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Fixed-term contracts

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Fixed-Term Contracts: Short-Term Blessings or Long-Term Scars? Empirical Findings from the Netherlands 1980–2000

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Abstract

Using a comprehensive longitudinal dataset of prime-age Dutch workers over the period 1980–2000, we examine how a previously held job with a fixed-term contract influences both the likelihood and the duration of a future spell of unemployment. Analyses show that Dutch workers with fixed-term contracts experience higher risks of future unemployment and have no shorter spells of unemployment compared to workers with regular contracts. Results also reveal that swifter employment re-entries among men with fixed-term contracts can be explained by their job search efforts before *unemployment. Our study (partly) invalidates theoretical positions that claim that fixed-term contracts foster employment security by shortening unemployment durations; suggesting that fixed-term contracts are a short-term blessing that could end, for some workers, in a recurrent unemployment trap.*

1. Introduction

In the labour market literature, fixed-term contracts have become an important topic in the study of job insecurities and labour market inequalities. Fixed-term contracts refer to labour contracts with a known expiration date. Increasingly, researchers have focused on investigating the risks and opportunities associated with this 'non-standard' type of contract, the use of which has experienced an explosive rise in the United States and many western European countries since the 1980s. It is therefore not surprising that by now, a growing body of both theoretical and empirical research has emerged on the effects of fixed-term contracts on workers' career outcomes (Abowd *et al.* 1999; Amuedo-Dorantes 2000; Autor and Houseman

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2005; Booth *et al.* 2000; García-Perez and Munoz-Bullon 2011; Kalleberg 2000; McGinnity *et al.* 2005; Segal and Sullivan 1997; Zijl 2011; Zijl *et al.* 2004).

A prevailing assumption among labour market analysts and flexicurity policy makers (e.g. Wilthagen and Tros 2004) is that recurrent spells of unemployment among workers with previously fixed-term contracts should be shorter because contractual flexibility fosters employment growth and acts as a stepping stone towards regular work (for an overview, see Ichino *et al.* 2006; see also Blossfeld 1997; Bover *et al.* 2002; Mertens and McGinnity 2004; Zijl *et al.* 2004). This stems from the idea that unemployed workers accept jobs with fixed-term contracts sooner when jobs with permanent ones are currently not available to them (counterfactual approach: Zijl *et al.* 2004). Although a central element in the public and academic debate since the introduction of fixed-term contracts, surprisingly little is known about the relationship between a *previously* held labour contract(s) and workers' subsequent spells of unemployment. Do workers with previous fixed-term contracts experience shorter subsequent spells of unemployment? And if so, is this disparity in the subsequent re-employment rates related to the variation in individual — and job — characteristics or to workers' variations in job search behaviour?

These questions will be the starting point of our study, which presents an alternative approach to understanding the circumstances under which fixed-term contracts reduce or introduce future unemployment spells. Our hypotheses will be tested using a comprehensive longitudinal dataset from the Dutch Labour Supply Panel (OSA) spanning the period 1980–2000. The data contain rich information about workers' labour contracts and their individual differences regarding previous tenure, earnings and job search behaviour that *predate* their unemployment experience but are crucial in determining the duration until subsequent re-employment and workers' risk of future unemployment.

The empirical strategy followed in this study is two-fold. First, we apply (dynamic) life event history models to examine workers' unemployment duration gap until re-employment *after* their contract terminates (short-term effects). This approach provides a more appropriate way to test whether workers with previously fixed-term contracts experience shorter spells of unemployment relative to workers who had a permanent contract initially. Second, we apply a random-effect dynamic model to examine whether the risk of subsequent unemployment spells varies between workers with a previous fixed-term contract compared to those with a previous regular contract (long-term effects).

This study is structured as follows. First, Section 2 portrays briefly the context in which fixed-term contracts are embedded in the Dutch labour market. This is subsequently followed by Section 3, which develops hypotheses regarding the effects of fixed-term contracts on workers future unemployment risk and duration. In Section 4, the data, empirical approach and measurements are described, and our hypotheses are subsequently tested in

Section 5, which presents our results. The study ends with a summary and discussion of the empirical findings in Section 6.

2. Sketching the Dutch context

Fixed-term contracts in the Netherlands existed before World War II but not to a very large extent. Since the 1950s, the number of workers with a fixed-term contract has increased considerably. These jobs were mostly located in the administrative, clerical, metal and (ship) building industries (Bakels 1978). In the beginning of the 1960s, the first semi-legal temporary work agencies were established (e.g. Randstad, est. 1960). Not much later, the Dutch government introduced new legislation in the form of the Temporary Work Act of 1965 which regulated and liberalized the use of jobs with fixed-term contracts, while it offered protection and inclusion of these workers within the scope of the social security law, such as the Unemployment Act and the Sickness and Disability Acts.

What differentiates the Netherlands from other western European countries or the United States (with exception to Spain and Portugal; see Casals 2004) is the significant growth of jobs with fixed-term contracts over time. For instance, the use of fixed-term contracts grew steadily from 8 per cent in 1987 to almost 15 per cent in 2011 and is expected to grow from 20 per cent in 2007 to 25 per cent in 2015 (RWI 2009). This is different for other western European countries where the use of fixed-term contracts has reached a stable level (such as in Germany and the United Kingdom) or has decreased in the last few years (such as Denmark and Spain) (Zijl 2006). The reason for the growing share of jobs with fixed-term contracts in the Netherlands may relate to a history of strong labour unions, collective agreements and a generous welfare state that protect and compensate workers utilizing these types of contracts (Abbring *et al.* 2002; Mills and Täht 2010; Mooi-Reci 2012; Mooi-Reci and Mills 2012). Specifically, since 1996, according to the Dutch Civil Code, there is no difference between full- and part-time working individuals. Workers enjoy equal labour rights regardless their labour contracts (Heerma van Voss 2000). Elaborating on this and as a response to the need for more labour market flexibility, the Flexibility and Security Act of 1999 was implemented. The Act promoted more flexibility to the employers by easing the hiring and firing conditions of workers, while it provided more protection to the employees by offering equal protection rights to workers with fixed and regular contracts. In addition, it allowed fixed-term contracts to confer automatically into regular contracts when a maximum of three consecutive fixed-term contracts (without interruption of more than three months) had been utilized and when successive fixed-term contracts lasted for a maximum duration of three years (Abbring *et al.* 2002). An implication of the Act was that employers still retained the right to lay off workers with fixed-term contracts by the end of the contract termination *without* providing

an advanced notice or without asking permission from the Regional Director of the Public Employment Service (Abbring *et al.* 2002).

