# The Effect of Sanctions and Active Labour Market Programmes on the Exit Rate from Unemployment*

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## Abstract

This paper simultaneously investigates the effectiveness of benefit sanctions and active labour market programmes (ALMPs) on the exit rate from unemployment. In the data about one third of the individuals who are sanctioned also participate in ALMPs. Hence, modelling only one of them as treatment might bias the true effect. Moreover, simultaneously modelling ALMPs and sanctions will allow us to compare their relative effectiveness. We find that sanctions have stronger positive effect than participation in ALMPs.

**JEL Codes:** C14, C15, C41, J64, J65, J68

**Keywords:** Risks, Unemployment Insurance, Timing of Events, NPMLE, MMPH

# 1  Introduction

There are two basic components of active labour market policies. One is active labour market programmes (ALMPs), the other is monitoring and sanctions. In the evaluation literature on active labour market policies, these two components are considered as treatment for the unemployed. In this paper we jointly evaluate the effect of ALMPs and sanctions on the exit rate from unemployment using Danish register data. In the sample about one third of the individuals being sanctioned also participate in some type of ALMP.

To identify the effect of one treatment, it might be important to effectively control for the other treatment(s). For example, if we are evaluating the effect of participation in ALMPs on the exit rate out of unemployment, then the natural control group includes unemployed individuals who do not have any other treatment. But if the control group also includes unemployed individuals who are sanctioned, then the average hazard rate out of unemployment for this group is expected to be higher compared to the average hazard rate when the control group does not include any person being sanctioned. If we do not control for this effect in empirical specification, then the effect of participation into active labour market programmes will be underestimated. On the other hand, if only the treated group (participation into ALMPs) includes individuals who are also being sanctioned then we will end up overestimating the effect of ALMPs. This is purely an empirical question which will be addressed in this paper.

There is a large literature on the evaluation of both ALMPs and sanctions. The former typically finds that the effect of ALMPs in general is relatively modest (Kluve (2006) and Card et al. (2009)), whereas the latter generally finds rather large effects on the exit rate from unemployment (van den Berg et al. (2004), Lalive et al. (2005), Svarer (2010))

In this paper we use a timing-of-events method (see Abbring and van den Berg (2003) for details). In the timing-of-events model, the standard practice is to pre-specify a (relatively low) number of support points for the specification of unobserved heterogeneity, see for example van den Berg et al. (2004), Lalive et al. (2005), Svarer (2010), Svarer and Rosholm (2008). Gaure et al. (2007), however, show that a pre-specified number of mass points may bias the results if these not fully capture the unobserved heterogeneity distribution. Following Gaure et al. (2007), we impose no priori restriction on the number of support points of the mixture distribution. To select the number of support points, we calculate the value of the AIC (Akaike Information Criteria) when an additional point of support is added. We stop adding more support points to the model when AIC stops decreasing.

Based on a sample of Danish unemployed, we find that sanctions have a larger positive effect on the exit rate from unemployed compared to any of the active labour market

programmes. In addition, our results show that failing to control for selectivity into one treatment has a very little effect on effectiveness of other treatments. Furthermore, pre-specifying two support points underestimates the effect of sanctions and active labour market programmes. We also find that more severe sanctions have a higher impact on the exit rate and that immigrants react more to sanctions than natives do. Simultaneously modelling labour market programmes and sanctions shows that sanctions are more effective than any of the ALMPs.

The rest of the paper is organized as follows. Section 2 gives a brief introduction to labour market policies in Denmark. The data and descriptive analysis are presented in section 4. Section 5 explains the econometric framework. The summary and conclusion are presented in section 6.

# 2 Active Labour Market Policies in Denmark

Unemployed individuals in Denmark are eligible to receive either unemployment insurance benefits (henceforth UI benefits) or social assistance. Due to data constraints, this paper focuses on unemployed individuals who are insured [1]. To qualify for UI benefits, membership of a UI fund is required. Membership is voluntary and requires payment of a monthly tax deductible fee to UI fund. Entitlement to disbursement is obtained after at least 1 year's membership and a minimum of 52 weeks of employment within the last three years. The UI funds cover only a part of the UI benefit payments, the rest is paid by the state. Around 80% of the labour force are members of a UI fund and hence qualify for UI payments.

As mentioned earlier there are basically two components of ALMP. The principal component is the right and duty of the unemployed individual to participate in labour market programmes if he is unable to find a job sufficiently fast. The second component is the area of monitoring and sanctions, which ensures that unemployed individuals are available for employment and make an effort to obtain employment. In the following subsections, a brief introduction to these policies is presented.

## 2.1 Active Labour Market Programmes

Under the current regulations, an unemployed individual is entitled to UI benefits for a maximum period of four years. During all four years the individual is oblige to participate in active labour market programmes if the case worker finds it relevant. In addition, there

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[1]Sanctions data for individuals on social assistance is only available from 2007, and we do not have access to that data set.

are time limits which enforce participation after a certain amount of elapsed unemployment duration. The ALMPs are categorized into four types. The first is subsidized employment (private firms). Here private firms are paid roughly 50% of the going minimum wage if they employ an unemployed individual on a short term contract, typically for 6-9 months. The second is subsidized employment programmes (public employers) where the individual is offered a temporary (6-12 months) job in the public sector. The third is education/training programmes. All other programmes are classified as *other programmes.* These include job search assistance.

## 2.2 Benefits and Sanctions

There are a number of eligibility criteria that the unemployed fulfil in order to receive UI benefits. If the right to UI benefits stops, the unemployed can apply for social assistance, which, however, is also conditional on a set of eligibility criteria. UI benefits constitute up to 90% of the previous wage. There is a rather low cap on the total payments; on average the level of compensation is around 60%. Social assistance is means tested and is typically around 20% lower than UI benefits. The remainder of this section describes the eligibility criteria for unemployed people who receive UI benefits.

Basically, the eligibility criteria can be divided into two sets of requirements. The first set is based on the individual initiative and states that the unemployed must actively seek employment and undertake measures to increase the possibility of obtaining employment. These measures are quite difficult to verify, and case workers assess whether the obligations are sufficiently fulfilled. The second set of requirements is related to initiatives by the public employment service (henceforth PES). The PES can ask the unemployed to accept a given employment opportunity, require that the unemployed submits and maintains a CV in the internet based job bank, and require that the unemployed participates in active labour market programmes.

When the PES observes that an unemployed individual is not fulfilling the eligibility criteria it submits a notification to the relevant UI fund[2]. The UI fund evaluates the notification and decides whether to impose a sanction and what kind of sanction is relevant. It is potentially important to note that the UI funds decide on the sanctions[3]. To sum up, the

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[2]There are 32 different UI funds in Denmark. They each represent different levels and types of education. Recently UI funds that operate across types of education and industries have emerged. However, the main part of the UI recipients are still organised according to their main education and occupation (of Labour, 2006)

[3]The UI funds are under supervision by the National Directorate of Labour, which may imply minor differences in the administration of the rules. There are, however, still rather larger discrepancies, as will be

eligibility criteria are:

- Register at a PES.

- Submit electronic CV to internet based job bank.

- Update CV each quarter.

- Apply for jobs suggested by PES.

- Actively search for jobs.

- Accept job offers arranged by PES.

- Attend meetings with PES to discuss job plans and plans for participation in active labour market programmes etc.

- Participate in other activities initiated by PES.

If any of these criteria are violated, the UI fund may initiate a sanction. These can be summarized by three categories:

- Loss of UI benefits for 2-3 days (temporary exclusion).

- Loss of UI benefits for 3 weeks.

- Loss of UI benefits until the unemployed individual has worked for 300 hours within a 10 week period.

Not all non-compliance results in a sanction. If there are sufficiently good reasons for non-compliance, the UI fund may reject the notification from the PES.

According to the law,[4] the mapping from non-compliance to sanction is clear. Failure to attend meetings with the PES for reasons not related to the job plan is sanctioned until the unemployed contacts the PES. In these circumstances the PES notifies the UI fund. The UI fund stops UI payments and informs the unemployed that UI benefits are stopped until they contact the PES. These sanctions are normally of a duration of 2-3 days, but can last longer if the unemployed person does not contact the PES.

If the unemployed individual does not attend meetings related to the job plan or a specific job opportunity or if he declines job offers or interviews, his status as unemployed is

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clear later in the paper.

[4]In Danish: Bekendtgørelse om rådighed and Bekendtgørelse om selvforskyldt ledighed, June 17 2003.

classified as self-inflicted and will be consequently sanctioned for three weeks. The possibility of sanctioning someone who is unemployed until he has accumulated 300 hours of paid work within a 10 week period is enforced when the PES regards the unemployed person as being non-eligible for employment. This enforcement can be used in relation to all possible actions of non-compliance if the PES assesses that the individual is not available for employment opportunities.

# 3 Data and Descriptive Analysis

The analysis uses data from two administrative registers. The first data set, which is collected by the Danish Labour Market Authority, contains detailed information on individual labour market histories. This is the same data that the employment offices have access to. It has the advantage that it is updated with a very short time lag. The disadvantage is that it basically only contains labour market data. The register is called DREAM (Danish Register for Evaluation of Marginalization), and it is basically an event history file which includes weekly information on each individual's receipt of public transfer incomes, unemployment registrations, and participation in active labour market programmes. Based on yhis information, a weekly event history is constructed, where the individual each week either occupies one of a number of public transfer states or is not receiving public transfers. When an individual is not registered as receiving public transfers, the person can either be employed or be outside the labour force without receiving transfer income. In the Danish welfare state, the latter is very unlikely[5]. Hence, the assumption that not receiving public transfers in a given week corresponds to employment is innocuous[6]. From DREAM,we sample the inflow to unemployment in the UI system in the period January 2003 to November 2005[7]. All exits from unemployment to states other than (what we assume to be) employment are treated as independently right censored observations.

