Evaluating the impact of subsidized temporary jobs on labor contract. Evidence from France

Fabrice GILLES
LEM UMR 9221 / fabrice.gilles@univ-lille1.fr

Sabina ISSEHNANE
CEE – Université Rennes2 / sabina.issehnane@cee-recherche.fr

http://lem.cnrs.fr/IMG/pdf/dp2017-19.pdf

http://lem.cnrs.fr/

Evaluating the impact of subsidized temporary jobs on labor contract. Evidence from France[1]

Fabrice Gilles[2] and Sabina Issehnane[3]

June 2017

Abstract

In France and in other European countries, job seekers have the opportunity to return to a part-time work (Reduced Activity) and retain a part of their unemployment benefits. Part of job seekers who use reduced activity has doubled since the mid-90s. A lot of studies already analyzed the impact of this device on the probability for unemployed to find a full-time job. In this paper, our aim is to study the consequences of reduced activity on the kind of labor contract of the full time regular job that was found when returning back to employment. To that purpose, we consider data provided in FH-D3 (French National Agency for unemployed people) and in DPAE (French Central Agency of Social Security Organizations) files over 2012-2013. We use dynamic matching methods to take account of timing of events as well as of job seekers heterogeneity. Our findings are the following. On the one hand, reduced activity would diminish the probability for job seekers to find a full time job with labor contract of an undetermined duration, 6 months after using reduced activity; there is no impact anymore 12 months later. On the other hand, reduced activity would increase the probability for job seekers to find a regular temporary job, whatever the time horizon we consider once the unemployed used reduced activity.

Keywords: employment policy; reduced activity; dynamic matching.
JEL Classification: C22, J64, J68.

1. Introduction

In this article, we evaluate the impact of the French device Reduced Activity on the probability for unemployed to find a regular job characterized with a particular labor contract.

Since the 1970s, European countries have experienced large unemployment rates. The phenomenon has worsened since the beginning of the economic crisis in 2008. In France in particular, job seekers without any professional activity increased by about 65 percent

---

[2] LEM-CNRS (UMR 9221)-University Lille 1and TEPP. E-mail: fabrice.gilles@univ-lille1.fr. Adress : university Lille1 Sciencesand Technologies – Faculty of Social Sciencesand Economics, Cité Scientifique, 59655 Villeneuve d'Ascq Cedex, France.
[3] University Rennes 2, Lirisand Centre for Employment Studies (CEE). E-mail: sabina.issehnane@cee-recherche.fr.

between September 2008 and April 2015. At the same time, the number of unemployed people who use reduced activity (practicing temporary or part time jobs while being registered as job seekers) rose by more than 80 percent. The same hold in other European countries.

Thus, a lot of work have already analyzed the effects of reduced activity[4], in France (GRANIER AND JOUTARD, 1999; GURGAND, 2009, FREMIGACCI AND TERRACOL, 2013; TERRACOL, 2013), as well as abroad (GERFIN *ET AL*, 2002; KYYRÄ *ET AL.*, 2009; LALIVE *ET AL.*, 2008). They aim at evaluating to what extent reduced activity ease to find a full time regular job. These evaluations are based on the idea that even a short-term or part-time job may reduce distance to employment by maintaining a link with the labor market, thus have a beneficial effect on the return to permanent contract - a "stepping-stone effect". However, reduced activity can also have a "blocking effect" because it can reduce the time spent in job search, and thus decrease the probability of getting a stable employment. The repeated practice of reduced activity can also lead to an enclosing effect in a precarious trajectory, known as the "locking-in effect" (FREDRIKSSON AND JOHANSSON, 2003). These researches show ambiguous results. In the short run, reduced activity would have lock-in effects thus increasing the duration until a full-time job is found. In the long run, reduced activity may increase the probability for job seekers to find a full-time. In addition, the effects depend on the duration of reduced activity. These works highlight complex and heterogeneous effects according to the socio-demographic characteristics of individuals. FREMIGACCI AND TERRACOL (2013), more recently JOUTARD *ET AL.* (2016) and AURAY AND LEPAGE-SAUCIER (2016) point out that job seekers with the least favorable characteristics to getting a job, such as long-term job seekers or seniors, are those who have the least use of reduced activity and are more likely to benefit from a positive "stepping-stone effect". In Finland, KYYRÄ (2010) show that part-time working on partial unemployment benefit has a positive effect only for men job seekers in finding a regular job.

In a first step, those works are limited to measuring the effect on the exit from unemployment given the data available (GRANIER AND JOUTARD, 1999, GURGAND 2002, FREMIGACCI AND TERRACOL, 2014). More recently, FONTAINE AND ROCHUT (2014) focus on the features of the full-time job once the job seeker went out of unemployment. The authors evaluate the impact of reduced activity on wages and on hours of work of the full-time job. This study use the FH-DADS file, that is a match over 1999-2004 between two administrative files, the French Annual Declaration of Social Data (*DADS;* the French national statistical agency, *Insee*) and the Historial File of Job Seekers (*FH*; French National Agency for unemployed, *Pôle Emploi*). This file allowed to get in a unique dataset both employment and unemployment spells for considered individuals. On the one hand, FONTAINE AND ROCHUT (2014) find a positive impact of reduced activity on finding a full-time job on the long run. On the other hand, they show no effect of reduced activity on wages and on hours of work.

