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ABSTRACT

The Effect of Sanctions on the Job Finding Rate: Evidence from Denmark*

This paper investigates the effect of sanctions of unemployment insurance benefits on the exit rate from unemployment for a sample of Danish unemployed. According to the findings are that even moderate sanctions have rather large effects. For both males and females the exit rate increases by more than 50% following imposition of a sanction. The paper exploits a rather large sample to elaborate on the basic findings. It is shown that harder sanctions have a larger effect, that the effect of sanctions wear out after around 3 months and that particular groups of unemployed are more responsive to sanctions than others. Finally, the analysis suggests that men react ex ante to the risk of being sanctioned in the sense that men who face higher sanction risk leave unemployment faster.

JEL Classification: J6, C41

Keywords: sanctions, unemployment hazard

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1 Introduction

The Danish labour market model, also labelled the *flexicurity model,* due to a combination of flexible dismissal rules (the flex part) and fairly generous and long lasting unemployment benefits (the security part), has received a lot of international attention recently. The increased focus derives from the successful development in aggregate unemployment in Denmark.[1] Since 1993 the unemployment rate has fallen from around 12% to a present level of around 4.5%, which places Denmark among the countries with the lowest registered unemployment rate in the developed world. It is obvious that a system with a high inflow into unemployment from employment due to the flexible dismissal rules followed by generous and long lasting unemployment insurance carries the risk of immense unemployment. To mitigate the disincentive effects arising from generous unemployment payments the Danish labour market relies to a large extent on active labour market policies (henceforth ALMP). The principal component of ALMP is the right and duty for all unemployed to participate in an active labour market programme if they do not find employment sufficiently fast . Rosholm & Svarer (2004) and Geerdsen (2006) provide evidence that the mere threat of ALMP has a non-negligible effect on the transition rate from unemployment into employment,[2] whereas the job finding rate of individuals who complete the various skill-enhancing programmes is more or less unaffected (see e.g. Rosholm and Svarer, 2004[3]). Primarily due to the observed threat effect, the increased use of active labour market programmes since 1993 has been recognized to facilitate the exit rate from unemployment.

The second component of the active labour market policy is the area of monitoring and sanctions. To ensure that unemployed are available for employment and also on their own account make an effort to obtain employment there are a number of eligibility criteria unemployed have to fulfill to qualify for UI benefits. If these criteria are not met the unemployed face the risk of loosing UI payments for some period of time, where the length depends on the severity of the violation. The scope of monitoring and sanctions in the Danish labour market has – as it has also been the case for active labour market programmes – been strengthened in recent years. There have, however, been no systematic analysis of the effect of sanctions on the behavior of unemployed in Denmark. The purpose of the current study is to provide such an analysis and at the same time to make an addition to the existing, but rather limited, literature in this area.

[1] For a presentation on the Danish flexicurity model and how recent changes in the Danish labour market can be attributed to the drop in Danish unemployment see Andersen & Svarer (2006, 2007).

[2] This finding is consistent with e.g. a U.S. based analysis by Black et al. (2003).

[3] The Danish findings are not unique. Most studies on the effects of active labour market programmes find modest and often insignificant effects (see e.g. Heckman et al., 1999 and Kluve, 2006).

A number of recent studies have investigated the effect of sanctions on the transition from unemployment to employment (two Dutch studies (van den Berg et al., 2004 and Abbring et al., 2005) and a Swiss study (Lalive et al., 2005)).[4] They all use duration models to disentangle selection effects from causal effects and conclude that sanctions causally increase job findings rate and in addition that the size of this effect is far from negligible – job findings rates increase by up to 100% as a consequence of sanctions. These studies are based on rather limited sample sizes, which implies that they do not provide clear answers to questions like: Do more severe sanctions have larger effects? Are the effects of sanctions time varying? Do sanctions have different impact for different types of unemployed? The data set used in the current analysis is based on two large Danish registers that contain information on all unemployment spells and all sanctions in Denmark in the period from January 2003 to November 2005. The size of the data sets allows me to provide new answers to the posed questions.

In addition, the data set also allows for investigation of the so-called ex ante effect of monitoring and sanctions. As argued by e.g. Lalive et al. (2005) the mere threat of receiving a sanction presumably induces unemployed to search harder for employment before the potential sanction is imposed. This has a positive effect on the transition rate from unemployment to employment for all unemployed (and not only those who are sanctioned). Lalive et al. (2005) use variation in policies on sanction between Swiss public employment offices to estimate the ex ante effect and find that an increase in sanction warnings leads to a reduction in mean unemployment length. In the current analysis, I use variation across UI funds to investigate the extent of an ex ante effect in Denmark. I find that especially for men there is a positive relationship between their job finding rate and the rate at which their UI fund sanctions violations of eligibility criteria.

The paper corroborates the existing literature in terms of finding large and significant effects of sanctioning unemployed. For both males and females, I find that sanctions causally increase job finding rates by more that 50%. In addition – and which is new to the literature — I find that the effect increases in the severity of the sanction, that the effect of a sanction decreases over time, and finally that the effects are heterogenous with respect to the population of unemployed. In particular, I find that e.g. male immigrants are more responsive to sanctions than native Danes. The latter is interesting since some observers (e.g. Hasenfeld et al., 2004) argue that the existence of monitoring and sanctions is just hurting

[4] In addition, a number of studies have identified the monitoring of unemployed's search behaviour as an effective tool to bring unemployed into employment (see e.g. Gorter & Kalb, 1996 and Cockx & Dejemeppe, 2007). Also, in a recent investigation of the Norwegian labour market Røed & Weslie (2007) find that sanctions increase the job finding rate.

individuals who already have a hard time finding employment. This might still be the case, but the findings in this analysis do not support the general view that groups of unemployed who typically have difficulties entering employment do not react positively to sanctions. In addition, van den Berg et al. (2004) find that individuals receiving social assistance also experience higher exit rates into employment after a sanction has been imposed, which also indicates that weaker unemployed are influenced by economic incentives.

The structure of the remainder of the paper is as follows: Section 2 gives a brief introduction to the Danish labour market and the regulations concerning monitoring and sanctions. Section 3 presents the data. Section 4 outlines the empirical strategy and briefly discusses the expected effects of a sanction on the behaviour of unemployed. Section 5 presents the results, and finally Section 6 concludes.

2 Benefits and sanctions in the Danish labour market

Unemployed in Denmark can either receive unemployment insurance benefits (henceforth UI benefits) or social assistance. To qualify for UI benefits membership of a UI fund is required. Membership is voluntary and requires that the individuals pays a monthly tax deductible fee to the UI funds. Entitlement 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. There are a number of eligibility criteria that the unemployed has to fulfill 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, so on average the level of compensation is around 60%. Social assistance is means tested and is typically around 20% lower than UI benefits.

Due to data constraints, this article focuses on insured unemployed. Complete data for individuals on social assistance is not available. The remainder of this section describes the eligibility criteria for unemployed 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 actively have to 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 are 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 submit and maintain a CV on the internet based job bank, and require that the unemployed participate in active labour market programmes.

When the PES observes that an unemployed is not fulfilling the eligibility criteria it submits a notification to the relevant UI fund.[5] 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.[6]

To sum up, the 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, 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 has worked for 300 hours within a 10 week period.

[5]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. The main part of the UI recipients are however still organised according to their main education and occupation (National Directorate of Labour, 2006a).

[6]The UI funds are under supervision by the National Directorate of Labour, which should imply small ifferences in administration of the rules. There are, however, still rather larger discripancies, as will be clear later in the paper.

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[7] the mapping from non-compliance to sanction is pretty clear. Failure to attend meetings with the PES not related to the job plan are 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 does not contact the PES.

If the unemployed do not attend meetings related to the job plan or a specific job opportunity or if they decline job offers or interviews, their status as unemployed is classified as self-inflicted and they are consequently sanctioned for 3 weeks.

The possibility to sanction unemployed until they have accumulated 300 hours of paid work within a 10 week period is enforced when the PES regards the unemployed 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 unemployed are not available for employment opportunities.

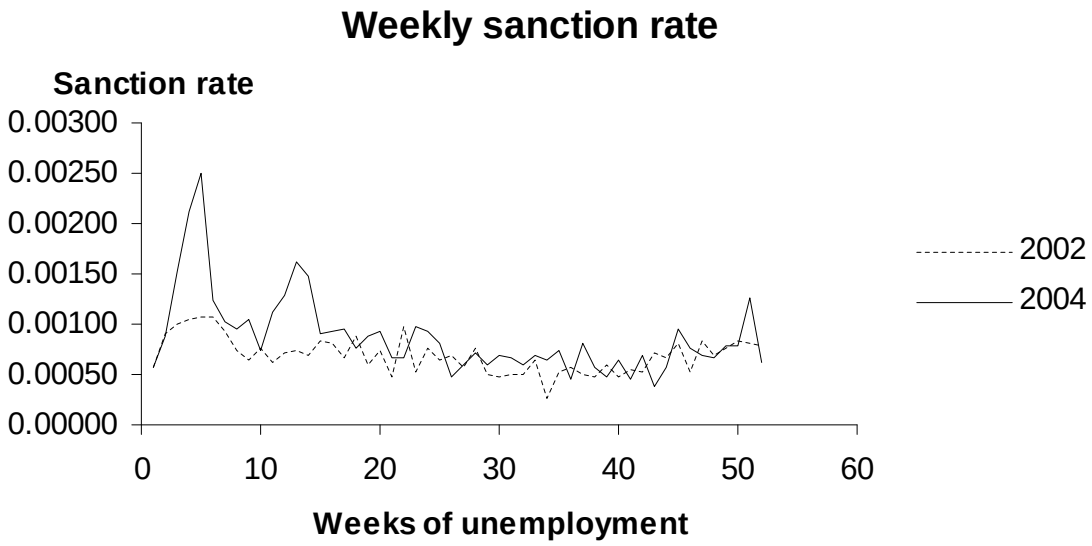
2.1 Some numbers

The latest annual report on sanction statistics (National Directorate of Labour, 2006b) reveals that the PES undertook 1,160,911 activities in 2005 ranging from meetings between the PES and the unemployed over active labour market programmes to job offers. In total 33,723 (relevant) notifications were made by the PES to the UI funds,[8] of these 15,116 released a sanction. Most (11,028) of the sanctions were short term stop of UI payments, on average loss of benefits for 2-3 days. There were 464,172 individuals who at some time in 2005 were unemployed. That is, based on the inflow into unemployment around 3.2% were sanctioned. If the number of sanctions is compared to the average stock of unemployed during 2005, the fraction of sanctioned rises to around 12%. In Gray (2003) the latter statistic is shown for 14 OECD countries based on data from the late 1990s. At that time the Danish figure was 4.3%, which placed Denmark among the more lax countries with respect to sanctioning UI recipients. Since then the eligibility criteria have been strengthened a number of times. As a consequence the incident of sanctions has increased. Unfortunately, there is no reliable time series data on the magnitude of sanctions in Denmark prior to 2001.

