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« Le Descartes »
29, promenade Michel Simon
93166 Noisy-Le-Grand CEDEX
Téléphone : (33) 01 45 92 68 00
Télécopie : (33) 01 49 31 02 44
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THOMAS BRODATY

thomas.brodaty@u-cergy.fr

Centre d'études de l'emploi, Thema, université Cergy-Pontoise

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THE IMPACT OF TRAINING PROGRAMS AND SUBSIDIZED PUBLIC EMPLOYMENT SCHEMES ON UNEMPLOYMENT, OCCUPATIONS, AND WAGES

Thomas Brodaty

ABSTRACT

This paper evaluates the effects of entry into training programs and subsidized public employment schemes which were set up in France at the end of the 1990s. Studied outcomes are unemployment and subsequent employment durations, wages accepted, and occupations. A flexible multivariate duration-occupation-wage dynamic model is estimated. The impact of programs depends, *ceteris paribus*, mainly on their training content and the educational level of recipients. Vocational training programs have an overall positive impact on the transition to employment, whereas basic training programs improve the job stability of less-educated recipients. The paper also highlights the importance of occupations in better understanding the impact of programs. Community jobs display negative impacts on employment and occupations. With basic training programs, they also display negative impacts on wages for the more-educated participants. These negative effects are found to be mainly driven by a post-program state dependence in low-skilled occupations.

Keywords: program evaluation, multivariate duration model, unemployment, wages, job stability, occupations.

JEL Codes: J64, J68, J24, C41, C30.

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Résumé

Ce papier étudie les effets des formations (générales ou qualifiantes) et des emplois subventionnés du secteur non marchand, en vigueur à la fin des années 1990, sur les parcours des bénéficiaires. Les variables étudiées sont les durées de chômage et d'emploi, les salaires acceptés ainsi que les niveaux de qualification des emplois retrouvés. L'hétérogénéité observable et non observable des bénéficiaires est prise en compte dans un modèle unifié de durée, de salaire et de qualification des emplois. Conditionnellement aux caractéristiques observables des bénéficiaires, la sélection dans les dispositifs n'apparaît pas très marquée. Les impacts des mesures dépendent principalement, toutes choses égales par ailleurs, du contenu en formation des dispositifs et du niveau de qualification initial des bénéficiaires. Les formations les plus qualifiantes ont un impact globalement positif sur les taux de retour à l'emploi. Les dispositifs de formation générale ou d'aide à la recherche d'emploi améliorent quant à eux la stabilité des emplois retrouvés. En revanche, les emplois subventionnés du secteur non marchand ont des effets négatifs sur les taux de retour à l'emploi et sur les niveaux de qualification des emplois retrouvés. Ils ont aussi, avec les formations générales non qualifiantes, des effets négatifs sur les salaires acceptés par les bénéficiaires les plus diplômés initialement. Ces effets s'expliquent principalement par un effet de signal négatif envoyé aux employeurs potentiels et une plus forte récurrence de l'emploi peu qualifié suite au passage en dispositif pour cette catégorie de bénéficiaires.

Mots clés : *Politiques actives, emploi, évaluation, modèles de durées, chômage, salaires, stabilité, qualification.*

INTRODUCTION

Most econometric evaluations of European active labor market policies have focused on the exit rate from unemployment to employment (see Fougère, Kramarz and Magnac [2000]) for the French case). In contrast, incomes or wages have been the main focus of attention in most assessments of US data (see Heckman, Lalonde and Smith [1999] for a survey).[1] The exit rate from unemployment to employment, job stability (i.e., subsequent transition rates from employment to unemployment), the type of job contract accepted (long term, short term or temporary contracts), occupation or job qualification, as well as the wages accepted are important dimensions of the underlying economic process.[2] Altogether, these various outcomes give a more realistic and insightfull description of program impacts.

This paper evaluates the impact of entry into training programs and subsidized public employment schemes, aimed at the unemployed. Studied outcomes are unemployment durations, the types of contract, occupations and wages accepted, as well as subsequent employment durations. Using data on multiple employment spells, the paper takes into account previous employment durations, wages and occupations in a dynamic model. In this way, unobserved determinants are better controlled for in the selection process. This also allows the variety of counterfactual situations to be enlarged, against which program participation can be compared. As a result, the paper highlights the importance of occupations and job qualifications in better understanding the impact of programs.

Taking into account durations, wages and occupations enriches the set of observed determinants that explain participation in the programs. This idea is in line with the assumption of selection based on observable covariates, discussed in Heckman and Smith (1999), and more recently in Lechner and Wunsch (2013) or Biewen, Fitzenberger, Osikominu and Paul (2014). It is also consistent with a dynamic model of "employer learning", whereby employees' productivity is increasingly revealed through wages, along with experience and seniority, as in Altonji and Pierret (2001).

Taking into account durations, wages and occupations also allows the variety of counterfactual situations to be enlarged against which program participation can be compared. Treatment is not only compared with no participation at all, but also with low-skilled employment, defined as a fixed term contract with wages, employment durations and occupation, at the "bottom" of their respective distributions. Non-treatment is usually defined as non-participation at the same time, which includes all possible situations in the labor market, except being in a program. Non-treated unemployment at the same time is the couterfactual situation used in Abbring and Van den Berg (2003), Crépon, Ferracci and Fougère (2012) or Osikominu (2013). Alternatively, non-participation is sometimes defined according to the state previously occupied on the labor market in multiple state transition models as in Bonnal, Fougère and Sérandon (1997) or more recently Blasco, Crépon and

[1] Some counter examples are Gritz (1993), Ham and Lalonde (1996) or Eberwein, Ham and Lalonde (1997). These are US studies looking at unemployment durations. More recently, Osikominu (2013) proposed an evaluation of both employment and wage outcomes for German data.

[2] For instance, many studies have documented the importance of individual reservation wages in explaining optimal job search strategies and the exit rate out of unemployment (see Van den Berg (1990) or Fougère, Pradel and Roger (2009) for the French context). Other things being equal, higher transition rates from unemployment to employment are not necessarily synonymous with higher job quality and a better match.

Kamionka (2012). In this case, past participation in a program is compared with the first participation in the labor market (i.e., with the lack of any previous work experience), or with the occurence of a past experience in employment. Usually long term, fixed term or temporary contracts are identified separately, but employment spells are not differentiated according to occupations or wages. This means it is impossible to identify low-skilled or poorly-qualified employment in the data. The present paper investigates low-skilled employment as a counterfactual situation with which program participation can be compared. This requires specifying the dynamics of wages, types of contract, employment durations and occupations, simultaneously.

To this end, a flexible statistical model is estimated in which the distribution functions of durations and wages variables are specified by their corresponding hazard function, folllowing Donald, Green and Paarsch (2000), or more recently Arni, Lalive and Van Ours (2013) and Osikominu (2013). Simultaneously, occupations are specified as a binary indicator of low-skilled employment. Observed and unobserved heterogeneity are taken into account in a multivariate duration-occupation-wage dynamic model. Flexibility is obtained from piecewise constant hazards and non-parametric specifications of unobserved heterogeneity. Using data on multiple employment spells, the paper introduces specific characteristics of previous employment spells in the current outcome equations. Previous employment experience is differentiated according to: type of contract (long term, fixed term or temporary contracts); to job qualification (skilled or unskilled occupations); to contracts' conditional duration (seniority); and to the corresponding wages, as a measure of employer-employee match quality. Under the assumption of proportional hazard, a simple interpretation of the wage equation parameters is provided in terms of stochastic dominance, as is usual in duration analysis. Using the "timing of events" methodology developed in Abbring and Van den berg (2003), Munch and Skipper (2008) estimated with Danish data a multivariate duration model (unemployment, employment and programs) extended by a standard log-normal wage equation with random effects. In contrast, the present framework allows the impacts of active labor market policies-ALMP's on durations and wages to be compared in the same "unit". Combining multiple spell data and, even if not strictly required, natural exclusion restrictions arising from the timing of events, the framework here allows program impacts to be identified both on unemployment durations, subsequent employment durations, wages and occupations.

As a result, this paper highlights the importance of occupations and job qualifications in better understanding the impact of programs. Special attention is paid to subsidized public employment schemes and non-vocational training programs that generate a wage penalty for the more-educated recipients. Specific investigations relative to these programs lead to the conclusion that post-program state dependence in low-skilled occupations appears to be an operating explanation for this long lasting wage penalty. The more-educated recipients are often over-qualified relative to the occupations offered in these programs, and state dependence in low-skilled occupations would induce this effect. Osikominu (2013) recently evaluated the heterogeneity of training program impacts according to past occupations. However, the impact of training programs on occupations is not explicitely estimated. State dependence in low-skilled and low-paid employment has also ever been stressed, as in Devereux (2002) or Uhlendorff (2006). The present paper investigates in greater depth the impact of ALMPs on wages through occupations and qualifications, by modelling explicitly the impact of programs on occupations and the selection process in acceding low-skilled employment.

The application is concerned with employment programs which were set up in France at the end of the 1990s. Three types of programs are evaluated: subsidized jobs in the public sector, basic training programs and vocational (or specific) training programs. These programs are representative of the many alternative schemes that have been implemented in the last two or three decades. Basic training programs include general training and counseling services, such as skills assessment or job search assistance. By improving the job search process, they are supposed to increase the exit rate from unemployment, at a lower cost. In contrast, vocational training programs are supposed to enhance long-term human capital, usually at a higher cost. Basic and vocational training programs should both result in a match having better quality and stability. On the other hand, subsidized jobs in the public sector are supposed to prevent specific populations at risk, like young people or under-qualified adults, from becoming long-term unemployed. These programs operate by allowing participants to accumulate experience, but do not provide specific or systematic training. Recently, European countries have set up policies that combine several features such as activation, training and subsidized worplace placements (see for instance the evaluations in Blasco and Rosholm [2011] or Ehlert, Kluve and Schaffner [2012]). Card, Kluve and Weber (2010) conducted a meta-analysis of all these types of programs and of their impacts. It is often admitted that human capital-intensive training programs are favorable to employment in the long-run, whereas job search assistance would do better in the short-run. Usually percentage impacts are found to be more important on employment than on wages. Subsidized employment programs in the public sector would have mitigated or mixed effects. In the French labor market context, Magnac (2000), Brodaty, Crépon and Fougère (2001), Crépon Dejemeppe and Gurgand (2005) or more recently Crépon, Ferracci and Fougère (2012) are examples of microeconometric evaluations of these programs. Within different contexts, methodologies and data, these studies roughly agree that sponsored training programs or counseling schemes would have mixed effects on the transition rate from unemployment to employment and small but usually positive impacts on employment durations. None of these papers, however, has investigated the impact of programs on occupations or wages.

The empirical analysis makes use of a non-experimental longitudinal micro-dataset collected over the period 1995-1998, by the Statistical Department of the French Ministry of Employment and Social Policy. The main results of the study show that, *ceteris paribus*, the impact of programs mainly depend on their training content and the educational level of recipients. Conditionally to the available observed covariates, selection into the programs does not seem to be an important concern. Vocational training programs have a general positive impact on the transitions to employment, especially for the less-educated. Basic training programs only improve job stability for less-educated participants, whereas Community Jobs programs have negative employment and occupational impacts for the more-educated. Both Basic training programs and Community jobs in the public sector display negative impacts on the distribution of wages for the more-educated. These effects are found to be mainly driven by a post-program state dependence in low-skilled employment.

The paper is organized as follows. Section 1 briefly describes active labor market policies in France over the period studied. Section 2 presents the available data and descriptive statistics. Section 3 is a detailed presentation of the statistical framework. Section 4 describes the main results and provides simulations of the average, overall impact of programs. Specific results on subsidized public employment schemes and low-skilled employment are also presented in this section. Section 5 concludes.

1. YOUTH UNEMPLOYMENT AND ACTIVE LABOR MARKET POLICIES IN FRANCENORMAL

Over the last 30 years, youth and long-term unemployment have been the most striking features of the French labor market. Between 1973 and 1996, the French unemployment rate increased from 2% to 12.5%. In the 1990s, long-term unemployment and youth unemployment roughly represented 20% and 30% of total unemployment. This explains why active labor market policies (ALMP) were increasingly introduced in France, as of the mid-1970s (see Dares [1996] for a historical description). These policies were targeted at the unemployed and at workers with the highest unemployment risks, which include young adults. They are similar to those implemented in other European countries (Scarpetta, 1993), France being a median user of such programs. Direct employment subsidies and incentives for human capital investments are the two main instruments of these policies. Almost any mixtures of these two components can be found within French employment policies. Public employment schemes such as the programs called "Contrats Emploi Solidarité" have almost no training or learning-by-doing component. At the other extreme, training programs with strong "workplace" schemes have a very intensive training content, these programs usually include classroom education and on-the-job training, in order to increase labor market experience and human capital.

To simplify, it is possible to distinguish between two main types of active labor market programs: i) training programs provided through the French Employment Agency (FEA), some of them with a "workplace" training content in private firms; and ii) "workfare" programs provided by the central government or in the public sector.[3] For this second type of programs, the amount of vocational and specific training is generally much lower, if present at all.

1.1. Training programs (basic and vocational)

This group includes two types of programs that differ according to their training content and their objectives. In the period studied – 1995-98 – between 200,000 and 300,000 unemployed individuals entered one of these two types of programs each year.

The first one, referred to as "Basic Training" here, includes general training programs and counseling services such as skills assessment or job search assistance. These services are usually provided by the French Employment Agency or in public training centers. They typically aim at helping individuals with bad employment perspectives, assess their professional skills ("Skill Assessment and Evaluation") or to analyze the appropriate nature of their personal employment project ("Project Assessment and Support"). They also help workers with pronounced unemployment risks and lower abilities to define a professional project and provide training programs in job search methods (curriculum vitae, writing or

[3] Active labor market schemes are the only programs that were considered in this paper. They represent about half of all employment policies (one million of entrants each year during the period studied (1995-1998), out of two million people). Programs such as job subsidies in the private sector, in which firms hiring low skilled workers are exempted to pay Social Security contributions, are excluded. Youth specific programs are also excluded such as apprenticeship contracts which are training schemes offering participants part-time work in the firm, complemented by part-time education in a public training center. They are mainly part of the educational system and are thus rarely encountered in the inflow into unemployment of our data (in such a case, the corresponding unemployment spells were right censored).

language skills). Some of these schemes lead to a first workplace placement whose length is defined by an agreement between the advisor and the firm, with strong variations in length. A few of them help the unemployed who wish to create their own business in assessing the appropriateness of their project with respect to the labor market situation, and provide some follow-up support with administrative procedures.