The second data set provides information on sanctions. This information is collected from a database containing information on the interaction between case workers and unemployed (AMANDA). When the public employment office submits a notification to the relevant UI

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[5]The Danish National Directorate of Labour tried to map individuals who leave public income transfer to employment, and they found that more than 90% move to employment.

[6]In practice an individual is registered as employed when he has not collected benefits for four consecutive weeks.

[7]January 2003 is chosen as the starting point due to changes in the regulations on monitoring and sanctions. These changes imply a more strict set of requirements and that the number of sanctions per unemployed individual increases afterwards. To have a period of comparable rules, we disregard the period prior to 2003.

fund, it is registered in AMANDA. More specifically, the date of notification, the type of violation and the sanction type (if given) are registered. In practice, the date of notification coincides with the sanction date since UI payments stop when the UI fund receives the notification only to begin again when the right to benefits is re-earned. If the notification does not give rise to a sanction, the unemployed individual gets the lost UI payments reimbursed.

We follow all UI recipients who enter unemployment in the period from January 2003 to November 2005. They are followed until they leave unemployment or the sampling period ends, in which case the spell is treated as right censored. We have weekly information on labour market status and also transform information on sanctions on a weekly frequency. That is, we measure weeks until a sanction occurs. We only look at the effect of the first sanction (this is the common approach in the literature, see van den Berg et al. (2004), Abbring and van den Berg (2003), and Lalive et al. (2005)), and the advantage is that we only have to model time until the first sanction in the empirical part of the paper. We right-censor spells that experience a second sanction. Due to data collection issues, we also ignore the most severe sanctions in the analysis.

In order for unemployed individuals to collect UI benefits, they need a UI card from their UI fund. As long as they have a valid UI card, they are registered as UI recipients and are visible in the data set. If they are sanctioned with the toughest sanction and have to collect 300 hours of paid work within a 10 week period, they should have their valid UI card revoked. Unfortunately, some UI funds do not withdraw the UI card, which implies that the individuals are registered as UI benefit recipients and therefore unemployed, although they do not collect benefits. The date they are observed to leave unemployment for employment is then based on the date the UI fund cancels the UI card, and accordingly this date is not informative on the actual length of unemployment. The number of sanctions of this type basically corresponds to the amount of sanctions of three weeks duration. The main bulk of sanctions are therefore still the very short ones, and it is also these sanctions that drive the main results[8]. The sample is split according to gender. In addition, we discard unemployed individuals under the age of 26. For this group of individuals, the rules are particularly strict. After six months of unemployment, they have a right and a duty to participate in active labour market programmes and they are more actively monitored. For an investigation of this group of individuals see Jensen et al. (2003).

The data set samples individuals between 26 and 65 years of age. We include five age group dummies, and the unemployed people below 30 serve as the reference group. An

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[8]We also carried out an analysis including the 10 weeks sanction. The main results are unaffected by this, but not surprisingly the magnitude of the effects is somewhat smaller when they are left out.

indicator variable is used for marital status, which is defined if an individual is unmarried and does not cohabit either. We have two indicators for whether the individual is an immigrant from more or less developed countries. The reference category is native Danes. For the UI funds, we have a set of indicators for unemployment insurance fund membership. There are 32 UI funds in Denmark, and membership is in most cases categorized according to education/skills and/or by industry. These funds may be seen as broad proxies for the missing information concerning education and skills. Most UI funds only accept members with certain types of educations or people who work in certain types of industries. Take for example a trained economist. She will qualify for membership of the UI fund for academics, but not for the metal workers UI fund. This observation is important in the subsequent analysis.

The rather large differences in sanction propensity have inspired the National Directorate of Labour to look closer at the administration of the eligibility criteria by different UI funds (National Directorate of Labour, 2006c). They find that some of the differences in sanction rates are driven by differences in the labour market situation for the members of the particular UI-fund. There is a tendency that UI funds with lower unemployment rates are tougher on their members. To accommodate this pattern, we include the unemployment rate for the UI funds in the analysis.

For active labour market programmes, we have a set of time-varying variables indicating whether the individual is currently in a labour market programme, and whether the individual has completed a labour market programme during the past 26 weeks. We distinguish between four types: private job training, public job training, education, and other. Regarding labour market history, we have rather detailed information on the history of past labour market performance. For each of the two years preceding the current unemployment spell, we include the fraction of the year spent on some kind of income transfer (UI, SA, temporary leave schemes including parental leave, or other public transfer schemes). Moreover, we use the number of unemployment spells the individual has had over the same period. Finally, we include a variable for accumulated tenure in the UI system. If an unemployed individual has been unemployed for, say, three months and then gets a job for less than 12 months, his tenure when he reenters the UI system is three months. This information enables us to test whether the imposition of sanctions is less effective for individuals with longer UI experience, and hence who are expected to have a weaker attachment to the labour market.

Table 1 is about here

The final data set consists of 170,547 women and 158,949 men, who experience a total of 218,618 and 219,282 unemployment spells respectively. Table 1 shows the distribution

of unemployed individuals in each type of labour market programmes and sanctions. The vast majority of sanctions are of short (2-3 days) duration and are imposed because the unemployed misses a meeting at the public employment services. Severe sanctions (three weeks duration) are used to a larger extent in relation to self-inflicted unemployment. A discussion about reasons for different sanctions can be found in Svarer (2010). Descriptive statistics of all variables for both women and men are presented in Table 9 in the appendix .

Figure 1: Weekly Kaplan-Meier hazard rates
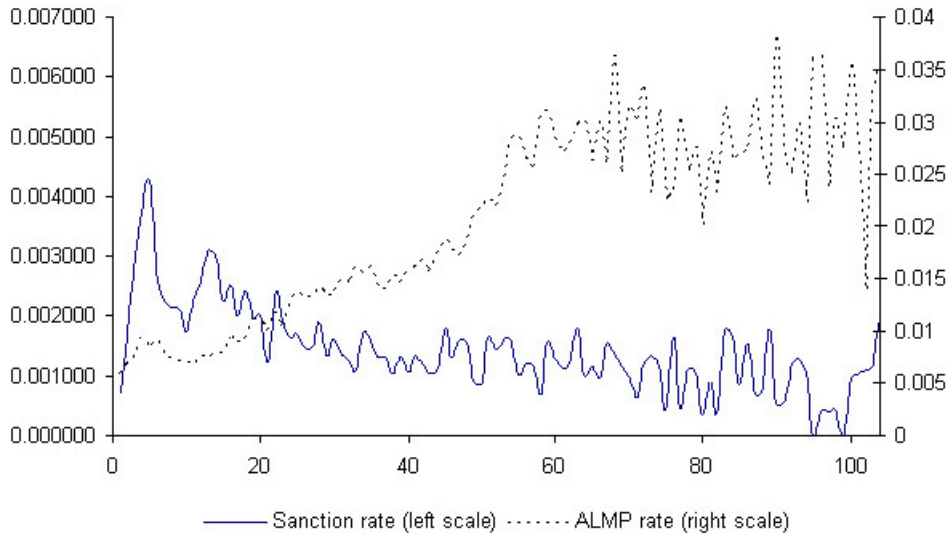


Figure 1 shows the sanction rate along with the ALMP participation rate for men. The sanction rate and rate of participation in ALMPs are Kaplan-Meier hazard rates for the transition into a sanction and an ALMP respectively over the course of the unemployment spell. The figure shows that the sanction rate is relatively higher in the early stages of the unemployment spell, whereas participation rate in ALMPs is higher in the later stages of the spell. Given this pattern, one can say that both sanctions and participation in ALMPs occur at different times of the unemployment spell, so they might be independent, but this is an empirical question.

## 4   Econometric Model

The theoretical foundation of the empirical model comes from the theoretical job search model. Several authors have presented more formal models to discuss the expected effects of benefit sanctions and participation into ALMPs. See for example van den Berg et al. (2004), Abbring and van den Berg (2003), Boone and van Ours (June 2006), and Lalive et al. (2005).

In order to identify the effect of both sanctions and participation into ALMPs, we simultaneously model the transition rate out of unemployment, the participation rate into ALMPs, and the sanction rate using a multivariate mixed proportional hazard model. We define a separate transition for each type of labour market programme. In total there are six hazard rates to be modelled simultaneously. These hazards are allowed to be interdependent through error structure, and identification is achieved through the timing-of-events method, developed by Abbring and van den Berg (2003). The effect of each treatment (being sanction or participation in ALMPs) is identified non-parametrically under the assumption of mixed proportional hazards, and a non defective distribution of time until being sanctioned or participation into ALMPs. As a result, there is no need for an exclusion restriction. In simple words, variation in the timing events (being sanctioned or participation into ALMPs) separates the treatment effect from the distribution of unobserved heterogeneity.

Let $T_{u(uemployemnt)}$, $T_{s(sanction)}$, and $T_{pj(programme-participation)}$ where $j = 1, \cdots, 4$ denote duration of unemployment, duration until an agent receives a sanction, and duration until an agent participates into one of the four types of labour market programmes respectively. These durations are non-negative random variables and are allowed to correlate through unobservable and through a possible treatment effect of being sanctioned or participation into ALMPs on the unemployment hazard. We are interested in the effect of the realization of $T_s$ and $T_{pj}$, where $j = 1, \cdots, 4$ on the distribution of $T_u$. Conditional on observed and unobserved variables, we can therefore ascertain that the realization of $T_s$ affects the shape of the hazard of $T_u$ from $t_s$ onwards in a deterministic way. This independence assumption implies that the causal effect is captured by the effect of $t_s$ on unemployment hazard for $t > t_s$. This rules out that $t_s$ affects unemployment hazard for $t < t_s$ i.e. anticipation of the sanction has no effect on the unemployment hazard. This assumption is likely to be fulfilled in the current analysis since the date of sanction is when the public employment office notifies the UI fund and hence when the sanction is imposed. The distribution of random variables is expressed in terms of their hazard rates $K_k$ where $k = 1, \cdots, 6$. We modelled these hazard rates using a multivariate mixed proportional hazard model (MMPH) with six competing events: employment ($k = 1$), a benefit sanction ($k = 2$), participation into one of the four ALMPs ($k = 3, 4, 5, 6$).