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

[8] In total there were 100,643 notifications, but the majority were irrelevant. If e.g. the unemployed misses a meeting because she has found employment the notification is still made, but is classified as irrelevant.

To get an impression of the effect of the tougher rules implemented in 2003 I depict in Figure 1 the Kaplan-Meier sanction rates for unemployment spells that began in 2002 and 2004.



The figure shows that the risk of being sanctioned has increased dramatically (relatively speaking) in the first 15 weeks of unemployment, whereas unemployed with longer spells do not seem to face a higher risk of being sanctioned after the labour market reform in 2003.

3 Data

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 the employment offices have. The advantage is 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 the 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; hence the assumption that not receiving public transfers in a given week corresponds

to employment is innocuous.[9] From DREAM, we sample the inflow to unemployment in the UI system in the period January 2003 to November 2005.[10] 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 entails information on sanctions 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 fund it is registered in AMANDA. More specifically, date of notification, type of violation and 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 and until the right to benefits is rearned. If the notification does not give rise to a sanction the lost UI payments are reimbursed to the unemployed.

3.1 Sample selection

I 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. I have weekly information on labour market status and also transform information on sanctions to a weekly frequency. That is, I measure weeks until a sanction occurs. I only look at the effect of the first sanction (this is the common approach in the literature (van den Berg et al., 2004, Abbring et al., 2005, and Lalive et al., 2005)) and the advantage is that I only have to model time until the first sanction in the empirical part of the paper. I right-censor spells that experience a second sanction. Due to data collection issues I also ignore the most severe sanctions in the analysis. In order for unemployed to collect UI benefits they need a UI card from their UI fund. As long as the 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 not have a valid UI card. 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 cancel's the UI card, and accordingly this date is not informative on the actual

[9] In practice an individual is registered as having left unemployment when the individual has not collected benefits for 4 consecutive weeks.

[10] January 2003 is chosen as the starting point due to changes in the regulations on monitoring and sanctions. These changes implied a stricter set of requirements and the number of sanctions per unemployed increased afterwards. To have a period of comparable rules I disregard the period prior to 2003.

length of unemployment. The number of sanctions of this type basically corresponds to the amount of sanctions of 3 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.[11]

The sample is split according to gender. In addition, I discard unemployed under 26 years old. For this group of individuals the rules are particularly strict. After 6 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 final data sets consist of 85,628 women who experience in total 109,872 unemployment spells of which 1960 receive a sanction. For men I have 79,334 observations with a total of 109,476 unemployment spells of which 3432 receive sanction.[12]

Table 1 shows the distribution of incidents that initiate sanctions and the sanction type imposed.

TABLE 1: DISTRIBUTION OF SANCTION, BY INCIDENTS AND GENDER

			Women			
Sanction	Missed meeting with PES	Neglected job plan agreements	Missed meeting concerning job	Declined job or interview	Did not submit or maintain CV	Sum
2-3 days	1391	237	89	17	44	1710
3 weeks	18	162	105	58	0	250
Sum	1409	399	194	75	44	1960

			Men			
Sanction	Missed meeting with PES	Neglected job plan agreements	Missed meeting concerning job	Declined job or interview	Did not submit or maintain CV	Sum
2-3 days	2522	396	31	5	58	3025
3 weeks	27	310	22	18	0	407
Sum	2547	706	53	23	58	3432

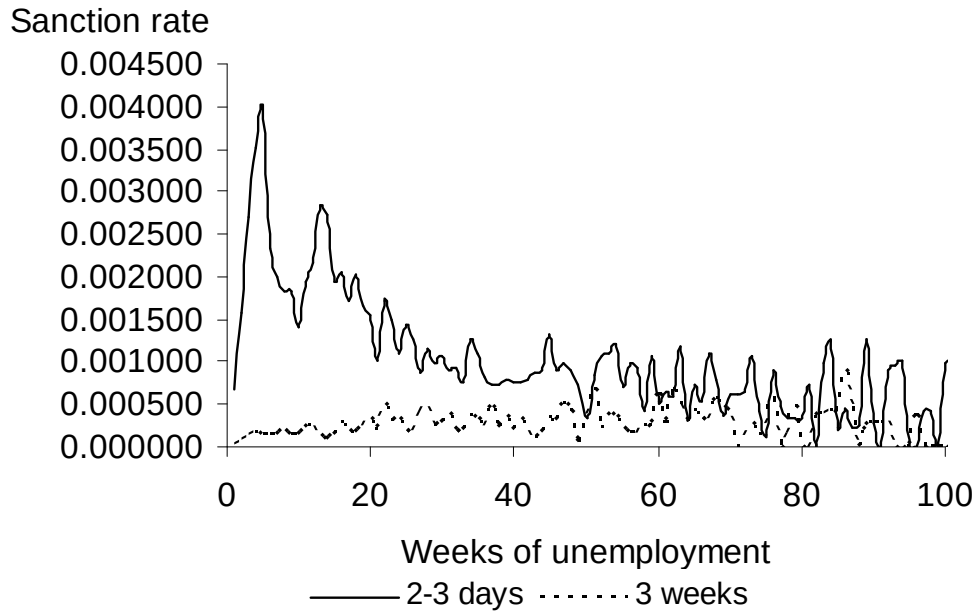
Table 1 shows that the vast majority of sanctions are of short duration and are imposed because the unemployed misses a meeting at the PES. The general pattern is in accordance with the regulations in the sense that more severe sanctions are used to a larger extent in relation to self-inflicted unemployment. There are, however, deviations from this pattern, which suggest some discretionary power to the UI funds. It is interesting to note that women and men differ in the types of eligibility criteria that they get sanctioned for. Whereas

[11] I also did the 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.

[12] Do to computer limitations I have to restrict the analysis to a random subsample of the complete data sets. Still sample sizes are large and also suffciently large to give significant results in the more elaborate analyses that follows.

men tend to avoid meetings, women are more reluctant to accept job offers or attend job interviews.

In terms of timing of sanctions Figure 2 shows the sanction rate for men (the corresponding figure for women exhibits a similar pattern and is left out to save space) for the two different types of sanctions. The sanction rate is the Kaplan-Meier hazard rate for the transition into a sanction over the course of the unemployment spell.



The sanction rate for 2-3 days sanctions increases sharply in the beginning of an unemployment spell coinciding with the first meetings with the PES and then levels out. The sanction rate is reaching a level of around 0.1% weekly sanction rate from week 40 and onwards. The sanction rates for the more severe sanction exhibit a slightly different pattern. First, they are of course less frequently imposed and second there is a slight tendency that imposition of this type of sanction increases as the unemployment period accumulates. Again, it is seen that also this type of sanction is used throughout the unemployment periods. It is crucial for the empirical model described later that there is some variation in the timing at which sanctions occur, and Figure 2 illustrates that this is indeed the case.

3.2 Explanatory Variables

I use the following sets of explanatory variables:

Age: The data set samples individuals between age 26 and 65. UI recipients below 26 years old are subject to a special youth programme which much stricter requirements and

regulations.[13] I include 3 age group dummies, and the unemployed below 30 serve as the reference group.

Unmarried: This measures whether an individual is unmarried and does not cohabit either.

Immigrant: We have two indicators for whether the individual is an immigrant from more or less developed countries. The reference category is native Danes.

UI-fund: I have a set of indicators for UI 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. As shown in Table 2 there are rather large differences in the propensity to sanction members who violate eligibility criteria in the different UI funds.

Table 2 about here

The rather large differences in sanction propensity has 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 towards their members. To accommodate this pattern, I include the unemployment rate for the UI funds in the analysis.

Active Labour Market Policies: I 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. I distinguish between 4 types: private job training, public job training, education, and other.

Labour market history: I have rather detailed information on the history on past labour market performance. I include, for each of the two years preceding the current unemployment spell, the fraction of the year spent on income transfer (UI, SA, temporary leave schemes including parental leave, or other public transfer schemes). Moreover, I use the number of unemployment spells the individual has had over the same period. Finally, I include a variable for accumulated tenure in the UI system. If an unemployed individual has

[13] For details on the youth programme see Jensen et al. (2003).

been unemployed for, say, 3 months and then gets a job for less than 12 months, his tenure in the UI system when he reenters is 3 months.

Table 3 and Table 4 present descriptive statistics for women and men.

Table 3 and 4 about here

3.2.1 Graphical representation of effects of sanctions on exit rate from unemployment

In order to provide a first check of the possible effect of sanctions on the exit rate from unemployment, Figure 3 presents empirical sanction rate hazard functions for individuals who leave unemployment at selected elapsed durations. The figure is inspired by Abbring and van den Berg (2003b). The first sanction rate is estimated for a subsample of individuals who leave unemployment between 4 and 6 weeks of unemployment. The sanction rate depicts a clear increasing trend prior to exit from unemployment, which suggests a positive association between the imposition of sanctions and the exit rate from unemployment. The other three sanctions rates confirm this picture. Even for unemployed with up to one year of unemployment the sanction hazard starts to increase a few weeks before exit is observed.

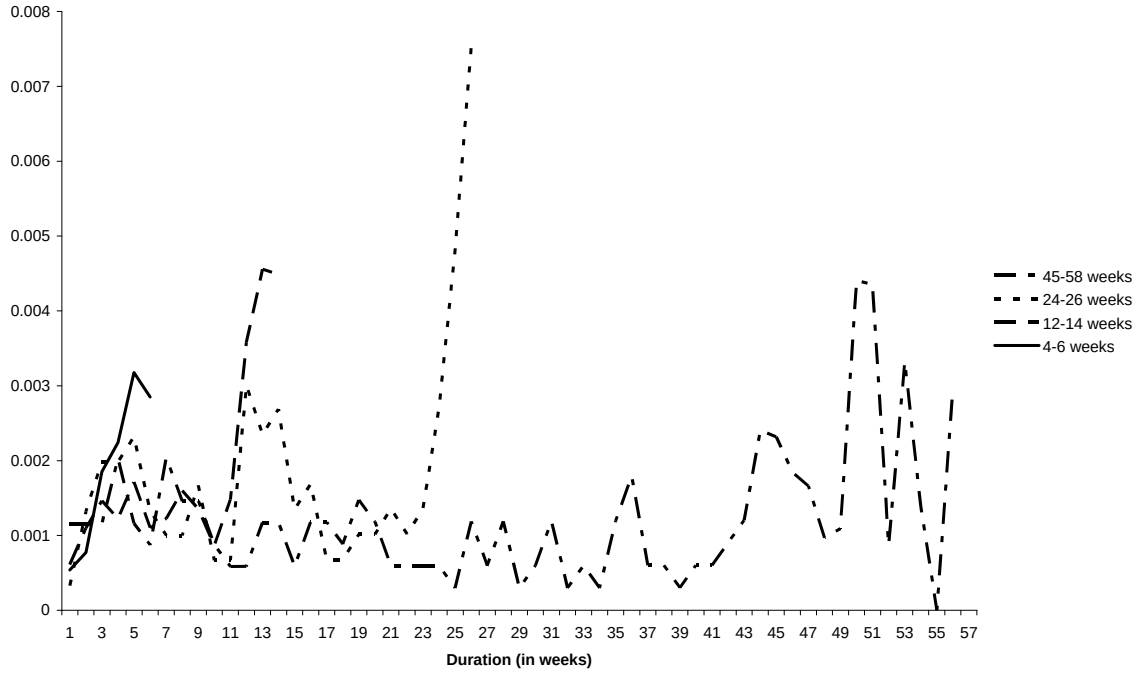


Figure 3: Empirical sanction hazard rates for individuals who leave unemployment at selected elapsed durations.

