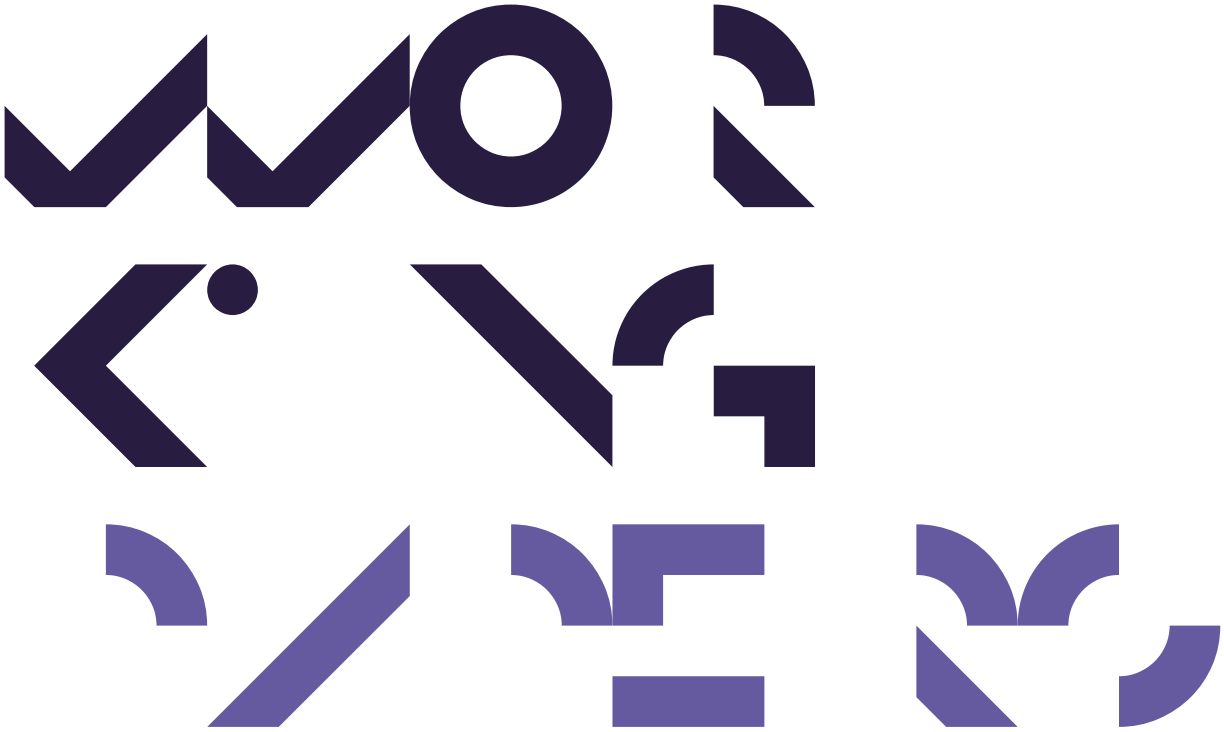

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Effects of Intensifying Labor Market Programs on Post-Unemployment Wages: Evidence From a Controlled Experiment

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Effects of Intensifying Labor Market Programs on Post-Unemployment Wages: Evidence From a Controlled Experiment

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Abstract

This paper investigates effects on wages of a Danish field experiment intensifying Active Labor Market Policies (ALMP). We link unemployed workers who participated in an ALMP experiment called "Quickly Back" carried out by the Danish Ministry of Employment 2005-2006 in two counties to matched employer-employee and public transfer register data up to 2008 enabling us to analyze exact labor market transitions and jobs of the participants. Men in one of the counties experienced significant higher probability of earning higher short and long term wages after treatment. Treated men in the other county encountered a higher probability of earning lower wages than non-treated in the short term. Women saw small positive or zero effects on wages.

Keywords: Active Labor Market Policies, controlled experiment, wages, Mixed Proportional Hazard model.

JEL codes: C41, J31, J64,

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1 Introduction

Many welfare states are characterized by a flexible labor market for firms and a generous social safety net for workers made redundant. For a system with a large public sector, high social benefits and easy access to lay off workers to be sustainable, a necessary condition is to maintain a low unemployment rate and a high participation rate. However, frictions (caused by e.g. incomplete information of supply and demand) and human capital depreciation in the labor market induce difficulties for unemployed workers to find jobs. Therefore, most western countries have a wide range of Active Labor Market Policies (ALMP) consisting of, among other things, training, activation, wage subsidies, monitoring and sanctions. Active labor market policies are meant to reduce these frictions and rebuild human capital of the unemployed worker by adding skills and knowledge, and by offering job search assistance, resume guidance, etc. to the unemployed as well as inducing him/her to actively search for a new job. This exercise is very expensive, though, and a natural question arises: does it provide value for the money?[1] The direct and short term outcome of ALMP is quite simple: Does it increase the exit-rate out of unemployment and/or decrease the re-entering rate into unemployment? The long term outcome of ALMP is less clear. First, ideally, after participating in ALMP, the unemployed worker should have gained new or updated skills securing a good and sustainable worker-firm match. Second, if, on the other hand, ALMP send unemployed workers into unsustainable or bad worker-firm matches, policy makers should rethink the setting of the ALMP system. Third, by guidance from a case worker or by participating in activation, the unemployed worker can be updated with the state of the labor market and might choose to lower his/her reservation wage in order to accept a job. If so, we would see workers entering lower paid jobs than if s/he had not been treated by ALMP.

In this paper, we analyze short, medium and long term post-unemployment outcomes (wages one, two and three years after leaving unemployment) from participating in an intensive active labor market policy program using a mixed proportional hazard framework (see Abbring and van den Berg (2003)).[2] We explore a field experiment carried out in two Danish counties, Storstroem and Southern Jutland, during the winter of 2005/2006. The experiment randomly assigned a fraction of all newly unemployed individuals to a treatment group with an intensive

[1] Denmark spends more than 1.5% of GDP every year on active measures of ALMP. Germany spends 0.9%, France 0.9%, The Netherlands 1.2%, Sweden 1.1%, Switzerland 0.7%, United Kingdom 0.4% and the United States spends 0.1% of GDP on active measures of labor market policies (2005 numbers, OECD.StatExtracts).

[2] Following the definition of Card, Kluve and Weber (2010), wages one, two and three years after leaving unemployment relate to short, medium and long term outcomes, respectively.

ALMP scheme compared to the current system.[3] The purpose of the experiment was to test whether an early effort could help treated newly unemployed back to work faster than non-treated. The intensification mainly consisted of increasing the frequency of meetings between the unemployed worker and a case worker and by advancing the time of activation. We use unique Danish administrative register data that allow us to measure labor market histories of the unemployed workers, both before they entered the experiment and up to three years after. From these registers, we construct average hourly wages by following each of their post-unemployment employment spells. This is the first paper to our knowledge that link intensification of ALMP and post-unemployment wages using Danish data.

Our findings in terms of wage outcomes from treatment are ambiguous. We find only *small or no significant long term outcomes for women* but *find treated men in Southern Jutland to have a significantly higher probability of earning higher long term wages than non-treated. Treated men in Storstroem county experience a higher probability of earning lower short term wages than non-treated. Both treated men and women in Southern Jutland have a higher probability of earning higher short term wages than non-treated.* This indicates that the intensification of ALMP may have had an impact on (short term) reservation wages as well as on long term wages.

Following the seminal works of Heckman and Singer (1984a,b) and Ham and Lalonde (1996) many studies have looked into various effects of Active Labor Market Policies. Often data restrict the focus to the effectiveness of ALMP on the exit rate out of unemployment into different labor market states such as other public transfers (inactivity) or self-support (mainly interpreted as employment) (see Heckman, Lalonde and Smith (1999), Lalive, Zweimüller and van Ours (2005), Rosholm and Svarer (2008), and Kluve (2010)), or the return rate into unemployment (e.g. Crepon, Dejemeppe and Gurgand (2005), Doiron and Gørgens (2008), and Blasco and Rosholm (2011)).[4]

Most of these studies look at the labor market spell after leaving the unemployment pool when participating in an ALMP program ignoring long term effects. Authors looking into long term effects mostly evaluate these on the basis of length of employment or self support. In a meta analysis of 97 ALMP studies (totaling 199 program estimates) Card et al. (2010) show that many programs with insignificant or negative short term impacts (within a year) have significant

[3]The assignment to treatment was conducted by day of birth. See section 2 for a more thorough description.

[4]See Kluve (2010) for a meta analysis of European ALMP studies and Card et al. (2010) for an extensive meta analysis of ALMP evaluations in general.

positive medium and long term impacts (after 2 to 3 years).

The field experiment used in this paper has previously been used to analyze ALMP in a Danish context. Graversen and van Ours (2008a,b) find that treated individuals experience shorter unemployment durations. They use a mixed proportional hazard model and find a 30% higher job finding rate for treated participants compared to control group members. Rosholm (2008) finds a similar estimate on the exit rate out of unemployment, but also shows that when controlling for time-varying indicators of treatment all positive effects vanish and some even become negative, the so-called lock-in effect. He finds that the estimated risks of meetings and being activated drive the difference in the job finding rates between treated and non-treated individuals. Vikström, Rosholm and Svarer (2011) use non-parametric methods to separate the sub-treatment effects on the exit rate out of unemployment. They find that job search assistance, frequent meetings and activation threats have positive impacts on the exit rate. Gautier, Muller, van der Klaauw, Rosholm and Svarer (2012) examine the outcomes for non-treated unemployed workers and compare these with unemployed workers in different counties of Denmark unaffected by the experiment to measure general equilibrium effects on the job finding rates. They find evidence of negative spillovers from treatment. Specifically, they find that estimating effects of treatment without accounting for externalities will result in an upward biased estimate. Finally, Blasco and Rosholm (2011) analyze long term effects on post-unemployment employment stability in terms of duration on self support after leaving the unemployment pool. They find that treatment increases the post-unemployment self support duration by ten percent for men while treated women show no post-unemployment stability effects. Decomposing the effect, they show that 20-25 percent is due to lagged duration dependence. Still, we know very little about post-unemployment labor market participation other than duration of self support. To further elaborate on the knowledge of long term ALMP effects on post-unemployment employment, this paper contributes by adding another and very important dimension of outcomes, namely wages.

ALMP schemes are designed to both increase the exit rate out of unemployment and to equip the unemployed better for a return to employment and thus enhance the quality of the worker-firm match. Studies of ALMP should not only evaluate exit and return rates but also take into account post-unemployment labor market outcomes such as wages and employment stability (see Crepon et al. (2005)). Analysis in these dimensions is important to tell the full story of potential successes or failures of ALMP programs. This paper contributes to the literature with

research in post-unemployment wages.

There is a shortcoming in the literature when it comes to analysis of wage gains/losses from participating in labor market schemes. Gaure, Røed and Westlie (2012) examine effects of unemployment benefits and ALMP participation on unemployment duration together with short term post-unemployment employment stability and earnings in Norway. They find that participation in ALMP lengthens the unemployment duration, i.e. the time until finding a job. However, they estimate ALMP to induce a higher probability of finding a job, and once the job is found, expected earnings have increased as well. Examining young workers being unemployed for more than nine months after finishing school, Cockx and Picchio (2012) find that prolonging the unemployment lowers the chance of getting a job but has no effect on starting wages earned once a job is found. Recently, literature has studied the effect of sanctions on the quality of post-program employment. In a study of sanctions on Swedish data, van den Berg and Vikström (2009) measure the effect on post-unemployment wages and hours worked. They find sanctioned workers to experience a 23 percent increase in the exit rate to employment, but with lower wages and fewer hours worked than non-sanctioned. On top of this, they find sanctioned workers to incur a higher level of human capital loss than non-sanctioned. Using rich Swiss unemployment and employment register data, Arni, Lalive and van Ours (2012) analyze the effect of monitoring and sanctions (full benefit reduction) on post-unemployment duration and earnings. They find that increasing monitoring increases the exit rate to employment with reduced earnings while durations are unaffected. Arni et al. (2012) show that sanctions also increase the exit rate, but with both lower earnings and lower post-unemployment employment durations as the result. Bolhaar, van der Klaauw and van Ours (2011) add another measure to the analysis of post-unemployment job quality as a result of sanctions based on Dutch data, namely employment contract type. They find no effect on employment duration or wages from sanctions, whereas they find that receiving a sanction decreases your probability of entering into employment on a permanent contract. For a US ALMP experiment, targeting unemployed believed to have a low probability of re-entering employment before benefit exhaustion, Berger, Black, Noel and Smith (2003) find that program participation decreases expected unemployment by 2.2 weeks, but more importantly, it increases subsequent earnings by $1,000. These papers all show that labor market policies have direct impacts on post-unemployment wages. Nonetheless, they all focus on unemployed workers in the potential lower end of the qualification distribution. Arni et al. (2012) and Bolhaar et al. (2011) both analyze effects of sanctioned

workers, and Berger et al. (2003) use those unemployed perceived to be least likely to return to employment. We differ from these studies by analyzing all newly unemployed and not only a subgroup within the pool of unemployed individuals. It is important to observe the entire population of newly unemployed workers when evaluating long term effects of intensifying ALMP in general, because ALMPs are often targeted towards newly unemployed to ease their path back into employment. This can only be evaluated by analyzing the full pool of newly unemployed workers. In the analysis we control for previous un- and employment spells as well as former wages and a wide variety of socio-economic characteristics. We argue this is necessary for a general study of the full effects of intensifying ALMP.

The rest of this paper is laid out as follows: Section 2 sketches the social experiment "Quickly Back", section 3 presents the data we utilize, section 4 review the econometric framework, and in section 5 we present our empirical results. Finally, section 6 concludes.

2 The Experiment

The controlled field experiment "Quickly Back" (henceforth denoted QB) was conducted by The National Labor Market Authority under the Danish Ministry of Labor in two Danish counties: Southern Jutland and Storstroem. QB was the first in a series of experiments conducted by the National Labor Market Authority testing the effects of intensifying ALMP in several dimensions. We use QB, partly because of a good setup related to measuring precise treatment and, partly because adequate time has passed since the beginning of the experiment such that we now are able to link post-unemployment employment spells to the participants. The experiment consisted of an intensification in multiple dimensions of the 2005 ALMP system. The experiment setting was constructed by randomly assigning a fraction of newly unemployed (UI benefit eligible) individuals to a treatment group. If a newly unemployed worker was born between the 1st and the 15th of any given month, he or she was assigned to the treatment group.

Importantly, there were no publicly announced description of the experiment before it was implemented. The participants in the control group were not told they were put into a control group of an experiment and individuals in the treatment group were only notified that they participated in a "pilot study", not in an experiment, a week and a half after registering as unemployed.

Individuals in both groups were sent to a CV/basic registration meeting within the first four

weeks of their unemployment spell. In the period of the experiment (first week of November 2005 to the last week of February 2006), the labor market program (i.e. for the control group) further consisted of:[5]

C-1 After four and twelve weeks of unemployment (receiving benefits), the unemployed should attend a meeting with a case worker.

C-2 Hereafter, the unemployed had to attend a meeting with a case worker every 13 weeks.

C-3 After a year of unemployment, the unemployed should participate in an unspecified program of at least one week duration.

C-4 For the rest of the unemployment spell, the unemployed worker had to participate in programs at least once every six month.

The intensification of the existing labor market program consisted of exposing the treatment group to:[6]

T-1 1.5 weeks after entering unemployment (receiving benefits) a letter informing the participant that s/he has been drawn as a member of a "labor market pilot study" and the entire course of the intense study was sent to the individual in the treatment group.

T-2 A two-week Job Search Assistance (JSA) program was mandatory after five or six weeks of unemployment.

T-3 During week 9 to 15 of unemployment, the treatment participant should (ideally) meet frequently with a case worker to ensure active job search and to provide JSA. The frequency was once a week in Storstroem and once every other week in Southern Jutland.

T-4 After week 18, an unspecified mandatory program lasting at a minimum of 13 weeks would start. There were four different possible programs of different lengths. (i) Private sector temporary job (subsidized by the authorities, lasting up to 6 months). (ii) Public sector temporary job (6-12 months). (iii) Classroom training (often less than 13 weeks each) and (iv) vocational training programs within firms (a couple of months).

T-5 The experiment ended and individuals still unemployed were transferred into the ordinary labor market program.

[5] C is for Control group.

[6] T is for Treatment group. See Table B1 (in the appendix) for an overview of the time schedule of treated versus non-treated individuals.