3. Theory and hypotheses

Job Search Behaviour under the Conditions of Advanced Notice

There are different mechanisms that may lead to differences in the re-employment rates between workers with fixed and regular labour contracts. First, from a job search perspective, workers' reservation wage, or the minimally acceptable wage offer in the labour market, is a key determinant in the job search process. The higher the reservation wage, the longer workers will search for a job that meets or exceeds that level, thus the longer unemployment durations should be (Barron and Mellow 1979; Mortensen 1977). However, re-employment rates depend not only upon the wage expectations but also upon workers' job search behaviour and efficiency. In this study, we extend the job search framework by integrating arguments from the *'advance notice'* literature, which considers differences in the job search behaviour among workers with fixed and regular contracts (Addison and Blackburn 1995, 1997; Addison and Portugal 1987; Swaim and Podgursky 1990). The prevailing assumption is that pre- and post-displacement job search should be treated as qualitatively distinct because a worker that was given advanced notice or advanced information about the layoff has the possibility to engage in an increased level of on the job search *before* the actual layoff takes place. In this respect, workers hired on the basis of fixed-term conditions are considered to have an information advantage over those with regular contracts, such that when hired for a 12-month contract, they immediately receive 12-month notice.

In the Netherlands, the period of advance notice for workers with regular contract relates to their age and tenure. Specifically, the period may vary between 13 and 26 weeks before the contract termination (Abbring *et al.* 2002). In addition, employers need to have a permit for dismissal from the regional employment institutions that allows for the dissolution of a regular labour contract. This implies that the information asymmetry regarding the end of contract termination may be another factor that drives severe disparities in the subsequent re-employment rates between workers with fixed-term and regular contracts. Specifically, workers with fixed-term contracts are expected to engage more severely in job search activities (before the contract termination), which may eventually shorten any subsequent unemployment spell compared to equivalent workers with regular contracts and more limited advance notice.

Another aspect that may lead to re-employment disparities relates to the potential job search efficiency of workers with fixed-term contracts. For instance, the risk of contract termination may lead to more intensive job search activities and the use of social networks or temp agencies that help

minimize subsequent unemployment spells. Though not specific to workers with fixed-term contracts, a number of authors have found that the quality of social networks is detrimental in the job finding process (Granovetter 1995; Mouw 2003). Choosing friends or contacts (in the same sector or with the same type of labour contract) provides workers with additional information about new job offers that ease the search process (McPherson *et al.* 2001; Mouw 2003). Based on the above-mentioned argumentations, we expect workers with fixed-term contracts to experience shorter subsequent unemployment spells compared to those with previously regular contracts *(advance notice hypothesis)*.

Fixed-Term Contract and the Risk of Subsequent Unemployment

From a theoretical point of view, it is not clear whether a fixed-term contract increases or decreases the risk of future unemployment. Using arguments from the career mobility theory (Sicherman 1991), accepting a fixed-term contract when a regular one is not available should contribute to workers' employment mobility based on two reasons. First, jobs with fixed-term contracts have lower firing costs, which compel firms to be more willing to hire new workers with fixed contracts (Blanchard and Landier 2002). Second, hiring a worker for a fixed time period may serve as a longer probationary period, which allows firms to assess workers' productive characteristics more closely and may eventually lead to conversion of the contract into regular (permanent) contracts (Altonji 2001; Farber and Gibbons 1996; Lange 2007). In the literature, there is some evidence in line with this argument. For instance, Segal and Sullivan (1997) show that 58 per cent of US workers with a fixed-term contract move to jobs with permanent contracts by the end of six quarters. Similar results are found in the Netherlands, which show an increase in the share of workers who move to jobs with a regular (permanent) contract after having had a fixed-term contract initially (Zijl *et al.* 2004).

Another strand of literature argues that workers with fixed-term contracts should experience higher risks of future unemployment spells compared to those with regular contracts, which relate to three crucial factors. First, according to the insider/outsider models addressed by Barbieri and Cutuli (2009), workers utilizing fixed-term contracts are part of a secondary labour sector consisting of jobs that are unstable and unprotected from which they can be easily laid off from in times of economic downturns. According to these models, holders of jobs with fixed-term contracts share a couple of traits that are typical of the 'outsider' workforce, namely: mainly young workers or women with less work experience and possess lower union coverage rates. These 'outsider' characteristics translate into jobs of poorer quality that are easier to find (and thus predict shorter unemployment durations); but are also easier to lose and thus predict higher risks of future unemployment spells. Second, firms that offer jobs with fixed-term contracts are shown to invest less in on-the-job training of temporary workers (Gash and McGinnity 2007; Giesecke and Gross 2003; Lange 2007; Scherer 2004). The lower accumulation

of firm-specific knowledge, compared to workers with regular contracts, constitutes a competitive disadvantage for those with fixed-term contracts which decreases the probability of contract renewal and thereby increases the risk of future unemployment spells. Finally, higher unemployment risks can be related to stigma effects. According to signalling theories (Spence 1973), employers' hiring decisions are based on uncertainty about each worker's productive capability. Under this uncertainty, employers rely on the observable characteristics of workers such as their past employment history, or a worker's previous employment contracts, which serve as a screening device in the hiring process. Workers with previously fixed-term contracts may be seen as 'under-qualified' and 'less career oriented' giving rise to an overall availability of less secure jobs and higher probability of experiencing repeated spells of unemployment in the future. Following these arguments, we expect, that all else equal, workers with a previous fixed-term contract will have higher risks of future unemployment spells compared to workers with previously permanent contracts (*contractual scarring hypothesis*).

4. Data, empirical approach and measurement

Dataset

We use longitudinal data from the OSA. The OSA panel study is targeted at a representative sample of 4000 to 5000 respondents in each wave, first drawn in 1985 and then in 1986 with further biannual waves until 2000. For our analyses, we limit our sample to respondents (men and women) between 21 and 54 years old who have valid observations on their labour force status. The advantage of this dataset is that it provides detailed information about workers' labour market situation *at* the time of interview distinguishing between the following labour market states: (a) employed, (b) self-employed, (c) unemployed, (d) non-participating, (e) in military service and (f) in education. Labour force information *between* the interview dates is also traceable through a series of retrospective questions about the start and end dates of labour force changes between the current and previous waves. This data structure allows us to investigate workers' time in unemployment after the expiration of their employment contract. Another advantage of this dataset is that workers have been asked to report the reason behind their labour force changes, which allows us to differentiate between workers who are *involuntarily* unemployed due to plant closings, massive lay-offs or reorganizations from those who were laid off due to other reasons which may relate to their own personal failures. In this study, unemployment is explicitly defined as 'currently out of labour and searching actively for a job', while fixed-term contracts are defined as 'contracts with a known expiration date'.