The integrated period-specific hazard rates, $H_{kit}$, conditional on observed time variant, $w_{kit}$, and unobserved time constant individual characteristic, $v_{ki}$, can be written as:

$$H_{kit} = \int_{t-1}^{t} H_{kis} ds = exp\left(w_{kit} + v_{ki}\right), k = 1, ..., 6 \tag{1}$$

We assume that sanctions and participation into ALMPs have a casual effect on the exit

rate out of unemployment. Moreover, participation into ALMPs may have effect both during the programme (locking in) and after the completion of the programme (post programme). We keep track of these effects in ongoing as well as completed events by time varying dummy variables. $w_{kit}$ also includes other explanatory variables explained in the previous section.

Intuitively, the timing-of-events method uses variation in unemployment duration and duration until a sanction or participation into ALMPs (conditional on observed characteristics) to identify the unobserved heterogeneity distribution. The selection effect is captured by the correlation between unobserved components, $v_{ki}$ where $k = 1, \cdots, 6$ while the causal effects of the sanction and participation into ALMPs on unemployment duration are captured by the effect of being sanctioned, and participation into ALMPs is required conditional on the observables and unobservable components. The advantage of this identification strategy is that it does not require an exclusion restriction.

The unobserved heterogeneity terms, $v_{ki}$ where $k = 1, \cdots, 6$ , are assumed to follow a discrete distribution with no priori restrictions on number of mass points. They capture time constant individual specific effects. To select the number of support points, we calculate the value of the AIC (Akaike Information Criteria) when an additional point of support is added. We stop adding more support points to the model when AIC stops decreasing. Gaure et al. (2007) show that the most reliable information criterion is the likelihood itself, or the likelihood based AIC, especially for large samples.

If $K_{it}$ is the set of feasible transitions for an individual $i$ at period $t$, then the transition probability for state $k$ can be written as follows[9]:

$$P_k\left(w_{kit} + v_{ki}\right) = \left(1 - exp\left(-\sum_{k \in K_{it}} exp\left(w_{kit} + v_{ki}\right)\right)\right) \frac{exp\left(w_{kit} + v_{ki}\right)}{\sum_{k \in K_{it}} exp\left(w_{kit} + v_{ki}\right)} \qquad (2)$$

Let $y_{kit} \in Y_i$ be an indicator variable for a transition to state $k$, then likelihood contribution by a particular individual $i$, conditional on observed and unobserved characteristics can be written as

$$L_i\left(v_i\right) = \prod_{y_{kit} \in Y_i} \left(\prod_{k \in K_{it}} \left(P\left(w_{kit} + v_{ki}\right)^{y_{kit}}\right) * \left(exp\left(-\sum_{k \in K_{it}} exp\left(w_{kit} + v_{ki}\right)\right)\right)^{\left(1 - \sum_{k \in K_{it}} y_{kit}\right)}\right)$$
$$(3)$$

Following Gaure et al. (2007), the unknown distribution of unobserved heterogeneity is approximated in a non-parametric way with the help of discrete distribution. Let M denote the number of mass points (M types of individuals) in this distribution. The associated

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[9]This section is based on Roed and Westlie (2007) and Gaure et al. (2007). Detailed derivations can be found in these papers.

location parameter (intercept) is denoted by $V_l$ with the probability mass $P_l$ , where $l = 1, \cdots, M$. The joint likelihood function is then given as

$$L = \prod_{i=1}^{N} E_{v_i}\left(L_i\left(v_i\right)\right) = \prod_{N}^{i=1} \sum_{M}^{l=1} p_l\left(L_i\left(v_i\right)\right) where \sum_{M}^{l=1} = 1 \qquad (4)$$

This likelihood function is maximized with respect to all model and heterogeneity parameters repeatedly for alternative values of mass points M. We start with $M = 1$, which corresponds to no unobserved heterogeneity, and then add more points until the value of AIC stops decreasing. The detailed maximization procedure, using alternative methods for verifying the maximization process, is discussed in Gaure et al. (2007).

# 5    Results

In this section, we report the results. First, we illustrate the sensitivity of the results to a pre-specified number of support points. Second, we carry out a sensitivity analysis with respect to modelling selection into ALMPs and sanctions. Finally, we will try to answer if severe sanctions have stronger effect compared to mild sanctions, and we investigate whether the effects are heterogeneous with respect to various characteristics of the population.

The estimation starts with only one intercept (one support point) and maximizes the likelihood function. After this has been done, we add another point and continue until AIC no longer decreases. New support points are found by using simulated annealing. The maximization procedure uses alternative algorithms to find the maximum of the likelihood function, i.e., BFGS, the newton-method or the trust-region (eigenvector) method[10]. We ended up with four support points for men and women. In total there are 24 location parameters ($4X6$) in the full model with all six transitions.

Tables 2 reports the estimation results for men, showing the effect of sanctions and ALMPs on the exit rate out of employment. The detailed results on other transitions and all explanatory variables can be found in Tables 11 and 12 in the appendix. Column one shows the results with only one mass point of the unobserved heterogeneity. In this case, the effect of sanctions and ALMPs are biased because assuming one mass point means no observed heterogeneity in the data. Column two shows the results with two support points of unobserved heterogeneity. The results in this column correspond to the results in earlier studies where researchers pre-specify two support points in modelling sanctions or ALMPs,

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[10]Details about the maximization routine can be found in following document: $http : //www.frisch.uio.no/NPMLE_files/joeapp.pdf$

see for example, van den Berg et al. (2004), Lalive et al. (2005), Abbring et al. (2005), Svarer (2010), Svarer and Rosholm (2008).

Table 2 is about here

At this point (with two support points), the results show that the exit rate out of unemployment is increased by 56.7% after the imposition of a sanction. Regarding the effect of ALMPs, we find a statistically positive locking in effect for private sector employment subsidy and other programmes, whereas public sector employment subsidy and education have a negative locking-in effect. The post programme effect is only positive for private sector employment subsidy. The exit rate out of unemployment increases by 27% during private sector employment subsidy and by 40% after the completion of the programme.

In column three, we introduce a third support point for the unobserved heterogeneity distribution. This leads to a substantial improvement in the likelihood function and a reduction in AIC. As a result, the parameter estimates change as well. We then experiment with 4th and 5th support points, but the AIC started to increase after the 4th one, and the parameter estimates do not change. So we ended up with the best results in column four of Table 2. The estimate of mass (support) points literally implies that for given observed characteristics there are four groups of unemployed individuals, which differ substantially in terms of re-employment, participation into ALMPs and sanction rates. These four groups represent 35, 30, 20, and 15 per cent of the sample.

The parameter estimate of sanctions now shows that the imposition of a sanction increases the exit rate out of unemployment by 68.9%. This treatment effect of sanctions is clearly underestimated in column two (56.7%). Regarding participation into ALMPs, the locking-in effect of private sector employment subsidy, public sector employment subsidy, education and other programmes are 26.5, -27.3, -13.6, and 14.8 per cent respectively. If we compare these figures with column two, then the locking-in effect of private sector employment subsidy is slightly overestimated, whereas the locking-in effects for public sector employment subsidy, education and other programmes are slightly underestimated. The post programme effects of private sector employment subsidy, public sector employment subsidy, education and other programmes are 52, -19.3, 3.3 and -31 percent respectively. The net effect is only positive for private sector employment subsidy. This result is broadly in line with earlier studies.

Table 3 shows the results for women. The model with three support points fitted the data best. Again, we can clearly see that the model with two support points underestimates the effect of the sanctions and the ALMPs. In the best fitted model (column three), the imposition of sanctions increases the hazard rate out of unemployment by 68.2%. Private

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sector employment subsidy increases the exit rate out of unemployment by 27.8% during the programme and by 41.2% after completion. The rest of the labour market programmes have negative effects both during and after programme completion.

<div align="center">Table 3 is about here</div>

Simultaneously modelling labour market programmes and sanctions allowed us to compare relative effectiveness of both sanctions and ALMPs. Our results show that sanctions have stronger positive effects compared to any of the active labour market programmes.

## 5.1 Sensitivity Analysis (with respect to modelling selectivity into ALMPs and sanctions)

This subsection reports the sensitivity analysis if we do not control the endogeneity of neither sanctions nor ALMPs. Table 4 shows the results of such analysis for men. Column one shows the results when sanctions are considered as exogenous in the model, whereas column three reports the results when both sanctions and ALMPs are endogenous. By comparing these two columns, we notice that ignoring the selectivity for sanctions substantially underestimates the actual treatment effect of sanctions. For example, imposition of sanctions increases the hazard rate out of unemployment by 35.5% without modelling selectivity into sanctions. This treatment effect of sanctions increases by more then 100% after we control for endogeneity of sanctions. This suggests that based on unobservable those who are less likely to leave unemployment are more likely to receive a sanction. Svarer (2010) found the same result. Assuming exogenous sanctions has very little effect on the treatment effect of ALMPs. Similarly, by comparing columns two and three in Table 4, we can see that assuming exogenous ALMPs greatly biases the treatment effect of ALMPs, but there is little effect on the treatment effect of sanctions. This finding is the same for women reported in Table 13 of the Appendix.

<div align="center">Table 4 is about here</div>

We conclude that failure to account for selectivity in the sanction process and ALMPs only biases their respective treatment effects. This means that both sanctions and participation into ALMPs occur independently in the data.