AURAY AND LEPAGE-SAUCIER (2016) mobilize also the FH-DADS 2004 but use approaches to timing of events of ABBRING AND VAN DEN BERG (2003) on the exit from unemployment. They show a stepping-stone effect of resorting to reduced activity. JOUTARD *ET AL.* (2016), using the same "timing of events" models, mobilize the FH-D3 data from 2004 to 2011. They show that the reduced

---

[4] See FREMIGACCI (2011) for a recent survey.

activity seems to have a stepping-stone effect, but the data mobilized do not allow Information on access to a job and on the type of job found. Thus, in order to better interrogate the idea of precarious trap, they also measure the duration observed before falling back to unemployment. Through this measure, JOUTARD ET AL. (2016) show that reduced activity would not have a significant effect on the quality of recovered jobs, since it would appear that these jobs belong to a "bad segment" of the labor market. Their conclusion would be consistent with that of other studies on the quality of jobs recovered following reduced activity (FONTAINE AND ROCHUT, 2014).

In this article, we follow FONTAINE AND ROCHUT (2014) to evaluate the impact of reduced activity on the probability for job seekers to find a full-time job with a particular kind of labor contract (open-ended contract; fixed-term contracts; temporary jobs). To that purpose, we merge two administrative files that provide us both with information on job seekers and on reduced activity (*Fichier Historique des statistiques des demandeurs d'emplois - D3, fichier national des allocataires*; French National Agency for the Unemployed, *Pôle Emploi*),and with information on features of jobs that are created (*Déclarations Préalables A l'Embauche*; Central Agency of Social Security Organisations, *Acoss*). We apply dynamic matching (LECHNER, 2008; FREDERIKSSON AND JOHANSSEN, 2008) to evaluate the effect of reduced activity. To proceed, we consider a random sub-sample of job seekers who registered between January and June 2012,and who were followed over 2012-2013. At a given month, we distinguish job seekers who began to practice reduced activity from other unemployed people who would practice later or would never practice. We then compare these two groups of job seekers at a given time horizon (6 or 12 months after the beginning of reduced activity).

We show that reduced activity would have reduced the probability for job seekers to find a regular full-time job 6 months after the beginning of reduced activity; however, there is no effect 12 months later. Moreover, reduced activity would have reduced the probability for job seekers to find a regular full-time job with a labor contract of undetermined duration (either considering a 6 or 12 months horizon after the beginning of reduced activity). On the contrary, in any case, reduced activity would have increased the probability for job seekers to find a temporary job as regular full-time jobs.

The remaining of the paper stands as follows. Section 2 presents data and descriptive statistics. Section 3 displays the identification strategy and the findings. Section 4 concludes.

2. Data

2.1 Data sources

We aim at evaluating the impact of reduced activity on the employment rate and on the probability for job seekers to find a regular full-time job with a particular kind of labor contract (open-ended contract; fixed-term contracts; temporary jobs). To that purpose, we consider two data sources: the *Fichier Historique des Statistiques des demandeurs d'emploi* (FHS; French National Agency for the Unemployed, *Pôle Emploi*), and the *Déclarations Préalables à l'Embauche* (DPAE; Central Agency of Social Security Organisations, *Acoss*).

The FH file *(Fichier Historique statistiques des demandeurs d'emploi) and the D3 file (national file for job seekers)*, that were both provided by the French National Agency for the Unemployed *(Pôle Emploi).*

On the one hand, for every employment spell over 2004-2013, the FH file allows us to have information on the considered job seeker:

- Demographic data (gender, age, nationality, marital status and number of children; job qualification and diploma);
- Kind of job that is seeked; kind of benefits; regim of unemployment benefits, motivation and date for becoming job seekers (registration at the unemployment agency), month after month.

On the other hand, the D3 file provides information on reduced activity: employment spell, working hours, as well as wages for a given job seeker for a given month. The file we consider contains only one tenth of job seekers that were selected on a random basis by the French National Agency for the Unemployed.

The DPAE file *(Déclarations Préalables A l'Embauche)* provided by the Central Agency of Social Security Organisations (*Acoss*).

The DPAE file contains hiring declarations from French firms. In fact; for every person they want to hire and who depend on the French Social Security system, employers have to fill a declaration that has to be sent to Urssaf (*Union de recouvrement des cotisations de sécurité sociale et d'allocations familiales*). The DPAE file contains information on the whole hiring declarations that were made by employers in French firms over 2012-2014.

This data source provides us with information on every hiring declaration, such as:

- The kind of labor contract (open-ended contract; fixed-term contract; temporary jobs);
- The date of the beginning or of the end of the labor contract (for fixed-term contracts);
- Information at the establishment level: business sector of activity; number of workers and legal category.