This particular experiment setting constitutes a good background for the analysis in this paper as the setting of random assignment by birthdays eliminates selection into treatment groups and justifies the ex-ante assumptions on unobserved heterogeneity of our mixed proportional hazard model (see Abbring and van den Berg (2003)). Further, it allows us to follow the individual worker throughout the experiment and, by linkage to register data, through his or her labor market transitions up to three years after leaving the experiment. Lastly, the treatment group member was imposed to a much more intense search scheme during his/her unemployment spell than the control group member. Other studies have already shown QB to have mixed positive and negative short term effects for men and women in terms of the exit rate out of unemployment and lowering the probability of re-entering unemployment (see Graversen and van Ours (2008a,b), Blasco and Rosholm (2011), Vikström et al. (2011)). In continuation of Card et al. (2010), who find that studies of labor market policies with zero or negative short term effects can have positive long term effects, it would be very interesting to analyze the long term effects of such an intensification of ALMP.

The down side of QB is the impossibility of distinguishing between the three dimensions of intensified treatment, (i) the two-week JSA program, (ii) the intensive meeting schedule, (iii) the faster entry into an activation scheme. The treatments came sequentially and we can thus not identify whether e.g. it was the meetings with a case worker having an impact or it simply was that the JSA program had a delayed effect. However, we argue, analyzing whether a general intensification of treatments has long term labor market outcome effects constitute important knowledge and insight into the full impacts of ALMP schemes. The division of individual effects of treatment is an important topic of further research but is beyond the scope of this paper.[7]

3 Data

We use three administrative register databases in this paper; (i) Quickly Back collected by the National Labor Market Board, (ii) weekly Spell data containing all labor market transitions and (iii) yearly data from the Integrated Database for Labor Market Research (IDA). All databases are maintained by Statistics Denmark. The QB data contain information on individuals par-

[7] In a later experiment named QB II, the National Labor Market Authority assigned each of the treatment dimensions to different counties such that explicit analysis of types of treatment in time could be conducted. We are thus in some years (when the participants of QB II have had the opportunity to experience post-unemployment outcomes) able to take the analysis from this paper further into dividing up the treatment effects.

ticipating in the field experiment carried out in two Danish counties, Storstroem and Southern Jutland, during the winter of $2005-2006$. The information covers participation in the treatment or control group, spells of unemployment (in terms of which week it started and which week it ended) prior, during and after the experiment, type of activation if the unemployed experienced any such and several socio-economic variables on the individual. The weekly Spell data is a longitudinal data set containing information of labor market transitions for each individual in the Danish population including wages from employment spells. IDA is a matched employer-employee longitudinal database containing socio-economic information on the entire Danish population, the population's attachment to the labor market, and at which firms the worker is employed. Both workers and firms can be monitored from $1980-2008$. The reference period in IDA is given as follows: the linkage of workers and firms refers to the end of November, ensuring that seasonal changes (such as e.g. shutdown of establishments around Christmas) do not affect the registration. Background information on individuals mainly refers to the end of the year.[8] The key feature of these three databases is the unique link between them given by individual id and firm id that are common across QB, Spell and IDA.

We construct hourly wages by accumulating wages net of public transfers from all employment spells during a year and normalizing by hours worked. Hours worked are measured by payments to the Danish mandatory public pension scheme. Payments to the pension scheme are determined by a step-function of hours worked.

3.1 Descriptive Summary

Here we present descriptives on the counties, QB, the Spell data and on IDA.

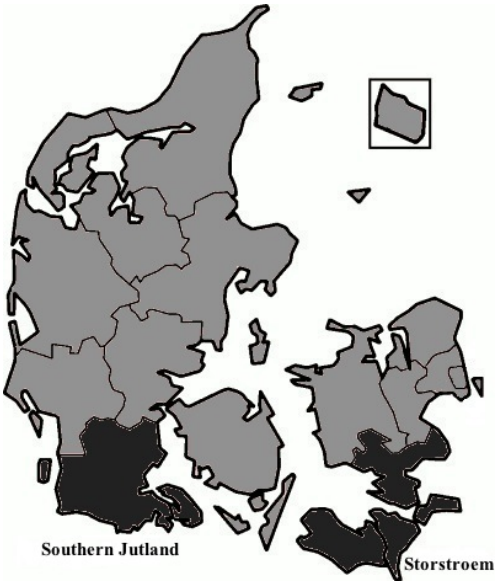
3.1.1 The Two Counties

QB was conducted in the two Danish counties, Storstroem and Southern Jutland. They are both counties without larger cities.[9] Both Storstroem and Southern Jutland lie in the geographically outer regions of Denmark as a whole and should thus not be considered representative of Denmark as a whole (Figure 1 shows Storstroem and Southern Jutland shaded in black). However, as Table 1 shows, West and South Zealand (which contain Storstroem county) saw similar un-

[8] See a more detailed documentation on IDA:
http://www.dst.dk/HomeUK/Guide/documentation/Varedeklarationer/emnegruppe/emne.aspx?sysrid=1013.

[9] The largest cities (2006) in Storstroem and Southern Jutland were Næstved (41,158 residents) and Sønderborg (27,391 residents) ranked 15th and 23rd in Denmark, respectively, in terms of residents.

Figure 1: Map of Denmark with Storstroem and Southern Jutland shaded in black.



employment rates as the Danish average after 2004. Southern Jutland had lower unemployment rates than Denmark on average from 2001 to 2008. In both counties as for Denmark, men had a lower unemployment rate than women. Notice, Table 1 shows that pooling the counties together should be done carefully, as they face two different labor markets. Southern Jutland participants face a considerably lower local unemployment rate than their Storstroem counterparts and an assumption that treated and non-treated in one county have the same employment possibilities as in the other could very easily be violated. We will thus not be pooling the counties together, but instead do the full analysis on each county separately as well as for men and women.

3.1.2 The Treatment Group vs. the Control Group

Table 2 shows descriptive statistics on the estimation samples. Storstroem county contains 1,169 observations in the treatment group and 1,217 in the control group. Southern Jutland county consists of 1,060 observations in the treatment group and 1,064 observations in the control group. The fraction of women in the Storstroem control group is slightly, but insignificantly, larger than in the treatment group. In Southern Jutland there is no difference. There are no major differences between treatment and control groups in the two counties with respect to week of entering the experiment. The only significant difference is entry in weeks 49-50 with a larger fraction of newly unemployed individuals being allocated to the treatment groups. There are only small educational differences between treatment and control groups in Storstroem county and none in Southern Jutland. Storstroem has a slightly larger fraction of vocational and smaller

Table 1: Net unemployment rates in percent.

	2001	2002	2003	2004	2005	2006	2007	2008
Denmark	4.7	4.8	5.8	5.8	5.1	3.9	2.7	1.9
West and South Zeeland*	5.1	5.2	6.1	6.0	5.2	3.9	2.9	2.0
Southern Jutland	4.5	4.5	5.5	5.3	4.6	3.1	2.0	1.3
Men								
Denmark	4.1	4.4	5.4	5.4	4.5	3.3	2.3	1.8
West and South Zeeland*	4.4	4.6	5.6	5.4	4.5	3.2	2.3	1.9
Southern Jutland	3.7	3.8	4.8	4.5	3.7	2.4	1.6	1.2
Women								
Denmark	5.2	5.2	6.1	6.3	5.7	4.5	3.2	2.0
West and South Zeeland*	6.0	5.8	6.7	6.6	5.9	4.7	3.5	2.1
Southern Jutland	5.5	5.3	6.4	6.4	5.6	4.0	2.6	1.5

*Covers Storstroem county and more.
Source: Statistics Denmark (statistikbanken.dk/AUL06).

fraction of primary/high school graduates in the treatment than in the control group. Both counties have a higher fraction of nonwestern immigrants being treated than non-treated. There are only very few nonwestern immigrants, however, and the significant difference is very unlikely to cause major selection issues between the groups, if any. Treatment and control groups do not display any major differences with respect to age, experience, marital status, lagged unemployment duration or post-unemployment transition to employment.

Treated individuals in Southern Jutland seem to be heading into slightly more stable employment spells than non-treated in the sense that in 2007 a larger fraction of treated holds only one job than non-treated. The opposite is the case in Storstroem in 2006 and 2008. There are only small insignificant differences in the fraction seeing one or more un- or non-employment spells after leaving QB.

For average hourly wages we see no significant differences before QB in all samples but men in Storstroem county in 2005. They display a 5 percent significantly higher average hourly wage rate. Treated men in Southern Jutland have significantly higher average hourly wages in 2007 and 2008, while no significant differences after the experiment are present in Storstroem county. Southern Jutland treated women see a significant lower average wage level in 2008 than non-treated.

Table 2: Summary statistics.

	Storstroem county			Southern Jutland		
	Treatment	Control	Diff.	Treatment	Control	Diff.
Pre-experiment characteristics						
Individual Characteristics						
Women	0.381	0.404		0.464	0.453	
Married	0.466	0.474		0.499	0.477	
Age	40.93	40.65		39.59	39.75	
Experience	14.47	14.51		12.92	13.19	
Danish	0.928	0.952		0.911	0.925	
Western immigrant	0.021	0.015		0.047	0.044	
Nonwestern immigrant	0.052	0.034	**	0.042	0.031	*
Level of education, 2005						
Primary and high school	0.397	0.429		0.419	0.428	
Vocational	0.491	0.463	*	0.456	0.446	
Bachelor	0.093	0.097		0.111	0.109	
Master and above	0.020	0.012	*	0.014	0.017	
Occupation in the last week of November 2005						
Management level	0.031	0.041		0.027	0.026	
Skilled level	0.470	0.467		0.450	0.453	
Unskilled level	0.304	0.293		0.305	0.303	
Unemployed	0.121	0.121		0.133	0.137	
Non-employed	0.074	0.077		0.083	0.077	
Accumulated unemployment duration 3 years before entering QB						
$\leq$ 6 weeks	0.477	0.505		0.517	0.508	
7-8 weeks	0.015	0.012		0.015	0.024	
9-16 weeks	0.073	0.072		0.068	0.071	
17-28 weeks	0.079	0.076		0.068	0.069	
29-52 weeks	0.122	0.118		0.125	0.122	
$>$ 52 weeks	0.234	0.219		0.208	0.207	
Week of entry into QB						
43-44, 2005	0.123	0.118		0.148	0.149	
45-46, 2005	0.062	0.054		0.053	0.061	
47-48, 2005	0.082	0.107		0.127	0.121	
49-50, 2005	0.119	0.082	***	0.097	0.069	***
51-52, 2005	0.111	0.110		0.108	0.111	
01-02, 2006	0.199	0.210		0.190	0.207	
03-04, 2006	0.122	0.107		0.093	0.100	
05-06, 2006	0.125	0.151		0.143	0.126	
07-08, 2006	0.058	0.061		0.041	0.057	
Average hourly wages (DKK), men						
Earned during 2004	179.0	181.4		172.8	173.3	
Earned during 2005	186.4	192.0	**	180.0	181.5	
Average hourly wages (DKK), women						
Earned during 2004	157.0	157.5		151.8	153.3	
Earned during 2005	165.7	166.9		161.3	164.9	

*: Indicates statistical significant difference at the 10% level. **: At the 5% level. ***: At the 1% level.

This table continues on the next page.

Table 2: Continued from previous page.

	Storstroem county			Southern Jutland		
	Treatment	Control	Diff.	Treatment	Control	Diff.
Post-experiment characteristics						
QB characteristics						
Treated $\leq$ 30 weeks	0.888	0.000	***	0.861	0.000	***
Treated $>$ 30 weeks	0.112	0.000	***	0.139	0.000	***
Transition QB, U $\rightarrow$ E	0.895	0.886		0.876	0.879	
Number of different employers after QB						
2006, zero employers	0.074	0.092		0.077	0.116	
2006, 1 employer	0.416	0.441		0.419	0.406	
2006, 2 employers	0.283	0.288		0.287	0.288	
2006, 3 or more employers	0.228	0.179	***	0.217	0.191	*
2007, zero employers	0.125	0.126		0.105	0.123	
2007, 1 employer	0.511	0.518		0.571	0.513	***
2007, 2 employers	0.241	0.241		0.204	0.243	
2007, 3 or more employers	0.123	0.116		0.121	0.120	
2008, zero employers	0.169	0.167		0.145	0.160	
2008, 1 employer	0.483	0.536		0.536	0.522	
2008, 2 employers	0.222	0.198	*	0.211	0.205	
2008, 3 or more employers	0.126	0.099	**	0.108	0.114	
Experiences unemployment spells after QB						
During 2006	0.329	0.303		0.326	0.322	
During 2007	0.367	0.377		0.339	0.372	
During 2008	0.295	0.310		0.259	0.279	
Experiences non-employment spells after QB						
During 2006	0.418	0.397		0.450	0.429	
During 2007	0.519	0.533		0.556	0.593	
During 2008	0.537	0.563		0.583	0.607	
Average hourly wages (DKK), men						
Earned during 2006	185.2	191.1	**	179.7	181.4	
Earned during 2007	189.3	190.3		185.3	180.0	**
Earned during 2008	194.5	191.1		191.5	185.4	**
Average hourly wages (DKK), women						
Earned during 2006	160.0	170.1	***	165.2	166.0	
Earned during 2007	163.1	164.0		161.0	161.9	
Earned during 2008	164.8	167.6		164.9	172.6	**
Observations	1,169	1,217		1,060	1,064	

*: Indicates statistical significant difference at the 10% level. **: At the 5% level. ***: At the 1% level.

Table B2 (in the appendix) shows the fraction of individuals in different occupational levels recorded by the last week of November in the years 2004 to 2008. None of the employment occupational groups differ significantly between treatment and control groups in either county in

Table 3: Number of QB participants in different unemployment duration categories.

Unemployment duration (weeks)	Storstroem			Southern Jutland		
	Treatment	Control	Diff.	Treatment	Control	Diff.
1 - 4	0.232	0.200	*	0.205	0.194	
5 - 8	0.203	0.170	**	0.194	0.160	**
9 - 15	0.244	0.222		0.249	0.209	**
16 - 30	0.209	0.239	*	0.213	0.248	*
31 +	0.112	0.169	***	0.139	0.189	***
Observations	1,169	1,217		1,060	1,064	

*: Indicates statistical significance at the 10% level. **: At the 5% level. ***: At the 1% level.

any of the years 2004 and 2005. Only workers employed at unskilled level in Storstroem county in 2005 that have a 10% level significantly larger fraction in the control than in the treatment group. In 2006 we see, not surprisingly, that a significantly larger fraction of control group members are unemployed. More interestingly, a larger fraction within the treatment groups is now employed at the unskilled level than in the two control groups. The other employment groups do not display any significant differences. Thus, it seems that it is lower occupational jobs that differ between the treatment groups and the control groups in 2006. In 2007 this difference has vanished in Storstroem county while it remains the same in Southern Jutland with a larger part of individuals from the treatment group employed at unskilled level than from the control group. The fraction of unemployed in Storstroem by 2007 has grown larger within the treated versus non-treated and equal by 2008. In Southern Jutland it remains to be a smaller fraction of treated than non-treated being unemployed during the last week of November 2007 and 2008 (at the 10 percent significance level).

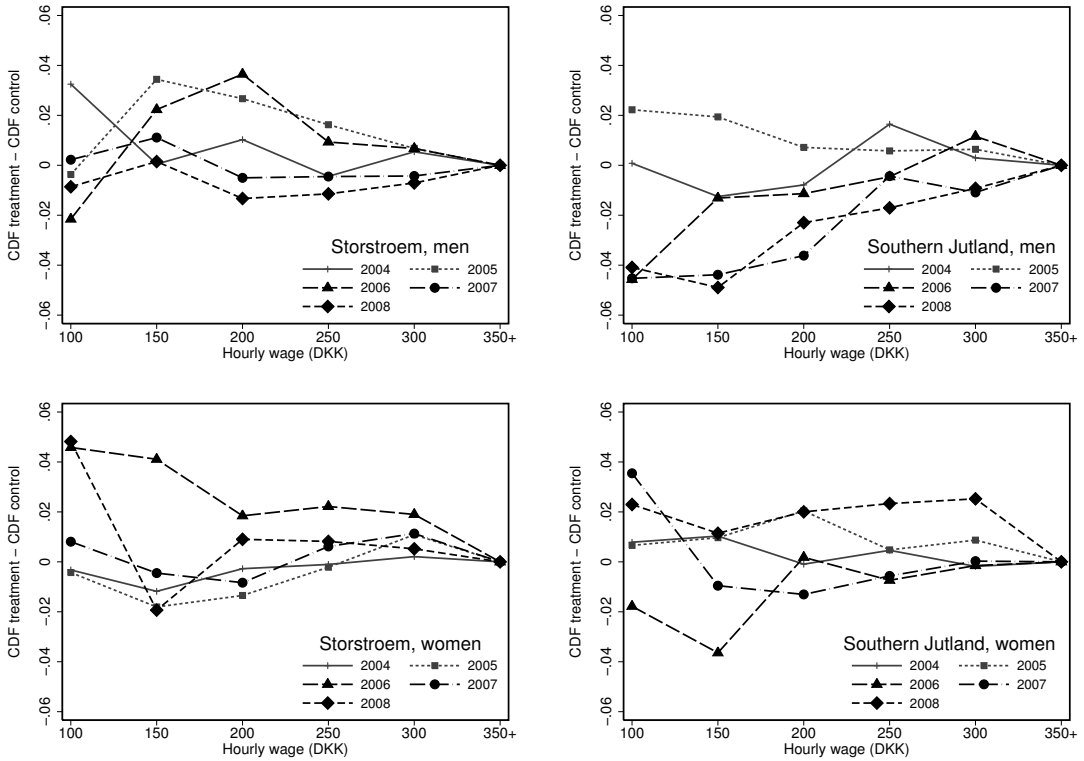
3.1.3 QB Durations

Several papers have shown that QB increased the exit rate out of unemployment (Graversen and van Ours (2008a,b), Rosholm (2008)). Table 3 contains the fraction of individuals leaving the benefit system within each of the experiment schemes (cf. Table B1). As expected, a higher fraction of treated individuals leaves unemployment before week 16 than non-treated. During the activation program scheme, this is circumvented and a larger fraction of non-treated individuals leaves unemployment. These differences highlight the threat and lock-in effects often found (see Rosholm (2008)).