4 Empirical strategy

Below, I briefly discuss the expected effects on the unemployed's behaviour of a system of monitoring and sanction. Several authors have presented more formal models on these effects (van den Berg et al., 2004, Abbring et al., 2005, Boone & van Ours, 2006, and Lalive et al., 2006). The main points from these papers coincide and the main messages are given verbally. Based on the theoretical foundation I present the empirical model, which is similar to models used by van den Berg et al. (2004), Abbring et al. (2005), and Lalive et al. (2005).

4.1 Theoretical considerations[14]

How would an unemployed worker who endogenously determines her search effort respond to a system of monitoring and sanctions? If the requirement imposed by the system (which for simplicity is assumed to consist of a certain level of search effort) is less strict than her own optimization would imply the answer is that nothing would change. The more interesting case is when at least some workers have as their private optimum a search level that is below the formal requirements. These workers face a trade-off between keeping a reduced search level and facing the risk of being caught or increasing their search level to comply with the eligibility criteria. Clearly, in both circumstances the utility of being unemployed decreases and the unemployed respond by lowering their reservation wages and if everything else is equal the exit rate from unemployment increases.[15] To be more precise several effects are possible. First, the general effect of increasing search effort and reducing reservation wages for a substantial amount of the unemployed could increase job finding rates even before a violation of requirements is observed and a sanction is imposed. This effect is labeled the ex ante effect. Second, there are ex post effects. These come in different shapes. If, as is the case in many countries, the unemployed are being informed that they are observed not to fulfill a given eligibility criteria and that the PES has submitted a notification there can be an additional effect of the system even before a sanction is imposed. This is denoted the *warning* effect (as in Lalive et al., 2005). An additional effect arises from the imposition of the sanction. This is the *direct* effect and leads to a discrete decrease in reservation wages as the benefit level is immediately reduced. When the sanction periods end and benefits are back at their original level it could be expected that unemployed maintain a higher search effort realizing that they are under increased surveillance. In fact, the data used in

[14] See van den Berg & van der Klaauw (2005) for a related informal description of the effects of monitoring and sanctions.

[15] Although it could be empirically relevant, I do not consider exit rates out of the labour force or into other means of public support in this analysis.

this analysis suggest that this is the case since very few (less than 10% of the individuals sanctioned) receive a second sanction (similar low levels of recidivism are found in the Dutch and Swiss studies). Hence, it is expected that the effect of a sanction extends to the period after the sanction ends.

To sum up, there are several expected effects from monitoring and sanctions, and the purpose of the remainder of this paper is to estimate as many as possible given the constraints imposed by the data set. All effects mentioned above suggest that monitoring and sanction increase the job findings rate. However, there are exceptions. As shown by van den Berg & van der Klaauw (2006) monitoring can imply that unemployed reduce the amount of informal job search. If informal job search is more effective than formal job search then monitoring may easily have a perverse effect on reemployment probabilities. In this case monitoring is clearly an ineffective policy. van den Berg & van der Klaauw (2006) exploit data from a controlled social experiment in the Netherlands and find that especially for well-qualified individuals the net effects are very small. There are, however, more positive results for weaker unemployed (e.g older and long-term unemployed).

4.2 Econometric model

In order to investigate the effect of a sanction on the exit rate from unemployment I estimate a duration model where the random variable is the time spent in unemployment. Since the occurrence of a sanction is potentially endogenous to the unemployment process the goal is to disentangle the selection effect from the causal effect. Following van den Berg et al. (2004), Abbring et al. (2005), and Lalive et al. (2005)) I apply the timing-of-event model of Abbring and van den Berg (2003a). That is, I estimate the process out of unemployment simultaneously with the process of receiving a sanction allowing the two processes to be interdependent through the error structure. Below the finer details of the timing-of-event model are presented.

4.2.1 Timing-of-events method

The estimation strategy requires simultaneous modelling of the sanction rate and the unemployment hazard. Let $T_{u(nemployment)}$ and $T_{s(anction)}$ denote the duration of unemployment and the duration till an agent receives a sanction. Both are continuous nonnegative random variables. I allow them to interact through correlation of unobservables and through a possible treatment effect of receiving the sanction on the unemployment hazard. I assume that all individual differences in the joint distribution of the processes can be characterized by observed explanatory variables, x, and unobserved variables, v. The occurrence of a

sanction and the exit rate out of unemployment are characterized by the moments at which they occur, and I am interested in the effect of the realization of T_s on the distribution of T_u. The distributions of the random variables are expressed in terms of their hazard rates $h_s(t|x_{s,t}, v_s)$ and $h_u(t|t_s, x_{u,t}, v_u)$. Conditional on x and v, I 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 $h_u(t|t_s, x_{u,t}, v_u)$ for $t > t_s$. This rules out that t_s affects $h_u(t|t_s, x_{u,t}, v_u)$ for $t \leq t_s$, 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.

Given the independence and no anticipation assumptions, the causal effect of a sanction on the unemployment hazard rate is identified by a mixed proportional hazard model. That is, it is a product of a function of time spent in the given state (the baseline hazard), a function of observed time-varying characteristics, x_t, and a function of unobserved characteristics, v

$$h\left(t|x_t, v\right) = \lambda\left(t\right) \cdot \varphi\left(x_t, v\right),$$

where $\lambda\left(t\right)$ specified as $exp(\lambda_m(t))$ is the baseline hazard and $\varphi\left(x_t, v\right)$ is the scaling function specified as $exp(\beta' x_t + v)$. More specifically the system of equations is:

$$h_s(t|x_{s,t}, v_s) = \exp(\beta'_s x_{s,t} + \beta'_{s,UI\ fund} x_{UI\ fund,t} + \lambda_s(t) + v_s) \tag{1}$$

$$h_u(t|t_s, x_{u,t}, v_u) = \exp(\beta'_u x_{u,t} + \beta'_{u,UI\ fund} x_{UI\ fund,t} + \delta D(t_s) + \lambda_u(t) + v_u),$$

where x_u, x_s are vectors of possibly time-varying covariates, x_{UI} is a vector of UI-fund dummy variables, $D(t_s)$[16] is a time-varying indicator variable taking the value 0 before the sanction is imposed, and 1 after, and v_s and v_u are unobserved heterogeneity terms.

Intuitively, the timing-of-events method uses variation in unemployment duration and in duration until a sanction (conditional on observed characteristics) to identify the unobserved heterogeneity distribution. The selection effect is captured by the correlation between v_u and v_s while the causal effect of the sanction on unemployment duration is captured by the effect of being sanctioned conditional on the observables and v_s and v_u. The advantage of this identification strategy is that it does not require an exclusion restriction. The data do not contain any obvious candidate as instrument. Likewise, it is possible that any information that can be used to predict the risk of being sanctioned can be obtained by unemployed

[16] In extended models I introduce two dummy variables for the different levels of strictness of the sanctions, allow the effects to change over time and allow for interactions between sanctions and the other explanatory variables.

agents and therefore looses credibility as instrument. In addition, it is hard to imagine that policy makers would conduct a social experiment where unemployed are sanctioned at random, although such an experiment could provide a cleaner picture of the effects of sanctions on the exit rate from unemployment.

Since the timing of warnings and sanction coincide I can only estimate one common ex post effect, δ. To estimate the ex ante effect I use UI fund membership information. There are 32 different UI funds and Table 2 shows that they have very different inclinations to impose sanctions. I use this information as a proxy for the probability of being sanctioned in response to a notification of violation. This approach is similar in spirit to Lalive et al. (2005). Here differences across Swiss public employment offices are exploited. Basically, membership is determined by educational type and industry. This implies some degree of exogeneity with respect to the probability of being sanctioned. There could be both observed and unobserved reasons justifying different behavioural responses by the UI funds. To take this into account I look at the relationship between β_u and β_s. Indication of an ex ante effect would result in a positive relationship between the two vectors of coefficients. UI funds that are more prone to enforce sanctions would experience that their members incorporate this information in the optimization procedure and consequently they are more likely to leave unemployment faster.

4.2.2 Parametrization

The baseline hazard, $\lambda(t)$, is flexibly specified as a piecewise-constant hazard, where I divide the time line into a number of intervals. For the both hazards, the time line is divided into $M = 4$ intervals measured in weeks (4-14, 14-24, 24-40, 40-) and $\lambda_i(t) = (\lambda_{i1}, ..., \lambda_{i4})$, $i = u, s$ denote the estimated parameters in these intervals.

The unobserved heterogeneity terms are assumed to follow a discrete with only two mass-points. One of the mass-points in each marginal distribution is normalized to zero so $V_u \in \{v_u^1 = 0, v_u^2\}$ and $V_s \in \{v_s^1 = 0, v_s^2\}$. This normalization is required as a consequence of the piecewise constant baseline specification. The correlation between V_u, and V_p is important because this is the way this procedure allows selection on unobservables without a resulting bias in the estimates. The associated probabilities for all the possible combinations from the

discrete distributions are defined as

$$\begin{aligned} P_1 &= \Pr(V_u = v_u^1, V_s = v_s^1) \\ P_2 &= \Pr(V_u = v_u^2, V_s = v_s^1) \\ P_3 &= \Pr(V_u = v_u^1, V_s = v_s^2) \\ P_4 &= \Pr(V_u = v_u^2, V_s = v_s^2) \end{aligned}$$

where $0 \leq P_j \leq 1,\ j = 1, 2, 3, 4$ and $\sum_{j=1}^{4} P_j = 1$. For more details on this class of mixture distributions in duration models, see e.g., van den Berg (2001).