## 5.2 Effects of Severe and Mild Sanctions

Simultaneously modelling labour market programmes and sanctions allowed us to compare the relative effectiveness of sanctions and ALMPs. Our results show that sanctions have

<div align="center">14</div>

stronger positive effect compared to any of the active labour market programmes. This finding is very important for policy makers since sanctions are more cost effective compared to active labour market programmes which bear huge cost. This result gives rise to another important question if stronger sanctions have stronger effect on the exit rate out of unemployment. We have analyzed this issue by modelling separately for mild (2-3 days loss of benefits) and severe (three weeks loss of benefits) sanctions. Due to fewer sanctions of three weeks duration Svarer (2010) did not model the sanction rate separately for the two types of sanctions. Table 5 shows the results of modelling separately for mild and severe sanctions. The results show that 2-3 days sanctions increase the hazard rate out of unemployment by 50%, whereas three weeks sanctions increase the hazard rate by more then 800%. Hence, losing UI benefits for three weeks has the huge effect on the exit rate from unemployment [11].

<center>Table 5 is about here</center>

## 5.3 Heterogeneous Effects of Sanctions and ALMPs

In this section we present a number of results where the effects of sanctions and ALMPs are provided for selected personal characteristics.

### 5.3.1 Ethnicity

Svarer (2010) interacted immigration status variables with sanctions variables to compare the responses of immigrants and natives on the exit rate out of unemployment. In our study, we have estimated separate models for immigrants and natives. Immigrants are further decomposed in two groups; that is western and non-western immigrants. The heterogeneous effect with respect to immigrants and natives for men is reported in Table 6. Results show that immigrants respond strongly to sanctions compared to natives. The imposition of sanctions increases the hazard rate out of unemployment by 56.5% for natives, 92.1% for western and 165.1% for non-western immigrants. Svarer (2010) also found that immigrants respond to sanctions with higher exit rate compared to natives. One reason for this much higher response from non-western immigrants could be that they are more represented in the lower part of the earnings distribution so they are very sensitive to changes in their disposable income. These findings are in line with van den Berg et al. (2004), who analyze a group of welfare recipients in the Netherlands and find large positive responses to sanctions.

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[11]It should be noticed that this finding does not reflect that individuals simply leave the unemployment registers for three weeks and then return once they can regain the right to UI benefits. Such a behaviour would be observed in the data and would not qualify as an exit from unemployment.

The results also show that ALMPs produce different treatment effects across immigrants and natives. The results show that participation in private sector employment subsidy increases the hazard rate out of unemployment by 48.3% and 60.2% for western and non-western immigrants after program completion. The equivalent figure for natives is 58.7%. The post programme effect of public sector employment subsidy is negative for natives and non-western immigrants but it is much stronger for non-western immigrants. In Table 2 the combined post program effect of education for both immigrants and natives was found to be very low. This is due to heterogeneous effects across immigrants and natives. Education has a positive and statistically significant effect for natives, whereas the effect is negative and statistically significant for non-western immigrants. For western immigrants education has a positive but statistically insignificant effect. The post programme effect of other programmes is similar across immigrants and natives.

### 5.3.2 Age

Table 7 reports the effect of ALMPs with respect to different age groups. We have estimated separate models for each age groups. Generally, the effect sanctions is stronger for older unemployed individuals, except for the age group 50-54 where it is less. Similarly, the post programme effect of private sector employment subsidy is positive for all age groups except for the age group 60 or higher. Public sector employment subsidy produces negative effect after programme completion for all age groups, but the effect is strongest for age group between 55 and 59. Education produces the most significant and strongest effect (13.4%) for the age between 30 and 39. Other programme produce similar negative effects across all age groups.

### 5.3.3 Fraction of Last Year on Public Support

Table 8 shows the heterogeneous effect with respect to fraction of last year on public support. The results show that unemployed individuals who did not use public support last year respond stronger to sanctions, whereas the weaker response comes from the unemployed individuals who used less than half time on public benefits last year. The post programme treatment effect of private sector employment subsidy, public sector employment subsidy and education is strongest for the individuals who have lower fraction of last year on public support. For example, the exit rate out of unemployment increases by 191.2% after private

sector employment subsidy for unemployed individuals who has zero fraction of last year on public support. The equivalent figures for unemployed individuals with the fraction less then half and greater than half are 47.3% and 18.1% respectively.

Table 8 is about here

### 5.3.4 Regions

We have divided Denmark into five major regions i.e. Copenhagen, Zealand, South Jutland, Mid Jutland and North Jutland. These regions represent 28, 14, 22, 23 and 14 percent of the data. Table 9 shows the regional effects of ALMPs. For Copenhagen, the metropolitan area, we find a stronger effect of sanctions compared to any of the other regions except Zealand. Furthermore, the post programme effects of private sector employment subsidy are the strongest in Copenhagen. And it is only in Copenhagen that the effect of education is positive and statistically significant.

Table 9 is about here

The study by Roed and Westlie (2007) has also modelled both sanctions and ALMPs simultaneously to evaluate the effect of soft constraints and mild sanctions using different UI regimes in Norway. They find that imposition of a sanction causes an immediate rise in the job hazard rate by 80%, which is quite similar to the results found in our study (approximately 68%). Their results show that participation in ALMPs reduces the employment hazards significantly while participating in ALMPs. In total, they find that ALMPs lengthens the participants' expected unemployment duration by approximately five weeks.

## 6   Conclusion

The object of this paper is to simultaneously evaluate the effect of sanctions and active labour market programmes on the exit rate out of unemployment. We have used the Akike information criterion to optimally select the number of support points for unobserved heterogeneity. We performed sensitivity analysis with respect to controlling for selectivity into sanctions while evaluating the treatment effect of active labour market programmes and vice versa.

The results show that the imposition of sanctions increases the exit rate out of unemployment by 68.9% for men and 68.2% for women. Only private sector employment subsidy has a postive effect on the hazard rate out of unemployment both during and after programme completion. All other types of programmes, i.e. public sector employment subsidy,

education and other programmes, have overall negative effect on the hazard rate out of unemployment. Results also show that immigrants respond strongly to sanctions compared to natives. Moreover, losing UI benefits for three weeks has a large effect on the exit rate from unemployment.

The pre-specification of two support points underestimates the treatment effects of sanctions and ALMPs. The sensitivity analysis shows that failure to control for selectivity of one treatment has very little effect on the effectiveness of other treatments.

Simultaneously modelling labour market programmes and sanctions allowed us to compare the relative effectiveness of both sanctions and ALMPs. Our results show that sanctions have stronger positive effect compared to any of the active labour market programmes. This finding is very important for policy makers since sanctions are more cost effective compared to active labour market programmes which bear huge cost. Stronger sanctions can have some negative distributional effects so further cost and benefit analysis is needed to address this important issue.

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Table 1: Distribution of Treatments in the Sample

| | Active Labour Market Programmes | | | | Sanctions | |
|---|---|---|---|---|---|---|
| | Private sector employment subsidy | Public sector employment subsidy | Other programmes | Education | 2-3 days | 3 weeks |
| **Man** | 2211 | 2217 | 17889 | 22564 | 5929 | 800 |
| (%) | (4.93) | (4.94) | (39.86) | (50.28) | (88.1) | (11.9) |
| **Women** | 1374 | 4053 | 21551 | 25302 | 3366 | 487 |
| (%) | (2.63) | (7.75) | (41.22) | (48.4) | (87.4) | (12.6) |

Number of individuals: 329496
Number of spells: 437900

Table 2: Effect of Sanctions and ALMPs on Exit Rate out of Unemployment for Men

Number of individuals: 158949

| Mass points | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| **Sanctions** | **0.135** | **0.449** | **0.515** | **0.524** | **0.525** |
| **Locking-in effect** | | | | | |
| Private sector employment subsidy | **-0.108** | **0.239** | **0.235** | **0.235** | **0.234** |
| Public sector employment subsidy | **-0.827** | **-0.417** | **-0.328** | **-0.319** | **-0.319** |
| Education | **-0.529** | **-0.199** | **-0.150** | **-0.146** | **-0.146** |
| Other programmes | **0.080** | **0.136** | **0.138** | **0.138** | **0.138** |
| **Post programme effect** | | | | | |
| Private sector employment subsidy | **-0.168** | 0.340 | **0.419** | **0.419** | **0.418** |
| Public sector employment subsidy | **-0.758** | **-0.343** | **-0.231** | **-0.214** | **-0.213** |
| Education | **-0.447** | **-0.029** | 0.027 | **0.032** | **0.032** |
| Other programmes | **-0.432** | **-0.387** | **-0.373** | **-0.371** | **-0.371** |
| AIC | 1261164.0 | 1233957.6 | 1232249.7 | 1232181.6 | 1232183.2 |
| Likelihood | -630260.3 | -616650.1 | -615789.1 | -615748.1 | -615742.8 |
| # of parameters | 323 | 330 | 337 | 344 | 351 |

Note: Bold figures denote significance at 5% level

Table 3: Effect of Sanctions and ALMPs on Exit Rate out of Unemployment for Women

| | | | | | |
|---|---|---|---|---|---|
| Number of individuals | 170547 | | | | |
| **Mass points** | 1 | 2 | 3 | 4 | 5 |
| **Sanctions** | **0.254** | **0.458** | **0.517** | **0.520** | **0.524** |
| **Locking-in effect** | | | | | |
| Private sector employment subsidy | 0.034 | **0.246** | **0.235** | **0.234** | **0.236** |
| Public sector employment subsidy | **-0.549** | **-0.274** | **-0.236** | **-0.236** | **-0.235** |
| Education | **-0.813** | **-0.544** | **-0.510** | **-0.510** | **-0.509** |
| Other programmes | 0.034 | -0.020 | -0.023 | -0.024 | -0.024 |
| **Post programme effect** | | | | | |
| Private sector employment subsidy | -0.033 | **0.318** | **0.341** | **0.345** | **0.346** |
| Public sector employment subsidy | **-0.454** | **-0.155** | **-0.109** | **-0.105** | **-0.105** |
| Education | **-0.405** | **-0.076** | **-0.040** | **-0.038** | **-0.037** |
| Other programmes | **-0.302** | **-0.405** | **-0.386** | **-0.384** | **-0.385** |
| AIC | 1326978.3 | 1307770.9 | 1306390.8 | 1306390.4 | 1306394.8 |
| Likelihood | -663178.6 | -653567.9 | -652871.8 | -652865.6 | -652861.7 |
| # of parameters | 311 | 318 | 325 | 332 | 339 |