3.1.4 Post-Unemployment Wages

Table B3 holds summary statistics of average hourly wages for men and women. Over all samples, the is no clear picture from the median and different percentiles of hourly wage. Note,

Figure 2: Plots of treatment group CDF subtracted the control group CDF for given hourly wage levels.



however, that treated men in Southern Jutland 2008 dominates non-treated in terms of hourly wages at all percentiles.

Figure 2 shows the cumulative average hourly wage distribution function (CDF) for treated individuals subtracted the CDF for non-treated at given wage levels.[10] A difference of zero at wage level w^* indicates an equal fraction of individuals earning w^* or less between treated and non-treated. If the difference is positive at wage level w^*, a higher fraction of treated individuals earns w^* or less than non-treated and vice versa. A common feature of all samples is that the 2004 and 2005 differences are close to zero for all wage levels. 2005, Storstroem men being an outlier. For 2006 wages (triangles), Storstroem women display positive CDF differences for all wage levels and Storstroem men for all wages higher than 150 Dkk. Men and women in Southern Jutland see negative or zero differences. The CDF differences for average 2007 wages (circles) of men in Southern Jutland lie below zero with a minimum of 4 percentage points lower fraction of treated paid an hourly wage of 150 DKK than non-treated.[11] Women

[10]Note that, by construction, $F_{\text{treated}}(w) - G_{\text{non-treated}}(w) \to 0$ for $w \to \infty$ where F and G are the CDF's of treated and non-treated respectively. Figure A3 shows CDF differences divided into treated individuals leaving unemployment in the first 30 weeks and after.

[11]Figure A1 (in the appendix) shows that roughly 50 percent in the control group have a wage less than 150 DKK.

Table 4: p-values from Kolmogorov-Smirnov tests for equal hourly wage distributions between treated and non-treated individuals.

	Men				Women			
	Storstroem		Southern Jutland		Storstroem		Southern Jutland	
Year	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
2004	0.449	0.818	0.632	0.976	0.334	0.644	0.542	0.919
2005	0.256	0.504	0.555	0.930	0.522	0.902	0.649	0.982
2006	0.178	0.355	**0.022**	**0.044**	0.057	0.114	0.368	0.700
2007	0.480	0.857	**0.006**	**0.012**	0.343	0.659	0.140	0.279
2008	0.580	0.948	**0.039**	0.078	0.122	0.244	0.102	0.204

(1) One-sided tests. (2) Two-sided tests. Bold numbers are those ≤ 0.05.

in Southern Jutland also see an overall negative difference in 2007 wages, but not as strong as men. Neither men or women have any differences in the CDF of 2007 wages in Storstroem. Finally, for 2008 wages (diamonds) men in both counties have a negative difference in CDFs of roughly 1.5 percentage points in Storstroem and as high as 5 percentage point in Southern Jutland. Figure A1 and A2 hold the levels of all the CDFs. Most masses are located below 200 DKK for men and 150 DKK for women. None of the samples has single mass points and the distributions all seem to be nice and smooth.

We have performed Kolmogorov-Smirnov tests for equal hourly wage distributions between treated and non-treated. Table 4 presents both one- and two-sided p-values from these tests.[12] Using one-sided tests, we cannot reject the null hypothesis of different underlying wage distributions on a 5 percent significance level for men in Southern Jutland 2006-2008 and borderline for women in Storstroem 2006. The two-sided test also rejects equal hourly wage distributions between treated and non-treated in the male Southern Jutland sample for the years 2006 and 2007. In 2008 the two-sided test rejects equal distribution on a 10 percent significance level. None of the samples (including men, 2005 in Storstroem county) rejects the null of equal pre-experiment wage distributions.

4 Econometric Framework

We use a Mixed Proportional Hazard (MPH) framework to capture the effect of treatment on post-unemployment wages. We measure wages by use of the same MPH structure as transitions from unemployment to either employment or non-employment and will thus be capturing

[12] In the one-sided test, if at the point of the largest difference, the CDF of treated is greater than the CDF of non-treated, the null is $H_0 : F_{\text{treated}}(w) \leq G_{\text{non-treated}}(w)$ versus $H_1 : F_{\text{treated}}(w) > G_{\text{non-treated}}(w)$, and vice versa if the CDF of treated is smaller than the CDF of non-treated. The null in the two-sided test is $H_0 : F_{\text{treated}}(w) = G_{\text{non-treated}}(w)$ versus $H_1 : F_{\text{treated}}(w) \neq G_{\text{non-treated}}(w)$. F and G are the cumulative wage distributions that treated and non-treated draw their wages from respectively.

a treatment effect on the probability of receiving a wage w^* conditional on receiving at least a wage w^*. In this section, we will discuss selection problems and go through the econometric methods used to address these issues and estimate the average treatment effects on post-unemployment wages.

4.1 Selection Bias

Even though the experiment analyzed here has a treatment and control group formed on the basis of birthday (i.e. almost as random and exogenous treatment placement as we can get) it is only random until after the first week and a half of the experiment. Hereafter, the treatment group members have received the letter sketching out the entire "pilot study" course. It would be a very strict assumption to assume that awareness of the program would not affect the behavior of the treatment group members. Thus, if we do not control for this fact, there will be a selection bias in the observed transition rates out of unemployment and into different jobs or other spells. In other words, when the experiment starts and no individuals know anything about the experiment, the hazard rate out of unemployment $\theta(t \mid x, \nu, d)$, where x is observable covariates, $d \in \{0, 1\}$ denotes membership of the treatment group and ν is unobserved heterogeneity, will be the same for both groups in weeks $t = \{0, 1\}$. I.e.

$$\theta(t = 0 \mid x, \nu, d = 0) = \theta(t = 0 \mid x, \nu, d = 1) \quad \text{and}$$
$$\theta(t = 1 \mid x, \nu, d = 0) = \theta(t = 1 \mid x, \nu, d = 1).$$

However, when treatment group members receive the information letter, dynamic selection kicks in as the observed duration now depends on whether or not the individual was a member of the treatment or control group. This is because the treatment group members now hold better, or at least more, timing information on their future labor market program. It would be too harsh an assumption not to allow for different types of individuals to select themselves into different states. Since we only observe individuals leaving the experiment at a specific point in time if they actually stayed in the experiment up until that point in time, the observed hazard rate out of unemployment at time $t \geq 2$ will be dependent on the unobserved heterogeneity and conditional on staying at least until t. So

$$\hat{\theta}(t \mid x, d) = E_\nu[\theta(t \mid x, \nu, d) \mid T \geq t],$$

will be the observed hazard out of unemployment at time t with T measuring realized unemployment duration. In other words, without explicitly controlling for dynamic selection, it is not possible to evaluate the effect of the experiment by comparing transition rates for the treatment group and for the control group as this would capture both the direct effect and the dynamic selection effects so we would have trouble identifying true effects. An appealing strategy to account for dynamic selection is to model the selection out of unemployment simultaneously with the hazard into post-unemployment outcomes.

4.2 The Mixed Proportional Hazard Model

4.2.1 Baseline Model

The MPH framework is attractable for this analysis for several reasons. First, the approach has already been extensively used in the field experiment literature.[13] Secondly, the MPH model specifically captures the dynamic selection effects by controlling for the fact that observed duration depends on participation (See Abbring and van den Berg (2003) for proof of identification).

Let t_{ue} and t_{un} denote duration in the experiment until leaving unemployment for employment and non-employment, respectively. The instantaneous hazard for an individual out of unemployment into employment or non-employment at time t is then given by

$$\theta_h(t_h \mid x_h, d, \nu_h) = \lambda_h(t_h) \exp(x_h'\beta_h + d'\delta_h) \exp(\nu_h), \quad h \in \{ue, un\}, \tag{1}$$

where x_h is observed individual characteristics used in the instantaneous hazard of h, the baseline hazard $\lambda_h(t_h)$ is duration dependence, $d = (\mathbb{1}(\text{treated} \leq 30 \text{ weeks}), \mathbb{1}(\text{treated} > 30 \text{ weeks}))$ is a vector of two treatment dummies and ν_h is unobserved heterogeneity.[14] Following the literature on duration analysis, the duration dependence parameter, λ_h, is modeled as a step function

[13] See e.g. van den Berg and van der Klaauw (2006), Rosholm (2008) and Blasco and Rosholm (2011).

[14] The experiment analyzed in this paper was targeted towards helping newly unemployed back to work as fast as possible. Other papers have shown the experiment to increase the exit rate for treated versus non-treated. We are interested in testing post-unemployment outcomes for this group so we need to restrict focus to those individuals who received treatment and left unemployment fast. Hence, the division of those leaving unemployment within 30 weeks and those leaving later. We have tried altering the analysis by setting $d = (\mathbb{1}(\text{treated} \leq 39 \text{ weeks}), \mathbb{1}(\text{treated} > 39 \text{ weeks}))$ and thus allowing individuals to leave during the post-program period as well. This did not change any of the results.

to allow for a more flexible duration dependence,

$$\lambda_h(t_h) = \exp\left[\sum_k \lambda_{h,k} \mathbb{1}(t_h \in k)\right], \tag{2}$$

with k a subscript for time intervals. $\mathbb{1}(t_h \in k)$ is the index function indexing time intervals. We normalize the duration dependence around one week of unemployment and allow for seven levels of duration dependence in weeks, $k \in \{2-3, 4-5, 6-8, 9-16, 17-30, 31-52, 53+\}$.

Our baseline model jointly estimates the parameters in a maximum likelihood setting as (indexing by individuals instead of writing out the conditioning on x, d and ν)

$$\mathscr{L} = \prod_{i=1}^{I} \int_{\nu} \theta_{ue,i}^{c_{ue,i}}(t_{ue}) S_{ue,i}(t_{ue}) \theta_{un,i}^{c_{un,i}}(t_{un}) S_{un,i}(t_{un}) dG(\nu), \tag{3}$$

with $\nu = (\nu_{ue}, \nu_{un})$. $G(\nu)$ is the cumulative joint distribution of the unobserved heterogeneity. $c_{h,i}$'s are censoring variables indicating whether individual i goes to spell h or not, i.e. $c_{ue,i} = \mathbb{1}(\text{individual } i \text{ moves to employment})$. In this way we account for both right-censoring of the unemployment spell and the employment/non-employment competing risks.

$$S_{h,i}(t_h) = \exp\left[-\int_0^{t_h} \theta_{h,i}(z \mid x_h, d, \nu_h) dz\right], \tag{4}$$

is the time-to-event specific survivor function. In the baseline model, we let ν have two support points in each transition totaling four mass points (α_j for $j = 1, 2, \ldots, J$) that are allowed to be freely correlated across transitions. For identification purposes, we normalize one mass point to zero (here $\alpha_J \equiv 0$). The mass point probabilities are given by

$$Pr(\alpha_j) = \frac{\exp(\alpha_j)}{\sum_i \exp(\alpha_i)}. \tag{5}$$

Below, this model will be extended to capture post-unemployment wage dynamics.

4.2.2 Post-Unemployment Wages

Wages enter the model in the same mixed proportional hazard framework as duration in unemployment, i.e. as a continuous wage hazard. The method of modeling wages as a hazard goes back to Donald, Green and Paarsch (2000) while Cockx and Picchio (2012) and Arni et al. (2012) extend it to a setting like the one used in this paper. Since wages are modeled by a

hazard approach, we are estimating the average treatment effect on the probability of earning exactly w^* conditional on earning at least w^*. I.e. the interpretation of treatment effects on wages is upward. There are several advantages of including wages in the mixed proportional hazard setting. First, the dynamic selection problem is incorporated in the MPH model. Second, in this setting we do not have to impose any parametric distribution on wages. Notice, however, if hourly wages are exponentially distributed, this setting would imply log wages to be linear in observables and unobservables. If hourly wages are not exponential, we will through the MPH structure be modeling proportionate shifts in the integrated hourly wage hazards (see Arni et al. (2012)). Third, short term results have an upper estimate reservation wage interpretation which we will elaborate on below.

We estimate the model for average hourly wages within the first, second and third year after entering the QB experiment, $w_{i,2006}, w_{i,2007}$ and $w_{i,2008}$. The instantaneous hazard into a given wage level is composed as

$$\theta_{w_m}(w_m \mid x_{w_m}, d, \nu_{w_m}) = \lambda_{w_m}(w_m) \exp(x'_{w_m}\beta_{w_m} + d'\delta_{w_m}) \exp(\nu_{w_m}), \tag{6}$$

for $m \in \{2006, 2007, 2008\}$. λ_{w_m} is the baseline wage hazard, modeled piecewise constant (normalized around average hourly wages below 100 Dkk.) to allow for a more flexible wage setting as

$$\lambda_{w_m}(w_m) = \exp\left[\sum_l \lambda_{w_m,l} \mathbb{1}(w_m \in l)\right], \tag{7}$$

with l being wage intervals, $l \in \{100-140, 140-180, 180-220, 220-240, 240-280, 280-350, 350+\}$. The wage "survivor" function is composed by[15]

$$S_{w_m,i}(w_m) = \exp\left[-\int_0^{w_m} \theta_{w_m,i}(z \mid x_{w_m}, d, \nu_{w_m})dz\right], \tag{8}$$

which leads to three models with likelihoods given by

$$\mathscr{L}_{w_{2006}} = \prod_{i=1}^{I} \int_\nu \theta_{ue,i}^{c_{ue,i}}(t_{ue}) S_{ue,i}(t_{ue}) \theta_{un,i}^{c_{un,i}}(t_{un}) S_{un,i}(t_{un}) \theta_{w_{2006},i}^{c_{w_{2006},i}}(w_{2006}) S_{w_{2006},i}(w_{2006}) dG(\nu), \tag{9}$$

[15]For the wage transition, the survivor function $S(w_m)$ measures individuals who have not exited into a wage level lower than w_m. I.e. those who have not accepted (if offered) a job with a wage $w^{**} < w_m$.

$$\mathscr{L}_{w_{2007}} = \prod_{i=1}^{I} \int_{\nu} \theta_{ue,i}^{c_{ue,i}}(t_{ue}) S_{ue,i}(t_{ue}) \theta_{un,i}^{c_{un,i}}(t_{un}) S_{un,i}(t_{un}) \theta_{w_{2007},i}^{c_{w_{2007},i}}(w_{2007}) S_{w_{2007},i}(w_{2007}) dG(\nu), \tag{10}$$

$$\mathscr{L}_{w_{2008}} = \prod_{i=1}^{I} \int_{\nu} \theta_{ue,i}^{c_{ue,i}}(t_{ue}) S_{ue,i}(t_{ue}) \theta_{un,i}^{c_{un,i}}(t_{un}) S_{un,i}(t_{un}) \theta_{w_{2008},i}^{c_{w_{2008},i}}(w_{2008}) S_{w_{2008},i}(w_{2008}) dG(\nu), \tag{11}$$

where $\nu = (\nu_{ue}, \nu_{un}, \nu_{w_m})$. Again, each entry in ν_h, $h \in \{ue, un, w_m\}$, has two points of support so the total number of mass points in the unobserved heterogeneity distribution is eight with $\alpha_8 \equiv 0$, and $c_{w_m} = \mathbb{1}(w_m > 0)$ is the average hourly wage censoring variable. x_{w_m} include information on wages 2004 and 2005, experience, marriage, occupation and educational level pre-QB, origin and age. The observable heterogeneity in the transition out of unemployment is in the shape of experience, marriage, occupation and educational level pre-QB, week of entry into QB, origin, age and lagged unemployment duration.