The second type of program is called "Vocational Training". These courses were initially aimed at facilitating entry into social and professional life for young people leaving the educational system without any diploma or qualification. They were extended in the 1990s to the long-term unemployed. Programs called "Actions d'Insertion et de Formation" (acronym: AIF; translation: "programs for insertion and training") were introduced in 1990. They offer different types of training courses, some of them including a short training period within a firm. The training is provided either by the firm or by a government training center. It is sometimes deferred to private operators. The time devoted to training is between 40 and 200 hours, and some courses may lead to certification after examination. The length of such training usually varies between 6 and 9 months and trainees may receive a lump-sum from the State, as well as a complementary allowance from the firm. Firms offering such courses are usually exempted from paying Social Security contributions. They are aimed at long-term unemployed workers, adult recipients of the "Minimum Integration Income" and older workers.[4] These schemes sometimes take the form of a fixed term job contract with a length that may vary from 6 to 18 months.

1.2. Workfare programs

Between 600,000 and 700,000 unemployed individuals entered this type of program each year, in the period studied. In 1990, a program called *Contrats Emploi Solidarité* (acronym; CES, literal translation: "Employment Solidarity Contracts") replaced the so-called *Travaux d'Utilité Collective* (literally "Jobs of Collective Utility") programs that were set up in 1984. For the CES, hiring low-educated jobless young adults and long-term unemployed in community services was heavily subsidized, the objective being not only to provide a job but also to increase future employability. Employers were public institutions, local administrations and non-profit associations. Labor contracts for these jobs were usually part-time (20 hours a week) and fixed-term contracts from 3 to 12 months. In 1987, the length of these contracts was extended to 24 months for people with poor employment prospects. The hourly wage was the legal hourly minimum wage, which was entirely paid by the State. The employer was exempted from Social Security but not from Unemployment Insurance contributions. In 1990, the eligible population was enlarged to long-term unemployed workers, adult recipients of the "Minimum Integration Income", and unskilled older workers. These contracts could be renewed three times with a maximum length of 36 months. Only a few of them included a training period.

2. DATA SET AND DESCRIPTIVE STATISTICS

The dataset comes from the *Trajectoires des Demandeurs d'Emploi* survey, carried out by the Statistical Department of the French Ministry of Employment and Social Policy between

[4] The "Minimum Integration Income" is the main means-tested welfare program in France.

1995 and 1998. The sample was randomly drawn amongst people entering unemployment during the second quarter of 1995, in eight local labor markets. The survey sites include two cities in the north of France (Roubaix and Lens in the Nord region), three cities around Paris (Cergy, Mantes and Poissy), and three in the south-east region (Marseille, Aix-en-Provence and Berre). About 9,000 unemployed people were sampled but only 8,125 could be reached for the first interview. Individuals were interviewed three times, in the first quarters of 1996, 1997, and 1998. During the first interview, respondents were asked to give information about their labor market status between their entry into unemployment during the second quarter of 1995 and the first interview, but also about their labor market history before the entry into the spell of unemployment sampled. The data record the events corresponding to individual transitions in the labor market, retrospectively month-by-month, between the second quarter of 1995 and the first quarter of 1998.

Unemployed people that were both employed and searching for a new job when they entered the spell of unemployment sampled were eliminated in this study. The subsample is representative of the inflow into unemployment and includes 7,543 individuals. For each individual whose unemployment spell is not right-censored, the following was observed: i) either a transition to a regular job with a long-term duration labor contract (LTC), a fixed-term labor contract (FTC) or a temporary contract (TC); and alternatively: ii) either a transition to an out-of-labor-force (OLF) state, or iii) a transition to one of the following employment and training programs:

- basic training program (BT hereafter),
- a vocational training program (VT hereafter),
- or a community job (CJ hereafter).

Table 1 gives descriptive statistics of the sample, separately for persons with no diploma and for the rest of the sample. The sample leads to 12,670 unemployment spells, 1,671 of which are right censored and 1,420 correspond to attrition. Transitions to a program represent roughly 15% of all unemployment spells. Training programs are significantly shorter than community jobs whose duration is 10 months on average, whereas vocational training programs are slightly longer than basic training programs. For each employment spell, detailed information is available on the type of contract (LTC, FTC or TC), the occupation, the employment spell duration, and the corresponding accepted wage (at the beginning of the employment spell). Wages are expressed in hundreds of euros, net monthly, with a full time conversion to 169 hours per month. They include every kind of allowance and supplementary hours paid. Observed average wages accepted were $\in 967$. LTC jobs are twice as long as FTC jobs, and accepted wages are significantly higher for LTC jobs than for FTCs.

Public institutions and local administrations are the main employers engaged in community services, providing work for 60% of persons on programs in the data. Non-profits provide a further 20%. Participants are usually hired in non-professional and low skill activities: more than 60% of the observed program spells relate to intermediate occupations (compared to 39% only in the other work spells); also 20% are related to routine and unskilled jobs. Specific activities or industries are over-represented in the hiring of CJ participants: 23% of participants work in education, 21% in public administration, 15% in social services and 10% in health services. The proportions of job contracts in public administration and especially in education are higher for the more-educated, who are also less often hired in low-skilled occupations.

Detailed information is also available for training programs. More than 70% of VT programs lead to certification at the end of the program, and offer a worplace experience during the training; they are only 40% for BT programs. Lump-sum or allowances for the recipients are

also present in 80% of the training spells. However, the data do not contain any detailed information about the levels of these allowances, training contents and worplace placement.

TABLE 1: Summary statistics for various sub-samples

	Whole sample	No diploma	Rest of sample
Sample size			
# individuals	7543	3264	4279
# spells (from unemployment)	12670	5451	7219
Transitions from unemployment			
# transitions to a Long Term Contract (LTC)	1674	540	1134
# transitions to a Fixed Term Contract (FTC)	4984	1949	3035
# transitions Out of Labor Force (OLF)	1073	452	621
# transitions to a Community Job (CJ) program	629	306	323
# transitions to a Basic Training (BT) program	497	269	228
# transitions to a Vocational Training (VT) program	722	320	402
# transitions to censoring	1671	854	817
# transitions to Attrition	1420	761	659
Explanatory variables			
Women	0,49	0.47	0.50
Less than 26 years old (sampling date)	0,41	0.37	0.45
No diploma	0,43	-	-
First participation on the labor market (sampling date)	0,18	0.17	0.18
Receiving welfare benefits (sampling date)	0,09	0.10	0.08
Receiving unemployment benefits (sampling date)	0,58	0.56	0.59
Observed durations (uncensored spells only)			
Unemployment	8.95 (7,18)	10.06 (7.93)	8.12 (6.68)
Community Job (CJ) program	10.22 (9,91)	10.22 (10.32)	10.22 (9.57)
Basic Training (BT) program	5.04 (4.85)	5.40 (5.15)	4.63 (4.50)
Vocational Training (VT) program	6.40 (6.31)	6.31 (6.32)	6.48 (6.31)
Long Term Contract (LTC)	13.04 (8.36)	11.74 (7.63)	13.65 (8.70)
Fixed Term Contract (FTC)	6.78 (6.67)	6.40 (6.23)	7.02 (6.94)
Out of Labor Force (OLF)	9.48 (7.05)	9.87 (6.80)	9.20 (7.19)
Observed wages in thousand euros (standard errors)			
All employment spells	9.67 (5.03)	8.62 (3.12)	10.25 (5.75)
Long Term Contract (LTC) only	10.55 (6.43)	9.01 (3.31)	11.28 (7.36)
Fixed Term Contract (FTC) only	9.22 (4.09)	8.44 (3.02)	9.68 (4.55)
Sectors of employment in Community Jobs			
Public administrations and institutions	56.33	64.55	51.94
Associations and non-profits	23.73	18.18	26.70
Public firms	10.13	9.09	10.68
Private firms	9.81	8.18	10.68
Public Administration	20.57	28.18	16.50
Association	3.16	3.64	2.91
Education	23.10	17.27	26.21
Health services	10.13	12.73	8.74
Social services	15.82	17.27	15.05
Qualifications in employment			
Unskilled workers	18.03	26.03	14.83
Skilled workers	15.91	22.91	13.11
Office workers	39.33	36.58	40.42
Professionals or related	26.73	14.48	31.64
Qualifications in Community Jobs			
Unskilled workers	12.97	18.18	10.19
Skilled workers	7.59	7.27	7.77
Office workers	63.92	63.64	64.08
Professionals or related	15.52	10.91	17.96
Vocational Trainings			
Certification or diploma	73.69	75.39	72.89
Workplace placement	73.49	76.64	72.00
Lump-sum or allowances	84.54	89.10	82.37
Basic Trainings			
Certification or diploma	35.54	34.02	36.20
Workplace placement	41.40	46.72	39.07
Lump-sum or allowances	76.56	79.10	75.45

Source: "Trajectoire des demandeurs d'emploi" survey, French Ministry of Employment and Social Policy, 1995-1998

Table 1 gives also information about observed covariates. Two types of explanatory variables are used in the application: i) time constant variables such as diploma, gender, or age at the sampling date, and ii) variables that change over time, such as welfare or unemployment benefits (recorded on a monthly basis and that vary within spells), and the previous situation in the labor market that varies across unemployment spells only.

3. STATISTICAL FRAMEWORK

Let l denote the l^{th} unemployment spell and (l) denote the set of all spells up to the l^{th} current unemployment spell. Let T_K^l denote unemployment duration and K^l the corresponding destination state of the l^{th} unemployment spell. The destination state K^l may be:

- "Employment" (FTC, LTC or TC jobs),
- "Program", (BT, VT or CJ programs),
- "Out of labor state" (OLF).

When a transition to employment occurs after the l^{th} unemployment spell, it gives rise to four distinct components that characterize the current job: the type of contract K^l (LTC, FTC or TC), its duration T_e^l, the occupation T_q^l, and the corresponding accepted net monthly wage T_w^l at the beginning of the employment spell.[5] The vector $\left(T_K^l, K^l, T_w^l, T_e^l, T_q^l\right)$ of these five endogenous variables fully characterizes what is called the l^{th} spell.[6] The full joint distribution is specified from the marginal distribution of $\left(T_K^l, K^l\right)$ and the conditional distributions of $\left(T_q^l \mid T_K^l, K^l\right), \left(T_w^l \mid T_K^l, K^l, T_q^l\right)$ and $\left(T_e^l \mid T_K^l, K^l, T_w^l, T_q^l\right)$. This decomposition allows wages to depend on the types of contract and occupation. This also allows employment durations to depend on the wages accepted at the beginning of the employment spell, even conditionally to the type of contract. The following sections show how these distributions are specified from their corresponding hazard rate, except the low-skilled occupation indicator T_q^l which is specified according to a binary choice model.

3.1. Transition rates from unemployment

The time scale is supposed to be continuous and is denoted $t \in R$. For each unemployment spell sampled, the time axis is divided into J intervals of the same length, denoted $\left[I_{j-1}, I_j\right[$ with $j \in N^*$. Interval $\left[I_{j-1}, I_j\right[$ is called j^{th} interval. The first date $I_0 = 0$ corresponds to the entry into the current unemployment spell l. Unemployment spell durations are thus reset to zero, each time that a transition occurs. These intervals are assumed to be unitary, which in this application corresponds to monthly intervals. $I_J = \infty$ is set as a convention. Finally, let t_j

[5] Strictly speaking, job contract durations are never fixed in advance because the fixed term contract could be extended or renewed, and long term contract could be broken both by employers and employees. However, without loss of generality, this assumption is maintained because it is coherent with the likelihood decomposition here.

[6] Note that in order to limit the size of the estimated parameters vector, durations of programs and durations of OLF spells are not considered as outcomes in this model.

denote calendar date t that corresponds to the j^{th} interval of the calendar time axis, which is never reset to zero.

Let T_k^l denote the latent duration of time spent being unemployed before the transition to a destination state of type k, with $k \in \{BT, VT, CJ, FTC, LTC, TC, OLF\}$. The transition rate from unemployment to destination state k is specified as

$$\theta_k^l\left(t_k^l \mid X_{k,t_j}^{(l-1)}, v_k\right) = \exp\left(\delta_j^k + X_{k,t_j}^{(l-1)}\beta_k + v_k\right), \qquad \forall t_k^l \in \left[I_{j-1}, I_j\right[.$$

Parameter δ_j^k is the piecewise constant baseline hazard, β_k the impact of the observables $X_{k,t_j}^{(l-1)}$, v_k the impact of the unobservables. $T_K^l = Min_k\left(T_k^l\right)$ and K^l is the corresponding destination state. It is assumed that, conditionally to the observables and to the unobservables, latent durations verify the usual assumption of independent competing risks. The set of control variables $X_{k,t_j}^{(l-1)}$ is allowed to depend on the destination state k of the current spell l, over the whole history up to the $(l-1)^{th}$ spell and on calendar date t_j. Specifically, the set $X_{k,t_j}^{(l-1)}$ includes the exogenous time constant covariates such as age at the sampling date, gender, diploma or geographic location, and exogenous time varying covariates such as the monthly recorded unemployment rate (by calendar time). I also include time varying covariates that represent the exact situation of the unemployed, with respect to unemployment and welfare benefits at the beginning of the current spell.[7] The set of covariates also includes indicators, if any, of the previous state K^{l-1} occupied in the labor market, just before entry into the current unemployment spell l. A Markov restriction is imposed explicitly to solve the initial condition problem, because at the sampling date (initial spell) we only know precisely the previous state of the labor market. When K^{l-1} corresponds to an employment situation, these indicators include information about the observed wages accepted, employment durations (i.e., seniority) and occupations. They are used to identify the impact of program entry during the $(l-1)^{th}$ on the outcomes of the current l^{th} spell, and to compare them with various counterfactual situations, such as the initial participation in the labor market or a work experience in a low-skilled occupation.