Our analyses focus on the unemployment spells of workers who were employed in the previous wave (i.e. at time *t*−1) but are unemployed at the date of interview of the present wave (i.e. at time *t*). In these analyses, we

exclude those who lost their jobs due to uneasily defined reasons and seasonal employment (191 respondents). An implication of the design of our study is that respondents who have experienced a first unemployment spell but have reported no temporary or permanent employment previously are not considered in our analyses (63 respondents). Spells interrupted due to a withdrawal from the sample are recorded as truncated. These restrictions leave us with a total of 2912 unemployment spells, 14.5 per cent of which are right censored (remain unemployed), 67.8 per cent end with a transition to employment (dependent worker), 5.7 per cent of the spells ends in self-employment, 7.3 per cent enter non-participation, 1.8 per cent enter military service and 2.8 per cent make the transition into education.

Figures 1 and 2 depict workers' course of labour force participation conditional on whether they were employed in a regular or a fixed-term contract in the previous wave (t–1). As expected, Figure 1 depicts a stable career trajectory for those with a previous regular contract. Specifically, a large share of workers (around 80 per cent) with a regular contract in the previous wave (in 1985) remains in employment in the following wave. A small share of this group either disappears out of the labour force (1 per cent), becomes unemployed (4 per cent) or self-employed (3 per cent) in the following wave. This trend remains slightly constant over time.

Another picture emerges for workers with fixed-term contracts in Figure 2. Specifically, from those in fixed-term contracts in 1985, less than the half (44 per cent) remains in the labour force in the following wave. The remainder of this group disappears out of the labour market (42 per cent), becomes unemployed (11 per cent) or chooses to start their own businesses (3 per cent) in the next wave. Interestingly, there appears a turning point in the labour force

FIGURE 1
The Labour Force Distribution of Workers with Regular Contracts in the *Previous* Wave.
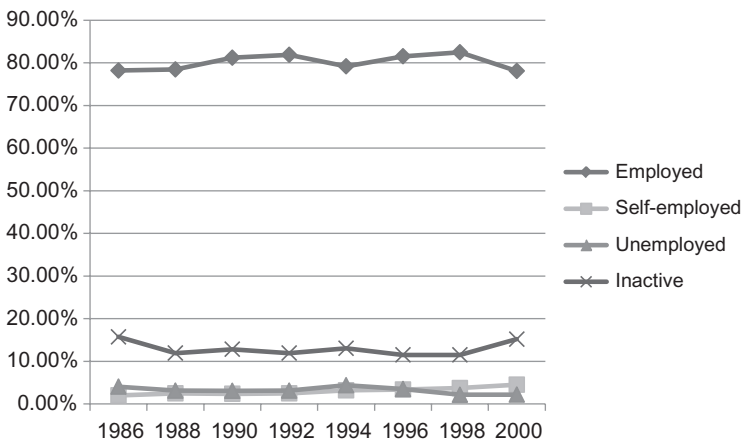
Source: Authors' calculations, based on the OSA panel 1980–2000.

FIGURE 2
The Labour Force Distribution of Workers with Fixed-term contracts in the *Previous* Wave.
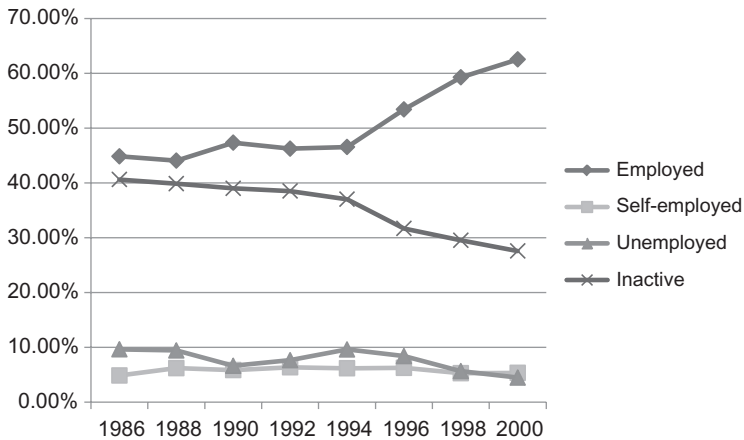
Source: Authors' calculations, based on the OSA panel 1980–2000.

distribution of these workers from 1994 and onwards. Specifically, from those workers with fixed-term contracts in 1994, around 55 per cent remains in the labour force in the next wave (as opposed to 44 per cent) and a lower proportion of workers (32 per cent) disappears out of the labour force as inactive (as opposed to 42 per cent). This change in the distribution may reflect policy effects with regard to the prescription of the equal labour rights of workers (regardless the type of the employment contract) that was implemented through the Civil Code in 1996 (Heerma van Voss 2000).

Who are the workers utilizing fixed-term contracts? Descriptive statistics in Table 1 show that these are more often single women in their early 30s with relatively fewer (home living) children, with slightly higher attained education compared to workers with a regular contract before unemployment. Despite their slightly higher education level, workers with fixed-term contracts have a shorter tenure compared to those in regular contracts.

Empirical Approach

To model how a previously held job with a fixed-term contract influences the duration of *subsequent* unemployment spells (i.e. re-entry to employment), we rely on survival or event history methods (Blossfeld *et al.* 2007). In the first set of our analyses, we produce parameter estimates in the form of the piecewise-constant exponential models. The advantage of these models over semi-parametric or parametric models is that it allows the time span, during which the workers re-enter the labour force, to be split into several intervals where for each interval a baseline hazard is estimated. This flexible approach does not impose a functional form of the baseline hazard, but leaves the data

TABLE 1
Summary of Sample Characteristics for Workers with Regular versus Fixed-Term Contracts

	Regular contract		Fixed-term contract	
	Mean %	*SD*	*Mean %*	*SD*
Demographics				
Women	40.59	49.11	44.21	49.68
Dutch	96.49	18.41	95.43	20.87
Age	34.92	10.13	31.14	9.65
Widowed/divorced	4.04	19.68	3.74	18.99
Married	75.55	42.98	58.58	49.27
Single	20.41	40.31	37.39	48.40
Has children	36.21	48.07	49.92	50.02
# Home living children				
1	9.64	29.52	8.59	28.04
2	27.67	44.74	18.89	39.15
3	11.52	31.93	7.39	26.18
4	2.01	14.03	1.76	13.16
5+	0.09	0.99	0.06	0.79
Human capital and labour force history				
Tenure (in months)	29.01	17.74	21.3	16.81
# Working hours	33.62	10.04	32.77	10.38
Public sector	25.07	43.35	23.83	42.62
Elementary education	7.14	25.76	5.95	23.66
Lower intermediate education	36.09	48.03	32.26	46.76
Higher intermediate secondary education	36.79	48.23	39.57	48.92
Vocational college	16.41	37.04	16.06	36.73
University degree	3.56	18.53	6.15	24.03
Total observations	4,558		1,468	