5 Results

In this section we present our findings of average treatment effects by participating in the intensified ALMP scheme on post-unemployment wages.

5.1 Post-Unemployment Wages

Table 5 contains the estimated δ_{w_m} parameters for $m \in \{2006, 2007, 2008\}$ from equations (9) to (11) on the male samples while Table 6 holds the female sample estimates (Table B4 to B7 present all parameter estimates). We are first and foremost interested in the average treatment effects on the wage hazard for workers leaving unemployment fast (i.e. within 30 weeks). First, it is evident there are different outcomes for treated individuals leaving unemployment within the first 30 weeks of the experiment and treated leaving later. QB was targeted towards helping newly unemployed back to work fast, and we are mostly interested in results on how treatment affected those succeeding in leaving unemployment fast (i.e. within 30 weeks). Second, remember, these estimates are effects on wage hazards. A *positive* estimate increases the probability of "exiting" the wage distribution early, i.e. you are more likely to receive a *lower* average hourly wage rate. Treated male individuals in Storstroem county reveal significantly higher probability of earning lower wages in 2006 than non-treated with those unemployed more than 30

Table 5: Wage specification estimation results for men (treatment effects singled out)

Men	2006 wages		2007 wages		2008 wages	
Average treatment effects	St.	S.J.	St.	S.J.	St.	S.J.
Treated (U $\leq$ 30 weeks)	0.139***	-0.046**	0.040	0.022	-0.009	-0.161***
	(0.014)	(0.023)	(0.075)	(0.076)	(0.058)	(0.022)
Treated (U $>$ 30 weeks)	0.429***	0.325***	0.108	0.168	0.399**	0.344***
	(0.161)	(0.029)	(0.288)	(0.173)	(0.196)	(0.057)
Observable heterogeneity	yes	yes	yes	yes	yes	yes
Unobservable heterogeneity	yes	yes	yes	yes	yes	yes
Log Likelihood	-22,527	-17,195	-22,691	-17,147	-22,408	-16,907
Observations	1,446	1,150	1,446	1,150	1,446	1,150

*: Indicates statistical significance at the 10% level. **: At the 5% level. ***: At the 1% level.
All parameter estimates can be found in Table B4 and B5 in the appendix.
St.: Storstroem county. S. J. Southern Jutland county.
Note: The numbers presented here are average treatment effects on the wage hazard. I.e. a positive estimate cause an increase in the wage hazard which means that the probability of "exiting" earlier in the wage distribution increases. A positive estimate on the wage hazard thus causes a lower expected wage level.

weeks dominating by a factor three. For Southern Jutland treated men leaving unemployment fast, treatment has increased their probability of earning higher wages than non-treated. Treated women in Southern Jutland leaving unemployment within 30 weeks have an even stronger negative average treatment effect on the wage hazard. I.e. treatment have increased their probability of earning higher wages than non-treated considerably.

Moving to long term impacts of the intensified labor market policies, Southern Jutland treated men leaving unemployment within the first 30 weeks, reveal significantly higher probabilities of receiving higher wages in 2008. Hence, in Southern Jutland there are long term positive treatment effects on wages for men leaving unemployment fast.

Estimating short term treatment effects of ALMP on wages by a hazard delivers an interesting economic interpretation caused by its upward looking characteristic. Imagine an unemployed worker searching for a job, receives an offer with a wage w^*. S/he will then, according to standard search theory, accept the offer if and only if the wage offered is higher than his/her reservation wage (see e.g. Burdett and Mortensen (1998)). For the pool of QB participants who hold a job in year Y, the wage hazard delivers the probability that the average wage earned during year Y is w^* given that it is at least w^*. In other words, the wage hazard describes the fraction of workers who are willing to work for wage w^* but not necessarily for any wages $w^{**} < w^*$. Thus, we are also contributing with an upper estimate of revealed reservation wages for those who actually accept a job offer. The short term average treatment effect reveals if treatment conditional on everything else being equal has had an impact on the upper level of reservation wages or not. Donald et al. (2000) discuss how one has to be careful interpreting estimates of the hazard function for wages since it is not straightforward to say that a 200 Dkk

Table 6: Wage specification estimation results for women (treatment effects singled out)

Women	2006 wages		2007 wages		2008 wages	
Average treatment effects	St.	S.J.	St.	S.J.	St.	S.J.
Treated (U $\leq$ 30 weeks)	0.056	-0.141**	-0.009	0.061	-0.039	0.102*
	(0.081)	(0.071)	(0.096)	(0.106)	(0.079)	(0.078)
Treated (U $>$ 30 weeks)	-0.029	0.013	0.173	0.242*	0.158	0.070
	(0.154)	(0.133)	(0.157)	(0.166)	(0.167)	(0.167)
Observable heterogeneity	yes	yes	yes	yes	yes	yes
Unobservable heterogeneity	yes	yes	yes	yes	yes	yes
Log Likelihood	-13,498	-14,096	-13,663	-14,420	-13,527	-14,196
Observations	936	974	936	974	936	974

*: Indicates statistical significance at the 10% level. **: At the 5% level. ***: At the 1% level.
All parameter estimates can be found in Table B6 and B7 in the appendix.
St.: Storstroem county. S. J. Southern Jutland county.
Note: The numbers presented here are average treatment effects on the wage hazard. I.e. a positive estimate cause an increase in the wage hazard which means that the probability of "exiting" earlier in the wage distribution increases. A positive estimate on the wage hazard thus causes a lower expected wage level.

hourly wage job was at risk of being only a 150 Dkk hourly wage job. What we can conclude, however, is that when we observe a 200 Dkk hourly wage job the worker has revealed to be willing to accept at least an offer of a wage of 200 Dkk. Turning back to Table 5 and 6, we see that especially Storstroem male short term estimates reveal large positive significant average treatment effects on the wage hazard. Southern Jutland estimates are significantly negative. Treated men and (insignificantly) women in Storstroem county who left unemployment within 30 weeks have lowered the upper estimate of their reservation wages by increasing the wage hazard by 15 and 6 percent respectively.[16] For treated men in Storstroem and Southern Jutland remaining unemployed for more than 30 weeks, treatment has increased the wage hazard by 53 and 38 percent respectively.[17]

Using the same field experiment as this paper, Gautier et al. (2012) analyze general equilibrium effects by comparing the control group of the experiment to other newly unemployed individuals living in other counties of Denmark. They find negative spill-overs from treatment on the control group and show that outcomes from the experiment will be upward biased if not accounting for externalities. They look at the exit rate out of unemployment, but it is very likely their result of negative spill-overs transfers to wage outcomes as well. If so, then the significant negative parameter estimates in the Southern Jutland samples are even stronger results.

To sum up, we find male post-unemployment wages to be overall more affected than female wages. Within the male samples, Storstroem treated workers leaving unemployment within 30 weeks experience a short term negative effect on wages which hereafter dies out and becomes

[16]Percentage change is calculated as $\Delta = \exp(\delta) - 1$.

[17]Note that only 45 and 57 treated men stay unemployed for more than 30 weeks and then enters into employment after QB in Storstroem and Southern Jutland respectively. Hence, we do not want to push the impact of parameter estimates on this group too far.

insignificant on the medium and long term. Southern Jutland workers leaving unemployment during the first 30 weeks have no significant effects on wages in the medium term, but have a positive effect on wages in the short term and a large positive effect in the long term, increasing their hourly wage hazard by 14 percent. These results should be considered with Table 1 displaying regional unemployment rates in mind. Storstroem workers face a higher local unemployment rate than Southern Jutland workers do. In fact, the unemployment rate of Southern Jutland falls to an incredible low of 1.3 percent in 2008 while Storstroem has unemployment rates of 3.9 in 2006 and 2.0 in 2008. These figures will ceteris paribus put less pressure on wages in Southern Jutland than in Storstroem county or if e.g. the unemployment rates had been at 2003 level of 6.1 percent.

5.1.1 Relating to the Literature

Our findings of men being more affected than women are consistent with those of Blasco and Rosholm (2011) analyzing post-unemployment employment (self support) stability effects by participating in QB. They find no significant treatment effects for women but find treated men to experience a reduction of 9 percent in the transition rate back into unemployment. They do not estimate their model on counties separately but include a dummy identifying Southern Jutland. This approach does not give any significant effect on self support stability. Rosholm (2008) shows differences in the treatment effect on exit rates for the two counties (pooling men and women together) with Southern Jutland increasing the exit rate out of unemployment more than Storstroem, consistent with the 2006 unemployment rates (cf. Table 1) and our Southern Jutland short term estimates of wages being less affected than Storstroem short term wages.

In relation to the international literature on the effects of labor market programs on post-unemployment wages our findings are in line with Gaure et al. (2012) examining impacts of (among other things) ALMP on earnings associated with the first job after unemployment. They find participation in ALMP to raise the expected post-unemployment earnings level (i.e. in the short term). As this paper, they model ALMP as one treatment independent of which type of program the individual is being assigned to. They deviate from this paper in the measurement however. They measure participation in ALMP or not, whereas this paper measures an intensification of ALMP versus normal ALMP. Cockx and Picchio (2012) find that prolonging unemployment for young school-leavers who have already been unemployed for nine months lowers the probability of them finding a job, but have no effect on the subsequent starting wages. In the

literature analyzing the effect of sanctions on post-unemployment wages, the typical finding is a reduction in reservation wages and earnings in the short term (see Arni et al. (2012) and van den Berg and Vikström (2009)). We still need to emphasize, however, that the sample of potential receivers of a sanction and our sample of the entire pool of newly unemployed workers are very different. Fundamentally, in order to be in danger of being sanctioned the unemployed worker must have been unemployed for some time neglecting to comply with the terms of receiving benefits. Our experiment was targeted towards newly unemployed workers helping them back to work as fast as possible, and the group of QB participants leaving unemployment within 30 weeks would not have been very likely to be in danger of receiving a sanction.

The primary goal of setting up the QB experiment by the National Labor Market Authority was to help newly unemployed individuals back to work faster through guidance and early activation than would otherwise be achieved. Graversen and van Ours (2008a,b) and Rosholm (2008) showed that the experiment did lead to a higher exit rate for treated than non-treated. It is therefore interesting to analyze how the treatment has affected the post-unemployment outcomes for these participants. We have now shown that for those individuals actually leaving unemployment within 30 weeks of unemployment (a fast return from unemployment and thus those individuals contributing to naming the experiment a success) the average treatment effects on post-unemployment wages are ambiguous. In Southern Jutland both men and women see a positive treatment effect on short term wages and men also have a considerable large positive long term treatment effect on wages. In Storstroem county, however, both men and (only insignificantly) women experience a negative short term treatment effect on wages and no effect on medium and long term wages. The main difference in the setting of the experiment between the counties was the meeting schedule. A newly unemployed worker in Storstroem was supposed to meet with a case worker every week while the schedule was only every other week in Southern Jutland.

5.1.2 State of the Labor Market

A primary difference between the economical setting during the experiment, however, was the local unemployment rates (cf. Table 1). Nonetheless, unemployment in both counties was still at historically low rates during the experiment, and it is plausible that they have not been the driving force behind our results, and at the least both the treatment and control groups within counties faced the same local labor market.

Table 7: Labor market summary.

County	Average # of vacancies			Average # of unemployed			Labor market tightness*		
	2006	2007	2008	2006	2007	2008	2006	2007	2008
Storstroem	1,394	1,356	1,195	6,208	4,306	3,107	0.225	0.315	0.385
Southern Jutland	1,458	1,361	1,339	5,680	3,748	2,352	0.257	0.363	0.569

*Labor market tightness calculated as the average number of vacancies divided by the average number of unemployed.
Note: The number of vacant jobs is collected by the National Labor Market Board by gathering information from the local job centers.

Of course, the unemployment rate is only showing one side of the state of the labor market the unemployed workers are situated in. If e.g. there are no open jobs for the unemployed to apply for, then a low unemployment rate will not indicate easy access to employment. The term of labor market tightness (the ratio of vacant jobs and unemployed workers) reveals how many open positions per unemployed are available and give a broader picture of the state of the labor market. Table 7 holds labor market tightness for the two counties. In 2006 there are 0.23 and 0.26 vacant jobs per unemployed in Storstroem and Southern Jutland, respectively, a difference of 14 percent. However, the tightness is still very low in both counties and we would not expect such a small difference in the labor market tightness to explain the difference between short term treatment effects in Storstroem versus Southern Jutland. In the long term, however, there is a stronger difference in the labor market tightness between the two counties with 0.39 vacant jobs per unemployed worker in Storstroem and 0.57 vacant jobs per unemployed worker in Southern Jutland (a difference of 47 percent). In other words, there are thus, all else equal, easier access to vacant jobs in Southern Jutland than in Storstroem county in 2008. Given these market tightnesses, we would expect workers in Southern Jutland, generally, to have better outside options than workers in Storstroem, and if treatment has either increased the human capital of the treated individuals or taught them the true state of the labor market, treated workers should be able to extract more rent, resulting in higher treatment effects, in Southern Jutland than in Storstroem. This is also what we find (cf. Table 5).

5.2 Robustness – Log Wages

Modeling hourly wages by an MPH structure is appealing because of the dispensable assumption of a specific distribution on wages. If, on the other hand, we assume hourly wages to be log-normal the likelihood contribution of log hourly wages is

$$\prod_{i=1}^{I} \phi\left(\frac{\ln w_{i,m} - x'_{i,w_m}\beta_{w_m} - d'\delta_{i,w_m} - \nu_{i,w_m}}{\sigma_{w_m}}\right)^{c_{i,w_m}}, \tag{12}$$

Table 8: Hourly wage and log hourly wage specification average treatment effects.

	2006 wages		2008 wages	
Men	Hourly wages	Log hourly wages	Hourly wages	Log hourly wages
Storstroem				
Treated (U $\leq$ 30 weeks)	0.139***	-0.032**	-0.009	0.006
	(0.014)	(0.012)	(0.058)	(0.024)
Southern Jutland				
Treated (U $\leq$ 30 weeks)	-0.046**	0.051***	-0.161***	0.057***
	(0.023)	(0.004)	(0.022)	(0.001)

*: Indicates statistical significance at the 10% level. **: At the 5% level. ***: At the 1% level.
Note: Hourly wage estimates are average treatment effects on the hourly wage hazard. Log hourly wage estimates are average treatment effects on the log hourly wage rate.
Parameter estimates from log wages equations are not shown. Can be delivered on demand.

with $\phi(\cdot)$ being the p.d.f. of the standard normal distribution and σ_{w_m} is the standard deviation of log wages in year m. By incorporating this likelihood contribution in the baseline model instead of the average hourly wage MPH structure above, we can estimate the effect of treatment on the log hourly wage. If hourly wages are exactly exponentially distributed then this specification should yield the exact same estimates as in the MPH structure model. We have incorporated (12) and estimated it simultaneously with the baseline likelihood function. Table 8 shows selected parameter estimates from this exercise. We only present parameter estimates on wages in the short and long term for men leaving unemployment fast (the samples with the most clear results above). Comparison of average treatment effects on wage hazards and log wages in Table 8 shows that, as expected, a negative effect on the hazard is followed by a positive effect on log wages. In terms of significance, the two approaches seems to deliver the same results. Assuming log normal hourly wages also results in the conclusion that treated men in Storstroem county are hit by significantly lower short term wages wages than non-treated, and see no effect in the long term. Treated men in Southern Jutland, on the other hand, benefit by a significantly higher wage than non-treated in both the short and the long term perspective. If average hourly wages were perfectly log normal distributed, we should have seen the exact same parameter estimates (with opposite signs). Differences between hourly and log hourly wage estimates indicate that average hourly wages are not exactly log normal, and we thus prefer using our wage hazard specification without the assumption of a specific wage distribution.[18]

[18]Kolmogorov-Smirnov, Anderson-Darling and Shapiro-Wilk tests for normality (not shown, but available upon request) rejects the null hypothesis of normally distributed log wages for all samples.

6 Conclusions

This paper uses a controlled field experiment of intensifying active labor market policies in Denmark to analyze post-unemployment wages. The experiment was carried out to test whether an early effort could help treated newly unemployed back to work faster than non-treated. The primary treatments were frequent meetings with a case worker and faster entry into activation.

Previous literature analyzing the experiment have shown treatment to have positive effects on the exit rate out of unemployment and to have lowered the re-entry rate into unemployment for men. To take the analysis on post-unemployment outcomes further, we link the experiment to Danish employment register data and construct hourly wages pre- and post-unemployment. Using a mixed proportional hazard framework we control for dynamic selection and estimate the average treatment effect on the wage hazard. We find male post-unemployment wages to be overall more affected by treatment than female post-unemployment wages. Within the male samples there are significantly differences between the two counties Storstroem and Southern Jutland. Men in Storstroem have a negative short term effect of treatment on wages resulting in a 15 percent lower expected hourly wage hazard in 2006 but no significant medium and long term effects. In Southern Jutland the opposite is true. Men have moderate positive short term and large positive long term average treatment effects increasing their expected 2008 hourly wage hazard by 14 percent. Treated Southern Jutland women display a sharp decrease in the wage hazard in the short term but have no effects in the medium or long term.