Note: Bold figures denote significance at 5% level

Table 4: Sensitivity Analysis (with respect to modelling selection into sanctions and ALMPs for men)

| | Sanctions exogenous ALMPs endogenous | Sanctions endogenous ALMPs exogenous | Both sanctions and ALMPs endogenous |
|---|---|---|---|
| **Sanctions** | **0.314** | **0.541** | **0.524** |
| **Locking-in effect** | | | |
| Private sector employment subsidy | **0.230** | **-0.136** | **0.235** |
| Public sector employment subsidy | **-0.328** | **-0.792** | **-0.319** |
| Education | **0.142** | **-0.268** | **0.138** |
| Other programmes | **-0.144** | **-0.696** | **-0.146** |
| **Post programme effect** | | | |
| Private sector employment subsidy | **0.423** | **0.425** | **0.419** |
| Public sector employment subsidy | **-0.217** | **-0.287** | **-0.214** |
| Education | **0.037** | 0.000 | **0.032** |
| Other programmes | **-0.367** | **-0.158** | **-0.371** |
| Number of individuals | 158949 | | |

Note: Bold figures denote significance at 5% level

Table 5: Effects of Severe and Mild Sanctions (Men)

| | Aggregate sanctions | | Stronger and shorter sanctions | |
|---|---|---|---|---|
| **Aggregate sanctions** | **0.520** | (0.027) | | |
| 2-3 days sanctions | | | **0.308** | (0.028) |
| Three weeks sanctions | | | **2.20** | (0.076) |
| **Locking-in effect** | | | | |
| Private sector employment subsidy | **0.235** | (0.029) | **0.234** | (0.029) |
| Public sector employment subsidy | **-0.316** | (0.040) | **-0.317** | (0.040) |
| Education | **-0.145** | (0.020) | **-0.146** | (0.020) |
| Other programmes | **0.139** | (0.028) | **0.139** | (0.028) |
| **Post programme effect** | | | | |
| Private sector employment subsidy | **0.448** | (0.033) | **0.428** | (0.032) |
| Public sector employment subsidy | **-0.198** | (0.045) | **-0.214** | (0.045) |
| Education | **0.040** | (0.014) | **0.036** | (0.014) |
| Other programmes | **-0.372** | (0.015) | **-0.376** | (0.015) |
| Number of individuals | 158949 | | | |

Note: Standard errors are reported in parentheses

Bold figures denote significance at 5% level

Table 6: Immigrants vs Natives (Men)

| | Western immigrants | | Non-western immigrants | | Natives | |
|---|---|---|---|---|---|---|
| | **Parameter** | S.E | **Parameter** | S.E | **Parameter** | S.E |
| **Sanctions** | **0.653** | 0.113 | **0.975** | 0.081 | **0.448** | 0.029 |
| **Locking-in effect** | | | | | | |
| Private sector employment subsidy | 0.094 | 0.131 | **0.394** | 0.116 | **0.237** | 0.031 |
| Public sector employment subsidy | **-0.366** | 0.172 | **-0.361** | 0.130 | **-0.311** | 0.043 |
| Education | **-0.276** | 0.081 | **-0.210** | 0.054 | **-0.118** | 0.023 |
| Other programmes | -0.112 | 0.124 | 0.057 | 0.083 | **0.180** | 0.031 |
| **Post programme effect** | | | | | | |
| Private sector employment subsidy | **0.394** | 0.151 | **0.471** | 0.121 | **0.462** | 0.035 |
| Public sector employment subsidy | 0.012 | 0.198 | **-0.525** | 0.158 | **-0.176** | 0.048 |
| Education | 0.041 | 0.056 | **-0.091** | 0.041 | **0.064** | 0.016 |
| Other programmes | **-0.442** | 0.062 | **-0.414** | 0.046 | **-0.354** | 0.017 |
| Log-likelihood: | -33526.5 | | -52916.7 | | -531530.2 | |
| AICc: | 67346.5 | | 106125.4 | | 1063350.8 | |
| Parameters: | 145 | | 145 | | 145 | |
| Mass points: | 3 | | 3 | | 3 | |
| Number of individuals | 7820 | | 10800 | | 140329 | |

Note: Bold figures denote significance at 5% level

Table 7: Heterogeneous Effect with Respect to Age

| | Age < 30 | | 30 < Age < 39 | | 40 < Age < 49 | | 50 < Age < 54 | | 55 < Age < 59 | | Age > 60 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Parameter** | S.E | **Parameter** | S.E | **Parameter** | S.E | **Parameter** | S.E | **Parameter** | S.E | **Parameter** | S.E |
| Sanctions | **0.452** | 0.054 | **0.511** | 0.042 | **0.557** | 0.060 | **0.447** | 0.116 | **0.693** | 0.124 | **0.964** | 0.298 |
| **Locking-in effect** | | | | | | | | | | | | |
| Private sector employment subsidy | 0.040 | 0.063 | **0.227** | 0.050 | **0.231** | 0.061 | **0.257** | 0.088 | **0.682** | 0.102 | **0.862** | 0.244 |
| Public sector employment subsidy | -0.175 | 0.090 | -0.143 | 0.075 | **-0.350** | 0.079 | **-0.607** | 0.108 | **-0.339** | 0.120 | -0.510 | 0.297 |
| Education | **-0.104** | 0.045 | **-0.228** | 0.036 | **-0.130** | 0.040 | **-0.192** | 0.063 | 0.036 | 0.075 | -0.065 | 0.144 |
| Other programmes | 0.101 | 0.067 | -0.046 | 0.053 | **0.299** | 0.053 | 0.106 | 0.084 | **0.379** | 0.088 | -0.136 | 0.206 |
| **Post programme effect** | | | | | | | | | | | | |
| Private sector employment subsidy | **0.508** | 0.071 | **0.340** | 0.057 | **0.472** | 0.066 | **0.552** | 0.094 | **0.709** | 0.117 | -0.176 | 0.392 |
| Public sector employment subsidy | -0.178 | 0.117 | **-0.163** | 0.084 | -0.067 | 0.085 | **-0.222** | 0.118 | **-0.441** | 0.138 | -0.231 | 0.362 |
| Education | **0.069** | 0.034 | **0.126** | 0.025 | 0.053 | 0.028 | 0.035 | 0.042 | -0.065 | 0.047 | -0.190 | 0.085 |
| Other programmes | **-0.323** | 0.037 | **-0.432** | 0.027 | **-0.323** | 0.030 | **-0.362** | 0.045 | **-0.431** | 0.049 | **-0.423** | 0.094 |
| Number of individuals | 24846 | | 50238 | | 40242 | | 19429 | | 23356 | | 7421 | |

Bold figures denote significance at 5% level

Table 8: Heterogeneous Effect with Respect to Fraction of Last Year on Public Support

| | Zero | | < 0.5 | | >0.5 | |
|---|---|---|---|---|---|---|
| | Parameter | S.E | Parameter | S.E | Parameter | S.E |
| **Sanctions** | **0.604** | 0.047 | **0.406** | 0.038 | **0.536** | 0.063 |
| **Locking-in effect** | | | | | | |
| Private sector employment subsidy | **0.420** | 0.045 | 0.074 | 0.047 | **0.273** | 0.063 |
| Public sector employment subsidy | **-0.171** | 0.071 | **-0.368** | 0.070 | **-0.407** | 0.066 |
| Education | 0.010 | 0.035 | **-0.184** | 0.033 | **-0.205** | 0.039 |
| Other programmes | 0.035 | 0.047 | **0.125** | 0.046 | **0.361** | 0.057 |
| **Post programme effect** | | | | | | |
| Private sector employment subsidy | **1.069** | 0.058 | **0.387** | 0.053 | **0.166** | 0.060 |
| Public sector employment subsidy | **0.357** | 0.096 | **-0.173** | 0.083 | **-0.418** | 0.066 |
| Education | **0.303** | 0.026 | **0.071** | 0.023 | **-0.133** | 0.026 |
| Other programmes | **-0.428** | 0.024 | **-0.316** | 0.024 | **-0.303** | 0.033 |
| Other programmes | 67319 | | 66833 | | 29431 | |