3.2. Types of occupation

Let T_q^l denote the binary indicator of low-skilled occupations. This variable equals 1, if individuals are hired as skilled workers, unskilled workers, or office workers, and takes the value 0 otherwise. The conditional distribution of T_q^l is specified according to a probit type equation:[8]

$$\Pr\left(T_q^l = 1 \mid X_{q,k,t}^{(l-1)}, v_q\right) = \Phi\left(X_{q,k,t}^{(l-1)}\beta_q + v_q\right)$$

Parameters β_q represent the impact of the observables $X_{q,k,t}^{(l-1)}$ and v_q the impact of the unobservables. The set of covariates $X_{q,k,t}^{(l-1)}$ does not contain any intercept term. It is allowed to depend on the destination state k of the current spell l, on the whole past history up to the

[7] No information is available on unemployment benefit profiles, during the unemployment spell. However, this lack of information is partly balanced with information about the last accepted wage, if any.

8 As usual for identification in binary choice models, the underlying latent specification imposes the variance parameter to be unitary.

$(l-1)^{th}$ spell, as well as on the calendar date t. Control variables $X_{q,k,t}^{(l-1)}$ include the same exogenous time constant and time varying covariates as the unemployment durations, as well as the same set of information on the previous state occupied K^{l-1}. According to the joint distribution decomposition retained, specific variables that are proxies for potential job search effects are added to these common covariates. These include the current type of contract K^l (LTC, FTC or TC) and a set of indicators of the unemployment duration which led to the current employment spell.

3.3. Accepted wage distribution

Let T_w^l denote accepted net monthly wages. The conditional distribution of T_w^l is specified from the corresponding hazard function as in Donald, Green and Paarsch (2000):

$$\theta_w^l\left(t_w^l \mid X_{w,k,t_0}^{(l-1)}, v_w\right) = \exp\left(\delta_j^w - X_{w,k,t_0}^{(l-1)}\beta_w - v_w\right), \qquad \forall t_w^l \in \left[I_{j-1}^w, I_j^w\right[$$

where $\left[I_{j-1}^w, I_j^w\right[$ is the j^{th} interval of the support of T_w^l.[9] In the application, these intervals are arbitrarily chosen to correspond to the 5% percentile bounds of the observed distribution of accepted wages. Parameter δ_j^w is the piecewise constant baseline hazard, β_w the impact of the observables $X_{w,k,t_0}^{(l-1)}$ and v_w the impact of the unobservables. The set of control variables $X_{w,k,t_0}^{(l-1)}$ is allowed to depend on the current destination state k (conditionally to employment, i.e., LTC, FTC or TC), on the whole past history up to the $(l-1)^{th}$ spell and on calendar time $t_j = t_0$ which corresponds to the month of entry into employment. Specifically, the set $X_{w,k,t_0}^{(l-1)}$ includes the same set of covariates as the occupation equation. Introducing unemployment duration before the entry into the spell of employment proxies potential job search effects implied by reservation wage properties (see Van Den Berg (1990)). Additionally, according to the chosen likelihood decomposition, the current type of contract and occupation are also added into that list.

As noted in Donald, Green and Paarsch (2000), the interpretation of parameters β_w in the wage "hazard" function is not straightforward. In contrast to unemployment durations, there is no clear interpretation for the population at risk (i.e., those individuals with a wage above a given value). However, proportional hazard specification allows the corresponding survivor function to be written as:

$$S_w^l\left(t_w^l \mid X_{w,k}^{(l-1)}, v_w\right) = S_w^l\left(t_w^l \mid v_w\right)^{\exp\left(X_{w,k,t_0}^{(l-1)}\beta_w\right)}, \qquad \forall t_w^l \in \left[I_{j-1}^w, I_j^w\right[$$

where $S_w^l\left(t_w^l \mid v_w\right)$ is the survivor function for the reference group which does not depend on $X_{w,k,t_0}^{(l-1)}$. Thus, as in usual duration models under proportional hazard specification, it can be seen that any positive change in the hazard function due to a change from $X_{w,k,t_0}^{(l-1)}$ to $\bar{X}_{w,k}^{(l-1)}$ implies first order stochastic dominance, in the sense that $S_w^l\left(t_w^l \mid X_{w,k}^{(l-1)}, v_w\right) \leq S_w^l\left(t_w^l \mid \bar{X}_{w,k}^{(l-1)}, v_w\right)$

9 Introducing observables with a negative sign makes the interpretation of the results easier.

for all $t_w^l \geq 0$ [10]. From this point of view, the specification allows simultaneously study, within the same "unit", duration and wage outcomes.

3.4. Employment durations

Let T_e^l denote employment spell duration, if any, corresponding to the end of the l^{th} sampled unemployment spell.[11, 12] Employment duration is specified with a univariate duration model. The first date $I_0 = 0$ now corresponds to the date of entry into employment. The conditional distribution of T_e^l is specified from the following hazard function:

$$\theta_e^l\left(t_e^l \mid X_{e,k,t_j}^{(l-1)}, v_e\right) = \exp\left(\delta_j^e - X_{e,k,t_j}^{(l-1)}\beta_e - v_e\right), \qquad \forall t_e^l \in \left[I_{j-1}, I_j\right[,$$

Parameter δ_j^e is the piecewise constant baseline hazard, β_e the impact of the observables $X_{e,k,t_j}^{(l-1)}$ and v_e the impact of the unobservables.[13] As for unemployment durations, the set of covariates $X_{e,k,t_j}^{(l-1)}$ is allowed to depend on the destination state k of the current spell l, on the whole past history up to the $(l-1)^{th}$ spell, as well as on calendar date t_j. Control variables $X_{e,k,t_j}^{(l-1)}$ include the same exogenous time constant and time varying covariates as wages accepted, as well as the same set of information on the previous state K^{l-1}. A specific indicator of the current type of contract K^l (LTC, FTC or TC) is added, because long-term contracts have mechanically longer employment durations than fixed-term contracts or temporary contracts. Moreover, into the list of covariates a set of indicators of the unemployment duration, which led to the current employment spell, is added in order to proxy potential job search effects. Indeed, *ceteris paribus*, a longer unemployment spell could lead to a better match. According to the joint distribution decomposition retained, wages accepted at the beginning of the current employment spell are also included in the list, as another proxy for match quality that could lead, *ceteris paribus*, to longer employment spells.

3.5. Attrition

Given that multiple spell data are used, it is important to take into account attrition and make a clear distinction between attrition and exogenous right-censoring (see Van Den Berg, Lindenboom and Ridder (1994)). Transitions to the attrition state are specified in parallel with the unemployment and employment durations. Let T_{att}^l denote the duration before a transition occurs to the attrition state during the l^{th} spell. Attrition is allowed to occur both during unemployment and employment spells. The total duration before a transition occurs

[10] Another obvious consequence of this specification is mean dominance, as in usual duration models: any positive effect on the survivor function also implies a positive effect on the mean of the duration/wage distribution.

[11] I assume that each spell of employment, program or OLF necessarily ends with a transition to unemployment. For instance, any direct transition from employment to a program is broken down into a transition from employment to unemployment, and a transition from unemployment to a program during the first month of unemployment, i.e., the interval $\left[I_0, I_1\right[$. Such a specification is not very constraining because the data are recorded on a monthly basis.

[12] Neither the program nor OLF spell durations are considered as an outcome in the application.

[13] Introducing observables with a negative sign makes the interpretation of the results easier.

towards the attrition state is specified with a univariate duration model. The conditional distribution of T_{att}^{l} is specified from the following hazard function:

$$\theta_{att}^{l}\left(t_{att}^{l} \mid X_{att}^{(l-1)}, v_{att}\right) = \exp\left(\delta_{j}^{att} + X_{att,t_j}^{(l-1)}\beta_{att} + v_{att}\right), \qquad \forall t_{att}^{l} \in \left[I_{j-1}, I_{j}\right[,$$

Parameter δ_{j}^{k} is the piecewise constant baseline hazard, β_{att} the impact of the observables $X_{att,t_j}^{(l-1)}$ and v_{att} the impact of the unobservables. The set of controls $X_{att,t_j}^{(l-1)}$ is allowed to depend on the whole past history up to the $(l-1)^{th}$ spell, as well as on calendar time t_j. Specifically, the set $X_{att,t_j}^{(l-1)}$ includes the same set of covariates as the unemployment duration hazards, as well as the same set of indicators of the previous state occupied K^{l-1}. Note that current transitions to employment, to a program or to the OLF state are not allowed to modify the current hazard rate to attrition along the l^{th} spell.[14]

3.6. Unobserved heterogeneity

Two specifications are assumed for the joint distribution of the 11-dimensional vector of unobserved heterogeneity

$$v = \left(v_{FTC}, v_{LTC}, v_{TC}, v_{CJ}, v_{BT}, v_{VT}, v_{q}, v_{w}, v_{e}, v_{OLF}, v_{ATT}\right)$$

In the first specification, the population is segmented into two unobserved different groups. The unobserved components v_k are equal to α_k^1 with probability p and α_k^2 with probability $(1-p)$. Thus there is one frequency parameter and there are 22 location parameters to estimate. Specifications with more than two unobserved types in the population were rejected by Quong Vuong tests of non-nested hypotheses. In the second specification, we assume the existence of four unobserved types in the population with a constrained two factor loading structure. Each of the unobserved components v_k is now specified as

$$v_k = \alpha_k^1 u_1 + \alpha_k^2 u_2$$

where u_1 and u_2 are supposed to be independently distributed on the support $(1,-1)$ with respective probability $\Pr(u_j = 1) = p_j$ for $j = 1,2$. This specification requires the estimation of two frequency parameters p_j and 22 location parameters α_k^j. For purposes of identification, $\delta_0^k = 0$ is set for all k in the hazard functions.

In both specifications, the frequency parameters are assumed to have the following logistic form:

$$p_j = \frac{\exp(\lambda_j)}{1+\exp(\lambda_j)}$$

with $\lambda_j \in R$ for $j = 1,2$ to constrain them lying in the simplex. The model is estimated using maximum likelihood optimization routines.

[14] Using the "timing of events" methodology from Abbring and Van Den Berg (2003), I have attempted to introduce such effects. However, the corresponding parameters were not accurately estimated and led to a very low convergence rate of the numerical routine, duel likely to the low number of transitions to attrition and the obvious absence of multiple spell data for these kinds of transitions.

3.7. Identification with multiple spell data

Identification of mixed competing risk duration models have been extensively discussed in the literature (see Van Den Berg (2000) for a survey). It is similar to the identification in panel data with unobserved heterogeneity. Here, it is assumed that multiple spell data are sufficient to disentangle the true causal effects from spurious relations and identify parameters β_k.[15] Because non-random censoring could be more problematic with multiple spell data than with single spell data, I assume that introducing attrition as a separate state avoids generating such biases (see the discussion above).

Multiple spell arguments could also be invoked for the identification of parameters β_e, β_w and β_q. As discussed for instance in Abbring (2008), results on the identification of repeated unemployment duration models still hold when applied to employment durations. Results available in panel data could also be invoked for the identification of parameters in the observed accepted wage and occupation distributions. However, it could be argued that such sources of identification are not clear enough. In order to strengthen identification of these parameters, I also introduce exogenous variations of the monthly unemployment rate in the hazard functions. Such exogenous time varying covariates recorded on a monthly basis are able to produce natural exclusion restrictions. Indeed, if $u^l_{t_j}$ is the unemployment rate at calendar date t_j that corresponds to the j^{th} interval of the l^{th} spell, the latent distribution function of unemployment durations $t^l_k \in [I_{j-1}, I_j[$ for destination state k clearly depends on the whole set of past unemployment rates $\{u_{t_h}\}_{h\leq j}$ whereas the distribution of subsequent employment durations t^l_e depends only on the future set $\{u_{t_h}\}_{h\geq j}$ which are almost strictly disjoint sets. In the same way, the distribution of accepted wages t^l_w in the j^{th} interval depends only on $u^l_{t_0}$, the calendar date of entry into employment, and can thus be assumed to be independent of past information $\{u^l_{t_h}\}_{h<j}$, at least conditionally to t_j itself. The same arguments can be invoked for the distribution of occupations. These exclusion restrictions are natural in the timing of events in the sense of Van den berg (1990): it is not necessary to exclude future unemployment rates, but only past unemployment rates from current decisions. It should be noted that I have explored specifications without these exclusion restrictions, in various robustness checks, and the results have appeared to be very robust in this respect.

4. RESULTS

4.1. Estimates of conditional impacts

Table 2 presents the complete results of the two preferred specifications for each educational level, with and without occupations. Two different models have been estimated according to the assumed distribution of unobserved heterogeneity. Following Quong-Vuong tests of non-

[15] Note that I do not allow for heterogeneous effects with respect to the unobserved heterogeneity. See Richardson and Van Den Berg (2013) for such an attempt and new identification results.

nested models, the distribution of unobserved heterogeneity with two mass points appeared to be best, in all cases.

The reference situation for the previous state on the labor market is the initial participation in the labor market, with no previous work experience. When the previous state in the labor market is regular employment, a subdivision is carried out according to seniority, wages in the job and previous occupation. This allows the impact of any previous transition into a program to be compared with, for instance, the previous experience of a low-skilled and low-paid job (see the simulations below). Previous seniority, wages and occupations have been introduced as common effects to all types of employment. For instance, in Table 2 (1/7) and column 1, the effect on the transition rate to the OLF state, of experiencing a previous spell in a LTC job in the first quartile of wages and seniority of less than one year is -0.572, whereas the impact of a previous spell in an LTC with the highest wage and seniority levels is -0.10=-.572+.286+.386.

State dependence within the programs is generally important. Transitions to any program are more frequent after a previous transition into a community job (and, to a lesser extent, after a transition into a basic training program). This is especially true for the unemployed with less education. Previous occurrence of a vocational training program decreases significantly, however, the transition rate to a community job for them. State dependence within employment contracts and occupations is also very strong.

Transition intensities from unemployment to employment mainly depend on the training content of programs and the educational level of recipients. Community jobs and basic training programs do not affect the transition intensity to a long term contract, whereas vocational training programs increase the intensity at all educational levels. Community jobs have a significant negative effect on the transitions to a temporary contract at all levels of diploma, and on the transitions to a fixed term contract for the more educated recipients. In contrast, vocational training programs increase the transition rates to FTC or TC jobs for the less-educated alone. Community jobs and basic training programs also decrease the transition intensity to the out-of-labor-force state for the more-educated, whereas vocational training programs decrease it for the less-educated.