2.2 Final sample and first descriptive statistics

From the database, we contract a sample of people with all jobs seekers who registered between January and June 2012. They are observed until December 2013. Some of job seekers are dropped: disabled job seekers (classified as « not immediatly available for work »; benefits recipients who are covered by a different set of unemployment regulations - « intermittents du spectacle »). For each job seeker and unemployment spell, we keep the date for registration to the French National Agency for the unemployed, as well as the date for the beginning of the reduced activity if there is any for the given unemployment spell. We finally extract a sub-sample, composed of 10 percent of the job seekers. This sub-sample was randomly selected to ease computations. Thus, our final sample contains 21,960 job seekers

who register between January and June 2012, and for whom we can follow trajectories (successive unemployment and empoloyment spells) over 2012 and 2013[5].

2.2.1 Characteristics of job seekers

Table 1 displays descriptive statistics dealing with demographic data (gender, age, nationality, marital status and number of children; job qualification and diploma). This information is collected for job seekers at the date they register. About 48 percent of them experienced a reduced activity spell while register between January and Jun 2012. First, job seekers who experienced reduced activity are more frequently women, of French nationality, who are married, whose highest diploma is the French *CAP/BEP* (First technical-vocational degree), who are blue-collar workers or skilled white-collar workers. Second, job seekers with reduced activity are more frequently people who register because of the end of a fixed-term contract or of a temporary job, who are looking a job within the manufacturing sector. Third, an unemployed person who experienced a reduced activity while being registered at the French National Agency for the Unemployed recieves more frequently unemployement benefits (so-called *Allocation d'aide au retour à l'emploi (ARE)*) and who depends on the French Social Security system.

---

[5] 2012-2013 corresponds the time period that is covered by both FH-D3 filesand the DPAE file.

Table 1. Characteristics of job seekers

Job seekers' features / Sample	No RA in the unemployment spell	RA in the unemployment spell	All job seekers who register between January and June 2012
Number of job seekers	*11,476*	*10,484*	*21,960*
Gender:			
Male	53	49	51
Age when registrating:			
Average age	33.68	34.01	33.83
Less than 25 years old	26	23	25
Between 25 and 49 years old	61	66	64
50 years old and mores	13	11	12
French nationality	85	89	87
Marital status			
Alone	54	51	53
Separate	10	09	09
Married	35	41	38
Number of children			
No child	63	60	62
One or two children	28	30	29
Three children or more	09	09	09
Levek of diploma			
No diploma or *Certificat d'études primaires* (Primary school degree)	05	04	05
*Brevet (*First part of general secondary school completed*)*	14	11	13
High school	02	01	02
CAP-BEP (First technical-vocational degree)	34	39	36
Baccalauréat (*A*-level grade)	21	22	21
BAC+2 (2 years achieved at university)	11	12	11
BAC+3 and more (at least 3 years achieved at university)	12	11	12
Qualification			
Unskilled blue-collar worker	10	11	11
Skilled blue-collar worker	12	16	14
Unskilled blue-collar worker	24	17	21
Skilled blue-collar worker	41	44	42
Intermediate workers	07	08	08
Executive	06	04	05
Reason for registration at unemployment agency			
Economic lay-offs	03	03	03
Other lay-offs	11	09	10
Quit	04	03	04
Conventional break	06	05	05
End of fixed-term contract	22	31	26
End of temporary job	06	14	10
First registration	06	02	04
End of sick leave	04	04	04
End of non salaried activity	02	01	01
End of internship	02	02	02
Other	36	25	31
Kind of job that is seeked:			
Agriculture, fisheries and nature	03	04	04
Arts and general contractor	01	00	00
Banking, insurance and real estate	02	01	01
Trade, sales and distribution	18	15	16
Communication and media technologies	02	02	02
Construction	11	11	11
Hotels, restaurants and tourism	10	08	09
Manufacturing	07	12	09
Installation and maintenance	04	04	04

Job seekers' features / Sample	No RA in the unemployment spell	RA in the unemployment spell	All job seekers who register between January and June 2012
Health care	03	04	03
Personal services	17	18	18
Entertainment business	01	01	01
Business support services	12	10	11
Transportation and logistics	09	11	10
Compensated during the current spell	38	69	53
Kind of unemployment benefits			
ARE and *AUD*	36	67	51
Other insurances	00	00	00
Solidarity	02	02	02
Particular regim of unemployment benefits			
General regim	34	50	41
Temporary jobs	04	20	11
Other regim	62	31	47

Sources: FH-D3 (Pôle Emploi) and DPAE (Acoss) files over 2012-2013.
Field: job seekers who registered at the unemployment agency during the first six months in 2012 in France.
Note: perrcentages.