ALMPs are meant to update or teach skills of the unemployed worker and to help him/her realize the state of the labor market. The outcome on wages from these measures is not straightforward. If ALMP build on the human capital of the worker the resulting worker-firm match should reflect the updated skills and the wage could very well be higher than if no treatment were conducted. If the treatment effect on the other hand goes through guidance of the state of the labor market resulting in advice to accept lower paying jobs than the worker would be willing to without such guidance we would see lower wages as the outcome of ALMP. Our results point to the former in the male Southern Jutland sample and the latter in the male Storstroem sample. Relating to standard search theory, unemployed workers will accept a job if and only if the offer is better than their reservation wage. In this framework, short term wages can be thought of as a revealed upper estimate of the worker's reservation wage. We thus find evidence towards that treatment has lowered the upper estimate of the reservation wage of especially men in Storstroem county.

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Appendices

A Figures

Figure A1: Cumulative distribution graphs of average hourly wages, men.

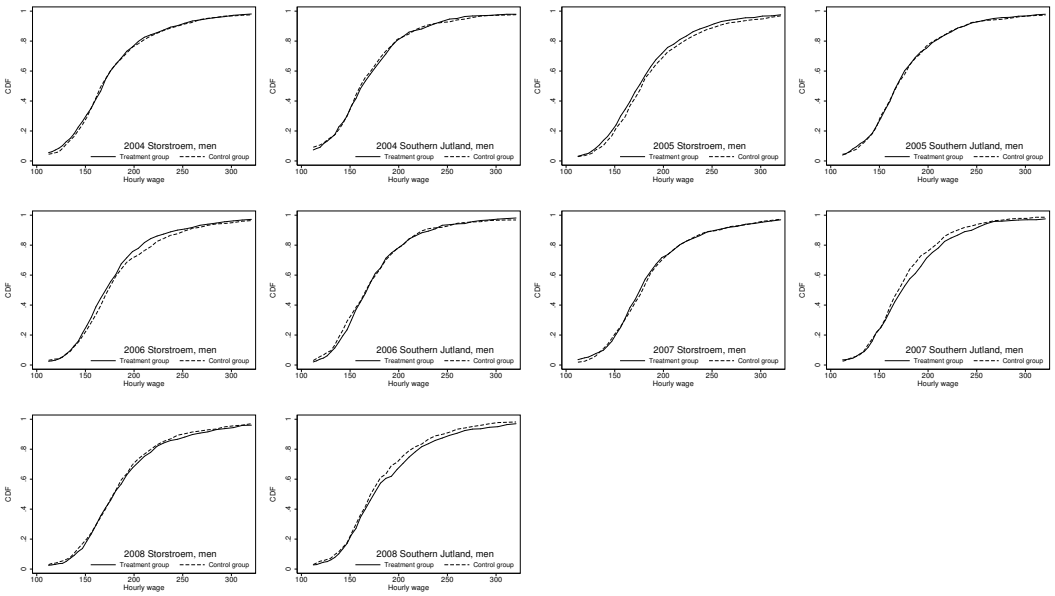


Figure A2: Cumulative distribution graphs of average hourly wages, women.

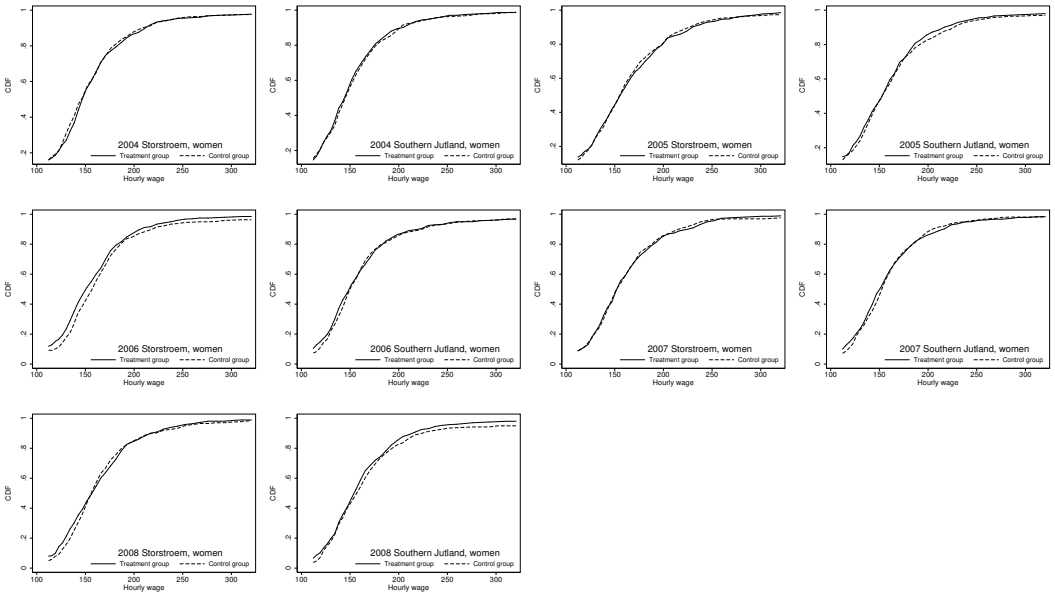
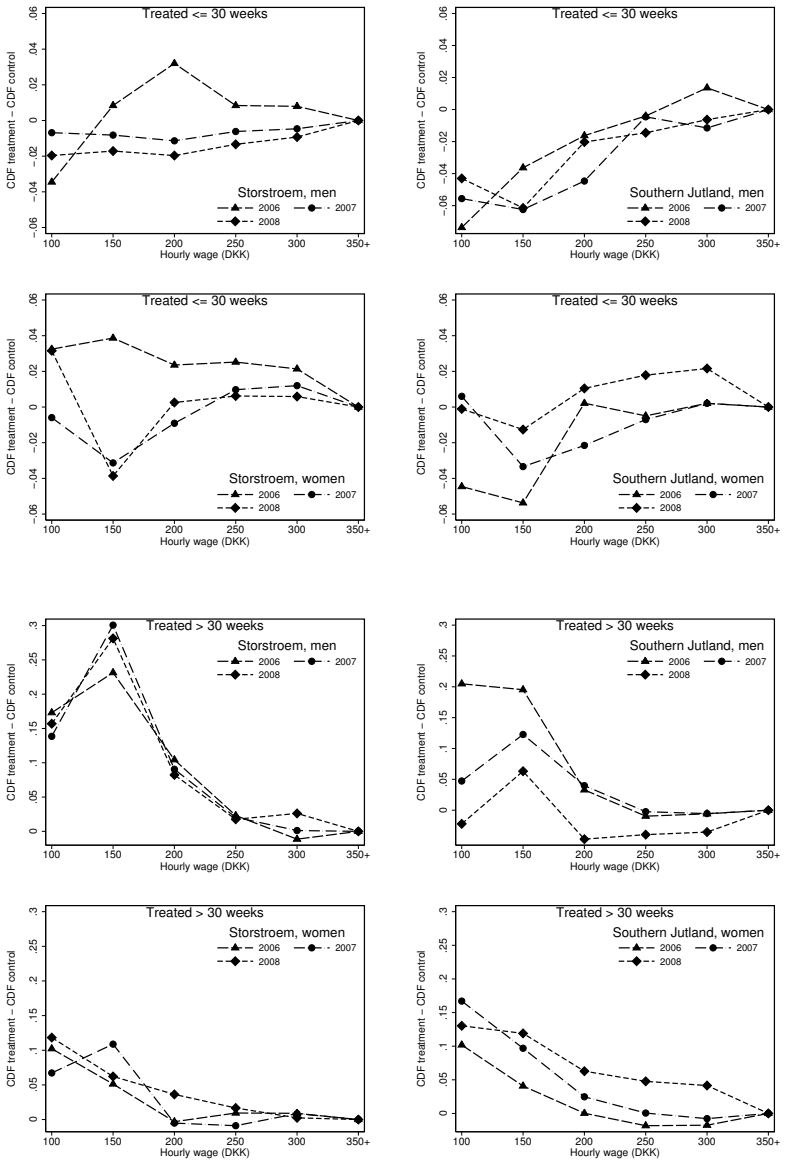


Figure A3: Plots of treatment group CDF subtracted the control group CDF for given hourly wage levels. Treated ≤ 30 weeks and treated > 30 weeks versus control groups.



B Tables

Table B1: Outline of the treatments.

Weeks after registering for unemployment benefits	Treatment group	Control group
1.5	Letter of 'pilot study' notification received	
1	CV/basic registration meeting with case worker	CV/basic registration meeting with case worker
2		
3		
4		Meeting with case worker
5		
6	Two-week JSA programme	
7		
8		
9		
10		
11		
12	Frequent meetings with case worker	Meeting with case worker
13		
14		
15		
16	Between programs	
17		
18		
19		
20		
21		
22		
23		
24	Activation program	
25		Meeting with case worker
26		
27		
28		
29		
30		
31		
32		
33		
34	Post-treatment, transferred to normal scheme after week 39	
35		
36		
37		
38		Meeting with case worker
39		

Dashed lines separate treatment group programs. Solid lines separate control group programs.

Table B2: Occupational level in the last week of November each year.

	Storstroem			Southern Jutland		
Occupation	**Treatment**	**Control**	**Diff.**	**Treatment**	**Control**	**Diff.**
2004						
Management level	0.064	0.065		0.076	0.063	
Skilled level	0.070	0.082		0.068	0.063	
Unskilled level	0.740	0.730		0.740	0.735	
Unemployed	0.092	0.085		0.075	0.084	
Outside the labour force	0.033	0.038		0.042	0.055	*
2005						
Management level	0.050	0.056		0.052	0.043	
Skilled level	0.059	0.070		0.061	0.064	
Unskilled level	0.712	0.690	*	0.692	0.695	
Unemployed	0.144	0.145		0.153	0.154	
Outside the labour force	0.035	0.039		0.042	0.044	
2006						
Management level	0.044	0.052		0.049	0.050	
Skilled level	0.089	0.086		0.079	0.077	
Unskilled level	0.728	0.690	**	0.737	0.682	***
Unemployed	0.092	0.123	**	0.099	0.146	***
Outside the labour force	0.048	0.048		0.036	0.045	*
2007						
Management level	0.054	0.065		0.057	0.062	
Skilled level	0.084	0.085		0.075	0.088	
Unskilled level	0.667	0.689		0.728	0.679	**
Unemployed	0.099	0.079	*	0.067	0.082	*
Outside the labour force	0.096	0.082		0.074	0.089	*
2008						
Management level	0.072	0.086		0.060	0.075	*
Skilled level	0.078	0.083		0.101	0.092	
Unskilled level	0.591	0.577		0.637	0.601	*
Unemployed	0.098	0.103		0.075	0.095	*
Outside the labour force	0.162	0.151		0.127	0.137	
Observations	1,169	1,217		1,060	1,064	

*: Indicates statistical significance at the 10% level. **: At the 5% level. ***: At the 1% level.

Table B3: Descriptives on average hourly wages, men in the top panel and women in the bottom panel.

Men	Treatment								Control							
Storstroem	Obs	Average	S.D.	P10	P25	P50	P75	P90	Obs	Average	S.D.	P10	P25	P50	P75	P90
2004	683	179.0	53.7	128.1	147.5	170.2	198.8	245.4	691	181.4	57.1	131.6	149.7	168.9	199.2	247.2
2005	698	186.4	51.9	135.1	154.4	177.6	206.6	249.2	694	192.0	56.7	139.5	157.2	180.4	213.3	259.3
2006	683	185.2	57.0	136.6	152.3	173.3	200.2	248.1	669	191.1	63.6	138.1	155.4	176.6	210.5	256.9
2007	646	189.3	54.8	140.5	158.1	178.6	209.8	258.2	639	190.3	51.8	138.8	158.1	181.1	210.5	259.4
2008	606	194.5	57.8	142.0	159.8	181.6	213.5	265.1	610	191.1	54.0	139.8	159.2	181.7	211.1	253.9
Southern	Treatment								Control							
Jutland	Obs	Average	S.D.	P10	P25	P50	P75	P90	Obs	Average	S.D.	P10	P25	P50	P75	P90
2004	529	172.8	53.0	121.6	143.8	164.2	193.5	234.5	545	173.3	58.1	118.8	145.1	163.0	193.0	232.9
2005	533	180.0	52.2	128.9	150.5	170.5	200.5	239.2	552	181.5	55.1	131.4	150.4	170.3	198.9	241.0
2006	536	179.7	50.6	133.7	151.0	169.9	196.3	238.9	533	181.4	63.9	133.8	146.0	169.3	197.2	227.8
2007	526	185.3	52.1	137.7	154.2	175.0	207.2	248.7	513	180.0	45.6	136.9	153.5	172.2	200.4	233.8
2008	502	191.5	57.6	140.2	155.9	177.3	214.4	259.3	495	185.4	51.5	136.9	154.3	173.6	206.8	250.0

Women	Treatment								Control							
Storstroem	Obs	Average	S.D.	P10	P25	P50	P75	P90	Obs	Average	S.D.	P10	P25	P50	P75	P90
2004	407	157.0	61.0	85.7	129.2	148.8	174.1	214.9	448	157.5	62	102.9	127.9	148.5	173.7	213.2
2005	410	165.7	56.4	97.0	131.8	157.9	190.4	233.8	450	166.9	58.6	109.4	132.2	158.0	189.1	230.8
2006	396	160.0	50.7	109.8	133.7	152.0	176.8	208.7	436	170.1	64.1	120.6	138.6	158.9	181.4	222.4
2007	373	163.1	48.3	118.5	135.9	153.9	183.1	229.6	425	164.0	50.9	116.3	137.0	154.6	179.4	219.0
2008	362	164.8	45.9	121.0	135.4	159.7	186.1	219.5	404	167.6	47.5	125.1	140.3	158.1	183.3	225.3
Southern	Treatment								Control							
Jutland	Obs	Average	S.D.	P10	P25	P50	P75	P90	Obs	Average	S.D.	P10	P25	P50	P75	P90
2004	446	151.8	50.1	98.1	124.8	146.1	169.4	206.9	440	153.3	51.7	98.9	125.5	146.9	171.8	204.1
2005	448	161.3	56.7	102.3	130.2	155.5	180.6	218.9	428	164.9	57.7	103.8	132.5	154.5	184.2	229.5
2006	442	165.2	68.4	112.5	133.4	151.1	177.6	224.4	408	166.0	61.5	120.4	135.0	152.1	174.7	227.0
2007	423	161.0	50.5	114.0	133.9	152.4	179.9	218.1	420	161.9	48.0	119.0	134.3	155.5	177.9	207.7
2008	404	164.9	48.4	119.2	137.7	156.0	185.2	216.7	399	172.6	60.1	123.7	138.7	159.2	185.9	227.0

Table B4: Men, Storstroem county.