Looking at the distribution of wages accepted (conditionally to the type of accepted contract), vocational training programs do not display any significant impact on wages. In contrast, community jobs and basic training programs have a negative impact at higher levels of diploma. This extends to wages the previous results found in Bonnal, Fougère and Sérandon (1997), who used (un)employment duration data. However, these negative effects vanish fully when occupations are taken into account. This suggests the existence of an *ex post* occupational state dependence effect, associated with the participation in these programs. This point will be investigated further, in a separate section below. Similar results are obtained for low-skilled/low-paid employment spells, suggesting that community job and basic training program spells could act as a low-skilled employment experience at higher levels of diploma.

Looking at the impact of programs on job stability (conditionally to the type of contract and wages accepted), basic training programs increase the employment duration for the lower levels of diploma, whereas vocational training programs increase it slightly for the whole sample. In contrast, community jobs do not display any significant impact on employment durations. Taking into account occupations does not significantly change the impact of programs on durations and on types of contract.

Table 2: Results for the prefered specifications with two mass points (1/7)

Specification with job qualifications:	No Diploma		Rest of the Sample	
	No (1)	Yes (2)	No (3)	Yes (4)
Transition to Out of Labor Force (OLF)				
Piecewise baseline hazard for durations (Ref: less than 3 months)				
Between 4 and 6 months	0.214 (1.269)	0.210 (1.237)	**0.806 (6.366)**	**0.795 (6.239)**
Between 7 and 12 months	**0.691 (4.269)**	**0.685 (4.187)**	**0.642 (4.689)**	**0.629 (4.556)**
Between 12 and 24 months	0.201 (1.119)	0.197 (1.092)	**0.332 (2.104)**	**0.314 (1.980)**
Beyond 25 months	0.246 (1.058)	0.247 (1.058)	-0.303 (1.042)	-0.340 (1.166)
Previous state on the labor market (Ref: first participation)				
Community job (CJ)	-0.386 (1.459)	-0.393 (1.481)	**-0.787 (3.042)**	**-0.810 (3.134)**
Basic training (BT)	0.103 (0.416)	0.079 (0.311)	**-0.495 (1.957)**	*-0.467 (1.848)*
Vocational training (VT)	**-0.970 (2.405)**	**-0.987 (2.392)**	-0.211 (0.901)	-0.191 (0.822)
Employment in the first quartile of wages and a seniority less than one year				
Long term Contract (LTC)	**-0.572 (2.254)**	-0.384 (1.299)	**-0.461 (2.257)**	-0.338 (1.469)
Fixed Term Contract (FTC)	-0.148 (0.789)	0.048 (0.197)	**-0.463 (2.644)**	*-0.349 (1.782)*
Temporary Contract (TC)	0.031 (0.11)	0.313 (0.945)	0.240 (1.146)	0.257 (1.102)
Common employment heterogeneous effects				
Seniority > one year	0.286 (1.470)	0.279 (1.393)	-0.122 (0.787)	-0.125 (0.800)
Wage 2nd quartile	0.178 (0.959)	0.196 (1.044)	0.059 (0.373)	0.067 (0.420)
Wage 3rd quartile	0.186 (0.934)	0.208 (1.023)	0.030 (0.192)	0.050 (0.322)
Wage 4th quartile	**0.386 (2.011)**	*0.368 (1.885)*	*0.227 (1.807)*	*0.220 (1.717)*
Skilled worker	- -	*-0.393 (1.806)*	- -	0.148 (0.794)
Unskilled worker	- -	-0.382 (1.325)	- -	-0.362 (1.285)
Office worker	- -	0.038 (0.171)	- -	0.201 (1.367)
Out of Labour Force (OLF)	*0.278 (1.905)*	*0.280 (1.906)*	0.077 (0.49)	0.074 (0.473)
Current unemployment spell (Reference: no benefit at all, measured monthly)				
Welfare benefits	**-0.647 (3.433)**	**-0.649 (3.427)**	**-0.369 (2.138)**	**-0.364 (2.112)**
Unemployment benefits	**-0.586 (4.881)**	**-0.579 (4.764)**	-0.074 (0.708)	-0.065 (0.624)
Unemployment rate	*0.216 (1.774)*	*0.215 (1.757)*	0.094 (0.952)	0.093 (0.936)
Individual observed covariates (at sampling date)				
Paris	-0.119 (1.089)	-0.125 (1.132)	-0.011 (0.117)	-0.012 (0.121)
Women	**0.545 (4.98)**	**0.503 (4.445)**	**0.580 (6.168)**	**0.558 (5.669)**
Less than 26 years old	**0.343 (3.065)**	**0.338 (2.99)**	*0.168 (1.661)*	*0.174 (1.692)*
Transition to Community Jobs (CJ)				
Piecewise baseline hazard for durations (Ref: less than 3 months)				
Between 4 and 6 months	*0.372 (1.821)*	*0.378 (1.832)*	*0.366 (1.703)*	*0.370 (1.709)*
Between 7 and 12 months	0.318 (1.518)	0.327 (1.551)	**0.643 (3.216)**	**0.641 (3.171)**
Between 12 and 24 months	*0.419 (1.931)*	**0.432 (1.971)**	**1.095 (5.313)**	**1.093 (5.268)**
Beyond 25 months	**0.654 (2.612)**	**0.671 (2.671)**	*0.541 (1.784)*	*0.551 (1.808)*
Previous state on the labor market (Ref: first participation)				
Community job (CJ)	**0.991 (3.891)**	**1.013 (3.979)**	**0.741 (3.089)**	**0.732 (3.041)**
Basic training (BT)	**0.788 (2.993)**	**0.796 (3.001)**	0.193 (0.71)	0.160 (0.591)
Vocational training (VT)	**1.012 (3.854)**	**1.018 (3.840)**	0.354 (1.339)	0.330 (1.247)
Employment in the first quartile of wages, seniority less than one year, occupied as an office worker				
Long term Contract (LTC)	0.118 (0.378)	0.103 (0.257)	**-1.010 (2.698)**	**-1.039 (2.47)**
Fixed Term Contract (FTC)	-0.056 (0.217)	-0.135 (0.39)	-0.097 (0.429)	-0.127 (0.395)
Temporary Contract (TC)	-0.448 (1.055)	-0.481 (0.957)	0.058 (0.18)	0.156 (0.35)
Common employment heterogeneous effects				
Seniority > one year	**-1.094 (3.683)**	**-1.082 (3.608)**	**-0.569 (1.996)**	**-0.580 (1.993)**
Wage 2nd quartile	0.268 (1.468)	0.277 (1.509)	0.218 (1.109)	0.218 (1.098)
Wage 3rd quartile	0.153 (0.607)	0.197 (0.772)	0.200 (0.89)	0.204 (0.892)
Wage 4th quartile	-0.204 (0.688)	-0.077 (0.259)	**-0.615 (2.268)**	**-0.609 (2.219)**
Skilled worker	- -	-0.060 (0.216)	- -	-0.177 (0.508)
Unskilled worker	- -	**-1.299 (2.406)**	- -	-0.118 (0.268)
Professionals	- -	-0.255 (0.809)	- -	-0.111 (0.37)
Out of Labour Force (OLF)	-0.345 (1.426)	-0.324 (1.327)	*-0.406 (1.872)*	*-0.419 (1.922)*
Current unemployment spell (Ref: no benefit at all, measured monthly)				
Welfare benefits	**0.434 (2.683)**	**0.415 (2.553)**	**0.341 (2.042)**	**0.356 (2.098)**
Unemployment benefits	-0.152 (0.980)	-0.156 (1.000)	**-0.561 (3.853)**	**-0.546 (3.731)**
Unemployment rate	*0.241 (1.664)*	*0.241 (1.655)*	**0.341 (2.227)**	**0.349 (2.266)**
Individual observed covariates (at sampling date)				
Paris	0.178 (1.328)	0.174 (1.288)	-0.093 (0.664)	-0.088 (0.626)
Women	-0.047 (0.372)	-0.095 (0.72)	**0.672 (4.714)**	**0.680 (4.613)**
Less than 26 years old	0.156 (1.104)	0.143 (1.01)	0.091 (0.680)	0.091 (0.679)

Remarks: T-statistics between parenthesis; bold characters are significant at the 5% level, Italic at 10%.

Table 2: Results for the prefered specifications with two mass points (2/7)

	No Diploma		Rest of the Sample	
Specification with job qualifications:	No (1)	Yes (2)	No (3)	Yes (4)
Transition to Basic Training (BT)				
Piecewise baseline hazard for durations (Ref: less than 3 months)				
Between 4 and 6 months	**0.545 (2.399)**	**0.543 (2.345)**	**1.172 (4.410)**	**1.159 (4.259)**
Between 7 and 12 months	**0.574 (2.565)**	**0.571 (2.526)**	**1.398 (5.156)**	**1.388 (5.044)**
Between 12 and 24 months	**0.575 (2.443)**	**0.575 (2.426)**	**1.460 (5.318)**	**1.435 (5.153)**
Beyond 25 months	**0.627 (2.042)**	**0.632 (2.042)**	**1.125 (2.784)**	**1.046 (2.589)**
Previous state on the labor market (Ref: first participation)				
Community job (CJ)	-0.046 (0.161)	-0.047 (0.162)	**1.046 (2.462)**	**0.981 (2.33)**
Basic training (BT)	0.356 (1.361)	0.342 (1.300)	*0.817 (1.825)*	**0.847 (1.938)**
Vocational training (VT)	-0.106 (0.319)	-0.112 (0.328)	0.052 (0.099)	0.083 (0.158)
Employment in the first quartile of wages and a seniority less than one year				
Long term Contract (LTC)	**-0.782 (2.019)**	-0.658 (1.372)	0.563 (1.317)	0.598 (1.266)
Fixed Term Contract (FTC)	**-0.744 (2.648)**	-0.606 (1.581)	0.566 (1.442)	0.607 (1.398)
Temporary Contract (TC)	-0.678 (1.505)	-0.446 (0.927)	**1.293 (2.875)**	**1.212 (2.419)**
Common employment heterogeneous effects				
Seniority > one year	-0.249 (0.743)	-0.263 (0.751)	-0.224 (0.883)	-0.219 (0.857)
Wage 2nd quartile	0.156 (0.684)	0.162 (0.695)	-0.400 (1.38)	-0.404 (1.386)
Wage 3rd quartile	-0.227 (0.724)	-0.222 (0.696)	-0.340 (1.155)	-0.356 (1.183)
Wage 4th quartile	*-0.764 (1.854)*	*-0.801 (1.88)*	-0.081 (0.384)	-0.102 (0.472)
Skilled worker	- -	-0.425 (1.294)	- -	-0.092 (0.268)
Unskilled worker	- -	-0.166 (0.399)	- -	-0.243 (0.576)
Office worker	- -	-0.047 (0.135)	- -	0.110 (0.406)
Out of Labour Force (OLF)	-0.350 (1.607)	-0.347 (1.581)	0.540 (1.409)	0.517 (1.353)
Current unemployment spell (Ref: no benefit at all, measured monthly)				
Welfare benefits	-0.232 (1.066)	-0.225 (1.023)	0.354 (1.442)	0.331 (1.37)
Unemployment benefits	0.040 (0.227)	0.031 (0.176)	0.112 (0.552)	0.101 (0.494)
Unemployment rate	**0.442 (2.935)**	**0.438 (2.861)**	0.123 (0.744)	0.106 (0.641)
Individual observed covariates (at sampling date)				
Paris	0.028 (0.189)	0.020 (0.13)	0.000 (0)	-0.001 (0.007)
Women	**0.322 (2.274)**	**0.298 (2.019)**	*0.277 (1.715)*	0.214 (1.27)
Less than 26 years old	0.173 (1.144)	0.171 (1.116)	-0.256 (1.323)	-0.242 (1.24)
Transition to Vocational Training (VT)				
Piecewise baseline hazard for durations (Ref: less than 3 months)				
Between 4 and 6 months	**0.569 (3.265)**	**0.558 (3.157)**	**0.988 (6.445)**	**0.973 (6.294)**
Between 7 and 12 months	**0.384 (2.086)**	**0.368 (1.966)**	**0.487 (2.897)**	**0.464 (2.758)**
Between 12 and 24 months	-0.085 (0.393)	-0.105 (0.48)	0.190 (0.938)	0.153 (0.76)
Beyond 25 months	*-0.899 (1.858)*	*-0.950 (1.947)*	-0.088 (0.236)	-0.146 (0.393)
Previous state on the labor market (Ref: first participation)				
Community job (CJ)	**-0.906 (2.930)**	**-0.941 (3.009)**	0.110 (0.397)	0.084 (0.305)
Basic training (BT)	0.175 (0.684)	0.147 (0.567)	0.323 (1.182)	0.366 (1.356)
Vocational training (VT)	0.171 (0.666)	0.157 (0.602)	*0.469 (1.859)*	**0.500 (2.016)**
Employment in the first quartile of wages, seniority less than one year, occupied as an office worker				
Long term Contract (LTC)	**-1.195 (3.606)**	**-0.969 (2.420)**	-0.375 (1.364)	*-0.360 (1.166)*
Fixed Term Contract (FTC)	**-0.473 (2.081)**	**-0.218 (0.766)**	0.095 (0.445)	0.098 (0.392)
Temporary Contract (TC)	**-0.749 (2.402)**	**-0.466 (1.292)**	0.125 (0.445)	-0.094 (0.290)
Common employment heterogeneous effects				
Seniority > one year	**-0.564 (2.029)**	**-0.551 (1.906)**	-0.278 (1.377)	-0.266 (1.313)
Wage 2nd quartile	-0.197 (0.847)	-0.175 (0.735)	**-0.551 (2.404)**	**-0.568 (2.456)**
Wage 3rd quartile	-0.200 (0.780)	-0.178 (0.675)	0.018 (0.101)	0.032 (0.174)
Wage 4th quartile	0.039 (0.167)	-0.004 (0.016)	**-0.389 (2.093)**	**-0.348 (1.88)**
Skilled worker	- -	-0.305 (1.099)	- -	0.355 (1.472)
Unskilled worker	- -	-0.063 (0.191)	- -	-0.333 (1.045)
Professionals	- -	0.208 (0.703)	- -	0.118 (0.535)
Out of Labour Force (OLF)	**-0.711 (3.164)**	**-0.725 (3.188)**	0.147 (0.688)	0.143 (0.673)
Current unemployment spell (Ref: no benefit at all, measured monthly)				
Welfare benefits	*-0.406 (1.770)*	*-0.386 (1.646)*	-0.229 (1.129)	-0.224 (1.112)
Unemployment benefits	*0.275 (1.780)*	*0.301 (1.915)*	-0.004 (0.027)	-0.003 (0.025)
Unemployment rate	**0.316 (2.227)**	**0.320 (2.220)**	**0.582 (4.615)**	**0.580 (4.552)**
Individual observed covariates (at sampling date)				
Paris	*0.244 (1.930)*	*0.238 (1.840)*	0.008 (0.066)	0.005 (0.042)
Women	**-0.590 (4.467)**	**-0.604 (4.437)**	-0.167 (1.461)	-0.188 (1.592)
Less than 26 years old	**0.691 (4.783)**	**0.686 (4.695)**	0.183 (1.426)	0.169 (1.301)

Remarks: T-statistics between parenthesis; bold characters are significant at the 5% level, Italic at 10%.