Source: Authors' calculations, based on the Dutch Labour Supply (OSA) panel 1980–2000.

to speak for themselves (Cleves *et al.* 2008). The piecewise-constant exponential model yields an overall hazard (h_j) of:

$$h_j(t) = h_0 \cdot \lambda_{ij}(t) \exp(\chi_{i,t-1}' \beta_j) \tag{1}$$

Where h_0 refers to the baseline hazard rate that is assumed to be constant within each time interval (λ_{ij}) (where $j = 6, 12, \ldots, J$ months) for worker i ($i = 1, \ldots, N$ workers in the sample) with (t) representing the elapsed unemployment duration. $\chi_{i,t-1}$ refers to a vector of explanatory variables previous to the current unemployment spell that may affect a worker's current unemployment duration. Finally, β_j refers to a transposed vector that accounts for coefficients associated with the observables characteristics.

Estimation of our piecewise-constant exponential models faces a methodological challenge with regard to the issue of the sample selection. For an individual's unemployment duration to be observed a worker should: (a) be unemployed within the observation period; (b) report the type of contract before unemployment. To correct for the non-randomness related to the sample selectivity, we use a two-stage equation, where in the first stage, we run a probit model on the probability of being part of the sample. The additional variable at this stage, which is necessary for the identification of

the equation, is the dummy variable '*ever unemployed during the observation period*', which strongly determines workers' likelihood to end up in a job with fixed-term contract but that may not directly influence the current spell of unemployment. To test for the instrument's validity, we employ a test for exogeneity as proposed by Green and Heywood (2011) elaborating on the work of Stock and Yogo (2005). The test statistic (F-test = 16.38) as outlined by Stock and Yogo (2005), yields a value above the critical value that is necessary to detect a weak instrument of (F-test = 10.57) and implies that we have a valid instrument for our analyses.

Next, to examine how a previous held job with a fixed-term contract influences the likelihood of subsequent unemployment spells, we apply random-effect probit models that include lagged (independent) variables on the right-hand side as used by Heckman and Willis (1976) and by Chamberlain (1985). Consider the following linear reduced form equation for the latent dependent variable *unemployment occurrence* in time periods t (where $t = 1, 2, \ldots, T$) for worker i ($i = 1, \ldots, N$ workers in the sample):

$$\Pr(y_{it} = 1 \mid x_{i,t-1}) = \Phi(\beta' x_{i,t-1}) + \alpha_i + e_{it}) \tag{2}$$

where the value of y_{it} refers to the unemployment occurrence of individual i at time t, conditional on workers' observable characteristics ($x_{i,t-1}$) in the previous wave t-1. The symbol Φ refers to the cumulative density function of a standard normal distribution. The value β refers to a transposed vector that accounts for coefficients associated with the observables characteristics whereas α_i refers to the unobserved time-invariant and individual-specific effect, while e_{it} refers to the error term of the model. So far, our models treat the individual-specific error (α_i) as random and assume that the error term of the model (e_{it}) is normally distributed, with zero mean, a fixed variance ($e_{it} \sim \text{IN}(0, \sigma^2_\varepsilon)$ and independently distributed for all individuals across time periods. A danger occurs when this assumption is violated. To account for this problem, we relax the assumption that α_i is independent of time-varying characteristics by using a model as proposed by Chamberlain (1985). The model, assumes that the regression function of α_i is linear in the means of all time-varying covariates. This implies that using the mean of time-varying variables in the model as additional regressors, allows the random effects to depend on the current, future and past X's. In doing so, the correlation between two successive error terms for the same individual is constant over time, implying that the effect of one year's unemployment on the next year's unemployment does not change over time and is constant across individuals.

Measurement

(a) Dependent variables
In this study, we distinguish between two dependent variables (a) *unemployment duration until re-employment* and (b) *unemployment occurrence*. To

construct the first dependent variable, we use workers' reported start and end dates of any change in their labour force status that occurred between the current and last interview dates. In doing so, we specify a continuous duration variable varying from 1 to 80 months. To construct the second dependent variable, we used data regarding respondents' labour force status at the time of interview. At each survey, respondents were asked to report their labour force status distinguishing between (a) employed, (b) self-employed, (c) unemployed, (d) non-participating, (e) in military service and (f) in education. Using this information, we specify a binary variable, taking the value 1 if a respondent is unemployed at the time of interview and 0 if employed at time *(t)*.

(b) Independent variables

To test our theoretical expectations about how a previous fixed-term contract affects the duration and the risk of subsequent unemployment spells, we have constructed a dummy variable indicating a worker's *type of contract before unemployment* that has been reported at the interview date. This is a lagged variable indicating 1 if the labour contract at the previous employment was *fixed* or 0 if *regular* contract. We expect this measure to be positively associated with the subsequent unemployment duration (i.e. higher propensities to leave unemployment, thus shorter durations) and negatively related to the risk of unemployment occurrence due to 'advance notice' effects. To assess effects that are related to multiple fixed-term contracts held in the past, we construct a count variable for *multiple fixed contracts*, where 1 = 2 previous fixed-term contracts, 2 = 3 previous fixed-term contracts, 3 = 4 previous fixed-term contracts, 4 = 5 or more previous fixed-term contracts, and 0 refers to those with regular contracts. We expect this measure to be positively associated with the unemployment spell till re-employment (higher propensities to leave unemployment, thus shorter durations) and negatively related to the likelihood of future unemployment spells (lower probability to be unemployed in the next period). If opposite effects emerge, after holding constant individual, job, and macro variables, we argue that stigma effects dominate such that workers acquire stigma in the eyes of prospective employers. To deal with the issue of selection into unemployment, we differentiate between workers who lost their job due to exogenous shocks, such as plant closings, reorganizations or massive lay-offs and those who lost their jobs due to their other reasons. This information was derived from the reported information regarding the reason for changing labour force status. We construct three dummy variables: *unemployment due to plant closings* (1 = yes and 0 otherwise); *unemployment due to contract termination* (1 = yes and 0 otherwise); and *unemployment due to own motivations* (1 = yes and 0 otherwise). This latter category includes also workers who reported an undesirable work atmosphere.