	2006 wages		2007 wages		2008 wages	
	Estimate	S.D.	Estimate	S.D.	Estimate	S.D.
Transition U → E						
Experience	0.002	0.004	0.007	0.006	**0.028**	0.004
Experience squared/100	0.010	0.012	-0.015	0.019	**-0.068**	0.013
Treatment (U $\leq$ 30 weeks)	0.077	0.081	0.091	0.073	0.095	0.073
Treatment (U $>$ 30 weeks)	0.049	0.247	0.078	0.300	0.075	0.242
Married	0.012	0.060	0.033	0.108	0.021	0.058
Occupation, top 2005	**0.444**	0.189	**0.398**	0.168	**0.733**	0.174
Occupation, middle 2005	**0.558**	0.060	**0.561**	0.059	**0.842**	0.061
Occupation, base 2005	**0.559**	0.083	**0.548**	0.070	**0.834**	0.067
Occupation, unempl. 2005	**0.713**	0.152	**0.598**	0.118	**1.007**	0.128
Education, vocational 2006	0.008	0.067	0.031	0.076	0.009	0.055
Education, bachelor 2006	-0.012	0.141	0.014	0.140	-0.011	0.132
Education, master 2006	0.057	0.340	0.165	0.371	0.045	0.311
Entry week, 45 - 46, 2005	**0.398**	0.172	**0.444**	0.221	**0.445**	0.144
Entry week, 47 - 48, 2005	**0.413**	0.153	**0.353**	0.104	**0.474**	0.126
Entry week, 49 - 50, 2005	**0.466**	0.128	**0.359**	0.089	**0.522**	0.097
Entry week, 51 - 52, 2005	**0.421**	0.100	**0.346**	0.091	**0.513**	0.107
Entry week, 01 - 02, 2006	**0.355**	0.081	**0.266**	0.073	**0.446**	0.081
Entry week, 03 - 04, 2006	**0.495**	0.087	**0.459**	0.125	**0.595**	0.096
Entry week, 05 - 06, 2006	**0.431**	0.113	**0.335**	0.094	**0.502**	0.081
Entry week, 07 - 08, 2006	**0.590**	0.143	**0.578**	0.188	**0.678**	0.141
Western immigrant	0.113	0.364	-0.193	0.348	**0.188**	0.111
Non-western immigrant	0.055	0.229	0.038	0.214	0.165	0.293
Age 25 - 29	0.138	0.094	**0.360**	0.091	**0.219**	0.109
Age 30 - 39	**0.174**	0.082	**0.402**	0.082	**0.208**	0.088
Age 40 - 49	0.094	0.095	**0.358**	0.110	**0.117**	0.064
Age 50 +	0.083	0.063	**0.368**	0.113	**0.137**	0.065
Lagged Uempl. duration, 7 - 8 weeks	-0.098	0.259	**0.166**	0.060	-0.123	0.235
Lagged Uempl. duration, 9 - 16 weeks	0.056	0.128	0.058	0.125	0.036	0.109
Lagged Uempl. duration, 17 - 28 weeks	-0.041	0.109	-0.021	0.103	-0.047	0.110
Lagged Uempl. duration, 29 - 52 weeks	0.046	0.121	0.028	0.102	0.011	0.092
Lagged Uempl. duration, 52 + weeks	-0.011	0.080	0.001	0.113	-0.017	0.088
Baseline hazard 2 - 3 weeks	**-1.447**	0.173	**0.152**	0.067	**-0.899**	0.185
Baseline hazard 4 - 5 weeks	**-3.592**	0.135	**-1.766**	0.150	**-2.890**	0.154
Baseline hazard 6 - 8 weeks	**-5.661**	0.150	**-3.546**	0.126	**-4.782**	0.118
Baseline hazard 9 - 16 weeks	**-8.125**	0.137	**-5.746**	0.167	**-7.052**	0.104
Baseline hazard 17 - 30 weeks	**-10.186**	0.144	**-7.700**	0.124	**-8.946**	0.135
Baseline hazard 31 - 52 weeks	**-11.600**	0.162	**-9.151**	0.246	**-10.279**	0.141
Baseline hazard 53 + weeks	**-12.656**	0.108	**-10.566**	0.444	**-11.332**	0.279
ν_{e1}	**9.299**	0.221	**5.523**	0.009	**7.499**	0.187
ν_{e2}	**9.266**	0.288	**9.323**	0.013	**6.955**	0.026
Transition U → N						
Experience	**-0.149**	0.007	**-0.280**	0.009	**-0.151**	0.008
Experience squared/100	**0.356**	0.031	**0.813**	0.013	**0.376**	0.031
Treatment (U $\leq$ 30 weeks)	0.053	0.238	0.073	0.325	-0.048	0.175
Treatment (U $>$ 30 weeks)	0.652	0.538	**-0.398**	0.183	0.434	0.415
Married	0.046	0.210	-0.028	0.054	0.063	0.192
Occupation, top 2005	0.500	0.547	0.029	0.659	0.261	0.568
Occupation, middle 2005	0.190	0.206	-0.256	0.187	0.067	0.265
Occupation, base 2005	0.111	0.221	-0.314	0.249	-0.019	0.237
Occupation, unempl. 2005	-0.483	0.446	**-0.466**	0.123	**-1.004**	0.375
Education, vocational 2006	0.196	0.197	**0.184**	0.053	0.168	0.189
Education, bachelor 2006	0.166	0.542	-0.041	0.409	-0.004	0.425
Education, master 2006	-0.448	0.679	-0.056	1.118	**0.552**	0.251
Entry week, 45 - 46, 2005	0.026	0.428	**0.318**	0.149	**0.362**	0.145
Entry week, 47 - 48, 2005	0.032	0.409	0.026	0.495	-0.083	0.586
Entry week, 49 - 50, 2005	-0.492	0.637	**-0.853**	0.352	**-0.672**	0.147
Entry week, 51 - 52, 2005	-0.381	0.391	-0.258	0.482	**-0.705**	0.304
Entry week, 01 - 02, 2006	-0.287	0.292	0.075	0.057	-0.448	0.434
Entry week, 03 - 04, 2006	-0.359	0.387	-0.213	0.432	**-0.702**	0.370
Entry week, 05 - 06, 2006	-0.158	0.366	**0.202**	0.065	**-0.521**	0.238
Entry week, 07 - 08, 2006	**0.683**	0.123	-0.212	0.159	0.090	0.401
Western immigrant	**-0.772**	0.169	**-0.603**	0.131	-1.888	1.773
Non-western immigrant	-0.129	0.588	-0.346	0.407	-0.120	0.648
Age 25 - 29	**0.835**	0.342	0.667	0.478	**1.173**	0.100
Age 30 - 39	**0.826**	0.353	**1.096**	0.583	**0.949**	0.548

Table continues on next page.
Bold face numbers indicate statistical significance at the 5 % level.

Table B4 continued: Men, Storstroem county.

	2006 wages		2007 wages		2008 wages	
	Estimate	S.D.	Estimate	S.D.	Estimate	S.D.
Age 40 - 49	**1.105**	0.349	**0.846**	0.219	**1.065**	0.307
Age 50 +	**1.411**	0.185	**1.485**	0.552	**1.374**	0.193
Lagged Uempl. duration, 7 - 8 weeks	0.432	0.355	-0.193	1.524	**0.480**	0.285
Lagged Uempl. duration, 9 - 16 weeks	-0.108	0.408	-0.085	0.645	-0.033	0.518
Lagged Uempl. duration, 17 - 28 weeks	-0.036	0.680	-0.089	0.567	-0.026	0.669
Lagged Uempl. duration, 29 - 52 weeks	-0.064	0.516	-0.247	0.283	-0.006	0.591
Lagged Uempl. duration, 52 + weeks	-0.270	0.246	0.156	0.563	-0.247	0.221
Baseline hazard 2 - 3 weeks	**-4.232**	0.482	**-4.334**	0.660	**-4.174**	0.518
Baseline hazard 4 - 5 weeks	**-5.360**	0.590	**-5.595**	0.634	**-5.352**	0.585
Baseline hazard 6 - 8 weeks	**-4.570**	0.336	**-4.884**	0.500	**-4.506**	0.377
Baseline hazard 9 - 16 weeks	**-5.561**	0.296	**-5.999**	0.292	**-5.533**	0.279
Baseline hazard 17 - 30 weeks	**-5.948**	0.361	**-6.541**	0.325	**-5.973**	0.279
Baseline hazard 31 - 52 weeks	**-6.571**	0.332	**-6.467**	0.443	**-6.424**	0.373
Baseline hazard 53 + weeks	**-7.315**	0.371	**-7.570**	0.659	**-7.012**	0.526
ν_{n1}	**1.864**	0.283	**2.385**	0.034	**2.137**	0.257
ν_{n2}	**1.848**	0.254	**3.578**	0.017	**2.233**	0.068
Wages						
Experience	**0.019**	0.004	**-0.041**	0.004	-0.006	0.005
Experience squared/100	**-0.066**	0.013	**0.070**	0.012	-0.015	0.014
Treatment (U $\leq$ 30 weeks)	**0.139**	0.014	0.040	0.075	-0.009	0.058
Treatment (U $>$ 30 weeks)	**0.429**	0.161	0.108	0.288	**0.399**	0.196
Married	0.034	0.071	0.006	0.069	**-0.121**	0.059
Occupation, top 2005	0.227	0.176	0.383	0.242	**0.483**	0.185
Occupation, middle 2005	**0.298**	0.060	**0.519**	0.067	**0.475**	0.066
Occupation, base 2005	**0.367**	0.088	**0.614**	0.059	**0.482**	0.069
Occupation, unempl. 2005	**0.330**	0.094	**0.531**	0.108	**0.544**	0.116
Education, vocational 2006	-0.005	0.065	0.079	0.058	0.061	0.074
Education, bachelor 2006	-0.137	0.128	-0.032	0.161	-0.072	0.134
Education, master 2006	0.102	0.459	-0.169	0.352	-0.050	0.398
Western immigrant	-0.189	0.275	-0.252	0.208	-0.189	0.428
Non-western immigrant	0.195	0.261	**0.167**	0.059	0.230	0.231
Age 25 - 29	-0.071	0.093	0.121	0.157	0.165	0.125
Age 30 - 39	-0.040	0.086	**0.290**	0.086	**0.313**	0.087
Age 40 - 49	0.039	0.080	**0.351**	0.088	**0.447**	0.064
Age 50 +	0.053	0.074	**0.387**	0.084	**0.481**	0.078
Log wage 2004	-0.004	0.030	-0.008	0.036	0.002	0.024
Log wage 2005	**-0.122**	0.035	**-0.167**	0.009	**-0.118**	0.032
Baseline wage hazard 100 - 140 dkk.	**6.671**	0.377	**7.195**	0.358	**4.585**	0.309
Baseline wage hazard 140 - 180 dkk.	**2.014**	0.202	**3.155**	0.270	**0.613**	0.232
Baseline wage hazard 180 - 220 dkk.	**-2.576**	0.254	**-1.283**	0.206	**-3.863**	0.222
Baseline wage hazard 220 - 240 dkk.	**-5.691**	0.372	**-4.280**	0.205	**-6.917**	0.522
Baseline wage hazard 240 - 280 dkk.	**-8.548**	0.092	**-6.682**	0.201	**-9.775**	0.571
Baseline wage hazard 280 - 350 dkk.	**-11.635**	0.089	**-8.861**	1.007	**-12.740**	0.080
Baseline wage hazard 350 + dkk.	**-14.882**	0.116	**-10.989**	0.045	**-16.109**	0.109
ν_{w1}	**-22.854**	0.989	**-24.816**	0.956	**-21.939**	1.041
ν_{w2}	**-33.625**	1.011	**-50.145**	1.048	**-40.460**	0.962
α_1	1.131	3.900	1.073	14.280	1.191	4.168
α_2	4.237	30.600	**4.172**	0.229	**4.183**	1.538
α_3	**6.582**	0.192	**6.626**	0.045	**6.589**	0.211
α_4	3.305	30.600	**3.285**	0.866	3.334	30.600
α_5	0.611	4.385	0.516	2.127	0.543	3.447
α_6	**6.425**	0.225	**6.401**	0.035	**6.552**	0.328
α_7	1.200	3.823	1.182	1.470	1.203	2.766
α_8	0.000		0.000		0.000	
$Pr(\alpha_1)$	0.002		0.002		0.002	
$Pr(\alpha_2)$	0.048		0.045		0.043	
$Pr(\alpha_3)$	0.500		0.518		0.475	
$Pr(\alpha_4)$	0.019		0.018		0.018	
$Pr(\alpha_5)$	0.001		0.001		0.001	
$Pr(\alpha_6)$	0.427		0.414		0.458	
$Pr(\alpha_7)$	0.002		0.002		0.002	
$Pr(\alpha_8)$	0.001		0.001		0.001	
Log likehood	-22,527		-22,691		-22,408	
Average log likehood	-15.58		-15.69		-15.50	
Observations	1,446		1,446		1,446	

Bold face numbers indicate statistical significance at the 5 % level.

Table B5: Men, Southern Jutland county.

	2006 wages		2007 wages		2008 wages	
	Estimate	S.D.	Estimate	S.D.	Estimate	S.D.
Transition U → E						
Experience	**-0.028**	0.004	**-0.011**	0.004	0.009	0.006
Experience squared/100	**0.077**	0.013	**0.047**	0.013	**-0.025**	0.007
Treatment (U $\leq$ 30 weeks)	0.096	0.108	0.087	0.071	0.084	0.071
Treatment (U $>$ 30 weeks)	-0.272	0.247	0.052	0.234	-0.010	0.193
Married	-0.052	0.096	0.006	0.068	0.015	0.073
Occupation, top 2005	0.261	0.340	0.428	0.291	**0.360**	0.184
Occupation, middle 2005	**0.416**	0.130	**0.500**	0.064	**0.491**	0.080
Occupation, base 2005	**0.323**	0.104	**0.521**	0.086	**0.520**	0.077
Occupation, unempl. 2005	**0.223**	0.122	**0.594**	0.129	**0.575**	0.176
Education, vocational 2006	-0.036	0.144	-0.021	0.068	0.015	0.095
Education, bachelor 2006	0.025	0.129	0.150	0.151	0.153	0.120
Education, master 2006	**-0.159**	0.092	0.630	0.488	0.580	0.365
Entry week, 45 - 46, 2005	0.384	0.494	**0.367**	0.184	0.279	0.187
Entry week, 47 - 48, 2005	0.106	0.121	**0.324**	0.124	**0.204**	0.093
Entry week, 49 - 50, 2005	**0.213**	0.050	**0.404**	0.132	**0.333**	0.175
Entry week, 51 - 52, 2005	**0.169**	0.096	**0.506**	0.113	**0.414**	0.108
Entry week, 01 - 02, 2006	0.099	0.124	**0.429**	0.099	**0.317**	0.079
Entry week, 03 - 04, 2006	0.112	0.095	**0.423**	0.115	**0.312**	0.102
Entry week, 05 - 06, 2006	0.075	0.123	**0.405**	0.128	**0.296**	0.090
Entry week, 07 - 08, 2006	0.112	0.158	**0.386**	0.177	0.246	0.184
Western immigrant	**0.127**	0.048	0.006	0.179	-0.015	0.150
Non-western immigrant	0.074	0.469	-0.023	0.241	-0.043	0.196
Age 25 - 29	**0.652**	0.037	0.163	0.114	**0.154**	0.046
Age 30 - 39	**0.686**	0.033	**0.157**	0.092	0.086	0.080
Age 40 - 49	**0.642**	0.030	0.094	0.085	0.041	0.098
Age 50 +	**0.632**	0.155	0.054	0.080	0.033	0.079
Lagged Uempl. duration, 7 - 8 weeks	**0.398**	0.048	0.091	0.244	0.134	0.278
Lagged Uempl. duration, 9 - 16 weeks	**0.236**	0.036	0.054	0.136	0.015	0.130
Lagged Uempl. duration, 17 - 28 weeks	0.062	0.134	0.078	0.153	0.032	0.116
Lagged Uempl. duration, 29 - 52 weeks	**0.096**	0.036	-0.006	0.121	-0.034	0.094
Lagged Uempl. duration, 52 + weeks	**0.118**	0.027	0.056	0.088	0.075	0.149
Baseline hazard 2 - 3 weeks	**-1.183**	0.197	**-1.099**	0.161	**-1.009**	0.185
Baseline hazard 4 - 5 weeks	**-2.984**	0.147	**-2.916**	0.150	**-2.773**	0.166
Baseline hazard 6 - 8 weeks	**-4.875**	0.136	**-4.866**	0.158	**-4.598**	0.133
Baseline hazard 9 - 16 weeks	**-7.220**	0.134	**-7.259**	0.120	**-6.843**	0.137
Baseline hazard 17 - 30 weeks	**-9.352**	0.160	**-9.432**	0.143	**-8.940**	0.147
Baseline hazard 31 - 52 weeks	**-10.509**	0.317	**-10.903**	0.186	**-10.320**	0.216
Baseline hazard 53 + weeks	**-12.445**	0.315	**-12.739**	0.296	**-12.235**	0.325
ν_{e1}	**8.352**	0.091	**8.184**	0.042	**7.643**	1.015
ν_{e2}	**8.356**	0.434	**8.754**	0.444	**8.028**	0.319
Transition U → N						
Experience	**-0.289**	0.008	**-0.188**	0.011	**-0.154**	0.010
Experience squared/100	**0.962**	0.065	**0.454**	0.060	**0.320**	0.039
Treatment (U $\leq$ 30 weeks)	-0.290	0.301	**-0.493**	0.298	-0.321	0.444
Treatment (U $>$ 30 weeks)	-0.213	0.614	0.208	0.332	0.556	0.507
Married	0.289	0.257	**0.530**	0.290	**0.498**	0.270
Occupation, top 2005	0.128	0.134	**-0.785**	0.190	**-1.823**	0.465
Occupation, middle 2005	-0.260	0.313	0.352	0.288	0.104	0.313
Occupation, base 2005	-0.357	0.223	0.167	0.455	-0.119	0.315
Occupation, unempl. 2005	-0.214	0.395	0.225	0.404	-0.048	0.510
Education, vocational 2006	-0.162	0.252	-0.151	0.199	-0.089	0.272
Education, bachelor 2006	0.034	0.176	0.026	0.668	-0.102	0.587
Education, master 2006	0.048	0.177	0.268	0.241	0.074	1.712
Entry week, 45 - 46, 2005	-0.014	0.162	0.540	0.537	0.293	0.467
Entry week, 47 - 48, 2005	**0.338**	0.139	-0.201	0.388	-0.324	0.459
Entry week, 49 - 50, 2005	**0.718**	0.085	-0.080	0.928	-0.603	0.564
Entry week, 51 - 52, 2005	0.194	0.934	0.134	0.138	0.000	0.134
Entry week, 01 - 02, 2006	0.448	0.499	0.717	0.443	0.427	0.320
Entry week, 03 - 04, 2006	**0.498**	0.101	-0.176	0.631	-0.142	0.955
Entry week, 05 - 06, 2006	0.041	1.026	0.012	0.584	-0.169	0.662
Entry week, 07 - 08, 2006	**0.300**	0.086	**1.080**	0.630	**0.832**	0.413
Western immigrant	0.138	0.108	-0.713	0.613	-0.517	1.020
Non-western immigrant	-0.190	0.627	-0.225	0.629	-0.238	0.754
Age 25 - 29	**1.026**	0.080	-0.120	0.431	-0.054	0.666
Age 30 - 39	**0.951**	0.358	**0.678**	0.306	**0.615**	0.369

Table continues on next page.
Bold face numbers indicate statistical significance at the 5 % level.