Bold figures denote significance at 5% level

Table 9: Regional Effects of ALMPs

| | Copenhagen | | Zealand | | South Jutland | | Mid Jutland | | North Jutland | |
|---|---|---|---|---|---|---|---|---|---|---|
| | value | stderr | value | stderr | value | stderr | value | stderr | value | stderr |
| **Sanctions** | **0.656** | 0.051 | **0.956** | 0.083 | **0.388** | 0.049 | **0.352** | 0.059 | **0.384** | 0.077 |
| **Locking-in effect** | | | | | | | | | | |
| Private sector employment subsidy | **0.218** | 0.064 | **0.183** | 0.073 | **0.303** | 0.060 | **0.317** | 0.058 | 0.115 | 0.078 |
| Public sector employment subsidy | **-0.358** | 0.071 | **-0.317** | 0.092 | **-0.278** | 0.093 | **-0.377** | 0.097 | -0.181 | 0.106 |
| Education | **-0.079** | 0.035 | **-0.171** | 0.062 | **-0.109** | 0.044 | **-0.219** | 0.045 | **-0.261** | 0.059 |
| Other programmes | **-0.401** | 0.056 | **0.491** | 0.056 | **0.537** | 0.064 | **0.460** | 0.068 | 0.074 | 0.110 |
| **Post programme effect** | | | | | | | | | | |
| Private sector employment subsidy | **0.621** | 0.078 | **0.440** | 0.084 | **0.406** | 0.066 | **0.454** | 0.063 | **0.466** | 0.090 |
| Public sector employment subsidy | **-0.245** | 0.085 | **-0.302** | 0.114 | **-0.263** | 0.108 | 0.040 | 0.095 | -0.158 | 0.115 |
| Education | **0.102** | 0.025 | 0.055 | 0.042 | 0.005 | 0.030 | -0.026 | 0.031 | 0.021 | 0.039 |
| Other programmes | **-0.501** | 0.023 | **-0.208** | 0.038 | **-0.232** | 0.044 | **-0.175** | 0.041 | **-0.227** | 0.053 |
| Log-likelihood: | -186215 | | -82613 | | -130636 | | -1E+05 | | -81347 | |
| AICc: | 372710.3 | | 165494 | | 261548 | | 262620 | | 162971 | |
| Parameters: | 140 | | 133 | | 140 | | 133 | | 140 | |
| Number of individuals | 44411 | | 22470 | | 34450 | | 35807 | | 21423 | |

Bold figures denote significance at 5% level

## Table 10: Descriptive Statistics

|  | Sample Averages | |
|---|---|---|
|  | Men | Women |
| Age less then 30 | 0.134 | 0.149 |
| Age 30-39 | 0.296 | 0.349 |
| Age 40-49 | 0.255 | 0.251 |
| Age 50-54 | 0.125 | 0.114 |
| Age 55-59 | 0.146 | 0.119 |
| Age 60 and above | 0.044 | 0.018 |
| Single | 0.464 | 0.356 |
| Immigrant from developed country | 0.052 | 0.049 |
| Immigrant from less developed country | 0.077 | 0.059 |
| Year dummy 2004 | 0.402 | 0.398 |
| Year dummy 2005 | 0.070 | 0.064 |
| Public transfers rate one year ago | 0.263 | 0.352 |
| Public transfers rate two years ago | 0.247 | 0.344 |
| Number of unempl. spells, two years ago | 1.467 | 1.368 |
| Number of unempl. spells, last year | 0.892 | 0.851 |
| Average unemployment rate in UI-fund | 7.168 | 8.547 |
| Experience as UI claimant (weeks) | 24.732 | 31.855 |
| Region Zealand | 0.133 | 0.137 |
| South Denmark | 0.218 | 0.227 |
| Central Jutland | 0.222 | 0.239 |
| Northern Jutland | 0.140 | 0.134 |
| **Sanctions** | 0.034 | 0.017 |
| **Participation into ALMP** | | |
| Private sector employment subsidy | 0.016 | 0.008 |
| Public sector employment subsidy | 0.013 | 0.019 |
| Education | 0.070 | 0.065 |
| Other programmes | 0.043 | 0.042 |
| **Have ended participation in ALMP** | | |
| Private sector employment subsidy | 0.011 | 0.007 |
| Public sector employment subsidy | 0.012 | 0.020 |
| Education | 0.098 | 0.092 |
| Other programmes | 0.069 | 0.074 |
| **Unemployment insurance funds** | | |
| Academics | 0.021 | 0.026 |
| Plummer and pipefitter | 0.007 | 0.000 |
| Childhood teachers and youth educators | 0.006 | 0.037 |
| DANA (self-employed) | 0.012 | 0.007 |
| Electricians | 0.016 | 0.000 |
| Free salaried employees | 0.005 | 0.011 |
| Salaried employees | 0.016 | 0.005 |
| FTF-A | 0.047 | 0.072 |
| Commercial and clerical employees | 0.058 | 0.193 |
| Engineers | 0.030 | 0.006 |
| Computer professionals | 0.008 | 0.003 |
| Journalists | 0.008 | 0.015 |
| Christian trade union | 0.074 | 0.093 |
| Teachers | 0.008 | 0.017 |
| Managers and executives | 0.029 | 0.008 |
| Painters | 0.012 | 0.003 |
| Food and allied workers | 0.020 | 0.020 |
| FOA - trade and labour | 0.012 | 0.090 |
| Nursery and childcare assistants | 0.004 | 0.031 |
| Restaurants | 0.013 | 0.020 |
| Business Denmark | 0.013 | 0.003 |
| Unemployment insurance fund | 0.031 | 0.025 |
| Social educators | 0.007 | 0.023 |
| General workers | 0.330 | 0.095 |
| Unemployment insurance fund STA | 0.007 | 0.005 |
| Health organizations | 0.000 | 0.010 |
| Professional technicians | 0.014 | 0.016 |
| Wood industry and building workers | 0.050 | 0.012 |