## 2.2.2 Outcome variables. Evolution since the registration at the employment agency

We focus on job seekers going back to regular employment, and on the kind of job – the type of labor contract – they find to go out of unemployment. We thus use both DPAE and FH-D3 files to follow job seekers over time. In particular, we look at the evolution of two kinds of variables: the employment rate and the probability for job seekers to find a full-time job with a particular kind of labor contract (open-ended contract; fixed-term contracts; temporary jobs). These evolutions are measured in months since the registration of the job seeker at the French unemployment agency (*Pôle Emploi*). We also distinguish job seekers who experienced reduced activity at least one month from other job seekers.

Whatever the time horizon we consider since the registration of the job seeker at *Pôle Emploi*, we see that employment rate once they go out of unemployment is smaller among individuals who experienced RA than among other kind of individuals. Considering the kind of labor contract that characterizes the new regular (full-time) job, Table 1 shows that there is a larger part of (full-time regular) temporary jobs among job seekers who experienced (at least one month) RA than among other types of unemployed people. On the contrary, the share open-end contract is smaller among unemployed people who experienced RA than among other job seekers[6].

However, these findings are only descriptive statistics. They do not refer to an impact of RA on employment rate or on the probability for a job seeker to find a regular (full-time) job with a particular labor contract. As mentioned in Section 2.2.1, job seekers who experienced RA are different from other individuals.

---

[6] The same findings hold if we exclude from ours ample all employment spells characterized by reduced activity.

Figure 1. Evolution of employment rates and of shares of labor contracts of a given type (open-ended contract; fixed-term contracts; temporary jobs) among regular jobs found by job seekers to go out of unemployment. Following the considered job seeker experienced or not RA.
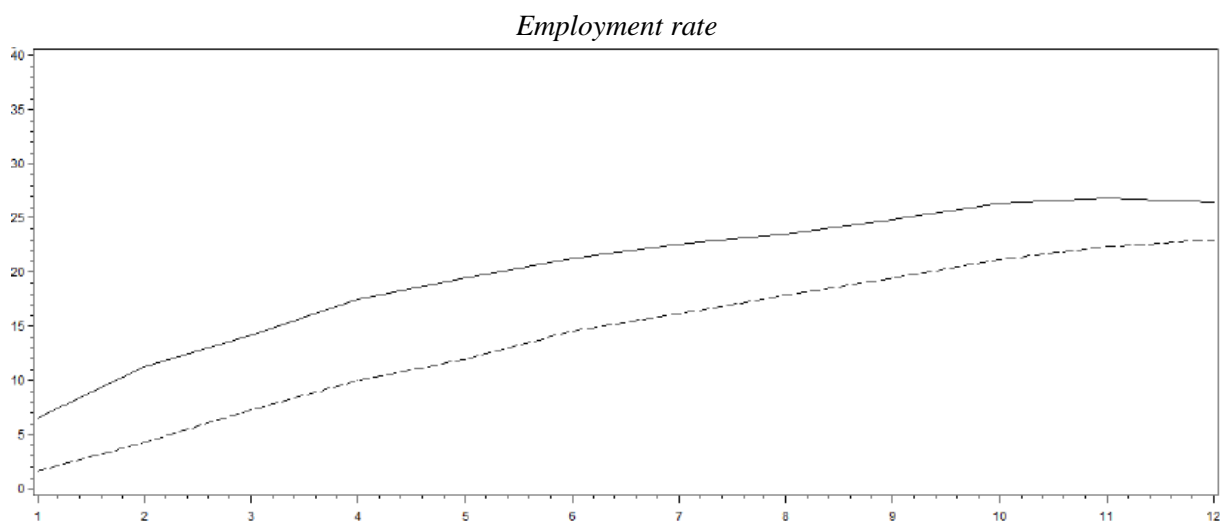
Employment rate