Table B5 continued: Men, Southern Jutland county.

	2006 wages		2007 wages		2008 wages	
	Estimate	S.D.	Estimate	S.D.	Estimate	S.D.
Age 40 - 49	0.737	0.530	**0.951**	0.567	**0.773**	0.360
Age 50 +	0.376	0.352	**0.664**	0.099	**0.696**	0.324
Lagged Uempl. duration, 7 - 8 weeks	-0.329	1.002	0.323	0.855	0.470	1.174
Lagged Uempl. duration, 9 - 16 weeks	0.187	1.242	0.068	0.927	0.094	1.043
Lagged Uempl. duration, 17 - 28 weeks	**0.391**	0.180	0.176	1.217	-0.290	0.622
Lagged Uempl. duration, 29 - 52 weeks	0.098	0.131	0.443	0.549	0.396	0.466
Lagged Uempl. duration, 52 + weeks	**0.383**	0.073	0.049	0.494	-0.032	0.385
Baseline hazard 2 - 3 weeks	**-4.598**	0.630	**-4.877**	0.646	**-4.358**	1.034
Baseline hazard 4 - 5 weeks	**-6.089**	0.951	**-6.550**	0.787	**-5.852**	1.322
Baseline hazard 6 - 8 weeks	**-6.228**	0.583	**-6.596**	0.685	**-6.169**	0.856
Baseline hazard 9 - 16 weeks	**-5.946**	0.313	**-6.247**	0.345	**-6.052**	0.310
Baseline hazard 17 - 30 weeks	**-6.618**	0.340	**-6.847**	0.402	**-6.533**	0.471
Baseline hazard 31 - 52 weeks	**-6.309**	0.420	**-6.792**	0.373	**-6.514**	0.550
Baseline hazard 53 + weeks	**-6.316**	0.341	**-6.829**	0.355	**-6.805**	0.330
ν_{n1}	**2.610**	0.282	**2.450**	0.285	**2.574**	0.323
ν_{n2}	**2.666**	0.349	**2.653**	0.056	**2.697**	0.546
Wages						
Experience	**-0.040**	0.004	**-0.032**	0.004	**-0.026**	0.005
Experience squared/100	**0.131**	0.014	**0.075**	0.014	**0.060**	0.015
Treatment (U $\leq$ 30 weeks)	**-0.046**	0.023	0.022	0.076	**-0.161**	0.022
Treatment (U $>$ 30 weeks)	**0.325**	0.029	0.168	0.173	**0.344**	0.057
Married	**-0.104**	0.063	-0.021	0.077	0.013	0.071
Occupation, top 2005	-0.120	0.463	0.397	0.436	-0.251	0.230
Occupation, middle 2005	0.077	0.088	**0.649**	0.075	0.094	0.107
Occupation, base 2005	0.111	0.090	**0.699**	0.067	**0.150**	0.067
Occupation, unempl. 2005	**0.266**	0.046	**0.650**	0.136	0.161	0.124
Education, vocational 2006	-0.039	0.065	**-0.145**	0.079	-0.072	0.066
Education, bachelor 2006	0.068	0.299	-0.120	0.157	-0.098	0.145
Education, master 2006	**-0.396**	0.114	-0.474	0.484	**0.773**	0.434
Western immigrant	0.063	0.195	-0.105	0.199	-0.069	0.187
Non-western immigrant	-0.115	0.342	0.105	0.267	-0.166	0.242
Age 25 - 29	**0.107**	0.039	0.113	0.108	0.080	0.113
Age 30 - 39	0.071	0.117	0.087	0.084	**0.152**	0.079
Age 40 - 49	0.104	0.070	0.064	0.083	**0.236**	0.075
Age 50 +	0.021	0.084	0.110	0.074	**0.207**	0.078
Log wage 2004	0.000	0.033	**-0.094**	0.039	**0.049**	0.027
Log wage 2005	**-0.087**	0.033	-0.065	0.045	**-0.068**	0.028
Baseline wage hazard 100 - 140 dkk.	**5.757**	0.424	**5.035**	0.285	**-1.339**	0.292
Baseline wage hazard 140 - 180 dkk.	**0.912**	0.234	**0.984**	0.227	**-6.046**	0.247
Baseline wage hazard 180 - 220 dkk.	**-3.724**	0.282	**-3.236**	0.227	**-10.728**	0.324
Baseline wage hazard 220 - 240 dkk.	**-6.440**	0.088	**-5.959**	0.509	**-14.255**	0.418
Baseline wage hazard 240 - 280 dkk.	**-9.189**	0.614	**-8.494**	0.087	**-17.636**	0.124
Baseline wage hazard 280 - 350 dkk.	**-11.599**	0.106	**-10.728**	1.075	**-20.961**	0.551
Baseline wage hazard 350 + dkk.	**-14.796**	0.167	**-12.783**	0.095	**-23.759**	0.111
ν_{w1}	**-23.067**	0.958	**-24.575**	0.951	**-13.891**	1.131
ν_{w2}	**-44.225**	1.046	**-49.658**	1.054	**-40.850**	0.895
α_1	1.130	3.277	1.176	3.039	1.214	2.673
α_2	4.225	2.778	**4.264**	1.600	**4.380**	2.312
α_3	**6.651**	0.095	**6.669**	0.068	**6.483**	0.063
α_4	3.236	30.600	3.250	30.600	3.362	30.600
α_5	0.514	3.879	0.554	3.954	0.597	3.612
α_6	**6.431**	0.109	**6.431**	0.077	**6.592**	0.069
α_7	1.187	3.199	1.139	3.315	1.240	2.904
α_8	0.000		0.000		0.000	
$Pr(\alpha_1)$	0.002		0.002		0.002	
$Pr(\alpha_2)$	0.046		0.047		0.053	
$Pr(\alpha_3)$	0.517		0.520		0.436	
$Pr(\alpha_4)$	0.017		0.017		0.019	
$Pr(\alpha_5)$	0.001		0.001		0.001	
$Pr(\alpha_6)$	0.415		0.410		0.486	
$Pr(\alpha_7)$	0.002		0.002		0.002	
$Pr(\alpha_8)$	0.001		0.001		0.001	
Log likehood	-17,195		-17,147		-16,907	
Average log likehood	-14.95		-14.91		-14.70	
Observations	1,150		1,150		1,150	

Bold face numbers indicate statistical significance at the 5 % level.

Table B6: Women, Storstroem county.

	2006 wages		2007 wages		2008 wages	
	Estimate	S.D.	Estimate	S.D.	Estimate	S.D.
Transition U → E						
Experience	**-0.035**	0.005	**-0.052**	0.005	0.004	0.005
Experience squared/100	**0.157**	0.019	**0.213**	0.018	**0.036**	0.020
Treatment (U $\leq$ 30 weeks)	0.032	0.091	0.034	0.081	0.061	0.079
Treatment (U $>$ 30 weeks)	-0.021	0.177	0.013	0.220	0.082	0.286
Married	-0.075	0.071	-0.080	0.081	-0.053	0.091
Occupation, top 2005	0.002	0.215	0.028	0.247	0.051	0.211
Occupation, middle 2005	**0.206**	0.079	**0.269**	0.071	**0.256**	0.077
Occupation, base 2005	0.136	0.109	**0.214**	0.127	0.163	0.107
Occupation, unempl. 2005	0.220	0.138	**0.359**	0.147	**0.272**	0.112
Education, vocational 2006	-0.041	0.076	-0.013	0.090	-0.049	0.078
Education, bachelor 2006	0.028	0.129	0.045	0.124	0.016	0.101
Education, master 2006	0.242	0.334	0.406	0.532	0.228	0.302
Entry week, 45 - 46, 2005	-0.046	0.204	0.034	0.191	0.042	0.175
Entry week, 47 - 48, 2005	0.011	0.136	0.142	0.177	0.103	0.132
Entry week, 49 - 50, 2005	0.035	0.160	0.194	0.190	0.145	0.172
Entry week, 51 - 52, 2005	0.116	0.159	**0.272**	0.161	0.167	0.124
Entry week, 01 - 02, 2006	-0.026	0.108	0.106	0.100	0.075	0.107
Entry week, 03 - 04, 2006	0.011	0.171	0.144	0.168	0.155	0.197
Entry week, 05 - 06, 2006	0.058	0.115	0.234	0.156	0.175	0.107
Entry week, 07 - 08, 2006	0.099	0.180	0.233	0.178	0.221	0.182
Western immigrant	-0.199	0.513	-0.379	0.348	-0.178	0.533
Non-western immigrant	-0.084	0.224	-0.175	0.164	0.017	0.218
Age 25 - 29	0.094	0.143	0.242	0.165	**0.201**	0.110
Age 30 - 39	**0.167**	0.089	**0.325**	0.101	**0.231**	0.091
Age 40 - 49	0.054	0.097	**0.219**	0.098	0.115	0.098
Age 50 +	-0.012	0.093	0.149	0.101	0.066	0.111
Lagged Uempl. duration, 7 - 8 weeks	0.181	0.506	0.269	0.714	0.145	0.527
Lagged Uempl. duration, 9 - 16 weeks	0.005	0.227	-0.061	0.194	-0.002	0.248
Lagged Uempl. duration, 17 - 28 weeks	0.056	0.171	0.032	0.176	0.039	0.177
Lagged Uempl. duration, 29 - 52 weeks	0.069	0.147	0.055	0.146	0.047	0.126
Lagged Uempl. duration, 52 + weeks	0.001	0.108	-0.012	0.106	-0.037	0.091
Baseline hazard 2 - 3 weeks	**-1.267**	0.213	**-0.957**	0.231	-0.003	0.261
Baseline hazard 4 - 5 weeks	**-2.824**	0.233	**-2.430**	0.205	**-1.278**	0.192
Baseline hazard 6 - 8 weeks	**-4.376**	0.166	**-3.861**	0.185	**-2.515**	0.185
Baseline hazard 9 - 16 weeks	**-6.705**	0.123	**-6.119**	0.121	**-4.604**	0.145
Baseline hazard 17 - 30 weeks	**-8.628**	0.135	**-8.027**	0.109	**-6.430**	0.105
Baseline hazard 31 - 52 weeks	**-10.120**	0.133	**-9.473**	0.148	**-7.904**	0.168
Baseline hazard 53 + weeks	**-11.539**	0.184	**-10.852**	0.228	**-9.252**	0.194
ν_{e1}	**8.440**	0.207	**7.486**	0.168	**5.645**	0.230
ν_{e2}	**8.445**	0.232	**7.600**	0.283	**5.612**	0.306
Transition U → N						
Experience	**-0.147**	0.009	**-0.132**	0.009	**-0.191**	0.008
Experience squared/100	**0.274**	0.040	**0.197**	0.053	**0.408**	0.050
Treatment (U $\leq$ 30 weeks)	**-0.362**	0.199	**-0.178**	0.063	-0.348	0.217
Treatment (U $>$ 30 weeks)	0.571	0.352	0.646	0.447	**0.540**	0.325
Married	-0.069	0.155	0.057	0.261	-0.147	0.152
Occupation, top 2005	-0.521	1.033	0.174	0.151	-0.261	1.156
Occupation, middle 2005	0.102	0.180	**0.502**	0.212	**0.349**	0.185
Occupation, base 2005	-0.040	0.229	**0.478**	0.107	0.257	0.320
Occupation, unempl. 2005	**0.585**	0.292	**0.940**	0.384	**1.033**	0.384
Education, vocational 2006	**0.431**	0.161	**0.426**	0.169	**0.436**	0.184
Education, bachelor 2006	0.288	0.342	0.387	0.591	0.155	0.263
Education, master 2006	-0.022	1.323	0.064	0.256	0.078	0.243
Entry week, 45 - 46, 2005	0.249	0.507	0.105	0.543	0.372	0.550
Entry week, 47 - 48, 2005	0.085	0.424	-0.173	0.317	0.149	0.334
Entry week, 49 - 50, 2005	**0.878**	0.385	**0.636**	0.243	**1.055**	0.334
Entry week, 51 - 52, 2005	0.297	0.591	-0.044	0.375	0.476	0.447
Entry week, 01 - 02, 2006	**0.428**	0.237	0.330	0.355	**0.681**	0.320
Entry week, 03 - 04, 2006	**0.685**	0.291	**0.763**	0.377	**0.935**	0.256
Entry week, 05 - 06, 2006	**0.460**	0.254	0.281	0.228	**0.838**	0.482
Entry week, 07 - 08, 2006	0.444	0.514	0.240	0.313	0.610	0.393
Western immigrant	0.610	0.663	0.541	0.831	0.596	0.861
Non-western immigrant	-0.165	0.696	-0.314	0.493	-0.519	0.355
Age 25 - 29	**0.780**	0.306	**1.036**	0.270	**1.219**	0.337
Age 30 - 39	**1.145**	0.224	**1.283**	0.175	**1.597**	0.196

Table continues on next page.
Bold face numbers indicate statistical significance at the 5 % level.

Table B6 continued: Women, Storstroem county.