5 Results

Before I proceed to the results of this paper I briefly sketch the main findings of the previous literature. van den Berg et al. (2004) investigate how Dutch welfare recipients react to sanctions. They find that the exit rate from welfare assistance to employment increases by more than 140% after a sanction is imposed. In addition, they find that the effect of a sanction is higher in the period after the sanction period ends than during the sanction period. This is presumably due to the fact that it takes some time before the adjusted job search behaviour pays off. They do not find that harder sanctions have stronger effects nor dothey also find any evidence that the effects of sanctions differ across the population.

Abbring et al. (2005) use a sample of Dutch UI recipients, for which the exit rate increases by 36%-98% (they look at four different samples). They do not find time varying effects of sanctions nor that the effects differ across the population.

Lalive et al. (2005) look at Swiss UI recipients. The novelty of this paper is that they have access to the date on which the unemployed are informed that they are under suspicion of violating the eligibility criteria and that they can expect a sanction if they are found guilty. They find that the warning increases the job finding rate by 25% and that the job finding rate experiences an additional increase of 19.8% when a sanctions is imposed. They find that the effect of a warning drops by 16% after 30 days. The effect of being sanctioned does not significantly differ over time. The authors do not find heterogeneous effects of sanction across the population. They do however estimate an ex ante effect by regression the UI-fund coefficients from the unemployment hazard on the UI fund coefficients from the sanction hazard and find that unemployed attached to lax public employment offices stay longer on UI benefit payments. They emphasize that this effect is important since it affects the whole population of unemployed and not only those who are sanctioned.

5.1 The effect of sanction on the exit rate from unemployment

Turning to the results for the Danish case I present in Table 5 and Table 6 the results for women and men.

Table 5 and Table 6 around here

The first columns present the results from a model where I treat the imposition of a sanction as an exogenous event. The tables show that the exit rate from unemployment increases by more than 30% after the imposition of a sanction. The last columns in the tables present the results from the timing-of-event model where I also model the sanction rate and allow for correlation between the unobservable heterogeneity components of the unemployment hazard and the sanction hazard. For men I could not identify the full model and I present the results from a restricted version where I impose perfect correlation (either -1,0, or 1) between the unobservables. For both genders I find that the effects of sanctions are enhanced once I correct for selection effects. This is most pronounced for women, where the effect of sanction now leads to an increase in the subsequent hazard rate out of unemployment of 98%. For men the hazard increases by 55%. This suggests that based on unobservables those who are less likely to leave unemployment are more likely to receive a sanction. To the extent that unobserved heterogeneity captures a virtue like motivation to find employment, the negative correlation reveals that this is exactly what leads to a sanction.[17]

In relation to the other studies in this literature the results presented here corroborate the picture that sanction do affect the incentives of the unemployed in the expected direction.

A quick glance through Table 5 and 6 confirms the typical picture in relation to length of unemployment spells; individuals who are older, who are non-native, who have accumulated more experience on public support, and who are in a industry with more unemployment have longer spells. The sanction rate is higher for young people, singles and immigrants and descendants and as expected higher for individuals who begin unemployment in 2004 and 2005 compared to 2003. Interestingly, the UI-fund specific unemployment rate do not significantly affect the sanction rate. Although the coefficient is negative as expected it is far from significant. This suggests that the pattern observed in Table 2 is driven by other factors than different labour market conditions across UI-funds.

[17] A negative correlation is also found in van den Berg et al. (2004) and Lalive et al. (2005), whereas, Abbring et al. (2005) find positive correlation between the unobserved heterogeneity terms.

5.2 Do more severe sanctions have larger effects?

The previous literature did not find that more severe sanctions implied a larger response in the exit rate from unemployment. In Table 7 and 8 I present the results from a model where I distinguish between two types of sanctions. As shown in Section 2 most sanctions are relatively short and on average only withhold UI benefits for 2-3 days. The more severe sanction that imply a loss of benefits for 3 weeks are only used in around 15% of the cases. Due to the small amount of sanctions of 3 weeks duration I do not model the sanction rate separately for the two types of sanctions.

Table 7 and Table 8 about here

For both men and women the effects of the more severe sanctions are much more pronounced. The exit rate increases with more than 200% for women and more than 100% for men. Loosing UI benefits for almost a month has a remarkable effect on job finding rates. It should be noticed that this finding do *not* reflect that individuals simply leave the unemployment registers for 3 weeks and then return ones 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 finding that tougher sanctions have a larger effect is new to the literature but by no means surprising if unemployed respond to economic incentives. It does, however, emphasize to policy makers that there is a real trade off between the probability of being caught (which is expensive for the policy makers) and the strength of the punishment (which can be expensive for the unemployed). In the recent changes in legislation on monitoring and sanctions in Denmark the emphasis has been on increasing monitoring and extending the eligibility criteria, but not on increasing the level of punishment. The results presented above suggest that a more cost effective way to get unemployed back into employment by means of a system of monitoring and sanctions could be to increase the punishment.

5.3 Is the effect of sanctions time varying?

As argued earlier the effect of sanctions might change over the spell of unemployment. Previous literature finds that the long-term effects seem to dominate the direct effect of sanctions, although the differences are rather modest.

Table 9 and 10 in the appendix, present the results for men and women distinguishing between the effects of sanctions (here I do not distinguish between the two types of sanctions, since the distribution of the two types are the same for men and women) in the first month

after a sanction is imposed, in the two susequent months and in the period after 3 months.

For both men and women the effect is remarkably high in the first month after a sanction has been imposed, in the two months that follow the effect drops sharply, but is still positive. After 3 months the effect of imposing a sanction on the exit rate from unemployment is no longer significant. The time profile is depicted in Figure 3:

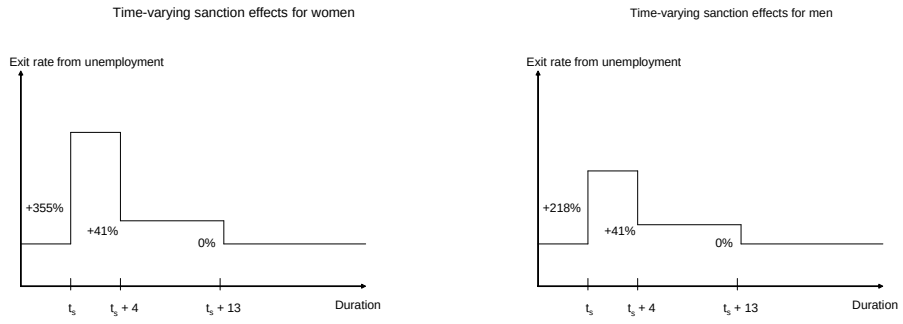


Figure 3: Time-varying effects of sanction on the exit rate from unemployment

Figure 3 shows that the effects of sanctions are relatively short-lived, which – given the relatively mild sanctions in Denmark – is not too surprising. One interpretation of Figure 3 is that perhaps sanctions affect those unemployed who have an easier time finding employment most. Ones they realize that they are monitored and punished if they do not comply with the eligibility criteria they might choose to accept job offers or start searching more actively for employment. Those not able to find jobs in the short run are those with less favourable employment prospects and are not affected in the longer term of the imposition of a sanction. To take a closer look at the possible heterogeneous effects of sanctions the next subsection introduces interaction terms between sanctions and a number of individual characteristics.

5.4 Do some unemployed react stronger to sanctions than others?

It has been argued (see e.g. Hasenfeld et al., 2004) that one reason some unemployed fail to comply with the eligibility criteria is that they simply do not have the qualifications necessary to find employment and hence that sanctioning these individuals would have no incentive effect. One way to investigate whether some unemployed are less responsive to sanctions in to estimate heterogeneous effects of sanctions.

In the previous literature there have been no indications that the effects of sanctions differ across the population. That could to some extent be caused by the relatively small data sets in some of these studies.

Table 11 presents the results from a model where I have interacted a number of the explanatory variables with the sanction dummies for 2-3 days sanctions and 3 weeks sanctions.

Table 11 around here

For women, I only find very modest differences across the population for the short sanctions. For the tougher sanctions, I find that women who are single, older, have recieved public support for more than 25% of last year, and are non-Danes have a stronger response to sanctions than their counterparts.

For men, I find that older unemployed respond to sanctions with a higher exit rate than younger men. The same is true for immigrants and descendants compared to natives. Interestingly, these groups are expected to have a weaker labour market attachment in the sense that they have longer spells of unemployment than younger men and native Danes respectively. Consequently, sanctions also seem to affect individuals who traditionally have long spells of unemployment. Table 11 also shows that unmarried men respond less to sanctions than married men, whereas individuals who have spent more than 25% of the previous year on public support do not seem to react differently to sanctions than individuals with a higher level of self-support. All in all, the heterogeneous effects suggest that weaker unemployed are also affected by sanctions, and for some characteristics they in fact react stronger than more employable groups. In some sense this finding corroborates the analysis by van den Berg et al. (2004), who analyze a group of welfare recipients in the Netherlands and find large positive responses to sanctions.[18]

5.5 Ex ante effects of sanctions

Two recent pieces of evidence suggest that unemployed also react to the risk of being sanctioned and not only when a sanction is imposed. An experimental study by Boone et al. (2004) find that both ex ante and ex post effects of sanctions affect the outflow from unemployment and that ex ante effects are bigger than ex post effects. An empirical study by Lalive et al. (2005) that exploits differences in the intensity with which Swiss public employment service units (PES) sanction unemployed also find positive ex ante effects. In local labour markets where the PES are more lax the unemployed stay longer on UI benefits. The latter findings might be subject to policy endogeneity issues in the sense that the head of the particular PES might react to the labour market conditions for the unemployed of her area.

[18] It should be noted that the economic conditions in Denmark has been very positive during the sampling period. This could affect the findings of the study since the demand for labour have been quite high and many industries lack labour. In future research it could be interesting to test whether the results are business cycle sensitive. This has to await data for a complete business cycle, though.

In the current study I exploit differences in the sanction rate between different UI funds to make an analysis similar in spirit to Lalive et al. (2005). As shown in Table 2 there are rather large discrepancies in the propensity to sanction unemployed across UI funds. Clearly, some of this difference might reflect the labour market situation for the members, but as shown in the estimated sanction rate models presented above, the UI fund unemployment rate did not have a significant effect on the sanction rate.

Figure 4 is a graphical illustration of the association between the UI fund specific coefficients in the exit rate hazard and the sanction rate hazard. That is, these coefficients are estimated in a model where I also condition on observed (including UI fund specific unemployment rates) and unobserved characteristics of the unemployed.