Notes: legends: abscissa: number of months elapsed since the registration to the unemployment agency; ordinate: percentage. Dashed line: reduced activity experience; straight line: no reduced activity.
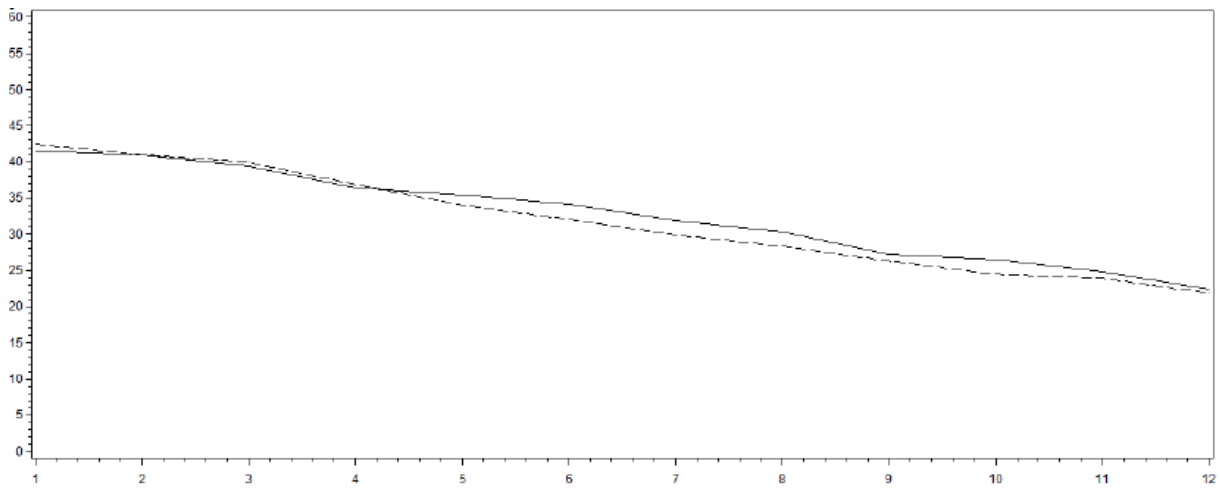*Reading note: 6 months after the registration to the unemployment agency, the employment rate of job seekers who experienced reduced activity is 14.6 percent whereas it is about 20.7 for other job seekers.*
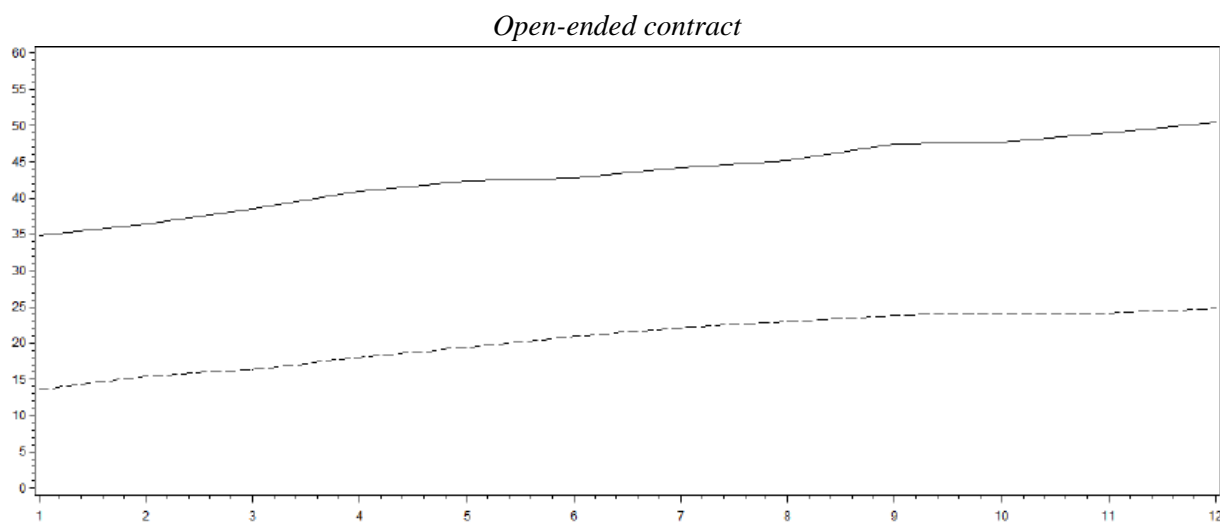
Open-ended contract

Notes: legends: abscissa: number of months elapsed since the registration to the unemployment agency; ordinate: percentage. Dashed line: reduced activity experience; straight line: no reduced activity.
Reading note: 6 months after the registration to the unemployment agency, among people who find a job, there is a larger part of jobs with fixed-term contracts among job seekers who experienced at least one month RA (20.9 percent) than among other types of unemployed people (42.8 percent).

Fixed-term contract

Notes: legends: abscissa: number of months elapsed since the registration to the unemployment agency; ordinate: percentage. Dashed line: reduced activity experience; straight line: no reduced activity.
Reading note: 6 months after the registration to the unemployment agency, among people who find a job, there is a larger part of jobs with fixed-term contracts among job seekers who experienced at least one month RA (20.9 percent) than among other types of unemployed people (42.8 percent).
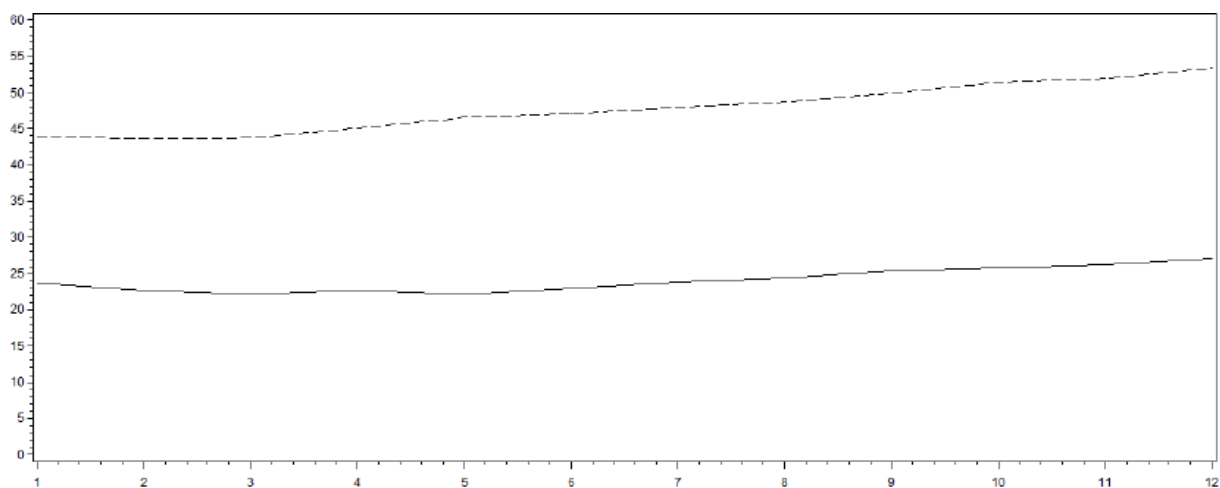
Temporary job