	2006 wages		2007 wages		2008 wages	
	Estimate	S.D.	Estimate	S.D.	Estimate	S.D.
Age 40 - 49	**1.082**	0.217	**1.307**	0.280	**1.683**	0.314
Age 50 +	**1.484**	0.211	**1.729**	0.313	**2.001**	0.253
Lagged Uempl. duration, 7 - 8 weeks	-0.276	0.507	0.284	0.306	-0.959	0.800
Lagged Uempl. duration, 9 - 16 weeks	0.289	0.601	0.238	0.549	0.344	0.638
Lagged Uempl. duration, 17 - 28 weeks	-1.025	0.762	**-0.260**	0.120	-1.083	0.689
Lagged Uempl. duration, 29 - 52 weeks	-0.501	0.442	-0.067	1.041	**-0.278**	0.151
Lagged Uempl. duration, 52 + weeks	0.004	0.199	0.055	0.202	-0.019	0.187
Baseline hazard 2 - 3 weeks	**-3.801**	0.557	**-3.338**	0.506	**-3.718**	0.573
Baseline hazard 4 - 5 weeks	**-4.082**	0.526	**-3.508**	0.574	**-3.936**	0.524
Baseline hazard 6 - 8 weeks	**-4.568**	0.374	**-4.056**	0.403	**-4.440**	0.404
Baseline hazard 9 - 16 weeks	**-5.205**	0.200	**-4.647**	0.277	**-5.137**	0.198
Baseline hazard 17 - 30 weeks	**-6.127**	0.199	**-5.574**	0.268	**-6.091**	0.197
Baseline hazard 31 - 52 weeks	**-6.673**	0.219	**-6.093**	0.256	**-6.548**	0.242
Baseline hazard 53 + weeks	**-8.091**	0.406	**-7.570**	0.448	**-7.977**	0.464
ν_{n1}	**2.764**	0.237	**0.977**	0.028	**2.124**	0.287
ν_{n2}	**2.791**	0.272	**1.960**	0.020	**2.103**	0.242
Wages						
Experience	-0.001	0.006	**0.019**	0.007	**-0.014**	0.006
Experience squared/100	-0.018	0.019	**-0.055**	0.027	0.012	0.021
Treatment (U $\leq$ 30 weeks)	0.056	0.081	-0.009	0.096	-0.039	0.079
Treatment (U $>$ 30 weeks)	-0.029	0.154	0.173	0.157	0.158	0.167
Married	**0.145**	0.085	0.027	0.087	0.039	0.079
Occupation, top 2005	-0.068	0.242	0.122	0.245	-0.011	0.241
Occupation, middle 2005	-0.016	0.076	**0.225**	0.093	0.136	0.091
Occupation, base 2005	0.138	0.103	**0.255**	0.130	0.057	0.112
Occupation, unempl. 2005	0.125	0.129	**0.365**	0.139	0.093	0.116
Education, vocational 2006	**0.168**	0.080	-0.019	0.090	-0.037	0.076
Education, bachelor 2006	-0.126	0.107	-0.144	0.141	-0.158	0.135
Education, master 2006	0.064	0.226	-0.252	0.321	-0.253	0.379
Western immigrant	-0.014	0.304	0.213	0.315	0.249	0.439
Non-western immigrant	0.051	0.200	0.085	0.160	0.003	0.178
Age 25 - 29	-0.071	0.127	0.016	0.129	**-0.233**	0.122
Age 30 - 39	-0.058	0.093	-0.142	0.112	**-0.163**	0.094
Age 40 - 49	-0.077	0.093	**-0.186**	0.108	-0.012	0.091
Age 50 +	-0.056	0.098	-0.123	0.100	0.037	0.097
Log wage 2004	0.001	0.036	-0.068	0.042	0.014	0.031
Log wage 2005	-0.033	0.036	**-0.057**	0.033	-0.045	0.031
Baseline wage hazard 100 - 140 dkk.	**-3.221**	0.295	-0.161	0.296	**-2.603**	0.232
Baseline wage hazard 140 - 180 dkk.	**-7.990**	0.267	**-3.798**	0.153	**-7.123**	0.249
Baseline wage hazard 180 - 220 dkk.	**-12.027**	0.254	**-6.611**	0.247	**-11.016**	0.233
Baseline wage hazard 220 - 240 dkk.	**-14.317**	0.122	**-8.002**	0.077	**-13.030**	0.116
Baseline wage hazard 240 - 280 dkk.	**-16.028**	0.977	**-9.156**	0.055	**-14.850**	0.125
Baseline wage hazard 280 - 350 dkk.	**-17.864**	0.908	**-10.067**	0.070	**-16.699**	0.099
Baseline wage hazard 350 + dkk.	**-20.526**	0.137	**-11.396**	0.071	**-18.398**	0.168
ν_{w1}	**-23.449**	1.004	**-24.944**	0.917	**-22.591**	0.940
ν_{w2}	**-48.533**	0.996	**-49.287**	1.100	**-35.470**	1.068
α_1	1.292	3.086	1.177	3.089	1.149	3.928
α_2	**4.430**	1.773	**4.221**	2.096	4.428	30.600
α_3	**6.800**	0.080	**6.729**	0.091	**6.816**	0.163
α_4	3.586	30.600	3.300	30.600	3.296	30.600
α_5	0.820	3.538	0.516	3.702	0.737	4.290
α_6	**6.678**	0.092	**6.410**	0.106	**6.550**	0.191
α_7	1.355	3.010	1.190	3.199	1.201	3.860
α_8	0.000		0.000		0.000	
$Pr(\alpha_1)$	0.002		0.002		0.002	
$Pr(\alpha_2)$	0.046		0.044		0.048	
$Pr(\alpha_3)$	0.492		0.540		0.527	
$Pr(\alpha_4)$	0.020		0.018		0.016	
$Pr(\alpha_5)$	0.001		0.001		0.001	
$Pr(\alpha_6)$	0.436		0.393		0.404	
$Pr(\alpha_7)$	0.002		0.002		0.002	
$Pr(\alpha_8)$	0.001		0.001		0.001	
Log likehood	-13,498		-13,663		-13,527	
Average log likehood	-14.42		-14.60		-14.45	
Observations	936		936		936	

Bold face numbers indicate statistical significance at the 5 % level.

Table B7: Women, Southern Jutland county.

	2006 wages		2007 wages		2008 wages	
	Estimate	S.D.	Estimate	S.D.	Estimate	S.D.
Transition U → E						
Experience	**0.017**	0.005	**-0.031**	0.005	**0.026**	0.006
Experience squared/100	-0.030	0.019	**0.103**	0.019	**-0.063**	0.026
Treatment (U $\leq$ 30 weeks)	0.026	0.102	0.022	0.121	0.038	0.098
Treatment (U $>$ 30 weeks)	0.071	0.155	0.134	0.269	0.069	0.165
Married	0.015	0.076	-0.009	0.113	0.001	0.086
Occupation, top 2005	0.215	0.230	**0.380**	0.229	0.407	0.339
Occupation, middle 2005	**0.138**	0.082	**0.339**	0.100	**0.290**	0.083
Occupation, base 2005	0.109	0.081	**0.294**	0.119	**0.275**	0.091
Occupation, unempl. 2005	0.055	0.096	**0.421**	0.167	**0.361**	0.119
Education, vocational 2006	0.044	0.072	0.086	0.095	0.094	0.081
Education, bachelor 2006	0.019	0.125	0.043	0.138	0.070	0.129
Education, master 2006	0.205	0.327	0.306	0.502	**0.489**	0.112
Entry week, 45 - 46, 2005	-0.020	0.148	0.191	0.256	0.172	0.167
Entry week, 47 - 48, 2005	0.080	0.105	**0.311**	0.130	**0.312**	0.123
Entry week, 49 - 50, 2005	-0.067	0.142	0.218	0.215	0.200	0.191
Entry week, 51 - 52, 2005	0.143	0.148	**0.404**	0.202	**0.397**	0.173
Entry week, 01 - 02, 2006	0.030	0.090	**0.261**	0.121	**0.252**	0.116
Entry week, 03 - 04, 2006	0.144	0.161	**0.460**	0.250	**0.441**	0.186
Entry week, 05 - 06, 2006	0.035	0.114	**0.283**	0.136	**0.267**	0.126
Entry week, 07 - 08, 2006	0.192	0.177	**0.538**	0.297	**0.492**	0.198
Western immigrant	-0.002	0.229	-0.061	0.301	0.021	0.207
Non-western immigrant	0.064	0.203	0.049	0.335	0.186	0.312
Age 25 - 29	-0.198	0.121	-0.028	0.129	-0.043	0.130
Age 30 - 39	-0.054	0.082	**0.239**	0.115	0.073	0.091
Age 40 - 49	-0.092	0.082	**0.235**	0.134	0.049	0.102
Age 50 +	**-0.218**	0.091	0.141	0.149	-0.025	0.106
Lagged Uempl. duration, 7 - 8 weeks	-0.020	0.427	0.356	1.008	0.187	0.182
Lagged Uempl. duration, 9 - 16 weeks	0.035	0.210	-0.021	0.162	-0.028	0.187
Lagged Uempl. duration, 17 - 28 weeks	0.007	0.143	0.075	0.184	0.058	0.184
Lagged Uempl. duration, 29 - 52 weeks	0.098	0.137	0.084	0.153	0.051	0.143
Lagged Uempl. duration, 52 + weeks	-0.004	0.093	-0.017	0.149	-0.052	0.091
Baseline hazard 2 - 3 weeks	**-1.090**	0.206	**-0.853**	0.259	-0.242	0.217
Baseline hazard 4 - 5 weeks	**-2.539**	0.191	**-2.304**	0.198	**-1.403**	0.201
Baseline hazard 6 - 8 weeks	**-4.003**	0.172	**-3.800**	0.217	**-2.594**	0.275
Baseline hazard 9 - 16 weeks	**-6.119**	0.117	**-5.915**	0.123	**-4.547**	0.153
Baseline hazard 17 - 30 weeks	**-7.990**	0.106	**-7.793**	0.126	**-6.354**	0.112
Baseline hazard 31 - 52 weeks	**-9.320**	0.123	**-9.140**	0.187	**-7.620**	0.155
Baseline hazard 53 + weeks	**-10.790**	0.150	**-10.687**	0.215	**-9.116**	0.157
ν_{e1}	**7.914**	0.188	**7.304**	0.171	**5.636**	0.170
ν_{e2}	**7.911**	0.131	**7.639**	0.044	**5.586**	0.262
Transition U → N						
Experience	**-0.091**	0.008	**-0.198**	0.011	**-0.133**	0.011
Experience squared/100	**0.199**	0.041	**0.562**	0.058	**0.346**	0.060
Treatment (U $\leq$ 30 weeks)	0.175	0.141	0.198	0.257	0.146	0.174
Treatment (U $>$ 30 weeks)	0.072	0.235	0.236	0.463	0.115	0.292
Married	-0.030	0.124	0.029	0.302	-0.036	0.181
Occupation, top 2005	-0.603	0.658	-0.612	0.801	-0.293	0.914
Occupation, middle 2005	-0.083	0.131	0.058	0.232	0.179	0.220
Occupation, base 2005	**-0.611**	0.216	**-0.665**	0.235	-0.373	0.315
Occupation, unempl. 2005	-0.120	0.182	**0.306**	0.076	0.293	0.228
Education, vocational 2006	**-0.244**	0.145	**-0.090**	0.052	-0.208	0.180
Education, bachelor 2006	-0.061	0.210	-0.054	0.362	0.022	0.096
Education, master 2006	0.130	0.666	0.294	1.053	0.359	0.915
Entry week, 45 - 46, 2005	-0.350	0.323	0.083	0.098	-0.242	0.379
Entry week, 47 - 48, 2005	-0.424	0.264	-0.020	0.367	-0.118	0.423
Entry week, 49 - 50, 2005	-0.115	0.307	0.479	0.584	0.194	0.464
Entry week, 51 - 52, 2005	**-0.811**	0.441	-0.239	0.723	**-0.307**	0.160
Entry week, 01 - 02, 2006	0.049	0.189	0.421	0.289	0.242	0.209
Entry week, 03 - 04, 2006	-0.526	0.341	0.186	0.133	-0.236	0.320
Entry week, 05 - 06, 2006	-0.095	0.203	0.324	0.312	0.140	0.262
Entry week, 07 - 08, 2006	-0.508	0.435	-0.115	0.404	-0.112	0.542
Western immigrant	-0.604	0.520	-0.605	0.790	-0.412	0.860
Non-western immigrant	-0.283	0.443	-0.410	0.611	-0.292	0.533
Age 25 - 29	0.266	0.169	**0.679**	0.294	**0.449**	0.222
Age 30 - 39	0.034	0.175	**0.593**	0.270	0.262	0.213

Table continues on next page.
Bold face numbers indicate statistical significance at the 5 % level.

Table B7 continued: Women, Southern Jutland county.

	2006 wages		2007 wages		2008 wages	
	Estimate	S.D.	Estimate	S.D.	Estimate	S.D.
Age 40 - 49	-0.236	0.246	0.413	0.575	0.059	0.387
Age 50 +	**0.497**	0.152	**1.109**	0.280	**0.788**	0.226
Lagged Uempl. duration, 7 - 8 weeks	0.411	0.886	0.648	1.112	0.652	1.119
Lagged Uempl. duration, 9 - 16 weeks	-0.575	0.624	-0.041	0.130	-0.443	0.880
Lagged Uempl. duration, 17 - 28 weeks	-0.269	0.400	0.048	0.664	0.013	0.699
Lagged Uempl. duration, 29 - 52 weeks	-0.037	0.287	**0.253**	0.078	0.169	0.582
Lagged Uempl. duration, 52 + weeks	0.032	0.180	0.082	0.293	0.068	0.249
Baseline hazard 2 - 3 weeks	**-2.173**	0.513	**-1.931**	0.510	**-2.055**	0.610
Baseline hazard 4 - 5 weeks	**-2.835**	0.586	**-2.552**	0.700	**-2.825**	0.611
Baseline hazard 6 - 8 weeks	**-2.640**	0.286	**-2.370**	0.492	**-2.658**	0.334
Baseline hazard 9 - 16 weeks	**-3.642**	0.180	**-3.484**	0.246	**-3.685**	0.204
Baseline hazard 17 - 30 weeks	**-4.471**	0.187	**-4.305**	0.264	**-4.521**	0.199
Baseline hazard 31 - 52 weeks	**-4.897**	0.217	**-4.817**	0.348	**-4.960**	0.276
Baseline hazard 53 + weeks	**-5.676**	0.240	**-5.759**	0.365	**-5.783**	0.288
ν_{n1}	**2.592**	0.129	**1.599**	0.058	**2.159**	0.250
ν_{n2}	**2.598**	0.220	**2.122**	0.025	**2.127**	0.195
Wages						
Experience	**0.013**	0.006	**-0.052**	0.006	-0.004	0.006
Experience squared/100	-0.026	0.021	**0.117**	0.023	**-0.047**	0.020
Treatment (U $\leq$ 30 weeks)	**-0.141**	0.071	0.061	0.106	0.102	0.078
Treatment (U $>$ 30 weeks)	0.013	0.133	0.242	0.166	0.070	0.167
Married	0.079	0.071	0.075	0.106	0.104	0.074
Occupation, top 2005	**0.558**	0.213	**0.564**	0.063	0.173	0.364
Occupation, middle 2005	**0.357**	0.075	**0.502**	0.115	**0.426**	0.080
Occupation, base 2005	**0.433**	0.085	**0.582**	0.119	**0.351**	0.088
Occupation, unempl. 2005	**0.351**	0.106	**0.544**	0.094	**0.381**	0.119
Education, vocational 2006	0.041	0.077	0.008	0.091	0.040	0.078
Education, bachelor 2006	-0.105	0.107	-0.144	0.171	-0.163	0.115
Education, master 2006	-0.213	0.355	-0.031	0.099	0.221	0.562
Western immigrant	0.197	0.171	-0.001	0.229	-0.127	0.202
Non-western immigrant	0.224	0.205	-0.338	0.346	-0.076	0.234
Age 25 - 29	-0.121	0.097	0.172	0.123	0.105	0.116
Age 30 - 39	0.037	0.079	**0.306**	0.100	**0.217**	0.093
Age 40 - 49	**-0.186**	0.082	**0.375**	0.097	0.133	0.084
Age 50 +	**-0.195**	0.095	**0.252**	0.111	**0.223**	0.107
Log wage 2004	**-0.052**	0.026	0.049	0.042	-0.025	0.027
Log wage 2005	**-0.079**	0.026	**-0.101**	0.034	**-0.077**	0.027
Baseline wage hazard 100 - 140 dkk.	**-6.463**	0.698	-0.204	0.277	**-2.629**	0.258
Baseline wage hazard 140 - 180 dkk.	**-13.983**	0.653	**-3.801**	0.165	**-7.291**	0.293
Baseline wage hazard 180 - 220 dkk.	**-20.318**	0.680	**-6.570**	0.229	**-11.403**	0.242
Baseline wage hazard 220 - 240 dkk.	**-25.255**	0.860	**-7.858**	0.074	**-13.764**	0.610
Baseline wage hazard 240 - 280 dkk.	**-29.766**	1.172	**-8.734**	1.073	**-15.574**	0.135
Baseline wage hazard 280 - 350 dkk.	**-34.495**	0.791	**-9.356**	0.049	**-17.655**	0.126
Baseline wage hazard 350 + dkk.	**-40.069**	1.056	**-10.835**	0.071	**-20.701**	0.184
ν_{w1}	**-22.195**	2.017	**-24.695**	0.945	**-23.213**	0.957
ν_{w2}	**-47.638**	0.665	**-49.680**	1.062	**-40.103**	1.047
α_1	1.507	3.049	1.189	3.446	1.243	3.428
α_2	5.046	30.600	**4.204**	0.919	4.302	30.600
α_3	**6.715**	0.104	**6.620**	0.079	**6.696**	0.123
α_4	3.702	14.280	3.274	30.600	3.440	30.600
α_5	1.022	3.516	0.480	3.704	0.576	4.049
α_6	**7.760**	0.112	**6.363**	0.094	**6.464**	0.144
α_7	1.800	2.772	1.175	2.716	1.134	3.528
α_8	0.000		0.000		0.000	
$Pr(\alpha_1)$	0.001		0.002		0.002	
$Pr(\alpha_2)$	0.046		0.047		0.047	
$Pr(\alpha_3)$	0.244		0.524		0.517	
$Pr(\alpha_4)$	0.012		0.018		0.020	
$Pr(\alpha_5)$	0.001		0.001		0.001	
$Pr(\alpha_6)$	0.694		0.405		0.410	
$Pr(\alpha_7)$	0.002		0.002		0.002	
$Pr(\alpha_8)$	0.000		0.001		0.001	
Log likehood	-14,096		-14,420		-14,196	
Average log likehood	-14.47		-14.80		-14.58	
Observations	974		974		974	

Bold face numbers indicate statistical significance at the 5 % level.

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