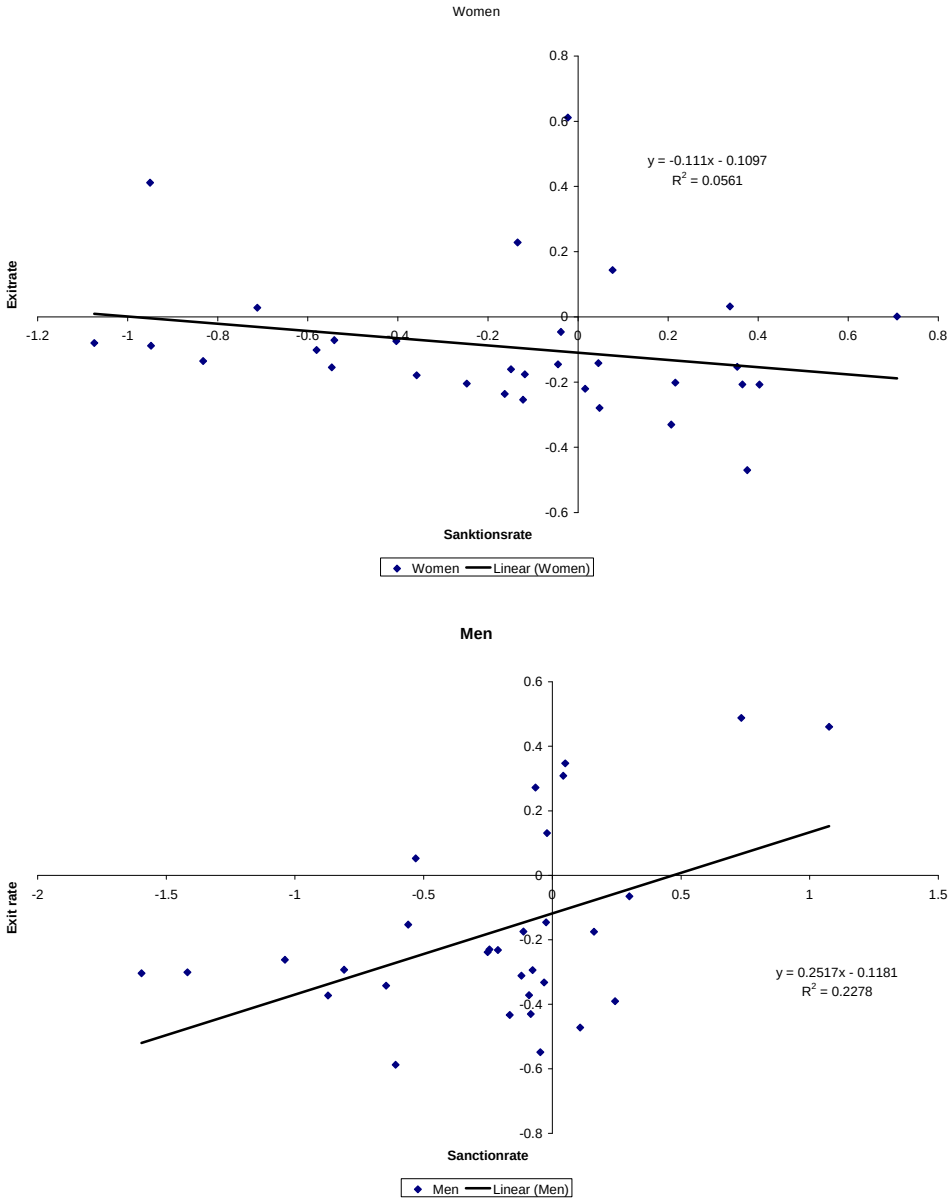


Figure 4: Ex ante effects of sanctions

There are no significant ex ante effects for women, but for men the association between the risk of being sanctioned and the exit rate from unemployment is significant and positive, which suggests that UI funds that apply sanctioning of non-compliance also have to pay UI benefits for shorter periods of time.

In Rosholm & Svarer (2004) ex ante effects of active labour market programmes are estimated for a sample of Danish UI recipients. In accordance with the findings in Figure 4 they also find that men respond to the risk of activation, but women do not.

With the available data it is hard to ensure that the patterns observed in Figure 4 can be given a causal interpreation. There is no information that can be used to determine

whether the unemployed are aware how strictly their UI fund administers the rules. The figures should be interpreted with this in mind.

6 Concluding remarks

The paper shows that unemployed respond strongly to the imposition of sanctions, also when these are relatively mild. For both males and females the exit rate out of unemployment increases by more than 50% following a sanction. This result corroborates previous literature on the effects of sanction on the exit rate from unemployment. In relation to the development in aggregate unemployment in Denmark in recent years it is likely that the strengthening of the eligibility criteria and the increased used of sanctions together with more emphasis on other active labour market policies have contributed to the decline in the number of unemployed. This highlights the need to look at all aspects of the Danish labour market when discussing the virtues of the highly celebrated Danish flexicurity model (cf. the analysis in Andersen & Svarer, 2007).

The paper also finds that harder sanctions have a larger effect, that the effect of sanctions wears out after around 3 months, that particular groups of unemployed are more responsive to sanctions than others and that men react ex ante to the risk of being sanctioned in the sense that males who face higher sanction risks leave unemployment faster.

In the data set used in the current analysis I have no information on the correspondence between the case workers and the unemployed in the period before a sanction is imposed. It could be the case that the interaction between them has increased and that the unemployed experiences a loss in the utility of being unemployed even before the sanction is imposed simply due to increased effort. More information along those dimensions could make an interesting contribution to the identification of which factors are important for the rather large effect of sanction found in this paper and in general in the literature on the effects of sanctions.

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Tables

Table 2: Sanction rates by UI fund

Unemployment insurance fund	Fraction of notifications that are followed by sanction		
	2003	2004	2005
Academics	42%	43%	31%
Women workers	43%	37%	34%
Firm salaried employess	46%		
Business (sales people)	52%	46%	36%
General workers	53%	41%	34%
Commercial language personnel	53%	57%	44%
Engenieers	56%	52%	39%
Food and allied workers	56%	49%	36%
Commercial and clerical employees	58%	50%	45%
Christian trade union	59%	49%	44%
STA (public- and telecom employees)	59%	50%	68%
Restaurants	60%	51%	55%
Wood and building	62%	52%	54%
FOA (public sector employees)	62%	57%	52%
Teachers	63%	55%	39%
Business economists	66%	36%	30%
FTF-A (Salaried empl. and civil servants)	66%	56%	48%
Nursery and childcare assistants	67%	56%	49%
Salaried employees	68%	62%	60%
Painters	71%	68%	67%
Childhood teacher and youth educators	72%	55%	45%
Computer professionals	74%	65%	57%
Technicians	76%	57%	47%
Social educators	80%	61%	50%
Managers and executives	80%	68%	66%
Metal workers	82%	58%	62%
DANA (Self-employed)	83%	64%	55%
ASE (Self-employed)	83%	62%	60%
Journalists	84%	57%	44%
Electricians	86%	69%	82%
Plummer and pipefitters	86%	69%	65%
Masters Unemployment Insurance Fund	87%	48%	31%
Wage earners	94%	58%	60%
Health organizations	95%	69%	77%

Source: National Directorate of Labour (2006b)

Table 3: Descriptive statistics for women

	Mean	Std. Dev
Age		
Under 30	0.162	
30-39	0.352	
40-49	0.242	
Over 50	0.234	
Population category		
Native	0.889	
Immigrant from developed country	0.051	
Immigrant from less developed country	0.059	
Single	0.358	
Fraction of year on public transfers, last year	0.329	0.357
Fraction of year on public transfers, two years ago	0.321	0.324
Number of unempl. spells, last year	0.822	0.948
Number of unempl. spells, two years ago	1.338	1.473
Participate in AMLP:		
Private sector empl. subsidy	0.001	
Public sector temp. job	0.002	
Other programme	0.006	
Education	0.007	
Have ended participation in ALMP:		
Private sector empl. subsidy	0.004	
Public sector temp. job	0.009	
Other programme	0.170	
Education	0.282	
Average unemployment rate in UI fund (per cent)	8.435	3.599
Experience as UI claimant (weeks)	28.179	62.417
Unemployment insurance funds, %:		
Restaurants	1.89	
Wood and builders	1.11	
Journalists	1.54	
Social educations	2.23	
General workers	9.99	
FOA (Public sector employees)	7.35	
Teachers	2.24	
Nursery and childcare assistants	2.48	
Wage earners	0.75	
Metal workers	0.31	
Food and allied workers	1.98	
Electricians	0.03	
Painters	0.51	
Women workers	8.71	
Commercial and clerical workers	18.22	
STA (public- and telecom employees)	0.5	
Salaried employees	0.52	
Managers and executives	0.81	
Technicians	1.55	
Christians	9.76	
Health organizations	1.36	
Childhood teachers and youth educators	3.79	
Business (sales people)	0.4	
Free salaried employees	1.18	
Engenieers	0.69	
Masters Unemployment Insurance fund	3.82	
Akademics	3.37	
FTF-A (Salaried empl. and civil servants)	7.81	
ASE (Self-employed)	2.74	
DANA (Self-employed)	0.83	
Computer professionals	0.28	
Business economists	1.11	
Other UI fund	0.14	
Number of persons	85638	
Number of sanctions	1960	
- hereof sanction no. 2	150	
Average duration of unemployment spell (weeks)	32.14	27.01
Number of unemployment spells	109872	
Proportion of spells that are right censored	0.34	

Table 4: Descriptive statistics for men

	Mean	Std. Dev
Age		
Under 30	0.147	
30-39	0.302	
40-49	0.252	
Over 50	0.305	
Population category		
Native	0.889	
Immigrant from developed country	0.048	
Immigrant from less developed country	0.062	
Single	0.460	
Fraction of year on public transfers, last year	0.236	0.301
Fraction of year on public transfers, two years ago	0.223	0.270
Number of unempl. spells, last year	0.857	0.933
Number of unempl. spells, two years ago	1.434	1.505
Participate in ALMP:		
Private sector empl. subsidy	0.002	
Public sector temp. job	0.001	
Other programme	0.005	
Education	0.008	
Have ended participation in ALMP:		
Private sector empl. subsidy	0.005	
Public sector temp. job	0.005	
Other programme	0.017	
Education	0.026	
Average unemployment rate in UI fund (per cent)	8.791	3.767
Experience as UI claimant (weeks)	20.782	49.099
UI funds, %:		
Restaurants	1.23	
Wood and builders	5.72	
Journalists	0.74	
Social educations	0.62	
General workers	34.01	
FOA (Public sector employees)	0.9	
Teachers	0.85	
Nursery and childcare assistants	0.29	
Wage earners	0.93	
Metal workers	9.01	
Food and allied workers	1.87	
Plummer and pipefitters	0.83	
Electricians	1.61	
Painters	1.45	
Commercial and clerical workers	4.97	
STA (public- and telecom employees)	0.63	
Salaried employees	1.41	
Managers and executives	2.95	
Technicians	1.24	
Christians	7.49	
Health organizations	0.04	
Childhood teachers and youth educators	0.56	
Business (sales people)	1.4	
Free salaried employees	0.45	
Engenieers	3.27	
Masters Unemloyment Insurance fund	2.47	
Akademics	2.26	
FTF-A (Salaried empl. and civil servants)	4.25	
ASE (Self-employed)	3.19	
DANA (Self-employed)	1.26	
Computer professionals	0.71	
Business economists	1.28	
Other UI fund	0.1	
Number of persons	79334	
Number of sanctions	3432	
- hereof sanction no. 2	339	
Average duration of unemployment spells (weeks)	25.83	23.85
Number of unemployment spells	109476	
Proportion that are right censored	0.238	