Notes: legends: abscissa: number of months elapsed since the registration to the unemployment agency; ordinate: percentage. Dashed line: reduced activity experience; straight line: no reduced activity.
Reading note: among people who find a job 6 months after the registration to the unemployment agency, there is a larger part of temporary jobs among job seekers who experienced at least one month RA (47.1 percent) than among other types of unemployed people (23.0 percent).

Source: FH-D3 (Pôle Emploi) and DPAE files (Acoss), 2012-2013.
Field: job seekers who registered at the French unemployment agency between January and June 2012.

3. Empirical strategy and results

The aim of this Section is first to present the identification strategy to evaluate the impact of reduced activity on the employment rate and on the kind of labor contract that characterized the full-time job once the job seeker go out of employment. Second, we displays and discuss results.

3.1 Empirical strategy

In this paper, we aim at evaluating the impacts of RA for those workers who experienced RA. To proceed, we have to take account for selection bias, controlling for heterogeneity among job seekers[7].

First, we may think that people who experience RA have a greater probability to find a regular job, because they are not full-time unemployed while experiencing RA. In Section 2, we saw that both samples of job seekers (experiencing or not RA) differ according to their social and demographic features. Moreover, some unobserved heterogeneity may distinguish both types of job seekers.

Second, we have to take into account the features of information on job seekers. In particular, job seekers do not register at the French unemployment agency at the same time (the same month in 2012). Thus an unemployment spell may begin at different moments. Moreover, all job seekers did not experience RA at the same time: the beginning of a given RA spell may differ between job seekers, in particular with regards to the registration of the individual at the unemployment agency.

To evaluate the effects of RA, it is thus important to consider an econometric method that allows both to control for selection bias, and to take into account timing of events (registration at the unemployment agency; beginning of the RA experience or spell; beginning of RA once the individual registers at unemployment agency). Two kinds of econometric methods are usually considered (FREDERIKSSON AND JOHANSSON, 2008; LALIVE, VAN OURS AND ZWEIMÜLLER, 2008).

The first approach consider « timing of events » within the framework of duration models (ABBRING AND VAN DEN BERG, 2003). It implies the estimation of duration models and allows to control for selection on both observable and unobservable variables: this approach models both the outcome variable (employement rate; the kind of labor contract corresponding to the regular full-time job that is found by the job seeker) and the treatment variable (experiencing reduced activity), assuming residuals from both the outcome and the treatment variables are potentially correlated. However, such an estimation strategy relies on some assumptions we can not easily test (FREDERIKSSONAND JOHANSSON, 2008).

---

[7] In this version of the paper, we only focus on the effects of RA on job seekers who effectively experienced RA at a given moment in time (Averrage Treatement Effect on the Treated, ATET). It may also be of interest to evaluate these effects for job seekers who have still not experienced RA at a given time period – average treatment effect on untreated individuals. Indeed, dynamic matching allows this kind of estimation. In this case, the question would be the following: what would RA imply in terms of labor market outcomes for those individuals if they would have experienced RA (Average Treatment Effect on the Untreated, ATENT)? Finally, through the estimation of ATETand ATENT, we may be able to evaluate the impacts of RA on the whole population of job seekers.

The second approach both uses matching on the propensity score (ROSENBAUM AND RUBIN, 1983) and takes into account the timing of events (SIANESI, 2004, and more recently LECHNER, 2008, or FREDERIKSSON AND JOHANSSON, 2008, for a presentation of the analytical framework). Such a method refers to dynamic matching that uses the framework of the Rubin Causal Model (RUBIN, 1974). In this case, we consider one group of individuals, namely those who are treated – job seekers who experienced RA. To evaluate the effect of the treatment (reduced activity) on the treated (job seekers who experienced RA), we have to compare the outcome variable (employed or not; kind or labor contact corresponding to the regular job) for the individual who experienced reduced activity to the outcome he would have experienced in the situation without any RA. Since this situation is counterfactual for the the job seeker who experienced reduced activity, we consider as a proxy the outcome for the non treated individual (no RA) who is the nearest from the treated individual in terms of (predetermined) observed characteristics. In the case where treatement may occur at different moments of time (like for reduced activity), we consider that the date of the beginning of the reduced activity experience relative to the date of registration at the French unemployment agency is a treatment by itself; thus, two different dates for the beginning of reduced activity experiences, but relative to the same date of registration to the French unemployment agency, refer to two different treatments. However, dynamic matching requires that the conditional independance assumption is verified: indeed, once we control for all observed variables that affect both the outcome and the treatment, the outcome should be independent from the treatment. It is also not possible to test for this assumption. Nevertheless, since we have at our disposal a large set of information about job seekers before the RA experience begins (Section 2), we consider this approach in our analysis.[8] [9].