To measure the effect of job search behaviour before unemployment, we construct a dummy variable where 1 refers to those workers who have actively *searched for a job before unemployment* and 0 if otherwise. This

variable captures any fluctuation in a workers' job search behaviour before the occurrence of the present unemployment and should relate positively with workers' subsequent unemployment duration (thus shorter unemployment duration).

We also include a couple of measures that capture any pre-existing variation in workers' education, work experience and/or job characteristics that may affect workers subsequent re-employment rates. *Age before* unemployment (range 21 to 54) is included to control for its relationship with unemployment duration and re-employment rates with *age squared* incorporated to control for a curvilinear relation between age and unemployment. To assess the impact of human capital, the following lagged variables were constructed: *educational level before* unemployment, which was defined using the Dutch Standard Education Classification (*Standaard Opleidings Indeling*) that distinguishes between five categories: (a) elementary education (*Basis onderwijs*); (b) lower intermediate education (LBO-Mavo-Vmbo); (c) upper intermediate education (Havo-Mbo-Vwo); (d) college (Hbo); and (e) university degree (Wo). The variable *tenure* with the former employer is based on workers' reported start and end dates of employment spells that occurred between the interview dates (ranging between 0 and 80 months). This variable captures the loss of on-the-job training — which as assumed theoretically — should be lower compared to those in regular contracts due to employers' limited on-the-job investments. The variable *number of previous employment spells* ranging between 1 and more than 5 times (with 'no previous employment spells' as the reference category) was constructed to capture effects related to workers' previous employment history. In addition, a dummy variable for the *sector* (0 = private, 1 = public) of the previous job was constructed. This is necessary to eliminate group differences that are related to the characteristics of the sector. To assess whether the probability of leaving unemployment relates to pre-existing job-related characteristics, a continuous measure for previous *number of contractual working hours* (range 12–40)[1] was constructed together with the variable *log of previous net hourly wages* and the *level of the occupational status in the previous job* using the International Socio-Economic Index (*isei index*) scale of Ganzeboom *et al.* (1992).

To control for differences in the demographic situation that may affect workers' unemployment durations and subsequent unemployment, we have included *marital status* before unemployment (1 = married; 2 = single and 0 = widowed/divorced); respondents' *ethnicity* (1 = Dutch; 0 = non-Dutch), whether the respondent *had children* before unemployment (1 = yes; 0 = no); *number of home living children* (ranging from 1 to 5 or more) (with 'no children' as the reference category). A *gender* variable controls for differences in the job search behaviour and re-employment rates between men and women. By running separate models for men and women, we further untangle gender differences. To assess the impact of labour demand and control for business cycles, we include the variable *gross domestic product* (GDP) in our calculation.

5. Results

Fixed-Term Contracts and the Length of Subsequent
Unemployment Durations

In this section, we test our first hypothesis that workers with fixed-term contracts will experience a shorter spell of unemployment compared to workers with regular contracts due to 'advanced notice'. To test this, we estimate a series of piecewise-constant exponential models in four steps. First, a model (Model 1) is estimated including the 11 time periods to capture workers job search behaviour together with the two principal variables (i.e. *fixed-term contract before unemployment* and *multiple fixed-term contracts*) and a range of individual — and job characteristics that predate unemployment. If employers base their hiring decisions upon characteristics of the previous jobs and labour market history, then controlling for these variables should eliminate differences in the propensity of re-employment between workers with fixed versus regular contracts. In a second step (Model 2), we control for workers' job search activities before unemployment. This should reveal any mediating effect of job search efforts on re-employment rates. If the level and magnitude of our two principal variables disappears after the inclusion of this variable, then re-employment propensities can be largely explained by workers' job searching efforts before unemployment. In a third step (Model 3), we also control for reasons that have led workers to experience unemployment in order to sort out individuals with different pre-existing job search behaviour. In a final step (Model 4), we include the level of GDP to control for business cycle fluctuations and extend the models using a Heckman correction for sample selectivity. Negative estimates indicate decreasing hazard rates and therefore longer unemployment durations with positive estimates indicating increasing hazard rates and shorter unemployment durations.

Results from Model 1 in Tables 2A and B reveal that, all else equal, men and women who utilized a fixed-term contract in the previous wave do not re-enter employment at a faster rate compared to men and women with previously regular contracts. The coefficients are not significant for both women ($\beta = 0.120$; z-value = 0.86) and men ($\beta = -0.055$; z-value = 0.45). The substantially positive coefficient for men and women with multiple flexible contracts in the past indicates that these workers experience faster re-employment rates compared to those with a regular contract previously. This propensity is higher among women (0.125) than men (0.069) and translates into respectively 13.3 per cent[2] and 7.14 per cent faster monthly re-employment rates (thus shorter unemployment durations). Results so far add to existing research in the Netherlands, by showing that workers with *multiple* fixed-term contracts have higher propensities to re-enter employment than workers with regular contracts (Zijl 2006; Zijl *et al.* 2004).

To test whether these effects arise due to workers' job search efforts before the contract termination, we include the variable 'job search before

TABLE 2A
Piecewise Constant Exponential Estimates on Re-employment Entry among Women