Table 5: Results for exit rate from unemployment, women

	Basic model		Timing-of-events model			
	Exit rate		Exit rate		Sanction rate	
	Coeff.	Std. E.	Coeff.	Std. E.	Coeff.	Std. E.
Sanction	**0.321**	0.031	**0.666**	0.059		
Age 30-39	**-0.057**	0.013	**-0.055**	0.013	-0.081	0.065
Age 40-49	-0.019	0.014	-0.019	0.014	**-0.430**	0.078
Age 50 and above	**-0.368**	0.015	**-0.371**	0.015	**-0.934**	0.091
Single	**0.016**	0.009	**0.019**	0.009	**0.352**	0.053
Immigrant from developed country	**-0.086**	0.019	**-0.088**	0.020	**0.402**	0.097
Immigrant from less developed country	**-0.146**	0.020	**-0.140**	0.020	**0.761**	0.088
Year, 2004	**-0.054**	0.010	**-0.066**	0.010	**0.261**	0.054
Year, 2005	**-0.484**	0.027	**-0.496**	0.027	**0.503**	0.103
Public transfers rate one year ago	0.013	0.026	0.014	0.027	-0.105	0.144
Public transfers rate two years ago	**-0.488**	0.031	**-0.499**	0.032	**0.309**	0.168
Number of unempl. spells one year ago	**0.077**	0.008	**0.073**	0.008	**-0.089**	0.050
Number of unempl. spells two years ago	**0.077**	0.005	**0.083**	0.005	-0.044	0.033
Participate in ALMP:						
Private sector empl. Subsidy	**-0.187**	0.051	**-0.212**	0.052	-0.409	0.328
Public sector temp. Job	**-0.719**	0.040	**-0.741**	0.041	**-0.404**	0.205
Other programme	**-0.365**	0.043	**-0.367**	0.043	**-0.459**	0.274
Education	**-1.029**	0.029	**-1.057**	0.030	**-0.524**	0.130
Have ended ALMP:						
Private sector empl. Subsidy	**0.251**	0.055	**0.264**	0.056	0.073	0.329
Public sector temp. Job	**-0.173**	0.043	**-0.183**	0.043	-0.234	0.246
Other programme	**-0.088**	0.018	**-0.099**	0.019	**-0.565**	0.130
Education	**-0.134**	0.019	**-0.142**	0.019	-0.211	0.112
Experience as UI claimant	**-0.016**	0.009	**-0.019**	0.009	**-0.090**	0.048
Average unemployment rate in UI fund	**-0.013**	0.008	**-0.016**	0.008	-0.040	0.041
UI Funds						
Journalists	-0.061	0.040	**-0.080**	0.041	**-1.074**	0.524
Health organization	**0.453**	0.093	**0.411**	0.094	**-0.950**	0.540
Free salaried employees	**-0.146**	0.057	**-0.179**	0.058	-0.358	0.340
MA/PHD in humanities	**-0.125**	0.026	**-0.136**	0.027	**-0.833**	0.184
Academics	0.056	0.054	0.028	0.055	**-0.713**	0.298
Business economists	-0.048	0.057	-0.089	0.058	**-0.948**	0.415
Electricians	-0.029	0.211	-0.221	0.334	0.016	7.483
Business (sales people)	**-0.134**	0.079	**-0.146**	0.081	-0.045	0.426
Engenieers	-0.088	0.068	-0.102	0.069	-0.581	0.427
Wood and building	**0.121**	0.040	**0.144**	0.041	0.077	0.279
Social educators	-0.039	0.059	-0.074	0.060	-0.404	0.317
General workers	**0.209**	0.033	**0.228**	0.033	-0.134	0.174
Teachers	-0.055	0.077	-0.071	0.077	-0.541	0.402
Nursery and childcare assistants	**-0.203**	0.030	**-0.205**	0.031	-0.247	0.187
Painters	**0.633**	0.059	**0.611**	0.060	-0.023	0.433
Childhood teacher and youth educators	**-0.140**	0.063	**-0.155**	0.063	-0.547	0.336
Professional technicians	**-0.156**	0.037	**-0.161**	0.038	-0.149	0.224
Restaurants	0.012	0.047	0.001	0.048	**0.708**	0.233
Wage earners	**-0.158**	0.076	**-0.176**	0.077	-0.118	0.375
Food and allied workers	0.028	0.033	0.032	0.034	**0.337**	0.184
Commercial and clerical employees	**-0.223**	0.036	**-0.236**	0.036	-0.163	0.190
STA (public- and telecom employees)	**-0.215**	0.085	**-0.254**	0.086	-0.122	0.456
Christian trade union	**-0.202**	0.021	**0.207**	0.021	**0.365**	0.113
FTF-A (Salaried empl. and civil servants)	-0.031	0.052	-0.046	0.052	-0.038	0.274
Computer professionals	**-0.326**	0.093	**-0.279**	0.093	0.048	0.447
FOA (public sector employees)	**-0.134**	0.062	**-0.142**	0.062	0.045	0.318
Metal worker	**-0.252**	0.079	**-0.208**	0.080	0.403	0.327
Salaried employees	**-0.171**	0.070	**-0.202**	0.071	0.216	0.323
Managers and executives	**-0.135**	0.075	**-0.154**	0.076	0.353	0.366
ASE (Self-employed)	**-0.471**	0.059	**-0.470**	0.060	0.376	0.295
DANA (Self-employed)	**-0.314**	0.069	**-0.330**	0.070	0.207	0.309
Other UI fund	-0.173	0.138	-0.204	0.141	-0.281	0.769
v_u^2	**-0.551**	0.131	**-1.971**	0.318		
v_s^2			**-2.379**	0.779		
$P(v_u=v_u^1, v_s=v_s^1)$			0.015			
$P(v_u=v_u^1, v_s=v_s^2)$			0.025			
$P(v_u=v_u^2, v_s=v_s^1)$			0.910			
$P(v_u=v_u^2, v_s=v_s^2)$			0.048			
Number of individuals	31		85638			

Note: To save space estimates for baseline hazards are not presented .
Bold figures denote significance at 5% level

Table 6: Results for exit rate from unemployment, men

	Basic model		Timing-of-events model			
	Exit rate		Exit rate		Sanction rate	
	Coeff.	Std. E.	Coeff.	Std. E.	Coeff.	Std. E.
Sanction	**0.359**	0.020	**0.439**	0.040		
Age 30-39	**-0.079**	0.012	**-0.076**	0.012	**-0.330**	0.047
Age 40-49	**-0.165**	0.013	**-0.165**	0.013	**-0.789**	0.056
Age 50 and above	**-0.470**	0.014	**-0.469**	0.014	**-1.458**	0.063
Single	**-0.145**	0.008	**-0.146**	0.008	**0.338**	0.040
Immigrant from developed country	**-0.191**	0.018	**-0.196**	0.018	**0.144**	0.076
Immigrant from less developed country	**-0.369**	0.018	**-0.373**	0.018	**0.300**	0.062
Year, 2004	**-0.035**	0.009	**-0.039**	0.009	**0.131**	0.038
Year, 2005	**-0.056**	0.027	**-0.112**	0.027	**0.446**	0.099
Public transfers rate two year ago	-0.005	0.030	-0.004	0.030	**0.208**	0.125
Public transfers rate two years ago	**-0.673**	0.035	**-0.678**	0.035	0.185	0.147
Number of unempl. spells one year ago	**0.044**	0.008	**0.041**	0.008	**-0.095**	0.039
Number of unempl. spells two years ago	**0.092**	0.005	**0.093**	0.005	-0.012	0.025
Participate in ALMP:						
Private sector empl. Subsidy	**-0.326**	0.037	**-0.331**	0.038	**-0.478**	0.146
Public sector temp. Job	**-0.859**	0.052	**-0.816**	0.052	**-0.603**	0.199
Other programme	**-0.205**	0.038	**-0.210**	0.038	**-0.812**	0.217
Education	**-0.735**	0.027	**-0.724**	0.027	**-0.726**	0.117
Have ended ALMP						
Private sector empl. Subsidy	**0.200**	0.040	**0.227**	0.040	0.032	0.193
Public sector temp. Job	**-0.353**	0.057	**-0.327**	0.057	**-0.447**	0.258
Other programme	**-0.180**	0.018	**-0.182**	0.019	**-0.320**	0.087
Education	**-0.117**	0.017	**-0.115**	0.017	**-0.225**	0.080
Experience as UI claimant	**-0.145**	0.012	**-0.144**	0.012	**-0.277**	0.052
Average unemployment rate in UI fund	-0.012	0.017	**-0.051**	0.017	-0.074	0.069
UI Funds						
MA/PHD in humanities	**-0.392**	0.044	**-0.301**	0.044	**-1.418**	0.218
Business economists	**-0.283**	0.039	**-0.304**	0.039	**-1.596**	0.262
Academics	**-0.227**	0.034	**-0.262**	0.034	**-1.039**	0.166
Engineers	**-0.287**	0.039	**-0.373**	0.039	**-0.872**	0.170
Journalists	**-0.254**	0.062	**-0.153**	0.063	-0.560	0.329
Business (sales people)	**-0.220**	0.049	**-0.293**	0.049	**-0.809**	0.248
Electricians	**0.104**	0.044	0.052	0.044	**-0.531**	0.210
Computer professionals	**-0.506**	0.060	**-0.430**	0.061	-0.084	0.218
FTF-A (Salaried empl. and civil servants)	**-0.174**	0.034	**-0.230**	0.034	-0.244	0.142
Commercial and clerical employees	**-0.356**	0.033	**-0.311**	0.033	-0.120	0.133
Teachers	**-0.188**	0.077	**-0.343**	0.078	**-0.646**	0.336
STA (public- and telecom employees)	**-0.450**	0.083	**-0.588**	0.083	-0.609	0.391
Nursery and childcare assistants	**-0.375**	0.114	-0.175	0.114	0.162	0.439
General workers	**0.187**	0.053	**0.309**	0.054	0.042	0.218
Plummer and pipefitters	**0.230**	0.043	**0.272**	0.044	-0.065	0.214
Salaried employees	**-0.148**	0.037	**-0.175**	0.037	-0.112	0.152
Free salaried employees	**-0.318**	0.064	**-0.372**	0.064	-0.091	0.268
Wage earners	**-0.127**	0.064	**-0.238**	0.065	-0.252	0.252
Social educators	**-0.136**	0.059	**-0.232**	0.060	-0.211	0.259
Technicians	**-0.312**	0.041	**-0.294**	0.041	-0.077	0.158
Managers and executives	**-0.321**	0.057	**-0.433**	0.057	-0.166	0.233
Childhood teacher and youth educators	**-0.240**	0.067	**-0.332**	0.068	-0.032	0.246
Food and allied workers	**-0.160**	0.032	**-0.146**	0.032	-0.024	0.128
Wood and building	**0.321**	0.022	**0.347**	0.022	0.050	0.103
Health organizations	0.125	0.184	0.131	0.175	-0.020	1.026
FOA (public sector employees)	-0.359	0.057	**-0.472**	0.058	0.108	0.209
ASE (Self-employed)	**-0.406**	0.067	**-0.549**	0.068	-0.047	0.265
Christian trade union	**-0.108**	0.028	**-0.065**	0.028	**0.300**	0.114
DANA (Self-employed)	**-0.309**	0.052	**-0.390**	0.052	0.244	0.187
Restaurants	**0.066**	0.176	**0.460**	0.176	1.075	0.700
Painters	0.385	0.049	**0.488**	0.049	**0.734**	0.201
Other UI fund	**-0.159**	0.156	**-0.537**	0.163	-0.640	0.822
v_y^2	0.022	1.234	**0.246**		0.124	
v_s^2			**-1.114**		0.578	
$P(v_u=v_y^1, v_s=v_s^1)$				0.305		
$P(v_u=v_y^2, v_s=v_s^2)$				0.695		
Number of individuals			79334			