Table 2: Results for the prefered specifications with two mass points (4/7)

Specification with job qualifications:	No Diploma		Rest of the Sample	
	No (1)	Yes (2)	No (3)	Yes (4)
Transition to Temporary Contract (TC)				
Piecewise baseline hazard for durations (Ref: less than 3 months)				
Between 4 and 6 months	-0.149 (1.356)	-0.140 (1.260)	**-0.190 (2.074)**	-0.118 (1.200)
Between 7 and 12 months	**-0.546 (4.192)**	**-0.532 (4.035)**	**-0.477 (4.105)**	**-0.363 (2.864)**
Between 12 and 24 months	**-0.764 (4.512)**	**-0.740 (4.291)**	**-1.106 (6.399)**	**-0.968 (5.176)**
Beyond 25 months	**-1.122 (3.383)**	**-1.108 (3.334)**	**-1.528 (4.123)**	**-1.377 (3.539)**
Previous state on the labor market (Ref: first participation)				
Community job (CJ)	**-0.745 (2.01)**	**-0.737 (1.968)**	**-0.619 (2.269)**	*-0.529 (1.896)*
Basic training (BT)	-0.081 (0.241)	-0.040 (0.119)	0.081 (0.341)	0.029 (0.118)
Vocational training (VT)	**0.637 (2.222)**	**0.673 (2.327)**	-0.015 (0.066)	-0.041 (0.177)
Employment in the first quartile of wages, seniority less than one year, occupied as an office worker				
Long term Contract (LTC)	0.376 (1.478)	0.296 (1.060)	**-0.380 (2.031)**	**-0.562 (2.655)**
Fixed Term Contract (FTC)	**0.722 (3.320)**	**0.646 (2.642)**	0.136 (0.911)	-0.062 (0.355)
Temporary Contract (TC)	**2.054 (9.601)**	**1.947 (8.221)**	**1.574 (11.294)**	**1.265 (7.260)**
Common employment heterogeneous effects				
Seniority > one year	**-0.414 (2.848)**	**-0.415 (2.788)**	*-0.233 (1.879)*	*-0.239 (1.869)*
Wage 2nd quartile	-0.124 (0.776)	-0.142 (0.872)	0.065 (0.444)	0.052 (0.343)
Wage 3rd quartile	0.136 (0.927)	0.090 (0.603)	0.118 (0.929)	0.024 (0.179)
Wage 4th quartile	0.219 (1.468)	0.155 (0.991)	0.180 (1.633)	0.104 (0.900)
Skilled worker	- -	**0.407 (2.047)**	- -	**0.366 (2.316)**
Unskilled worker	- -	***0.569 (2.593)***	- -	**0.926 (5.503)**
Professionals	- -	0.213 (0.937)	- -	-0.011 (0.075)
Out of Labour Force (OLF)	0.133 (0.587)	0.154 (0.676)	-0.200 (1.223)	-0.173 (1.025)
Current unemployment spell (Ref: no benefit at all, measured monthly)				
Welfare benefits	**-0.609 (3.341)**	**-0.613 (3.330)**	**-0.686 (4.312)**	**-0.735 (4.081)**
Unemployment benefits	-0.138 (1.282)	-0.141 (1.282)	**-0.215 (2.608)**	**-0.228 (2.556)**
Unemployment rate	0.046 (0.455)	0.047 (0.463)	-0.117 (1.347)	-0.144 (1.599)
Individual observed covariates (at sampling date)				
Paris	0.007 (0.078)	0.012 (0.132)	0.061 (0.789)	0.075 (0.912)
Women	**-0.981 (9.141)**	**-0.914 (8.022)**	**-0.830 (10.795)**	**-0.761 (8.245)**
Less than 26 years old	0.113 (1.148)	0.128 (1.279)	**0.390 (4.909)**	**0.425 (4.953)**
Transition to a Non Professional Occupation				
Previous state on the labor market (Ref: first participation)				
Community job (CJ)	- -	0.551 (1.466)	- -	**0.471 (2.367)**
Basic training (BT)	- -	-0.147 (0.477)	- -	0.194 (1.058)
Vocational training (VT)	- -	0.111 (0.315)	- -	-0.090 (0.612)
Employment in the first quartile of wages, seniority less than one year, occupied as an office worker				
Long term Contract (LTC)	- -	**-0.991 (3.552)**	- -	**-0.627 (4.509)**
Fixed Term Contract (FTC)	- -	**-0.830 (3.191)**	- -	**-0.543 (4.536)**
Temporary Contract (TC)	- -	*-0.582 (1.649)*	- -	**-0.373 (2.210)**
Common employment heterogeneous effects				
Seniority > one year	- -	-0.094 (0.569)	- -	-0.094 (0.967)
Wage 2nd quartile	- -	-0.169 (0.888)	- -	*0.176 (1.611)*
Wage 3rd quartile	- -	0.074 (0.370)	- -	-0.038 (0.401)
Wage 4th quartile	- -	-0.198 (1.104)	- -	**-0.424 (5.322)**
Skilled worker	- -	**0.528 (2.659)**	- -	0.122 (0.877)
Unskilled worker	- -	*0.498 (1.841)*	- -	**0.605 (4.575)**
Professionals	- -	**-0.817 (4.951)**	- -	**-1.115 (13.194)**
Out of Labour Force (OLF)	- -	-0.206 (0.889)	- -	0.030 (0.262)
Current unemployment spell (Ref: no benefit at all, measured monthly)				
Welfare benefits	- -	-0.125 (0.610)	- -	*-0.202 (1.655)*
Unemployment benefits	- -	-0.078 (0.596)	- -	-0.036 (0.532)
Unemployment duration (Ref: less than 6 months)				
Between 7 and 12 months	- -	*0.280 (1.668)*	- -	-0.0445 (0.599)
Between 12 and 24 months	- -	0.294 (1.573)	- -	**0.1825 (2.105)**
Beyond 25 months	- -	-0.239 (1.438)	- -	-0.0371 (0.378)
Unemployment rate	- -	-0.178 (1.384)	- -	**-0.245 (3.795)**
Accepted job contract (Ref: Fixed term contract -FTC-, at the beginning of the employment spell)				
Long term Contract (LTC)	- -	-0.074 (0.543)	- -	**-0.2388 (3.973)**
Individual observed covariates (at sampling date)				
Paris	- -	0.047 (0.385)	- -	-0.077 (1.295)
Women	- -	**0.271 (2.107)**	- -	**0.245 (3.984)**
Less than 26 years old	- -	0.130 (0.987)	- -	**0.241 (3.599)**

Remarks: T-statistics between parenthesis; bold characters are significant at the 5% level, Italic at 10%.

Table 2: Results for the prefered specifications with two mass points (5/7)

	No Diploma		Rest of the Sample	
Specification with job qualifications:	No (1)	Yes (2)	No (3)	Yes (4)
Distribution of Accepted Wages				
Piecewise baseline hazard for accepted wages (Ref: 1-10 percentile)				
10-15 percentile	**-1.374 (9.186)**	**-1.378 (8.928)**	**-1.603 (12.393)**	**-1.611 (12.314)**
15-20 percentile	**-1.926 (12.636)**	**-1.931 (12.315)**	**-2.092 (15.931)**	**-2.104 (15.775)**
20-25 percentile	**-2.890 (21.332)**	**-2.897 (20.882)**	**-2.927 (23.771)**	**-2.944 (23.44)**
25-30 percentile	**-3.609 (22.938)**	**-3.617 (22.278)**	**-3.691 (26.655)**	**-3.713 (26.389)**
…. Not reported….	… …		… …	
70-75 percentile	**-4.108 (22.851)**	**-4.130 (22.55)**	**-3.543 (23.052)**	**-3.647 (23.296)**
75-80 percentile	**-4.313 (23.603)**	**-4.339 (22.883)**	**-4.195 (31.947)**	**-4.312 (32.362)**
80-85 percentile	**-4.095 (23.015)**	**-4.131 (22.507)**	**-3.900 (30.595)**	**-4.042 (31.403)**
85-90 percentile	**-4.250 (23.235)**	**-4.296 (22.616)**	**-4.143 (33.419)**	**-4.331 (34.44)**
90-95 percentile	**-4.462 (24.041)**	**-4.507 (23.852)**	**-4.232 (33.574)**	**-4.469 (35.022)**
95-100 percentile	**-4.288 (22.118)**	**-4.333 (22.047)**	**-4.156 (33.722)**	**-4.506 (36.285)**
Previous state on the labor market (Ref: first participation)				
Community job (CJ)	0.123 (0.737)	0.116 (0.675)	**-0.393 (2.314)**	-0.086 (0.544)
Basic training (BT)	-0.035 (0.194)	-0.023 (0.132)	**-0.383 (2.391)**	-0.131 (0.847)
Vocational training (VT)	-0.138 (0.626)	-0.128 (0.589)	-0.153 (1.274)	0.059 (0.521)
Employment in the first quartile of wages, seniority less than one year, occupied as an office worker				
Long term Contract (LTC)	0.192 (1.194)	*0.357 (1.828)*	**-0.304 (3.159)**	-0.028 (0.264)
Fixed Term Contract (FTC)	-0.042 (0.315)	0.155 (0.914)	**-0.304 (3.845)**	0.000 (0.001)
Temporary Contract (TC)	**0.405 (2.317)**	**0.499 (2.532)**	-0.043 (0.374)	*0.241 (1.892)*
Common employment heterogeneous effects				
Seniority > one year	0.109 (1.103)	0.077 (0.766)	**0.189 (2.554)**	**0.148 (2.089)**
Wage 2nd quartile	0.082 (0.814)	0.119 (1.179)	-0.092 (1.128)	-0.048 (0.608)
Wage 3rd quartile	**0.236 (1.962)**	**0.236 (1.909)**	**0.203 (2.65)**	**0.169 (2.228)**
Wage 4th quartile	**0.825 (7.761)**	**0.761 (6.820)**	**0.890 (13.341)**	**0.640 (9.805)**
Skilled worker	- -	-0.007 (0.059)	- -	-0.051 (0.558)
Unskilled worker	- -	0.004 (0.026)	- -	-0.061 (0.519)
Professionals	- -	0.194 (1.480)	- -	**0.155 (2.133)**
Out of Labour Force (OLF)	0.043 (0.316)	0.079 (0.584)	**-0.164 (1.972)**	-0.050 (0.569)
Previous unemployment spell (Ref: no benefit at all; measured at the end of the unemployment spell)				
Welfare benefits	-0.125 (0.775)	-0.121 (0.730)	0.033 (0.317)	0.018 (0.18)
Unemployment benefits	**0.157 (2.073)**	*0.146 (1.891)*	-0.005 (0.095)	-0.027 (0.51)
Unemployment duration (Ref: less than 6 months)				
Between 7 and 12 months	*-0.150 (1.707)*	-0.143 (1.607)	0.015 (0.267)	0.034 (0.554)
Between 12 and 24 months	**-0.212 (2.164)**	*-0.196 (1.975)*	-0.080 (1.118)	0.038 (0.547)
Beyond 25 months	-0.122 (1.174)	-0.091 (0.869)	0.009 (0.105)	0.089 (1.069)
Unemployment rate	0.021 (0.287)	0.034 (0.470)	0.057 (1.103)	0.011 (0.211)
Accepted job contract (Ref: Fixed term contract -FTC-, professional, at the beginning of the employment spell)				
Long term Contract (LTC)	**-0.235 (2.131)**	**-0.242 (2.252)**	**0.340 (6.209)**	**0.250 (4.735)**
Skilled worker	- -	-0.135 (0.843)	- -	**-1.101 (14.255)**
Unskilled worker	- -	0.214 (1.192)	- -	**-0.846 (8.753)**
Office worker	- -	0.065 (0.387)	- -	**-1.063 (15.258)**
Individual observed covariates (at sampling date)				
Paris	**0.266 (3.707)**	**0.214 (2.901)**	**0.195 (3.932)**	**0.192 (4.020)**
Women	**-0.321 (4.664)**	**-0.319 (4.099)**	**-0.148 (3.147)**	**-0.101 (1.914)**
Less than 26 years old	**-0.362 (5.075)**	**-0.340 (4.629)**	**-0.487 (9.062)**	**-0.375 (7.137)**

Remarks: T-statistics between parenthesis; bold characters are significant at the 5% level, Italic at 10%.