3.2 Outcome variables in treated and control groups

3.2.1 Building a sample

In this Section, we present how we get the sample we consider to evaluate the impact of RA using dynamic matching.

First, we consider that a given date of entry into reduced activity – namely a given number of months elapsed between the registration to the unemployment agency and the beginning of the reduced activity spell – gives rise to a given treatment. Since we have information from both FH-D3 and DPAE files for job seekers only over the 2012-2013 time period, we consider a sample of job seekers who registered between January and June 2012, and who were followed over 2012-2013. We choose to consider entry into reduced activty until six months after the registratione to the unemployment agency. Thus we can observe the situation of job

---

[8] Note that we can also control for the date of the beginning of the reduced activity experience to take fully account of the timing of events. Besides, contrary to linear regressions, matching allows to control for endogenous pre-treatment variables (FRÖLICH, 2008).

[9] Note that with regards to the discussion that deals with the identification strategy we will also consider later the estimation of a duration model that takes into account the timing of events, like in LALIVE, VAN OURS AND ZWEIMÜLLER (2008).

seekers on the labor market (employed or not; kind of labor contracts) until twelve months after the beginning of reduced activity[10].

Second, as a consequence of this particular "timing of events", we have to build a control group for every kind of treatment group that is associated to a given date of entry into reduced activity. Contrary to what is usually considered when applying matching, for a given treatment group, the control group contains not only composed job seekers who never experienced reduced activity, but also those who will experience RA in the future when they will find a job. Indeed, as it is usually done in the literature, we assume that a given job seeker does not know whether or not she / he will be given a job offer at given moment of time; thus, job seekers can't expect the fact they will find a job at a given moment of time (SIANESI, 2004)[11].

The final sample contains 21,960 job seekers who register at the unemployment agency between January and June 2012. Thus, we distinguish 7 treatment groups (and 7 control groups) of job seekers, for whom we observe the situation on the labor market over the next 12 months that followed the entry of the individual in reduced activity.[12]

3.2.2 Naive estimates

Thanks to our dataset, we can go further than simply comparing the situation on the labor market of job seekers who experienced reduced activity at a given moment of time to that of other unemployed individuals (Section 2.2.2).

---

[10] For this version of our study, data provided in the FH-D3 file were not available after the 1st of January 2014. The next update should have happened by the end of the year 2015.

[11] This assumption is also made if we consider duration models and "timing of events" (ABBRING AND VAN DEN BERG, 2003).

[12] When we merge FH-D3 and DPAE files, we found that a given individual is almost systematically observed as being employed or unemployed. On the contrary, information on jobs are not always available in the DPAE file.

Employment rate

Table 2. Employment rate. Differences between job seekers who experienced reduced activity at a given moment of time and other unemployd individuals.

Date d'entrée en AR \ Time horizon	6 months after entry into RA	12 months after entry into RA
When registering at *Pôle Emploi*	-4.81***	-3.70***
	(0.64)	(0.76)
One month after registration	-1.65	1.14
	(1.27)	(1.48)
Two months after registration	-2.96*	0.66
	(1.70)	(1.95)
Three months after registration	-4.07**	0.61
	(2.03)	(23.45)
Four months after registration	-2.14	-2.21
	(2.44)	(2.59)
Five months after registration	-4.96*	-2.41
	(2.63)	(2.89)
Six months after registration	-0.78	4.46
	(3.28)	(3.78)

Sources: FH-D3 (Pôle Emploi) and DPAE (Acoss) files over 2012-2013.
Field: 21,390 job seekers who registered at the unemployment agency during the first six months in 2012 in France.
*Notes: percentage points. Standard errors within parentheses. *(respectively ** and ***) refers to significance at a 10 percent (repectively at a 5 percent, at a 1 percent) level.*

In fact, we can compare the situation of job seekers who began to experience RA at a given moment in time (treatment group at that time) to that of other job seekers who still did not have experienced any RA (control group at that time). We thus consider seven treatment and control groups that corresponds to the duration elapsed since the entry into RA, *i.e.* the date of entry into RA relatively to the date at which individuals register at the French unemployment agency. Moreover, for every of the seven treatment groups, we can compare outcome variables for different time horizons. In what follows, we consider for a given unemployed individual her/ his situation on the labor market on the short run (6 months after the entry into RA) and on the medium run (12 months after the entry into RA[13]).