Note: To save space estimates for baseline hazards are not presented.
Bold figures denote significance at 5% level

Table 7: Results for exit rate from unemployment by type of sanction, women

	Exit rate		Sanction rate	
	Coeff.	Std. E.	Coeff.	Std. E.
Sanction:				
2-3 days	**0.578**	0.056		
3 weeks	**1.260**	0.103		
Age 30-39	**-0.056**	0.013	**-0.173**	0.064
Age 40-49	-0.020	0.014	**-0.532**	0.078
Age 50 and above	**-0.371**	0.015	**-0.982**	0.091
Single	**0.017**	0.009	**0.274**	0.052
Immigrant from developed country	**-0.099**	0.020	**0.330**	0.095
Immigrant from less developed country	**-0.151**	0.020	**0.781**	0.088
Year, 2004	**-0.066**	0.010	**0.220**	0.054
Year, 2005	**-0.493**	0.027	**0.486**	0.102
Public transfers rate two year ago	0.002	0.027	-0.055	0.143
Public transfers rate two years ago	**-0.486**	0.032	**0.390**	0.166
Number of unempl. spells one year ago	**0.073**	0.008	-0.068	0.049
Number of unempl. spells two years ago	**0.083**	0.005	**-0.067**	0.033
Participate in ALMP:				
Private sector empl. Subsidy	**-0.214**	0.052	-0.523	0.330
Public sector temp. Job	**-0.725**	0.041	**-0.442**	0.205
Other programme	**-0.381**	0.043	**-0.586**	0.273
Education	**-1.043**	0.029	**-0.479**	0.130
Have ended ALMP:				
Private sector empl. Subsidy	**0.242**	0.056	0.079	0.328
Public sector temp. Job	**-0.173**	0.043	-0.285	0.245
Other programme	**-0.083**	0.019	**-0.501**	0.129
Education	**-0.145**	0.019	**-0.183**	0.111
Experience as UI claimant	**-0.019**	0.009	**-0.131**	0.048
Average unemployment rate in UI fund	**-0.016**	0.008	-0.031	0.041
UI Funds				
Journalists	**-0.081**	0.041	**-1.408**	0.522
Health organization	**0.449**	0.093	**-1.045**	0.537
Free salaried employees	**-0.155**	0.058	-0.430	0.338
MA/PHD in humanities	**-0.138**	0.027	**-0.910**	0.183
Academics	0.027	0.055	**-0.622**	0.296
Business economists	-0.068	0.058	**-1.183**	0.414
Business (sales people)	**-0.158**	0.080	-0.068	0.420
Engineers	-0.107	0.069	**-0.736**	0.424
Wood and building	**0.112**	0.041	0.041	0.277
Social educators	-0.076	0.060	-0.363	0.315
General workers	**0.228**	0.033	-0.167	0.173
Teachers	-0.075	0.077	-0.454	0.400
Nursery and childcare assistants	**-0.206**	0.031	**-0.335**	0.185
Painters	**0.596**	0.059	-0.059	0.430
Childhood teacher and youth educators	**-0.160**	0.063	-0.419	0.335
Professional technicians	**-0.168**	0.038	-0.242	0.221
Restaurants	0.006	0.047	**0.533**	0.230
Wage earners	**-0.183**	0.077	-0.113	0.373
Food and allied workers	0.025	0.033	0.286	0.183
Commercial and clerical employees	**-0.241**	0.036	-0.180	0.189
STA (public- and telecom employees)	**-0.230**	0.085	-0.134	0.452
Christian trade union	**-0.209**	0.021	**0.292**	0.112
FTF-A (Salaried empl. and civil servants)	-0.054	0.052	-0.113	0.271
Computer professionals	**-0.324**	0.093	0.059	0.440
FOA (public sector employees)	**-0.153**	0.062	0.048	0.316
Metal worker	**-0.258**	0.080	0.531	0.324
Salaried employees	**-0.184**	0.071	0.276	0.319
Managers and executives	**-0.190**	0.076	0.497	0.363
ASE (Self-employed)	**-0.478**	0.059	0.376	0.293
DANA (Self-employed)	**-0.359**	0.070	0.283	0.306
Other UI fund	-0.206	0.140	0.059	0.763
v_u^2	**-2.417**		0.433	
v_s^2	**-2.219**		0.902	
$P(v_u=v_u^1, v_s=v_s^1)$	0.009			
$P(v_u=v_u^1, v_s=v_s^2)$	0.024			
$P(v_u=v_u^2, v_s=v_s^1)$	0.001			
$P(v_u=v_u^2, v_s=v_s^2)$	0.965			
Number of individuals	85638			

Note: To save space estimates for baseline hazards are not presented.
Bold figures denote significance at 5% level

Table 8: Results for exit rate from unemployment by type of sanction, men

	Exit rate		Sanction rate	
	Coeff.	Std. E.	Coeff.	Std. E.
Sanction:				
2-3 days	**0.431**	0.040		
3 weeks	**0.850**	0.061		
Age 30-39	**-0.079**	0.012	**-0.277**	0.049
Age 40-49	**-0.167**	0.013	**-0.720**	0.058
Age 50 and above	**-0.472**	0.013	**-1.368**	0.066
Single	**-0.147**	0.008	**0.363**	0.041
Immigrant from developed country	**-0.201**	0.018	**0.174**	0.078
Immigrant from less developed country	**-0.370**	0.017	**0.311**	0.064
Year, 2004	**-0.037**	0.009	**0.126**	0.039
Year, 2005	**-0.084**	0.027	**0.431**	0.100
Public transfers rate two year ago	0.008	0.030	0.157	0.128
Public transfers rate two years ago	**-0.677**	0.035	0.191	0.151
Number of unempl. spells one year ago	**0.042**	0.008	**-0.110**	0.039
Number of unempl. spells two years ago	**0.092**	0.005	0.005	0.026
Participate in ALMP:				
Private sector empl. Subsidy	**-0.335**	0.038	**-0.432**	0.147
Public sector temp. Job	**-0.876**	0.052	**-0.439**	0.200
Other programme	**-0.211**	0.038	**-0.532**	0.217
Education	**-0.729**	0.027	**-0.784**	0.117
Have ended ALMP:				
Private sector empl. Subsidy	**0.205**	0.040	0.033	0.195
Public sector temp. Job	**-0.345**	0.057	-0.264	0.259
Other programme	**-0.175**	0.019	**-0.372**	0.088
Education	**-0.128**	0.017	**-0.246**	0.080
Experience as UI claimant	**-0.149**	0.012	**-0.261**	0.053
Average unemployment rate in UI fund	**-0.032**	0.017	-0.073	0.070
UI Funds				
MA/PHD in humanities	**-0.339**	0.044	**-1.085**	0.220
Business economists	**-0.304**	0.039	**-1.073**	0.264
Academics	**-0.240**	0.034	**-0.928**	0.168
Engineers	**-0.317**	0.039	**-0.924**	0.173
Journalists	**-0.209**	0.063	-0.259	0.332
Business (sales people)	**-0.267**	0.049	**-0.593**	0.250
Electricians	**0.083**	0.044	**-0.415**	0.214
Computer professionals	**-0.484**	0.061	0.006	0.222
FTF-A (Salaried empl. and civil servants)	**-0.205**	0.034	-0.194	0.145
Commercial and clerical employees	**-0.338**	0.033	-0.154	0.136
Teachers	**-0.268**	0.077	-0.479	0.341
STA (public- and telecom employees)	**-0.532**	0.083	-0.402	0.396
Nursery and childcare assistants	**-0.383**	0.116	0.151	0.447
General workers	**0.249**	0.054	0.048	0.221
Plummer and pipefitters	**0.247**	0.044	0.008	0.219
Salaried employees	**-0.169**	0.037	-0.087	0.156
Free salaried employees	**-0.358**	0.064	-0.045	0.271
Wage earners	**-0.186**	0.065	-0.217	0.257
Social educators	**-0.186**	0.060	-0.125	0.264
Technicians	**-0.314**	0.041	-0.005	0.162
Managers and executives	**-0.385**	0.057	-0.176	0.237
Childhood teacher and youth educators	**-0.301**	0.068	-0.020	0.252
Food and allied workers	**-0.168**	0.032	-0.001	0.132
Wood and building	**0.338**	0.022	0.011	0.105
Health organizations	0.163	0.180	0.009	1.037
FOA (public sector employees)	**-0.421**	0.058	0.053	0.214
ASE (Self-employed)	**-0.488**	0.067	0.094	0.269
Christian trade union	**-0.091**	0.028	**0.352**	0.117
DANA (Self-employed)	**-0.357**	0.052	0.203	0.192
Restaurants	0.256	0.176	**1.235**	0.712
Painters	**0.437**	0.049	**0.672**	0.206
Other UI fund	**-0.433**	0.164	-0.369	0.840
v_u^2		0.223		
v_s^2		-1.794		
$P(v_u=v_u^1, v_s=v_s^1)$		0.326		
$P(v_u=v_u^2, v_s=v_s^2)$		0.674		
Number of individuals		79334		