Table 2: Results for the prefered specifications with two mass points (6/7)

	No Diploma		Rest of the Sample	
Specification with job qualifications:	No	Yes	No	Yes
	(1)	(2)	(3)	(4)
Distribution of Employment Durations				
Piecewise baseline hazard for durations (Ref: less than 3 months)				
Between 4 and 6 months	**-0.304 (4.564)**	**-0.307 (4.510)**	**-0.103 (1.999)**	**-0.104 (2.001)**
Between 7 and 12 months	**-0.143 (2.095)**	**-0.151 (2.169)**	0.011 (0.214)	0.008 (0.143)
Between 12 and 24 months	**0.430 (3.888)**	**0.412 (3.595)**	**0.551 (7.584)**	**0.548 (7.503)**
Beyond 25 months	**1.041 (2.879)**	**1.026 (2.821)**	**0.712 (4.238)**	**0.707 (4.149)**
Previous state on the labor market (Ref: first participation)				
Community job (CJ)	0.162 (1.205)	0.175 (1.277)	-0.020 (0.180)	-0.011 (0.097)
Basic training (BT)	**0.323 (2.200)**	**0.320 (2.123)**	-0.053 (0.504)	-0.048 (0.448)
Vocational training (VT)	0.223 (1.552)	0.227 (1.559)	*0.145 (1.780)*	*0.154 (1.818)*
Employment in the first quartile of wages, seniority less than one year, occupied as an office worker				
Long term Contract (LTC)	0.160 (1.377)	0.103 (0.768)	0.079 (1.123)	0.118 (1.535)
Fixed Term Contract (FTC)	*0.183 (1.812)*	0.136 (1.139)	0.066 (1.121)	0.103 (1.551)
Temporary Contract (TC)	0.145 (1.212)	0.110 (0.815)	**0.161 (2.205)**	**0.241 (2.79)**
Common employment heterogeneous effects				
Seniority > one year	0.010 (0.148)	0.006 (0.086)	-0.015 (0.339)	-0.014 (0.305)
Wage 2nd quartile	-0.020 (0.265)	-0.020 (0.261)	-0.013 (0.236)	-0.011 (0.204)
Wage 3rd quartile	*-0.132 (1.786)*	*-0.140 (1.847)*	0.045 (0.880)	0.047 (0.893)
Wage 4th quartile	-0.010 (0.134)	-0.037 (0.449)	-0.057 (1.321)	-0.071 (1.587)
Skilled worker	- -	-0.191 (1.85)	- -	-0.048 (0.832)
Unskilled worker	- -	-0.093 (0.81)	- -	-0.049 (0.818)
Professsionals	- -	-0.126 (1.228)	- -	-0.013 (0.275)
Out of Labour Force (OLF)	0.173 (1.632)	0.173 (1.596)	0.021 (0.326)	0.029 (0.449)
Previous unemployment spell (Ref: no benefit at all; measured at the end of the unemployment spell)				
Welfare benefits	**-0.326 (3.283)**	**-0.327 (3.169)**	**-0.166 (2.122)**	**-0.170 (2.123)**
Unemployment benefits	-0.076 (1.392)	-0.081 (1.463)	-0.020 (0.569)	-0.020 (0.569)
Unemployment duration (Ref: less than 6 months)				
Between 7 and 12 months	*0.141 (1.948)*	*0.141 (1.895)*	**0.141 (2.844)**	**0.130 (2.564)**
Between 12 and 24 months	**0.177 (2.381)**	**0.183 (2.396)**	**0.227 (3.909)**	**0.219 (3.732)**
Beyond 25 months	**0.313 (3.488)**	**0.322 (3.492)**	**0.226 (2.792)**	**0.214 (2.608)**
Current unemployment rate (monthly)	**-0.356 (5.988)**	**-0.358 (5.884)**	**-0.334 (7.148)**	**-0.331 (6.983)**
Accepted job contract (Ref: Fixed term contract, first quartile of wages, professional)				
Long term Contract (LTC)	**0.926 (11.663)**	**0.924 (11.339)**	**0.696 (14.035)**	**0.705 (14.065)**
Temporary Contract (TC)	-0.038 (0.532)	0.004 (0.048)	**-0.228 (4.137)**	**-0.167 (2.416)**
Wage 2nd quartile	**0.111 (2.473)**	**0.128 (2.287)**	**0.184 (4.609)**	**0.185 (4.359)**
Wage 3rd quartile	**0.221 (5.130)**	**0.263 (4.179)**	**0.225 (6.409)**	**0.222 (5.691)**
Wage 4th quartile	**0.149 (2.937)**	**0.180 (2.826)**	**0.293 (8.610)**	**0.275 (7.113)**
Skilled worker	- -	0.030 (0.361)	- -	-0.064 (0.963)
Unskilled worker	- -	0.042 (0.395)	- -	-0.014 (0.203)
Office worker	- -	-0.036 (0.387)	- -	0.029 (0.551)
Individual observed covariates (at sampling date)				
Paris	0.027 (0.551)	0.020 (0.4)	0.001 (0.025)	0.004 (0.105)
Women	-0.004 (0.086)	0.000 (0.002)	**0.071 (2.235)**	*0.062 (1.643)*
Less than 26 years old	-0.077 (1.513)	-0.071 (1.363)	-0.034 (0.971)	-0.035 (0.964)

Remarks: T-statistics between parenthesis; bold characters are significant at the 5% level, Italic at 10%.

Table 2: Results for the prefered specifications with two mass points (7/7)

	No Diploma		Rest of the Sample	
Specification with job qualifications:	No (1)	Yes (2)	No (3)	Yes (4)
Transition to Attrition (AT)				
Piecewise baseline hazard for durations (Ref: less than 3 months)				
Between 4 and 6 months	**-0.360 (2.118)**	**-0.352 (2.052)**	0.014 (0.086)	0.008 (0.048)
Between 7 and 12 months	**1.019 (7.355)**	**1.029 (7.306)**	**1.056 (7.619)**	**1.046 (7.483)**
Between 12 and 24 months	**0.743 (5.138)**	**0.753 (5.126)**	**0.807 (5.603)**	**0.796 (5.492)**
Beyond 25 months	**-2.532 (4.196)**	**-2.513 (4.125)**	**-3.400 (3.311)**	**-3.429 (3.326)**
Previous state on the labor market (Ref: first participation)				
Community job (CJ)	0.110 (0.675)	0.099 (0.603)	0.015 (0.077)	0.009 (0.044)
Basic training (BT)	0.163 (0.961)	0.150 (0.883)	0.048 (0.231)	0.030 (0.142)
Vocational training (VT)	0.110 (0.568)	0.090 (0.463)	0.194 (1.076)	0.177 (0.980)
Employment in the first quartile of wages, seniority less than one year, occupied as an office worker				
Long term Contract (LTC)	**0.447 (2.980)**	0.255 (1.398)	0.223 (1.452)	0.231 (1.396)
Fixed Term Contract (FTC)	**0.375 (2.843)**	0.193 (1.186)	**0.320 (2.413)**	**0.327 (2.241)**
Temporary Contract (TC)	**0.380 (2.293)**	0.210 (1.120)	**0.339 (2.066)**	**0.408 (2.272)**
Common employment heterogeneous effects				
Seniority > one year	*-0.185 (1.760)*	*-0.181 (1.684)*	0.011 (0.113)	0.009 (0.095)
Wage 2nd quartile	-0.098 (0.913)	-0.107 (0.987)	0.015 (0.138)	0.020 (0.177)
Wage 3rd quartile	-0.030 (0.257)	-0.042 (0.361)	-0.074 (0.718)	-0.071 (0.679)
Wage 4th quartile	0.010 (0.097)	0.027 (0.243)	**-0.202 (2.23)**	**-0.212 (2.287)**
Skilled worker	- -	-0.047 (0.402)	- -	-0.027 (0.21)
Unskilled worker	- -	-0.005 (0.036)	- -	0.083 (0.592)
Professionals	- -	-0.231 (1.669)	- -	0.016 (0.158)
Out of Labour Force (OLF)	0.188 (1.531)	0.173 (1.404)	*0.224 (1.675)*	0.217 (1.621)
Previous unemployment spell (Ref: no benefit at all; at the beginning of the unemployment spell)				
Welfare benefits	0.028 (0.260)	0.037 (0.335)	**0.247 (2.223)**	**0.244 (2.185)**
Unemployment benefits	**-0.207 (2.660)**	**-0.214 (2.723)**	-0.051 (0.678)	-0.050 (0.664)
Unemployment rate	**2.000 (15.379)**	**1.997 (15.245)**	**2.562 (15.347)**	**2.567 (15.252)**
Individual observed covariates (at sampling date)				
Paris	**0.204 (3.045)**	**0.198 (2.932)**	**0.305 (4.674)**	**0.306 (4.657)**
Women	**-0.349 (5.144)**	**-0.361 (4.997)**	**-0.220 (3.412)**	**-0.200 (2.910)**
Less than 26 years old	0.036 (0.498)	0.036 (0.483)	-0.006 (0.081)	-0.006 (0.086)
Distribution of Unobserved Heterogeneity				
Location parameters, first type				
Transition to OLF	**-5.245 (23.083)**	**-5.302 (15.725)**	**-5.145 (25.542)**	**-5.256 (20.103)**
Transition to CJ	**-5.686 (19.152)**	**-5.451 (12.094)**	**-5.764 (22.959)**	**-5.695 (14.149)**
Transition to BT	**-6.133 (16.990)**	**-6.119 (11.799)**	**-7.487 (16.493)**	**-7.325 (13.298)**
Transition to VT	**-5.274 (19.68)**	**-5.484 (13.594)**	**-5.709 (22.315)**	**-5.671 (15.924)**
Transition to LTC	**-5.331 (23.181)**	**-5.351 (17.548)**	**-3.953 (29.493)**	**-3.993 (22.116)**
Transition to FTC	**-3.861 (26.204)**	**-3.694 (18.142)**	**-3.212 (35.410)**	**-3.125 (25.103)**
Transition to TC	**-4.010 (18.915)**	**-4.251 (12.98)**	**-3.588 (25.352)**	**-3.878 (17.128)**
Non-professionnal occupation	- -	**2.220 (6.778)**	- -	**1.700 (11.034)**
Employment duration	**2.083 (16.562)**	**2.276 (11.626)**	**2.048 (25.179)**	**2.042 (18.582)**
Accepted wages	**6.168 (35.726)**	**5.982 (21.103)**	**6.808 (53.292)**	**7.404 (46.245)**
Tranition to Attrition	**-6.382 (28.454)**	**-6.121 (23.328)**	**-7.225 (28.868)**	**-7.264 (26.564)**
Location parameters, second type				
Transition to OLF	**-5.273 (14.479)**	**-5.136 (12.393)**	**-4.605 (13.230)**	**-5.113 (8.79)**
Transition to CJ	**-5.942 (11.901)**	**-5.610 (10.707)**	**-6.869 (6.395)**	**-8.054 (0.873)**
Transition to BT	**-5.304 (15.044)**	**-5.222 (10.227)**	**-6.149 (11.475)**	**-6.224 (8.49)**
Transition to VT	**-4.849 (13.987)**	**-5.005 (11.355)**	**-4.796 (13.164)**	**-5.259 (8.781)**
Transition to LTC	**-5.049 (16.893)**	**-5.225 (14.593)**	**-4.105 (15.482)**	**-4.083 (11.761)**
Transition to FTC	**-4.893 (21.070)**	**-4.784 (18.04)**	**-3.086 (18.281)**	**-2.869 (13.104)**
Transition to TC	**-5.480 (11.754)**	**-5.724 (11.218)**	**-4.552 (8.688)**	**-2.473 (8.459)**
Non-professionnal occupation	- -	**1.371 (3.68)**	- -	**1.459 (6.142)**
Employment duration	**1.770 (7.973)**	**1.883 (7.77)**	**1.796 (11.415)**	**1.835 (9.836)**
Accepted wages	**7.528 (33.189)**	**7.340 (23.848)**	**8.357 (54.514)**	**9.020 (48.709)**
Tranition to Attrition	**-6.185 (23.252)**	**-6.006 (20.285)**	**-7.949 (17.623)**	**-8.093 (15.303)**
Probability parameters				
Pr(first type)	**1.063 (4.366)**	**0.963 (4.202)**	**2.302 (11.184)**	**2.686 (10.852)**
# Individuals	3264		4279	
# Spells	5451		7219	
# Parameters	257	315	257	315
Log-likelihood	-2.72843	-2.76198	-3.06419	-3.13133

Remarks: T-statistics between parenthesis; bold characters are significant at the 5% level, Italic at 10%.

Table 2 gives other interesting results that have to be mentioned, with strong links with job search mechanisms. Other things being equal, unemployment duration has a negative impact (significant between 12 and 24 months of unemployment) on the distribution of wages accepted, indicating that the reservation wage of the less-educated may decrease with time. The duration of unemployment also has a significant positive impact on employment duration at all levels of diploma. This result indicates, *ceteris paribus*, a positive impact of longer search. Being hired with a long-term contract or at a higher wage also implies higher employment durations, which is synonymous with a potentially higher match quality and stability.

As a robustness check, Table A1 in the appendix presents the parameter estimates for our three active labor market programs on the whole set of outcomes that correspond to the specification in columns 1 and 3 of Table 2, without unobserved heterogeneity or with one of the assumed two types of unobserved heterogeneity distributions. If we compare the specification without unobserved heterogeneity with the ones with two or four mass points, it clearly appears that unobserved heterogeneity does not change the results drastically, for any of the outcomes studied. In fact, as discussed above, the main differences are induced by changes in the observed level of diploma and the type of program. This result clearly holds even if Quong Vuong tests of non-nested hypotheses have rejected the assumption of selection using only the observables. This is probably due to the systematic introduction of previously observed employment and unemployment characteristics, especially previous seniority, occupations and wages. This result is in line with the assumption of selection based on observable covariates, as is discussed for instance in Heckman and Smith (1999), or more recently in Lechner and Wunsch (2013) and Biewen, Fitzenberger, Osikominu and Paul (2014). It is also consistent with a dynamic model with employer learning, whereby employees' productivity is increasingly revealed through wages, along with experience and seniority (see for instance Altonji and Pierret (2001)), implying a better control of usually unobserved determinants.

4.2. Simulating overall average program impacts

In order to establish interpretable overall impacts, average returns have been simulated and reported in Table 3. They correspond to average treatment effects, conditional to the educational level. For each educational level, and each of five potential previous situations in the labor market (first participation, the three types of programs and low-skilled employment), I simulated the expected unemployment durations and transition probabilities to the different destination states (employment, program participation, or out of labor force state). When employed, the corresponding expected wages and employment durations have been simulated as well. In these simulations, low skilled employment is defined, according to the full model specification, as a fixed term contract in a non-professional occupation, with wages in the first quartile of their distribution and employment durations of less than one year.

The probability of entering an LT contract is around 10 percent for the less-educated and around 17% for other unemployed persons. The previous state in the labor market does not impact on these probabilities much, except with the occurrence of a transition to vocational training programs, which increases that rate up to 23%. The probability of entering an FT contract is around 30 percent, but the occurrence of a transition to a low-skilled job increases this probability up to 50%.