# Table 11: Results of Full Model with All Six Transitions (Men)

| | Employment | | ALMP1 | | ALMP2 | | ALMP3 | | ALMP4 | | Sanctions | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Value | S.E | Value | S.E | Value | S.E | Value | S.E | Value | S.E | Value | S.E |
| Sanctions | **0.524** | 0.027 | 0.083 | 0.136 | 0.209 | 0.140 | -0.110 | 0.059 | **0.143** | 0.047 | **-0.504** | 0.158 |
| **Locking-in effect** | | | | | | | | | | | | |
| Private sector employment subsidy | **0.235** | 0.029 | | | | | | | | | | |
| Public sector employment subsidy | **-0.319** | 0.039 | | | | | | | | | | |
| Education | **-0.146** | 0.020 | | | | | | | | | | |
| Other programmes | **0.138** | 0.028 | | | | | | | | | | |
| **Post programme effect** | | | | | | | | | | | | |
| Private sector employment subsidy | **0.419** | 0.033 | | | | | | | | | **-0.410** | 0.153 |
| Public sector employment subsidy | **-0.214** | 0.045 | | | | | | | | | **-0.451** | 0.159 |
| Education | **0.032** | 0.014 | | | | | | | | | **-0.457** | 0.055 |
| Other programmes | **-0.371** | 0.015 | | | | | | | | | **-0.504** | 0.061 |
| Age 30-39 | **-0.145** | 0.014 | **-0.214** | 0.065 | **-0.245** | 0.079 | **-0.203** | 0.029 | **-0.186** | 0.027 | **-0.324** | 0.034 |
| Age 40-49 | **-0.301** | 0.015 | **-0.459** | 0.073 | -0.006 | 0.081 | **-0.176** | 0.030 | **-0.169** | 0.028 | **-0.786** | 0.040 |
| Age 50-54 | **-0.540** | 0.018 | **-0.643** | 0.090 | **0.301** | 0.088 | **-0.198** | 0.036 | **-0.156** | 0.033 | **-1.293** | 0.057 |
| Age 55-59 | **-0.990** | 0.017 | **-0.968** | 0.091 | **0.212** | 0.088 | **-0.446** | 0.035 | **-0.449** | 0.033 | **-1.781** | 0.062 |
| Age 60 and above | **-1.129** | 0.024 | **-1.623** | 0.174 | 0.220 | 0.134 | **-0.176** | 0.048 | 0.051 | 0.045 | **-1.642** | 0.100 |
| Single | **-0.229** | 0.010 | **-0.173** | 0.049 | **0.215** | 0.048 | **0.085** | 0.019 | **0.049** | 0.018 | **0.273** | 0.028 |
| Immigrant from developed country | **-0.306** | 0.020 | -0.152 | 0.105 | -0.154 | 0.107 | 0.008 | 0.038 | **0.244** | 0.034 | 0.097 | 0.055 |
| Immigrant from less developed country | **-0.657** | 0.019 | **-0.382** | 0.097 | 0.021 | 0.091 | **0.098** | 0.032 | **0.432** | 0.029 | **0.116** | 0.038 |
| Year dummy 2004 | **-0.310** | 0.008 | **0.763** | 0.050 | 0.099 | 0.051 | **-0.124** | 0.019 | **0.406** | 0.018 | **0.091** | 0.028 |
| Year dummy 2005 | **-0.749** | 0.019 | **1.168** | 0.104 | -0.198 | 0.161 | **-0.419** | 0.048 | **0.216** | 0.044 | **0.461** | 0.062 |
| Public transfers rate one year ago | -0.053 | 0.034 | **0.674** | 0.163 | **0.768** | 0.143 | -0.080 | 0.065 | **0.345** | 0.056 | 0.009 | 0.019 |
| Public transfers rate two years ago | **-0.848** | 0.039 | **-0.882** | 0.194 | -0.177 | 0.171 | -0.147 | 0.076 | **-0.423** | 0.065 | 0.161 | 0.092 |
| Number of unempl. spells, two years ago | **-0.076** | 0.007 | **0.220** | 0.050 | 0.259 | 0.048 | **-0.103** | 0.020 | **0.244** | 0.018 | -0.013 | 0.124 |
| Number of unempl. spells, last year | **0.081** | 0.005 | **-0.110** | 0.034 | **-0.131** | 0.031 | **-0.045** | 0.013 | **-0.061** | 0.011 | **-0.144** | 0.029 |
| Average unemployment rate in UI-fund | **-0.063** | 0.011 | 0.060 | 0.063 | 0.097 | 0.078 | -0.002 | 0.026 | 0.030 | 0.025 | -0.078 | 0.083 |
| Experience as UI claimant (weeks) | **-0.002** | 0.000 | 0.001 | 0.001 | **0.003** | 0.000 | 0.000 | 0.000 | **0.002** | 0.000 | 0.127 | 0.125 |
| Region Zealand | **0.155** | 0.015 | **0.394** | 0.075 | **0.351** | 0.074 | -0.049 | 0.027 | **-0.176** | 0.029 | -0.003 | 0.046 |
| South Denmark | **0.125** | 0.013 | **0.242** | 0.070 | **0.280** | 0.068 | **-0.752** | 0.028 | **0.262** | 0.024 | **0.479** | 0.036 |
| Central Jutland | **0.104** | 0.013 | **0.420** | 0.064 | **0.150** | 0.067 | **-0.719** | 0.027 | **0.165** | 0.023 | **0.441** | 0.137 |
| Northern Jutland | **0.092** | 0.015 | **0.350** | 0.075 | **0.178** | 0.078 | **-0.537** | 0.032 | -0.019 | 0.028 | -0.017 | 0.088 |
| Academics | **-0.159** | 0.032 | -0.028 | 0.141 | **0.821** | 0.148 | 0.061 | 0.061 | -0.095 | 0.062 | **-0.725** | 0.111 |
| Plummer and pipefitter | **0.555** | 0.054 | -0.558 | 0.315 | -0.250 | 0.336 | **0.279** | 0.104 | **-0.396** | 0.113 | 0.270 | 0.140 |
| Childhood teachers and youth educators | **-0.380** | 0.064 | **-1.426** | 0.526 | **0.827** | 0.276 | -0.181 | 0.131 | **-0.477** | 0.128 | **0.059** | 0.165 |
| DANA (self-employed) | **-0.351** | 0.044 | -0.127 | 0.224 | **-0.909** | 0.358 | 0.033 | 0.084 | -0.022 | 0.077 | **0.377** | 0.111 |
| Electricians | **0.134** | 0.042 | -0.270 | 0.220 | -0.030 | 0.260 | 0.112 | 0.087 | -0.059 | 0.082 | | |
| Free salaried employees | **-0.454** | 0.064 | -0.075 | 0.301 | -0.639 | 0.406 | -0.018 | 0.131 | 0.013 | 0.122 | 0.065 | 0.106 |
| Salaried employees | **-0.169** | 0.039 | **-0.576** | 0.214 | **0.536** | 0.171 | 0.106 | 0.070 | **-0.177** | 0.067 | -0.079 | 0.191 |
| FTF-A | **-0.222** | 0.028 | **-0.587** | 0.157 | -0.002 | 0.171 | **-0.145** | 0.059 | -0.084 | 0.054 | 0.000 | 0.103 |
| Commercial and clerical employees | **-0.383** | 0.030 | -0.252 | 0.146 | 0.053 | 0.166 | 0.006 | 0.062 | **-0.151** | 0.057 | 0.049 | 0.035 |
| Engineers | **-0.260** | 0.031 | 0.253 | 0.134 | **-0.663** | 0.228 | **-0.135** | 0.065 | 0.039 | 0.060 | **-0.465** | 0.087 |
| Computer professionals | **-0.465** | 0.135 | 0.931 | 0.571 | 1.082 | 0.771 | 0.177 | 0.274 | -0.400 | 0.345 | **-0.672** | 0.105 |
| Journalists | **-0.130** | 0.060 | -0.291 | 0.280 | -0.241 | 0.333 | **-0.276** | 0.131 | **-0.289** | 0.118 | **-0.413** | 0.151 |
| Christian trade union | **0.080** | 0.027 | -0.227 | 0.134 | -0.265 | 0.153 | 0.010 | 0.057 | **-0.283** | 0.052 | **-1.276** | 0.244 |
| Teachers | **-0.349** | 0.059 | **-1.759** | 0.546 | 0.208 | 0.383 | -0.168 | 0.136 | -0.236 | 0.123 | **0.120** | 0.074 |
| Managers and executives | **-0.423** | 0.041 | 0.349 | 0.199 | -0.443 | 0.287 | -0.165 | 0.089 | 0.019 | 0.084 | -0.138 | 0.189 |
| Painters | **-0.400** | 0.040 | **-0.765** | 0.213 | **0.767** | 0.205 | -0.164 | 0.082 | **-0.237** | 0.077 | **-0.003** | 0.000 |
| Food and allied workers | **0.940** | 0.050 | **-0.899** | 0.335 | -0.261 | 0.327 | 0.062 | 0.115 | **-0.664** | 0.110 | **-1.498** | 0.148 |
| FOA - trade and labour | **-0.167** | 0.034 | -0.214 | 0.152 | 0.013 | 0.177 | **0.285** | 0.063 | **-0.183** | 0.059 | **0.217** | 0.044 |
| Nursery and childcare assistants | **-0.588** | 0.051 | **-1.102** | 0.362 | **1.006** | 0.220 | 0.124 | 0.093 | **-0.210** | 0.094 | -0.075 | 0.048 |
| Restaurants | **-0.378** | 0.102 | **-1.770** | 0.685 | 0.376 | 0.470 | -0.037 | 0.198 | **-0.630** | 0.190 | -0.046 | 0.141 |
| Business Denmark | **0.740** | 0.124 | **-0.897** | 0.687 | -1.084 | 0.823 | 0.046 | 0.278 | **-0.662** | 0.266 | **-0.602** | 0.262 |
| Unemployment insurance fund | **-0.197** | 0.043 | **0.730** | 0.163 | **-0.967** | 0.360 | -0.086 | 0.092 | -0.043 | 0.085 | -0.174 | 0.363 |
| Social educators | **-0.643** | 0.045 | 0.243 | 0.235 | -0.211 | 0.320 | -0.002 | 0.101 | -0.144 | 0.096 | **0.335** | 0.134 |
| General workers | **-0.215** | 0.058 | **-2.952** | 1.008 | 0.276 | 0.300 | -0.224 | 0.129 | **-0.439** | 0.122 | -0.038 | 0.166 |
| Unemployment insurance fund STA | **0.568** | 0.040 | **-0.743** | 0.220 | -0.130 | 0.261 | 0.167 | 0.091 | **-0.438** | 0.085 | **-0.298** | 0.121 |
| Health organizations | **-0.824** | 0.064 | -0.749 | 0.408 | 0.518 | 0.374 | 0.169 | 0.129 | -0.219 | 0.134 | -0.301 | 0.231 |
| Professional technicians | **-0.338** | 0.042 | -0.047 | 0.176 | **-0.698** | 0.263 | -0.082 | 0.083 | 0.037 | 0.071 | **-0.367** | 0.119 |
| Wood industry and building workers | **0.663** | 0.025 | **-0.559** | 0.146 | 0.110 | 0.144 | -0.028 | 0.060 | **-0.455** | 0.053 | 0.084 | 0.073 |
| Log-likelihood: | -615748.1 | | | | | | | | | | | |
| AICc: | 1232182 | | | P3 | 0.353 | 0.020 | | | | | | |
| Parameters: | 344 | | | P4 | 0.297 | 0.020 | | | | | | |
| Mass points: | 4 | | | P2 | 0.196 | 0.023 | | | | | | |
| | | | | P1 | 0.153 | 0.017 | | | | | | |

Bold figures denote significance at 5% level

Table 12: Results of Full Model with All Six Transitions (Women)