	Women			
	Model 1	*Model 2*	*Model 3*	*Model 4*
Contract history <u>before</u> unemployment				
Regular contract (ref)	–	–	–	–
Fixed term	0.120	0.127	0.111	0.092
	(0.86)	(0.85)	(0.68)	(0.57)
Multiple fixed-term contracts	0.125***	0.137***	0.134***	0.115**
	(2.84)	(2.87)	(2.59)	(2.22)
Individual characteristics <u>before</u> unemployment				
Non-Dutch	–	–	–	–
Dutch	0.725**	0.728**	0.691*	0.669*
	(2.01)	(2.01)	(1.79)	(1.73)
Widowed/divorced	–	–	–	–
Married	–0.130	–0.176	–0.218	–0.220
	(0.67)	(0.89)	(1.03)	(1.04)
Single	–0.316	–0.358	–0.385	–0.384
	(1.41)	(1.57)	(1.57)	(1.56)
Elementary education	–	–	–	–
Lower intermediate education	0.231	0.221	0.169	0.183
	(0.86)	(0.82)	(0.58)	(0.62)
Higher intermediate secondary education	0.382	0.381	0.330	0.309
	(1.42)	(1.40)	(1.13)	(1.06)
Vocational college	0.541*	0.490*	0.417	0.397
	(1.91)	(1.72)	(1.35)	(1.29)
University degree	0.285	0.365	0.305	0.180
	(0.81)	(1.04)	(0.78)	(0.46)
Age	–0.033***	–0.040***	–0.051***	–0.033**
	(2.74)	(3.18)	(3.60)	(2.21)
Age squared	0.000	0.000	0.000	0.000
	(1.02)	(1.24)	(1.51)	(0.07)
No children	–	–	–	–
Had children	0.100	0.107	0.017	–0.055
	(0.64)	(0.68)	(0.10)	(0.32)
# Home living children	–0.013	0.035	0.017	–0.023
	(0.23)	(0.61)	(0.28)	(0.37)
Job characteristics and labour force history <u>before</u> unemployment				
Private sector	–	–	–	–
Public sector	–0.130	–0.188*	–0.183	–0.130
	(1.26)	(1.79)	(1.58)	(1.11)
Log of hourly wages	–0.034	–0.004	0.020	0.085
	(0.29)	(0.03)	(0.16)	(0.64)
Working hours	0.000	–0.001	–0.004	–0.003
	(0.04)	(0.28)	(0.86)	(0.52)
ISEI index	0.005**	0.003	0.003	0.002
	(2.28)	(1.63)	(1.36)	(0.95)
Tenure (months)	–0.000	0.001	0.001	0.004
	(0.03)	(0.45)	(0.36)	(1.04)
No. of previous employment spells	0.092*	0.078	0.064	0.052
	(1.85)	(1.50)	(1.12)	(0.81)
No job search before unemployment	–		–	–
Searched actively before unemployment		0.066	0.041	0.208
		(0.63)	(0.35)	(0.82)
Unemployed due to plant closings			0.151	0.284
			(0.60)	(0.96)
Unemployment due to contract termination			0.473*	0.034
			(1.65)	(0.17)
Unemployment due to own motivations			–0.012	0.017
			(0.06)	(0.14)
GDP				0.228***
				(3.53)
Inverse Mills ratio				–0.463
				(0.46)
Time periods included	*Yes*	*Yes*	*Yes*	*Yes*
Observations	16428	16428	16428	16428
Events	412	412	412	412
Log likelihood	–1330.37	–1220.80	–1033.09	–1021.43

Note: The dependent variable is the *unemployment duration until re-employment*. Absolute value of *z*-statistics in parentheses.

* significant at 10%; ** significant at 5%; *** significant at 1%.

GDP, gross domestic product; ISEI, International Socio-Economic Index.

TABLE 2B
Piecewise Constant Exponential Estimates on Re-employment Entry among Men

	Men			
	Model 1	*Model 2*	*Model 3*	*Model 4*
Contract history <u>before</u> unemployment				
Regular contract (ref)	–	–	–	–
Fixed term	−0.055	−0.099	−0.038	0.001
	(0.45)	(0.76)	(0.27)	(0.01)
Multiple fixed-term contracts	0.069*	0.038	0.024	0.033
	(1.95)	(0.99)	(0.60)	(0.83)
Individual characteristics <u>before</u> unemployment				
Non-Dutch	–	–	–	–
Dutch	0.343*	0.277	0.307	0.228
	(1.71)	(1.38)	(1.44)	(1.06)
Widowed/divorced	–	–	–	–
Married	0.044	−0.085	0.105	0.256
	(0.16)	(0.30)	(0.32)	(0.78)
Single	0.051	−0.048	0.170	0.272
	(0.17)	(0.16)	(0.49)	(0.79)
Elementary education	–	–	–	–
Lower intermediate education	−0.008	−0.031	−0.040	0.030
	(0.05)	(0.18)	(0.22)	(0.17)
Higher intermediate secondary education	−0.007	−0.032	−0.033	0.047
	(0.04)	(0.18)	(0.18)	(0.26)
Vocational college	−0.118	−0.167	−0.138	−0.026
	(0.61)	(0.84)	(0.66)	(0.12)
University degree	0.228	0.303	0.156	0.239
	(0.96)	(1.25)	(0.59)	(0.91)
Age	−0.042***	−0.037***	−0.038***	−0.020
	(3.75)	(3.23)	(3.11)	(1.58)
Age squared	0.000	0.000	0.000	−0.000
	(0.70)	(0.34)	(0.70)	(1.58)
No children	–	–	–	–
Had children	−0.055	−0.074	−0.195	−0.215
	(0.45)	(0.60)	(1.47)	(1.61)
No. of home living children	−0.068	−0.067	−0.103**	−0.128***
	(1.62)	(1.53)	(2.17)	(2.64)
Job characteristics and labour force history <u>before</u> unemployment				
Private sector	–	–	–	–
Public sector	−0.282***	−0.233**	−0.248**	−0.142
	(2.96)	(2.40)	(2.33)	(1.32)
Log of hourly wages	0.107	0.068	0.031	−0.021
	(0.99)	(0.62)	(0.25)	(0.17)
Working hours	−0.004	−0.002	0.001	0.001
	(0.57)	(0.27)	(0.17)	(0.20)
ISEI index	0.006***	0.006***	0.005**	0.004*
	(3.02)	(3.05)	(2.56)	(1.92)
Tenure (months)	−0.001	−0.001	−0.001	0.002
	(0.59)	(0.27)	(0.56)	(0.90)
# previous employment spells	0.056	0.067	0.074	0.130
	(1.38)	(1.60)	(1.64)	(1.62)
No job search before unemployment		–	–	–
Searched actively before unemployment		0.186**	0.178**	0.228**
		(2.21)	(1.96)	(2.40)
Unemployed due to plant closings			0.138	0.144
			(0.69)	(0.72)
Unemployment due to contract termination			0.042	−0.069
			(0.15)	(0.24)
Unemployment due to own motivations			−0.098	0.071
			(0.60)	(0.44)
GDP				0.406***
				(7.01)
Inverse Mills ratio				0.018***
				(2.70)
Time periods included	*Yes*	*Yes*	*Yes*	*Yes*
Observations	27618	27618	27618	27618
Events	613	613	613	613
Log likelihood	−1979.52	−1884.19	−1628.33	−1594.49

Note: The dependent variable is the *unemployment duration until re-employment*; Absolute value of *z*-statistics in parentheses.
* significant at 10%; ** significant at 5%; *** significant at 1%.
GDP, gross domestic product; ISEI, International Socio-Economic Index.

unemployment' in Model 2 in Tables 2A and B. For women, there is little difference in the propensity of re-entering employment compared to the estimates presented in Model 1. That is, all else equal and after controlling for the job search before unemployment, women with multiple fixed term escape unemployment faster ($\beta = 0.137$, z-value = 2.87) or re-enter employment 14% faster than women with regular contracts previously. For men another picture emerges. Specifically, after controlling for the job search efforts before unemployment, the prior significant estimate from the variable 'multiple fixed-term contracts', in Model 1, disappears entirely ($\beta = 0.038$, z-value = 0.99). This is owed to the significant difference in the re-employment rates of workers who report engagement in job search activities predating unemployment ($\beta = 0.186$, z-value = 2.21). Viewed against the 'advance notice' literature (Addison and Blackburn 1995, 1997; Swaim and Podgursky 1990), this result is consistent with the assumption that pre-displacement job search entails distinct effects on the subsequent unemployment spells. In our analyses, this effect, however, is contingent on gender.