Note: To save space estimates for baseline hazards are not presented.
Bold figures denote significance at 5% level

Table 9: Results for exit rate from unemployment, effect of sanction is time-varying, women

	Exit rate		Sanction rate	
	Coeff.	Std. E.	Coeff.	Std. E.
Sanction: time since sanction				
4 weeks	**1.515**	0.069		
4-13 weeks	**0.349**	0.088		
more than 13 weeks	-0.021	0.098		
Age 30-39	**-0.056**	0.013	-0.083	0.064
Age 40-49	-0.020	0.014	**-0.426**	0.077
Age 50 and above	**-0.371**	0.015	**-0.929**	0.090
Single	**0.019**	0.009	**0.329**	0.053
Immigrant from developed country	**-0.088**	0.020	**0.412**	0.096
Immigrant from less developed country	**-0.141**	0.020	**0.748**	0.087
Year, 2004	**-0.063**	0.010	**0.223**	0.054
Year, 2005	**-0.495**	0.027	**0.491**	0.103
Public transfers rate two year ago	0.018	0.027	-0.119	0.143
Public transfers rate two years ago	**-0.503**	0.032	**0.300**	0.167
Number of unempl. spells one year ago	**0.074**	0.008	**-0.086**	0.049
Number of unempl. spells two years ago	**0.082**	0.005	-0.048	0.033
Participate in ALMP:				
Private sector empl. Subsidy	**-0.202**	0.052	-0.417	0.328
Public sector temp. Job	**-0.739**	0.041	**-0.414**	0.205
Other programme	**-0.357**	0.043	**-0.460**	0.274
Education	**-1.046**	0.029	**-0.540**	0.130
Have ended ALMP :				
Private sector empl. Subsidy	**0.259**	0.056	0.074	0.329
Public sector temp. Job	**-0.179**	0.043	-0.235	0.245
Other programme	**-0.092**	0.019	**-0.574**	0.129
Education	**-0.144**	0.019	**-0.222**	0.111
Experience as UI claimant	**-0.018**	0.009	**-0.094**	0.048
Average unemployment rate in UI fund	**-0.016**	0.008	-0.047	0.041
UI Funds				
Journalists	**-0.076**	0.041	**-1.072**	0.522
Health organization	**0.410**	0.094	**-0.962**	0.539
Free salaried employees	**-0.179**	0.058	-0.367	0.339
MA/PHD in humanities	**-0.131**	0.027	**-0.837**	0.184
Academics	0.026	0.055	**-0.738**	0.297
Business economists	-0.083	0.058	**-0.956**	0.414
Business (sales people)	**-0.132**	0.080	-0.049	0.421
Engineers	-0.103	0.069	-0.590	0.425
Wood and building	**0.151**	0.041	0.087	0.277
Social educators	-0.072	0.060	-0.427	0.316
General workers	**0.231**	0.033	-0.118	0.174
Teachers	-0.075	0.077	-0.572	0.401
Nursery and childcare assistants	**-0.200**	0.031	-0.248	0.186
Painters	**0.622**	0.061	-0.021	0.432
Childhood teacher and youth educators	**-0.155**	0.063	**-0.580**	0.335
Professional technicians	**-0.157**	0.038	-0.151	0.224
Restaurants	0.010	0.048	**0.740**	0.232
Wage earners	**-0.180**	0.077	-0.131	0.374
Food and allied workers	0.036	0.033	**0.344**	0.183
Commercial and clerical employees	**-0.235**	0.036	-0.177	0.189
STA (public- and telecom employees)	**-0.244**	0.086	-0.134	0.454
Christian trade union	**-0.203**	0.021	**0.371**	0.113
FTF-A (Salaried empl. and civil servants)	-0.046	0.052	-0.050	0.272
Computer professionals	**-0.275**	0.092	0.043	0.440
FOA (public sector employees)	**-0.143**	0.062	0.031	0.317
Metal worker	**-0.201**	0.080	0.397	0.324
Salaried employees	**-0.190**	0.071	0.206	0.322
Managers and executives	**-0.156**	0.076	0.331	0.365
ASE (Self-employed)	**-0.469**	0.060	0.347	0.294
DANA (Self-employed)	**-0.329**	0.070	0.186	0.308
Other UI fund	-0.204	0.140	-0.292	0.761
v_u^2	**-1.552**		0.323	
v_s^2	**-2.207**		1.315	
$P(v_u=v_u^1, v_s=v_s^1)$	0.029			
$P(v_u=v_u^1, v_s=v_s^2)$	0.021			
$P(v_u=v_u^2, v_s=v_s^1)$	0.884			
$P(v_u=v_u^2, v_s=v_s^2)$	0.065			
Number of individuals	85638			

Note: To save space estimates for baseline hazards are not presented.

Table 10: Results for exit rate from unemployment, effect of sanction is time-varying, men

	Exit rate		Sanction rate	
	Coeff.	Std. E.	Coeff.	Std. E.
Sanction: time since sanction				
4 weeks	**1.159**	0.048		
4-13 weeks	**0.345**	0.053		
more than 13 weeks	-0.042	0.058		
Age 30-39	**-0.077**	0.012	**-0.325**	0.048
Age 40-49	**-0.167**	0.013	**-0.771**	0.058
Age 50 and above	**-0.472**	0.013	**-1.429**	0.066
Single	**-0.150**	0.008	**-0.345**	0.040
Immigrant from developed country	**-0.190**	0.018	**0.166**	0.077
Immigrant from less developed country	**-0.374**	0.018	**0.312**	0.063
Year, 2004	**-0.037**	0.009	**0.114**	0.039
Year, 2005	**-0.056**	0.027	**0.520**	0.100
Public transfers rate two year ago	-0.015	0.030	0.196	0.127
Public transfers rate two years ago	**-0.668**	0.035	0.150	0.149
Number of unempl. spells one year ago	**0.043**	0.008	**-0.101**	0.039
Number of unempl. spells two years ago	**0.092**	0.005	-0.004	0.026
Participate in ALMP:				
Private sector empl. Subsidy	**-0.324**	0.038	**-0.490**	0.147
Public sector temp. Job	**-0.833**	0.052	**-0.568**	0.199
Other programme	**-0.218**	0.038	**-0.742**	0.217
Education	**-0.723**	0.027	**-0.744**	0.117
Have ended ALMP :				
Private sector empl. Subsidy	**0.221**	0.041	0.024	0.194
Public sector temp. Job	**-0.311**	0.057	-0.413	0.258
Other programme	**-0.169**	0.019	**-0.359**	0.088
Education	**-0.111**	0.017	**-0.260**	0.080
Experience as UI claimant	**-0.140**	0.012	**-0.285**	0.052
Average unemployment rate in UI fund	-0.282	1.726	-0.344	6.976
UI Funds				
MA/PHD in humanities	**-0.405**	0.044	**-1.431**	0.219
Business economists	**-0.285**	0.039	**-1.493**	0.263
Academics	**-0.220**	0.034	**-0.988**	0.167
Engineers	**-0.279**	0.039	**-0.865**	0.172
Journalists	**-0.269**	0.062	**-0.632**	0.330
Business (sales people)	**-0.202**	0.049	**-0.717**	0.249
Electricians	**0.120**	0.044	**-0.433**	0.212
Computer professionals	**-0.512**	0.060	-0.230	0.220
FTF-A (Salaried empl. and civil servants)	**-0.160**	0.034	-0.211	0.143
Commercial and clerical employees	**-0.373**	0.033	**-0.346**	0.134
Teachers	**-0.177**	0.077	-0.490	0.338
STA (public- and telecom employees)	**-0.433**	0.083	-0.492	0.393
Nursery and childcare assistants	**-0.481**	0.115	-0.024	0.443
General workers	**0.160**	0.054	-0.249	0.219
Plummer and pipefitters	**0.244**	0.043	-0.095	0.216
Salaried employees	**-0.142**	0.037	-0.123	0.154
Free salaried employees	**-0.313**	0.064	-0.073	0.270
Wage earners	**-0.113**	0.065	-0.150	0.254
Social educators	**-0.143**	0.060	-0.160	0.261
Technicians	**-0.335**	0.041	-0.177	0.160
Managers and executives	**-0.301**	0.057	-0.108	0.236
Childhood teacher and youth educators	**-0.241**	0.068	0.005	0.249
Food and allied workers	**-0.157**	0.032	-0.081	0.130
Wood and building	**0.315**	0.022	-0.078	0.104
Health organizations	0.253	0.180	0.006	1.039
FOA (public sector employees)	**-0.368**	0.058	0.130	0.130
ASE (Self-employed)	**-0.381**	0.067	0.170	0.170
Christian trade union	**-0.127**	0.028	0.157	0.157
DANA (Self-employed)	**-0.301**	0.052	0.250	0.250
Restaurants	-0.032	0.176	0.224	0.224
Painters	**0.373**	0.049	**0.477**	0.477
Other UI fund	**-0.237**	0.162	-0.511	0.852
v_u^2	**0.150**		0.077	
v_s^2	-1.939		6.641	
$P(v_u=v_u^1, v_s=v_s^1)$	0.510			
$P(v_u=v_u^2, v_s=v_s^2)$	0.490			
Number of individuals	79334			

Note: To save space estimates for baseline hazards are not presented.
Bold figures denote significance at 5% level

Table 11: Results for exit rate from unemployment, interaction effects for women and men

	Women		Men	
Sanction:	2-3 days	3 weeks	2-3 days	3 weeks
Non-Danish nationality	-0.141	**0.918**	**0.260**	**0.757**
	0.136	*0.246*	*0.119*	*0.233*
Single	-0.063	**0.613**	**-0.242**	**-0.195**
	0.094	*0.197*	*0.055*	*0.109*
Age above 40	**-0.243**	**0.653**	**0.136**	**0.175**
	0.105	*0.207*	*0.058*	*0.09*
Received public support for more than 25% of the previous year	-0.105	**0.745**	-0.019	-0.147
	0.093	*0.195*	*0.059*	*0.118*

Note: Standard errors in italic. Bold figures denote significance at 5% level