| | Employment | | ALMP1 | | ALMP2 | | ALMP3 | | ALMP4 | | Sanctions | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Value | S.E | Value | S.E | Value | S.E | Value | S.E | Value | S.E | Value | S.E |
| Sanctions | **0.520** | 0.041 | -0.253 | 0.296 | -0.082 | 0.153 | 0.002 | 0.071 | **0.238** | 0.061 | | |
| **Locking-in effect** | | | | | | | | | | | | |
| Private sector employment subsidy | **0.234** | 0.039 | | | | | | | | | | |
| Public sector employment subsidy | **-0.236** | 0.030 | | | | | | | | | | |
| Education | **-0.510** | 0.022 | | | | | | | | | | |
| Other programmes | -0.024 | 0.031 | | | | | | | | | | |
| **Post programme effect** | | | | | | | | | | | | |
| Private sector employment subsidy | **0.345** | 0.043 | | | | | | | | | -0.341 | 0.262 |
| Public sector employment subsidy | **-0.105** | 0.034 | | | | | | | | | **-0.419** | 0.157 |
| Education | **-0.038** | 0.016 | | | | | | | | | **-0.399** | 0.075 |
| Other programmes | **-0.384** | 0.016 | | | | | | | | | **-0.624** | 0.085 |
| Age 30-39 | **-0.106** | 0.013 | **-0.213** | 0.078 | **-0.297** | 0.050 | **-0.152** | 0.024 | **-0.088** | 0.023 | **-0.187** | 0.044 |
| Age 40-49 | **-0.106** | 0.015 | **-0.300** | 0.090 | **-0.115** | 0.054 | -0.035 | 0.026 | 0.018 | 0.025 | **-0.462** | 0.052 |
| Age 50-54 | **-0.374** | 0.018 | **-0.520** | 0.117 | **0.140** | 0.062 | -0.054 | 0.032 | 0.048 | 0.031 | **-0.821** | 0.074 |
| Age 55-59 | **-0.931** | 0.018 | **-1.251** | 0.140 | **-0.186** | 0.066 | **-0.281** | 0.031 | **-0.271** | 0.031 | **-1.261** | 0.080 |
| Age 60 and above | **-1.002** | 0.036 | **-1.075** | 0.297 | **-0.347** | 0.158 | -0.076 | 0.060 | **0.353** | 0.055 | **-0.763** | 0.147 |
| Single | **0.020** | 0.010 | **0.167** | 0.059 | **0.116** | 0.036 | **0.153** | 0.017 | **0.101** | 0.016 | **0.305** | 0.035 |
| Immigrant from developed country | **-0.197** | 0.021 | **-0.380** | 0.150 | 0.126 | 0.075 | 0.004 | 0.035 | **0.231** | 0.033 | **0.295** | 0.068 |
| Immigrant from less developed country | **-0.312** | 0.021 | **-0.552** | 0.154 | **0.233** | 0.069 | **0.154** | 0.032 | **0.526** | 0.029 | **0.609** | 0.057 |
| Year dummy 2004 | **-0.343** | 0.009 | **0.588** | 0.062 | **0.173** | 0.038 | **-0.093** | 0.017 | **0.390** | 0.017 | **0.149** | 0.038 |
| Year dummy 2005 | **-1.145** | 0.019 | **1.031** | 0.119 | -0.121 | 0.106 | **-0.267** | 0.039 | **0.244** | 0.038 | **0.577** | 0.072 |
| Public transfers rate one year ago | -0.053 | 0.029 | 0.309 | 0.184 | **0.556** | 0.098 | -0.092 | 0.051 | **0.364** | 0.046 | -0.124 | 0.101 |
| Public transfers rate two years ago | **-0.567** | 0.033 | **-0.810** | 0.215 | **-0.236** | 0.115 | **-0.145** | 0.060 | **-0.357** | 0.054 | **0.315** | 0.116 |
| Number of unempl. spells, two years ago | **0.081** | 0.005 | -0.077 | 0.041 | **-0.073** | 0.023 | **-0.036** | 0.011 | **-0.050** | 0.010 | -0.030 | 0.023 |
| Number of unempl. spells, last year | -0.013 | 0.008 | **0.166** | 0.062 | **0.163** | 0.035 | **-0.096** | 0.017 | **0.165** | 0.016 | **-0.105** | 0.035 |
| Average unemployment rate in UI-fund | **-0.015** | 0.004 | -0.021 | 0.028 | **0.051** | 0.021 | 0.012 | 0.008 | -0.012 | 0.008 | 0.014 | 0.018 |
| Experience as UI claimant (weeks) | 0.000 | 0.000 | **0.002** | 0.001 | **0.002** | 0.000 | 0.000 | 0.000 | **0.001** | 0.000 | **-0.001** | 0.000 |
| Region Zealand | **-0.065** | 0.015 | **0.216** | 0.099 | **0.359** | 0.060 | **-0.128** | 0.025 | **-0.138** | 0.027 | **-0.161** | 0.059 |
| South Denmark | **-0.102** | 0.013 | 0.165 | 0.089 | **0.603** | 0.052 | **-0.665** | 0.024 | **0.229** | 0.022 | **0.344** | 0.045 |
| Central Jutland | **-0.137** | 0.013 | **0.273** | 0.084 | **0.430** | 0.051 | **-0.608** | 0.024 | **0.134** | 0.022 | -0.075 | 0.048 |
| Northern Jutland | **-0.185** | 0.016 | **0.262** | 0.100 | **0.369** | 0.061 | **-0.646** | 0.030 | -0.044 | 0.027 | **-0.637** | 0.071 |
| **Uunemployment insuarnce funds** | | | | | | | | | | | | |
| Academics | **0.164** | 0.035 | 0.129 | 0.193 | **0.674** | 0.150 | 0.049 | 0.064 | 0.043 | 0.063 | -0.227 | 0.150 |
| Childhood teachers and youth educators | **-0.146** | 0.038 | **-2.142** | 0.412 | **0.348** | 0.169 | **-0.316** | 0.073 | **-0.581** | 0.071 | -0.017 | 0.152 |
| DANA (self-employed) | **-0.378** | 0.057 | 0.104 | 0.340 | -0.447 | 0.256 | **-0.258** | 0.097 | **0.244** | 0.081 | **0.405** | 0.175 |
| Free salaried employees | **-0.103** | 0.046 | **0.728** | 0.224 | -0.399 | 0.225 | **-0.282** | 0.086 | 0.000 | 0.081 | -0.296 | 0.212 |
| Salaried employees | **-0.131** | 0.066 | -0.210 | 0.467 | -0.149 | 0.262 | **-0.254** | 0.121 | -0.036 | 0.105 | 0.393 | 0.207 |
| FTF-A | 0.013 | 0.030 | **-0.398** | 0.186 | -0.129 | 0.143 | **-0.229** | 0.058 | **-0.111** | 0.054 | 0.204 | 0.120 |
| Commercial and clerical employees | **-0.287** | 0.022 | **0.419** | 0.112 | 0.097 | 0.093 | -0.055 | 0.038 | **-0.107** | 0.037 | 0.010 | 0.084 |
| Engineers | 0.038 | 0.057 | **0.949** | 0.243 | -0.077 | 0.268 | **-0.250** | 0.109 | 0.076 | 0.103 | -0.398 | 0.253 |
| Computer professionals | **-0.288** | 0.085 | 0.390 | 0.447 | -0.067 | 0.342 | -0.097 | 0.132 | 0.249 | 0.130 | 0.107 | 0.299 |
| Journalists | **-0.081** | 0.040 | 0.113 | 0.235 | **-0.667** | 0.203 | **-0.167** | 0.067 | **0.144** | 0.063 | **-1.137** | 0.240 |
| Christian trade union | **-0.200** | 0.020 | **0.384** | 0.125 | **-0.238** | 0.073 | **-0.196** | 0.035 | **-0.095** | 0.032 | **0.325** | 0.068 |
| Teachers | **0.150** | 0.046 | **-1.005** | 0.367 | **-0.529** | 0.255 | **-0.318** | 0.096 | -0.160 | 0.083 | 0.116 | 0.190 |
| Managers and executives | -0.092 | 0.056 | **0.770** | 0.269 | **-0.692** | 0.330 | **-0.293** | 0.105 | 0.068 | 0.096 | **0.590** | 0.194 |
| Painters | **0.980** | 0.066 | 0.203 | 0.466 | **-1.098** | 0.515 | -0.047 | 0.160 | **-0.326** | 0.155 | 0.291 | 0.278 |
| Food and allied workers | 0.069 | 0.036 | 0.229 | 0.230 | **-0.513** | 0.149 | **0.370** | 0.056 | 0.012 | 0.059 | 0.237 | 0.125 |
| FOA - trade and labour | **-0.158** | 0.035 | **-1.081** | 0.244 | **0.384** | 0.160 | -0.055 | 0.065 | **-0.208** | 0.062 | **0.496** | 0.135 |
| Nursery and childcare assistants | **-0.448** | 0.034 | **-1.148** | 0.338 | **0.280** | 0.089 | **-0.418** | 0.057 | **-0.339** | 0.054 | **-0.317** | 0.126 |
| Restaurants | -0.045 | 0.043 | 0.494 | 0.272 | **-0.366** | 0.160 | **-0.210** | 0.074 | -0.069 | 0.069 | 0.249 | 0.142 |
| Business Denmark | -0.009 | 0.072 | **1.415** | 0.248 | **-0.980** | 0.467 | -0.094 | 0.126 | -0.088 | 0.128 | -0.020 | 0.286 |
| Unemployment insurance fund | **-0.568** | 0.039 | 0.301 | 0.209 | 0.056 | 0.168 | **-0.189** | 0.069 | -0.036 | 0.065 | **0.454** | 0.139 |
| Social educators | -0.013 | 0.040 | **-1.897** | 0.421 | -0.143 | 0.182 | **-0.300** | 0.079 | **-0.469** | 0.076 | 0.142 | 0.155 |
| General workers | **0.311** | 0.026 | 0.131 | 0.203 | **-0.245** | 0.111 | -0.015 | 0.050 | **0.100** | 0.045 | **-0.273** | 0.110 |
| Unemployment insurance fund STA | -0.134 | 0.069 | -0.476 | 0.538 | 0.051 | 0.302 | 0.123 | 0.125 | -0.021 | 0.119 | 0.074 | 0.285 |
| | **-0.259** | 0.028 | 0.270 | 0.168 | **0.416** | 0.087 | **-0.230** | 0.048 | **0.164** | 0.043 | **-0.878** | 0.133 |
| Professional technicians | **-0.271** | 0.039 | **0.747** | 0.191 | **-0.604** | 0.167 | **-0.185** | 0.067 | **0.252** | 0.060 | -0.172 | 0.146 |
| Wood industry and building workers | **0.267** | 0.044 | **0.538** | 0.259 | 0.202 | 0.150 | 0.120 | 0.088 | **0.162** | 0.076 | 0.052 | 0.186 |
| Log-likelihood: | **-652865.6** | | **P1** | 0.477 | 0.017 | | | | | | | |
| AICc: | **1306390** | | **P3** | 0.313 | 0.011 | | | | | | | |
| Parameters: | **332** | | **P2** | 0.189 | 0.006 | | | | | | | |
| Mass points: | **4** | | **P4** | 0.020 | 0.015 | | | | | | | |

Bold figures denote significance at 5% level

Table 13: Sensitivity Analysis (with respect to modelling selection into sanctions and ALMPs for women)

| | Sanctions exogenous ALMPs endogenous | Sanctions endogenous ALMPs exogenous | Both sanctions and ALMPs endogenous |
|---|---|---|---|
| **Sanctions** | **0.416** | **0.524** | **0.520** |
| **Locking-in effect** | | | |
| Private sector employment subsidy | **0.237** | -0.061 | **0.234** |
| Public sector employment subsidy | **-0.235** | **-0.621** | **-0.236** |
| Education | **0.507** | **-1.052** | **-0.510** |
| Other programmes | -0.020 | **-0.377** | -0.024 |
| **Post programme effect** | | | |
| Private sector employment subsidy | **0.343** | **0.394** | **0.345** |
| Public sector employment subsidy | **-0.100** | **-0.114** | **-0.105** |
| Education | **-0.033** | **-0.082** | **-0.038** |
| Other programmes | **-0.382** | **-0.136** | **-0.384** |

Bold figures denote significance at 5% level