In Model 3 in Tables 2A and B, we include the reasons for becoming unemployed to control for pre-existing differences in worker's job search behaviour. Results (for both men and women) do not differ significantly from the earlier presented results in Model 2. Interestingly, women who became unemployed due to contract termination experience shorter unemployment spells compared to those indicating other reasons of unemployment. For men, we find no significant differences with regard to the reasons of unemployment. Finally, results that include the associated Heckman correction term (i.e. inverse Mills ratio) are presented in Model 4 in Table 2a,b. Although the correction term itself is significant only among men, its inclusion does not change our conclusions regarding the effect of fixed-term contract and the job search on the subsequent unemployment spells. A possible explanation for the unchanging results is that the sample selectivity (related to whether or not respondents were unemployed and had reported a valid labour contract) is close to random. Another possibility may be that selection correction does not play a major role in our analyses.

In summary, these results imply that there is a substantial gender disparity in the re-employment rates of workers with more than one previous fixed-term contract. This disparity is particularly evident among women and is not explained by individual productivity-related characteristics. These results suggest that for women, re-employment disparity arises due to the *flexible character of the fixed-term contract* that fits women's employment careers and their preferences, while for men this disparity relates to their *job search activity prior to unemployment.*

Fixed-Term Contracts and the Future Risk of Recurring Unemployment

In our earlier developed *contractual scarring hypothesis*, we expected that workers with multiple fixed-term contracts would have higher risks to become unemployed in the future compared to those with a regular

contract(s) due to the duality of the labour market and stigma related to the status of workers with fixed-term contract(s). To capture these scarring effects, in Tables 3A and B, we present three different models from our random-effect probit estimates separately for men and women. The random-effect probit models are run in three steps. A first baseline model (Model 1) includes our two principal covariates (i.e. *type of contract before unemployment* and *multiple fixed-term contracts*) that capture the 'gross-effect' of the type and number of fixed-term contracts on the probability to experience future unemployment. In a second step (Model 2), we include various control variables that capture workers' socio-demographic and job characteristics that may confound the relationship under study. At this stage, to disentangle unemployment from effects related to contractual disadvantage, we also include the reasons of unemployment. Finally, in Model 3, we relax the assumption that α_i is independent of time-varying characteristics by including the mean of time-varying variables in the model as additional regressors. Due to space limitations, we will focus on the interpretation of Model 3 in Tables 3A and B.

Results in Model 3 offer three remarkable findings. First, all else equal, compared to workers with regular contracts, both women and men in jobs with fixed-term contracts in the previous wave, have a higher probability of a recurrent unemployment spell with respectively ($\beta = 0.234$, z-value = 3.80) for women and ($\beta = 0.308$, z-value = 4.13) for men. This effect does not depend on whether or not respondents had multiple fixed-term contracts previously. Second, the significant and substantial effect of *pre*-unemployment job search demonstrates that both men and women who engage actively in job search have a lower probability to experience a subsequent unemployment spell compared to those who do not. Finally, the fact that in particular women who became unemployed due to plant closings experience a lower probability of recurrent unemployment ($\beta = -0.410$, z-value = 1.80) compared to other groups, suggests that employers' may use women's reason of unemployment as a screening device in their hiring decisions.

6. Conclusion

This study investigates whether a previous held job with a fixed-term contract influences both the likelihood and the duration of a *future* unemployment spell. We advance current evidence on this topic by addressing two competing hypotheses. First, using insights from the job search and 'advanced notice' literature, we predict that workers with previously fixed-term contracts will have relatively shorter subsequent unemployment spells due to 'advance notice'. Second, drawing on the scarring literature, we predicted that workers with fixed-term contracts will have higher unemployment risks due to the duality of the labour market and possible stigma effects. Longitudinal data from the OSA spanning over the period 1980–2000 were used to

TABLE 3A

Random-Effect Probit Estimates on Unemployment Occurrence, Women Only, 1980–2000

	Women		
	Model 1	*Model 2*	*Model 3*
Contract history <u>before</u> unemployment			
Regular contract (ref)	–	–	–
Fixed term	0.309***	0.275**	0.271**
	(3.06)	(2.26)	(2.19)
Multiple fixed-term contracts	0.035	−0.035	−0.049
	(1.35)	(1.15)	(1.58)
Individual characteristics <u>before</u> unemployment			
Non-Dutch		–	–
Dutch		0.084	−0.037
		(0.36)	(0.16)
Widowed/divorced		–	–
Married		−0.354**	−0.332**
		(2.23)	(2.03)
Single		−0.137	−0.102
		(0.72)	(0.52)
Elementary education			
Lower intermediate education		0.372*	0.350*
		(1.79)	(1.68)
Higher intermediate secondary education		−0.012	0.410*
		(1.95)	(1.74)
Vocational college		0.554**	0.474**
		(2.49)	(2.09)
University degree		0.770***	0.597**
		(2.68)	(2.04)
Age		−0.022**	−0.004
		(2.24)	(0.28)
Age squared		0.000**	−0.000
		(1.98)	(0.17)
No children		–	–
Had children		0.091	0.075
		(0.64)	(0.51)
No. of home living children		0.119**	0.082
		(2.33)	(1.55)
Job characteristics and labour force history <u>before</u> unemployment			
Private sector		–	–
Public sector		−0.222**	−0.151
		(2.46)	(1.63)
Log of hourly wages		−0.264**	−0.185
		(2.32)	(0.93)
Working hours		−0.006	0.004
		(1.43)	(0.50)
ISEI index		−0.001	0.000
		(0.42)	(0.11)
Tenure		−0.003	0.007**
		(1.23)	(2.22)
No job search before unemployment		–	–
Searched actively before unemployment		−0.287***	−0.250***
		(3.10)	(2.65)
Unemployed due to plant closings		−0.419*	−0.401*
		(1.80)	(1.71)
Unemployment due to contract termination		−0.292	−0.433*
		(1.15)	(1.66)
Unemployment due to own motivations		−0.165	−0.084
		(0.94)	(0.47)
GDP			−0.129***
			(3.63)
Constant	−0.785***	0.131	−0.795
	(15.53)	(0.25)	(0.97)
Observations	1849	1307	1307
Number of respondents	1046	781	781

Note: Absolute value of *z*-statistics in parentheses.