Table 3: Simulations of overall average impacts according to the level of diploma

Previous state on the labor market:	No diploma					Rest of sample				
	First participation	Community Jobs	Basic Training	Vocational Training	Low-skilled job	First participation	Community Jobs	Basic Training	Vocational Training	Low-skilled job
Unemployment duration (months)	4.14	4.62	3.11	3.03	3.81	2.83	3.18	2.56	2.25	2.56
Probability of transition to:										
Out of Labor Force	0.16	0.10	0.12	0.04	0.08	0.16	0.09	0.10	0.11	0.08
Community Jobs	0.12	0.28	0.17	0.19	0.06	0.08	0.21	0.11	0.10	0.05
Basic Training	0.14	0.12	0.14	0.08	0.04	0.04	0.12	0.08	0.03	0.04
Vocational training	0.15	0.06	0.14	0.13	0.07	0.07	0.09	0.10	0.09	0.06
Temporary Contract	0.11	0.05	0.08	0.14	0.14	0.14	0.09	0.16	0.12	0.13
Short Term Contract	0.25	0.28	0.28	0.31	0.50	0.36	0.25	0.30	0.32	0.47
Long Term Contract	0.08	0.11	0.07	0.11	0.12	0.16	0.15	0.16	0.23	0.18
Aggregated probability of transition to:										
Out of Labor Force	0.16	0.10	0.12	0.04	0.08	0.16	0.09	0.10	0.11	0.08
A Program	0.41	0.46	0.45	0.40	0.17	0.19	0.42	0.29	0.22	0.15
Employment	0.44	0.44	0.43	0.56	0.75	0.66	0.49	0.62	0.68	0.77
Probability of transition to:										
LTC job, conditionally to employment	0.18	0.25	0.16	0.19	0.16	0.24	0.30	0.26	0.34	0.23
Accepted Wages (euros per month)	784.77	803.99	779.54	764.38	778.48	865.00	797.96	799.39	836.13	811.30
Employment Duration (months)	16.66	23.35	24.27	21.85	19.25	17.66	18.08	16.24	23.25	18.36

Remark: Low-skilled jobs are defined as employment spells in non professional occupations whose wages are in the first quartile of their empirical distribution and durations less thar one year

State dependence is also important: previous employment (resp. program participation) leads to a higher probability of a new employment (resp. program) transition. This is especially true when the previous state in the labor market was either a community job (27% for the less-educated and 21% for the more-educated) or a low-skilled job (respectively 50% and 47%).

Looking at the accepted wage distribution, it can be seen that wage variations for the less-educated range from $\in 764$ following vocational training, and up to $\in 804$ after a community job. In contrast, they range from $\in 797$ after a community job or a basic training program, to up to $\in 865$ in the case of a first participation in the labor market for the more-educated. The magnitude of these negative effects for them is thus around $\in 70$ for basic training programs and community jobs: i.e., an income loss of around 8%.

All programs display positive impacts on employment durations for the less-educated, from 17 months for a first participation in the labor market, and up to 24 months after a basic training. For the more-educated, employment durations vary from 18 months after a first participation in the labor market, up to 23 months after vocational training.

Comparing programs with low-skilled jobs, only vocational training programs appear to be more efficient for more educated persons in terms of wages, and employment durations. This is mainly due to their impacts on the transitions to long term contracts. Experiencing vocational training that is intensive in human capital would thus be effective in acquiring valuable skills for such more-educated persons. For the less-educated unemployed, all types of programs provide better returns than those obtained with a low-skilled job in terms of subsequent employment durations, especially following basic training programs and community jobs, highlighting the importance of the selection process of recipients into the programs.

4.3. Understanding the negative signalling effects for the more-educated

Earlier evaluations in the literature have found negative impacts of subsidized public employment schemes, such as the Community Jobs program. For instance, Bonnal, Fougère and Sérandon (1997) found that Community Jobs had a negative impact on the transition rates from unemployment to employment for the more-educated, in the short run. In a multiple state transition model, they interpreted this effect as a negative signal of low employment performance for the more-educated, sent to potential employers. This interpretation is theoretically grounded if we admit that: i) employers use statistical discrimination in the hiring process to circumvent insufficient information about the true productivity of employees; and ii) that taking a Community Job is supposed to be negatively correlated with productivity by potential employers.[16] More recently, Gomel and Lopez (2012a, b) have found a persistent negative effect on the distribution of wages accepted, in the long term (using a 10-year survey). They used matching estimators relying on the assumption of selection on the observables, and a parametric selection model with the exclusion restriction of regional variations in the availabilty of program slots.[17] Two possible explanations for this are put forward. First, program recipients are usually paid wages at the bottom end of the wage distribution – at the legal minimum wage – and their work experience accumulated during the program is not necessarily recognized and compensated

[16] See the "employer learning" literature and, for instance, Altonji and Pierret (2001) or more recently Arcidiano, Bayer and Hizmo (2010) in the context of education.

[17] Note that attrition is only taken into account according to the available observed covariates in these studies.

in the private sector. As a result, a program wage and experience penalty could persist after the end of the program. Second, these programs are exclusively driven by the public or non-profit sectors, so that state dependence in the public or non-profit sector, associated with lower wages in these sectors, could also explain the persistence of a wage gap.

It should be noted first that a non-profit wage or experience penalty is not necessarily incompatible with negative statistical discrimination. For instance, employer beliefs could be concerned with actual experience and sectoral trajectories. Second, the assumption of lower wages in public or non-profit sectors has to be nuanced. Results by Krueger (1988) or more recently Fougère and Pouget (2003) have shown that the average federal worker, *ceteris paribus*, earns more than his/her counterpart in the private sector. Moreover, if Narcy's (2008) findings support the labor donation theory (Preston (1989)), explaining why non-profit sector workers earn less than in the for-profit sector, results by Rhum and Borkoski (2003) suggest that these differences can be entirely explained by the concentration of non-profit employment in relatively low paid industries.

As explained above, public institutions and local administrations are the main employers engaged in community services, and participants are usually hired in non-professional and low-skilled activities. Moreover, specific activities or industries are over-represented in the hiring of Community Job participants as education, public administration, or social and health services. If a direct test of statistical discrimation is beyond the scope of the present study, it is still possible to explore other challenging explanations such as a state dependence relying on sectoral activities, or even the assumption of poorly-valued non-profit work experience in the for-profit/commercial sector.

Table 4 presents the results from complementary estimations for the subsample of the more-educated. Columns 1 and 2 of Table 4 correspond to the two main models of Table 2, without and with job occupations respectively. Apart from these two models, state dependence is now alternatively taken into account according to:

• the type of employer or sector: public firms, federal, state or local administrations, associations or non-profits, and other private sector employers (column 3), and;

• the type of activity or industry: education, health, social services, public administration, association and other activities (column 4).

With these extra specifications, the types of employer or activity are now introduced into the various outcome equations of employment and wages in place of occupations, besides the other unchanged variables. Endogeneity is explicitely taken into account through the estimation of a correlated additional equation, as in the main specification with job occupations. Rather than the actual occupation, the specification in column 5 uses a subjective variable indicating that employees feel over-qualified relative to the qualification levels of the job. The specification in column 6 explicitly takes into account the observed accumulation of work experience outside the programs, in the time stretching from the entry into the unemployment spell sampled through to the current spell. This allows the assumption that there is a penalty for poorly-valued work experience in the non-profit sector to be tested. Finally, the specification in column 7 uses wages with no full time conversion, in order to test partial working time effects.

Whatever the specification analyzed, results are almost unchanged either in the transition rates from unemployment to employment, the OLF state or the programs, or in the distribution of employment durations. As a result, none of the above-mentioned explanations is able to describe the observed negative effects of Community Jobs on the transitions to short term employment. Looking at the impact on the distribution of wages accepted, the

negative observed impacts are unchanged in all specifications, except the one in column 2, which introduces the actual occupation. As described above, the negative effect of Community Jobs vanishes fully in this case. Results are also slightly less negative in the specification in column 5, with the employee's subjective feeling of being over-qualified for the job, but the results still remain significant at the conventional levels. In contrast, results are almost unchanged when taking into account the type employer or the job activity or industry, thus rejecting these factors as challenging explanations.

Table 4: Complementary estimations for the sub-sample of unemployed with a diploma

	Basic specification (1)	With occupations (2)	With sectors (3)	With activity (4)	With employee subjective over qualification (5)	With actual experience in regular employment (6)	With real earnings (7)
Transition to Out of Labor Force (OLF)							
Community job (CJ)	**-0.787 (3.042)**	**-0.804 (3.111)**	**-0.781 (3.011)**	**-0.775 (2.986)**	**-0.776 (3.001)**	**-0.810 (3.132)**	**-0.774 (3.034)**
Basic training (BT)	**-0.495 (1.957)**	*-0.446 (1.764)*	*-0.495 (1.949)*	**-0.501 (1.966)**	*-0.471 (1.869)*	**-0.513 (2.021)**	*-0.472 (1.875)*
Vocational training (VT)	-0.211 (0.901)	-0.170 (0.733)	-0.211 (0.899)	-0.204 (0.869)	-0.188 (0.816)	-0.228 (0.974)	-0.162 (0.7)
Transition to Community Jobs (CJ)							
Community job	**0.741 (3.089)**	**0.730 (3.037)**	**0.733 (3.035)**	**0.721 (2.979)**	**0.713 (2.925)**	**0.747 (3.104)**	**0.814 (3.379)**
Basic training	0.193 (0.710)	0.148 (0.547)	0.185 (0.678)	0.181 (0.661)	0.180 (0.662)	0.196 (0.723)	0.160 (0.579)
Vocational training	0.354 (1.339)	0.317 (1.201)	0.346 (1.303)	0.330 (1.245)	0.367 (1.376)	0.358 (1.355)	0.393 (1.478)
Transition to Basic Training (BT)							
Community job	**1.046 (2.462)**	**0.968 (2.300)**	**0.977 (2.295)**	**0.986 (2.296)**	**0.921 (2.211)**	**1.058 (2.480)**	**0.876 (2.068)**
Basic training	*0.817 (1.825)*	**0.855 (1.963)**	*0.746 (1.661)*	0.721 (1.589)	*0.824 (1.925)*	*0.823 (1.831)*	*0.783 (1.769)*
Vocational training	0.052 (0.099)	0.081 (0.156)	-0.022 (0.042)	-0.024 (0.046)	0.056 (0.108)	0.053 (0.100)	0.097 (0.186)
Transition to Vocational Training (VT)							
Community job	0.110 (0.397)	0.085 (0.308)	0.111 (0.400)	0.117 (0.422)	0.060 (0.217)	0.111 (0.401)	-0.015 (0.053)
Basic training	0.323 (1.182)	0.380 (1.408)	0.312 (1.139)	0.340 (1.244)	0.417 (1.557)	0.321 (1.169)	0.380 (1.427)
Vocational training	*0.469 (1.859)*	0.514 (2.076)	*0.449 (1.773)*	*0.489 (1.93)*	**0.534 (2.147)**	*0.465 (1.836)*	**0.527 (2.132)**
Transition to Long Term Contract (LTC)							
Community job	-0.294 (1.287)	-0.278 (1.205)	-0.293 (1.252)	-0.293 (1.263)	-0.372 (1.548)	-0.268 (1.163)	-0.253 (1.106)
Basic training	-0.042 (0.193)	-0.012 (0.054)	-0.042 (0.191)	-0.057 (0.256)	-0.006 (0.026)	-0.015 (0.070)	-0.047 (0.217)
Vocational training	**0.556 (3.28)**	**0.577 (3.405)**	**0.559 (3.261)**	**0.543 (3.190)**	**0.603 (3.236)**	**0.584 (3.429)**	**0.580 (3.42)**
Transition to Fixed Term Contract (FTC)							
Community job	**-0.557 (3.797)**	**-0.552 (3.720)**	**-0.559 (3.762)**	**-0.552 (3.724)**	**-0.606 (3.894)**	**-0.560 (3.804)**	**-0.527 (3.616)**
Basic training	-0.242 (1.589)	-0.246 (1.600)	-0.242 (1.553)	-0.238 (1.535)	-0.205 (1.243)	-0.245 (1.607)	-0.228 (1.497)
Vocational training	0.021 (0.169)	0.020 (0.159)	0.022 (0.169)	0.026 (0.204)	0.062 (0.458)	0.020 (0.157)	0.038 (0.302)
Transition to Temporary Contract (TC)							
Community job	**-0.619 (2.269)**	*-0.525 (1.878)*	**-0.620 (2.267)**	**-0.627 (2.289)**	*-0.552 (1.949)*	**-0.622 (2.264)**	*-0.537 (1.93)*
Basic training	0.081 (0.341)	0.037 (0.148)	0.087 (0.362)	0.083 (0.345)	-0.013 (0.052)	0.072 (0.301)	0.016 (0.066)
Vocational training	-0.015 (0.066)	-0.038 (0.164)	-0.003 (0.012)	-0.020 (0.091)	-0.102 (0.437)	-0.021 (0.095)	0.011 (0.049)
Distribution of Accepted Wages							
Community job	**-0.393 (2.314)**	-0.074 (0.470)	**-0.447 (2.513)**	**-0.378 (2.204)**	**-0.377 (2.705)**	**-0.390 (2.274)**	**-0.388 (2.365)**
Basic training	**-0.383 (2.391)**	-0.127 (0.821)	**-0.374 (2.334)**	*-0.292 (1.838)*	*-0.224 (1.671)*	**-0.389 (2.394)**	-0.128 (0.871)
Vocational training	-0.153 (1.274)	0.072 (0.642)	-0.180 (1.460)	-0.109 (0.917)	-0.114 (1.014)	-0.152 (1.260)	0.043 (0.362)
Distribution of Employment Durations							
Community job	-0.020 (0.180)	-0.012 (0.103)	-0.041 (0.356)	-0.036 (0.313)	-0.016 (0.139)	-0.019 (0.166)	0.000 (0.000)
Basic training	-0.053 (0.504)	-0.049 (0.458)	-0.056 (0.530)	-0.048 (0.444)	-0.055 (0.515)	-0.057 (0.535)	-0.080 (0.678)
Vocational training	*0.145 (1.780)*	*0.153 (1.813)*	0.129 (1.586)	0.132 (1.601)	*0.148 (1.761)*	*0.144 (1.749)*	*0.179 (1.875)*

Remarks: reference is always the "first participation" state; T-statistics betwwen parenthesis; bold characters are significant at the 5% level, italics at the 10% level

The complete results of the specification with occupations, given in Table 2, show clearly that the *ex ante* occupation has no impact on the transition rates to the programs. In contrast, the participation to a CJ program increases significantly the transition rate to low skilled employment. Moreover, once in low-skilled employment, there is a strong and very significant state dependence effect. Taking a low-skilled job also has a significant negative impact on the current wage accepted by the more-educated recipients, explaining the negative impact of subsidized public employment on wages for them.