* significant at 10%; ** significant at 5%; *** significant at 1%. Model 3 includes also the mean of time-varying variables: age, wages, ethnicity, working hours, ISEI-index, employment duration.

GDP, gross domestic product; ISEI, International Socio-Economic Index.

TABLE 3B
Random-Effect Probit Estimates on Unemployment Occurrence, Men Only, 1980–2000

	Men		
	Model 1	*Model 2*	*Model 3*
Contract history <u>before</u> unemployment			
Regular contract (ref)	–	–	–
Fixed term	0.251***	0.214**	0.207**
	(2.89)	(2.10)	(2.02)
Multiple fixed-term contracts	0.067***	−0.027	−0.023
	(3.28)	(1.09)	(0.92)
Individual characteristics <u>before</u> unemployment			
Non-Dutch		–	–
Dutch		−0.080	−0.070
		(0.51)	(0.45)
Widowed/divorced		–	–
Married		−0.385*	−0.355
		(1.71)	(1.56)
Single		−0.291	−0.325
		(1.19)	(1.32)
Elementary education		–	–
Lower intermediate education		−0.163	−0.122
		(1.24)	(0.91)
Higher intermediate secondary education		−0.012	−0.243*
		(1.79)	(0.94)
Vocational college		−0.284*	−0.116
		(1.78)	(0.69)
University degree		0.051	0.286
		(0.25)	(1.37)
Age		−0.010	−0.014
		(1.09)	(1.14)
Age squared		0.000	−0.000
		(0.78)	(0.46)
No children		–	–
Had children		−0.052	−0.073
		(0.47)	(0.65)
No. of Home living children		−0.035	−0.046
		(0.89)	(1.12)
Job characteristics and labour force history <u>before</u> unemployment			
Private sector		–	–
Public sector		−0.150*	−0.111
		(1.69)	(1.23)
Log of hourly wages		−0.238**	0.248
		(2.42)	(1.43)
Working hours		−0.006	−0.001
		(1.10)	(0.09)
ISEI index		−0.002	0.003
		(1.04)	(1.45)
Tenure (in months)		−0.003	0.000
		(1.47)	(0.12)
No job search before unemployment		–	–
Searched actively before job loss		−0.262***	−0.280***
		(3.49)	(3.69)
Unemployed due to plant closings		0.139	0.154
		(0.90)	(0.99)
Unemployment due to contract termination		0.372*	0.341
		(1.78)	(1.61)
Unemployment due to own motivations		−0.037	−0.059
		(0.29)	(0.45)
GDP			−0.219***
			(6.55)
Constant	−2.177***	−0.707*	2.082***
	(36.88)	(1.78)	(3.60)
Observations	2697	1931	1931
Number of respondents	1469	1098	1098

Note: Absolute value of *z*-statistics in parentheses.
* significant at 10%; ** significant at 5%; *** significant at 1%. Model 3 includes also the mean of time-varying variables: age, wages, ethnicity, working hours, ISEI-index, employment duration.
GDP, gross domestic product; ISEI, International Socio-Economic Index.

test these hypotheses. Using dynamic panel models and (dynamic) life event history models on a sample of prime age workers, three central findings can be drawn from this study.

First, our results demonstrate that men and women with a previous fixed-term contract in their previous employment do not experience shorter unemployment spells compared to those with a previous regular contract. Only among women with multiple fixed-term contracts in the past we find a swifter re-entry to the labour market which may relate to their ability to use their social networks in a more effective way. For men, we find no effects of fixed-term contracts on the re-employment rates. Results show, that any existing difference in re-employment rates can be explained by their job search efforts *before* unemployment. Second, our results demonstrate a pronounced risk of recurrent unemployment among workers with previous fixed-term contracts. This disparity could not be explained by productivity-related traits or by differences in the employment experiences and business cycle fluctuations. An explanation for this may relate to the stigma that is attached to the type of the labour contract held in the previous employment. Specifically, employers may treat workers with fixed-term contracts differently by offering jobs of a poorer quality that do not convert into regular contracts and higher recurrent unemployment probability. Finally, we show that job search engagement before unemployment is crucially important for subsequent employment careers, because it leads to substantial shorter unemployment durations (especially for men) and decreases dramatically the risks of recurrent unemployment for both men and women.

In sum, our results (partly) invalidate theoretical positions that claim that fixed-term contracts foster employment security by shortening unemployment durations. In fact, our results show that workers with fixed-term contracts, and especially men, may be worse off because they do not experience faster re-employment rates. Above and beyond this, they experience an increased risk of subsequent unemployment spells before obtaining a regular contract.

Our study points to a couple of limitations which should be taken into account when interpreting our results. First, our sample of workers with fixed-term contracts may suffer from different unobserved characteristics which lead them to use either informal job search methods (social networks) or temp agencies. By differentiating between different reasons for unemployment, this study moves one step further to account for workers' characteristics that may drive distinct job search processes and employment outcomes. A second limitation relates to the fact that fixed-term contracts are more common in specific sectors. Individuals who work in these sectors may develop sector-specific human capital which make them less likely to switch sectors and hence more likely to rejoin jobs with fixed-term contracts. To the extent that our data allowed, we tried to capture the (foregone) firm-specific knowledge by using workers' tenure with the previous employer as well as the previous sector. However, industry-specific information would have been more useful to detect industry-specific human capital.

Our findings have additional implications for future research. First, considering the disproportional risks of workers with fixed-term contracts that experience subsequent unemployment, more research is needed that reveals why this is the case. In this study, we argue that higher unemployment risks may be related to poor characteristics of jobs with fixed-term contracts, limited firm-specific knowledge and stigma attached to workers utilizing fixed-term contracts. Additional research should reveal how employers hiring decisions are taken and under which circumstances stigma effects may be more dominant than human capital or structural effects in their decision making. Second, this study is one of the first to provide contrasting empirical evidence that workers with fixed-term contracts do not experience shorter unemployment spells compared to those with regular contracts. More research, however, is needed on this issue to reveal whether this is a universal impact or whether it relates specifically to the Dutch case. Finally, our results showed consistent evidence about the importance of job search in reducing subsequent unemployment spells and risks. More attention should be addressed to policies that encourage, facilitate and coordinate workers who will potentially lose their jobs with potential employers.

Notes

1. In the Netherlands, those who work less than 12 hours are considered unemployed. Since we are interested in those previously employed, we have excluded from this measure those with less than 12 hours.
2. These calculations are based on the formula: [(exp(coefficient)-1)*100%]

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