To sum up these findings, state dependence in occupations and qualifications would be an operating explanation for the observed wage penalty. The more-educated recipients are

usually over-qualified relative to the occupations offered in these programs, and state dependence in low-skilled occupations, associated with lower wages, induces a long lasting wage penalty. State dependence in low-skilled activities could in turn be explained by the accumulation of low-skilled work experience and driven by a resume/curriculum vitae effect. It may be assumed that low-skilled work experience is perceived as dissonant by potential employers, and as evidence of low employment performance for more-educated persons, or that it is simply used by employers as curriculum information *per se* for classifying the unemployed in the job queue. However, these assumptions cannot be identified clearly with the data available.

Table 5: Complemantary estimations with trainings classified according to certification and workplace experience

	No diploma		Rest of sample	
Impact on the:	Certification (1)	Workplace experience (2)	Certification (3)	Worplace experience (4)
Transition to Out of Labor Force (OLF)				
Training without…	0.046 (0.172)	0.009 (0.026)	-0.311 (1.321)	-0.189 (0.773)
Training with…	**-0.849 (1.989)**	*-0.521 (1.722)*	-0.322 (1.235)	**-0.505 (1.977)**
Transition to Community Jobs (CJ)				
Training without…	**0.740 (2.942)**	0.407 (1.254)	0.219 (0.871)	0.157 (0.569)
Training with…	**1.013 (3.860)**	**1.078 (4.640)**	0.394 (1.559)	0.380 (1.624)
Transition to a Training without…				
Training without…	**0.631 (3.113)**	*0.481 (1.680)*	**0.562 (2.002)**	**0.799 (2.441)**
Training with…	-0.446 (1.341)	-0.193 (0.603)	0.090 (0.276)	0.163 (0.451)
Transition to a Training with…				
Training without…	-0.390 (1.362)	-0.068 (0.264)	0.077 (0.265)	0.410 (1.575)
Training with…	*0.457 (1.833)*	*0.323 (1.675)*	**0.815 (3.296)**	**0.674 (2.908)**
Transition to Long Term Contract (LTC)				
Training without…	0.207 (0.678)	0.400 (1.182)	0.240 (1.364)	**0.422 (2.458)**
Training with…	**0.811 (2.794)**	*0.518 (1.867)*	**0.473 (2.824)**	0.300 (1.746)
Transition to Fixed Term Contract (FTC)				
Training without…	*0.298 (1.646)*	*0.360 (1.642)*	**-0.278 (2.100)**	-0.080 (0.618)
Training with…	**0.617 (3.295)**	**0.487 (2.924)**	0.087 (0.726)	-0.098 (0.811)
Transition to Temporary Contract (TC)				
Training without…	-0.217 (0.668)	0.410 (1.298)	-0.015 (0.067)	-0.267 (1.110)
Training with…	**0.783 (2.799)**	0.234 (0.841)	-0.011 (0.049)	0.145 (0.723)
Distribution of Accepted Wages				
Training without…	-0.029 (0.168)	-0.123 (0.499)	**-0.298 (2.179)**	0.059 (0.486)
Training with…	0.022 (0.100)	0.029 (0.172)	-0.033 (0.299)	**-0.353 (2.895)**
Distribution of Employment Durations				
Training without…	0.216 (1.519)	0.098 (0.592)	0.101 (1.088)	0.085 (0.944)
Training with…	**0.285 (2.039)**	**0.325 (2.466)**	0.079 (0.997)	0.083 (1.033)

Remarks: reference is always the "first participation" state; T-statistics between parenthesis; bold characters are significant at the 5% level, italics at the 10% level; "with" or "without" are applied to certification in columns 1 and 3, or alternatively to worplace experience in columns 2 and 4.

Finally, it should be noted that the same kind of results are obtained for the Basic Training programs: the estimated negative impact on wages accepted vanishes fully, when considering occupations in Table 5. This again suggests the existence of an *ex post* occupational state dependence effect, associated with the participation in these programs. The negative impact also vanishes in the specification with no full time conversion, leading to the conclusion that in this case the recipients would contract a high number of low-paid hours. However, the impact of basic training programs on the transition rates to low skilled employment is positive, but not significant at the conventionnal levels in Table 2. In Table 5, it is shown that

for the more educated, the negative impacts of Basic training programs on wages accepted are mainly driven, according to the criteria of classification studied, by the absence of a certification or when a workplace experience is taken during the program. Unfortunately, the data do not contain any detailed information about the workplace placement (industry or activity of the firm, occupation or qualification, etc.). As a consequence, further investigations for Basic Training Programs are left for future research, with better data.

CONCLUSION

This paper assesses the effects of entry into different active labor market programs (set up in France at the end of the 1990s), on the duration of unemployment and subsequent employment durations, as well as on wages accepted and occupations. Observed and unobserved heterogeneity were taken into account in a flexible multivariate duration-occupation-wage model.

Other things being equal, the impact of programs mainly depends on their training content and the diploma/qualification level of recipients. Conditionally to observed covariates, selection into the programs does not seem to be an important concern. Vocational training programs have an overall positive impact on the transitions to employment, whereas basic training programs only improve job stability for less-educated recipients. These results are in line with recent studies such as Card, Kluve and Weber (2010) or Osikominu (2013). Human capital intensive programs would be overall more effective than simple counseling or skills assessment schemes. However, the conclusion of this paper stresses the heterogeneity of how programs impact on participants, especially according to their educational levels. This is an important concern in assessment studies, as well as for the search of an optimal selection process of recipients into the programs.

Concerning subsidized public employment schemes, Community jobs display negative effects on wages for persons with higher levels of qualifications. These program participants are over-qualified for the jobs proposed in such programs, and state dependence in job qualification induces a long lasting wage penalty, as low-skilled occupations are mechanically associated with lower wages. Although less clear-cut, the same kind of results are obtained for the Basic Training programs. However, the data do not contain enough detailed information about training contents and workplace placements, so that further investigations for these types of programs are left for future research, with better data.

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APPENDIX

Table A1: Main results for various types of unobserved heterogeneity distributions and sub-samples

	Whole sample			No diploma			Rest of sample		
	No unobserved heterogeneity (1)	Two mass points (2)	Four mass points with two loading factors (3)	No unobserved heterogeneity (4)	Two mass points (5)	Four mass points with two loading factors (6)	No unobserved heterogeneity (7)	Two mass points (8)	Four mass points with two loading factors (9)
Transition to Out of Labor Force (OLF)									
Community job (CJ)	**-0.625 (3.562)**	**-0.616 (3.507)**	**-0.612 (3.363)**	-0.389 (1.476)	-0.386 (1.459)	-0.386 (1.454)	**-0.793 (3.074)**	**-0.787 (3.042)**	**-0.790 (3.038)**
Basic training (BT)	-0.192 (1.158)	-0.229 (1.357)	-0.210 (1.196)	0.097 (0.406)	0.103 (0.416)	0.085 (0.336)	*-0.450 (1.792)*	**-0.495 (1.957)**	**-0.525 (2.061)**
Vocational training (VT)	*-0.332 (1.823)*	**-0.363 (1.967)**	-0.259 (1.364)	**-0.980 (2.44)**	**-0.970 (2.405)**	**-0.986 (2.431)**	-0.175 (0.76)	-0.211 (0.901)	-0.240 (1.021)
Transition to Community Jobs (CJ)									
Community job	**0.927 (5.768)**	**0.923 (5.417)**	**0.906 (5.223)**	**1.002 (3.946)**	**0.991 (3.891)**	**0.947 (3.597)**	**0.756 (3.173)**	**0.741 (3.089)**	**0.688 (2.795)**
Basic training	**0.541 (3.104)**	**0.599 (3.212)**	**0.559 (3.012)**	**0.784 (3.003)**	**0.788 (2.993)**	**0.889 (3.149)**	0.159 (0.59)	0.193 (0.71)	0.167 (0.605)
Vocational training	**0.662 (3.791)**	**0.723 (3.866)**	**0.669 (3.656)**	**0.998 (3.869)**	**1.012 (3.854)**	**1.140 (3.972)**	0.335 (1.288)	0.354 (1.339)	0.360 (1.335)
Transition to Basic Training (BT)									
Community job	0.277 (1.333)	0.271 (1.282)	0.253 (1.159)	-0.042 (0.152)	-0.046 (0.161)	0.008 (0.027)	**0.933 (2.250)**	**1.046 (2.462)**	**1.023 (2.381)**
Basic training	**0.507 (2.476)**	**0.367 (1.664)**	**0.529 (2.542)**	*0.440 (1.759)*	0.356 (1.361)	0.346 (1.291)	**0.838 (1.960)**	*0.817 (1.825)*	0.685 (1.504)
Vocational training	-0.074 (0.284)	-0.214 (0.81)	-0.076 (0.288)	-0.011 (0.034)	-0.106 (0.319)	-0.101 (0.306)	0.056 (0.109)	0.052 (0.099)	0.019 (0.035)
Transition to Vocational Training (VT)									
Community job	*-0.373 (1.937)*	*-0.367 (1.886)*	*-0.341 (1.704)*	**-0.921 (2.990)**	**-0.906 (2.930)**	**-0.906 (2.921)**	0.108 (0.394)	0.110 (0.397)	0.092 (0.333)
Basic training	**0.347 (2.052)**	0.270 (1.549)	**0.354 (1.952)**	0.209 (0.827)	0.175 (0.684)	0.162 (0.635)	0.413 (1.546)	0.323 (1.182)	0.289 (1.049)
Vocational training	**0.384 (2.325)**	*0.318 (1.837)*	**0.404 (2.355)**	0.206 (0.842)	0.171 (0.666)	0.163 (0.636)	**0.543 (2.199)**	*0.469 (1.859)*	*0.462 (1.823)*
Transition to Long Term Contract (LTC)									
Community job	-0.052 (0.315)	-0.057 (0.342)	-0.065 (0.380)	0.387 (1.370)	0.385 (1.352)	0.406 (1.416)	-0.295 (1.295)	-0.294 (1.287)	-0.326 (1.403)
Basic training	-0.042 (0.240)	-0.007 (0.037)	-0.066 (0.361)	0.128 (0.384)	0.099 (0.293)	0.072 (0.210)	-0.050 (0.233)	-0.042 (0.193)	0.005 (0.024)
Vocational training	**0.573 (4.044)**	**0.608 (4.155)**	**0.612 (4.07)**	**0.687 (2.298)**	**0.659 (2.187)**	**0.667 (2.179)**	**0.547 (3.251)**	**0.556 (3.28)**	**0.622 (3.507)**
Transition to Fixed Term Contract (FTC)									
Community job	**-0.283 (2.686)**	**-0.284 (2.683)**	**-0.290 (2.728)**	0.186 (1.120)	0.187 (1.106)	0.167 (0.969)	**-0.561 (3.836)**	**-0.557 (3.797)**	**-0.578 (3.778)**
Basic training	-0.070 (0.649)	-0.042 (0.381)	-0.035 (0.307)	*0.328 (1.811)*	**0.399 (2.128)**	**0.402 (2.105)**	-0.235 (1.554)	-0.242 (1.589)	-0.222 (1.356)
Vocational training	0.157 (1.582)	*0.183 (1.801)*	0.168 (1.603)	**0.537 (2.907)**	**0.609 (3.126)**	**0.574 (2.888)**	0.027 (0.218)	0.021 (0.169)	0.085 (0.619)
Transition to Temporary Contract (TC)									
Community job	**-0.718 (3.417)**	**-0.728 (3.455)**	**-0.781 (3.575)**	**-0.713 (1.951)**	**-0.745 (2.01)**	**-0.797 (2.144)**	**-0.608 (2.235)**	**-0.619 (2.269)**	**-0.669 (2.444)**
Basic training	-0.086 (0.475)	-0.031 (0.168)	-0.030 (0.154)	-0.142 (0.430)	-0.081 (0.241)	-0.029 (0.085)	0.046 (0.196)	0.081 (0.341)	0.039 (0.161)
Vocational training	0.156 (0.965)	0.216 (1.308)	0.234 (1.351)	**0.564 (2.051)**	**0.637 (2.222)**	**0.663 (2.302)**	-0.055 (0.248)	-0.015 (0.066)	-0.031 (0.137)
Distribution of Accepted Wages									
Community job	**-0.247 (2.649)**	*-0.187 (1.728)*	*-0.200 (1.759)*	0.031 (0.224)	0.123 (0.737)	0.077 (0.436)	**-0.470 (3.579)**	**-0.393 (2.314)**	**-0.411 (2.429)**
Basic training	*-0.188 (1.933)*	**-0.311 (2.62)**	-0.152 (1.317)	0.043 (0.307)	-0.035 (0.194)	0.097 (0.527)	**-0.286 (2.379)**	**-0.383 (2.391)**	**-0.410 (2.522)**
Vocational training	*-0.139 (1.650)*	-0.160 (1.511)	0.047 (0.488)	-0.135 (0.782)	-0.138 (0.626)	-0.001 (0.006)	-0.150 (1.47)	-0.153 (1.274)	-0.146 (1.197)
Distribution of Employment Durations									
Community job	0.050 (0.624)	0.043 (0.540)	0.058 (0.711)	0.164 (1.210)	0.162 (1.205)	0.159 (1.180)	-0.011 (0.097)	-0.020 (0.18)	-0.019 (0.169)
Basic training	0.074 (0.900)	0.082 (1.010)	0.091 (1.123)	**0.317 (2.123)**	**0.323 (2.200)**	**0.305 (2.060)**	-0.061 (0.582)	-0.053 (0.504)	-0.052 (0.483)
Vocational training	**0.177 (2.464)**	**0.184 (2.603)**	**0.180 (2.510)**	0.201 (1.405)	0.223 (1.552)	0.197 (1.356)	*0.142 (1.730)*	*0.145 (1.780)*	*0.153 (1.841)*

Remarks: reference is always the "first participation" state; T-satistics between parenthesis; bold characters are significant at the 5% level, italics at the 10% level

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