Table 2 shows that 6 months after the beginning of a RA the employement rate is greater for job seekers who experienced RA than for other kinds of unemployed people in four out of the seven treatement groups, following the date of entry into RA that is considered. If we look at the situation of job seekers 12 months after the beginning of the RA spell, there is no difference anymore between treatment and control groups.[14]

---

[13] We can also consider other time horizons. However, given the limitation of the data time period, we can not use a time horizon greater than 12 months after the entry into RA, except in the case where we get data until the end of 2014 for both FH-D3 and DPAE files.

[14] If we exclude from employment situations RA spells, these differences between the two kinds or groups are not significant anymore, whatever the time horizon we consider (Appendix 1).

Labor contract

Table 3. Shares of labor contract of a particular type: difference between job seekers who experienced reduced activity and other unemployed people. *For the employment situation, all kinds of jobs are considered, including reduced activity.*

Kind of labor contract \ Date of entry into RA	Open-ended contract	Fixed-term contract	Temporary job
Time horizon: 6 months after the begining of the reduced activity spell.			
When registering at *Pôle Emploi*	-11.10*** (1.32)	-2.15 (1.46)	13.26*** (1.54)
One month after registration	-15.39*** (1.96)	-8.48*** (2.04)	23.88*** (2.31)
Two months after registration	-13.71*** (2.54)	-3.75 (2.59)	17.46*** (2.85)
Three months after registration	-14.96*** (2.95)	-0.51 (2.92)	15.47*** (3.22)
Four months after registration	-12.21*** (3.51)	-3.26 (3.19)	15.47*** (3.67)
Five months after registration	-18.73*** (3.60)	-3.70 (3.55)	15.03*** (3.86)
Six months after registration	-19.83*** (4.46)	4.46 (4.26)	15.37*** (4.74)
Time horizon: 12 months after the entry into reduced activity.			
When registering at *Pôle Emploi*	-18.00*** (1.21)	2.35 (1.14)	15.65*** (1.35)
One month after registration	-17.04*** (1.96)	-3.12* (1.72)	20.16*** (2.16)
Two months after registration	-16.06*** (2.50)	-1.73 (2.24)	17.79*** (2.73)
Three months after registration	-17.81*** (2.76)	0.67 (2.62)	17.14*** (3.03)
Four months after registration	-11.88*** (3.40)	-2.24 (2.92)	14.12*** (3.52)
Five months after registration	-16.64*** (3.54)	-1.93 (3.10)	18.56*** (3.78)
Six months after registration	-9.91** (4.65)	-5.61 (3.57)	15.52*** (4.74)

Sources: FH-D3 (Pôle Emploi) and DPAE (Acoss) files over 2012-2013.
Field: 21,390 job seekers who registered at the unemployment agency during the first six months in 2012 in France.
Notes: percentage points. Standard errors within parentheses. *(respectively ** and ***) refers to significance at a 10 percent (repectively at a 5 percent, at a 1 percent) level.

Now let us have a look at the kind of labor contracts that characterize the reguar (full-time) job that is found by the job seeker to go out of unemployment. Whatever the time horizon we consider, Table 3 shows there are more temporary jobs among jobs seekers who experienced reduced activity than among unemployed people who will never experience RA or only later. On the contrary, among job seekers who experienced RA, jobs are less frequently associated to open-ended contract, whatever the considered date of entry into RA and the considered time horizon since the beginning of the RA spell.

Table 4. Shares of labor contract of a particular type: difference between job seekers who experienced reduced activity and other unemployed people. *For the employment situation, only jobs excluding reduced activity are considered.*

Kind of labor contract \ Date of entry into RA	Open-ended contract	Fixed-term contract	Temporary job
Time horizon: 6 months after the begining of the reduced activity spell.			
When registering at *Pôle Emploi*	-5.26*** (2.03)	-2.19 (1.89)	7.45*** (1.92)
One month after registration	-9.45*** (2.75)	-7.55*** (2.42)	17.00*** (2.78)
Two months after registration	-9.24*** (3.30)	-0.13 (3.05)	9.37*** (3.18)
Three months after registration	-4.81 (4.19)	-2.04 (3.82)	2.77 (3.76)
Four months after registration	-6.18 (4.45)	-3.53 (3.85)	9.71** (4.31)
Five months after registration	-7.72* (4.72)	-1.25 (4.05)	8.97** (4.50)
Six months after registration	-9.62* (5.28)	-0.54 (4.30)	10.16** (5.08)
Time horizon: 12 months after the entry into reduced activity.			
When registering at *Pôle Emploi*	-7.48*** (1.16)	0.81 (1.32)	6.66*** (1.58)
One month after registration	-9.18*** (2.42)	-7.33*** (1.64)	16.51*** (2.39)
Two months after registration	-5.71* (2.98)	-6.52*** (2.10)	12.23*** (2.88)
Three months after registration	-7.36** (3.46)	-4.83* (2.56)	12.19*** (3.33)
Four months after registration	-5.19 (4.13)	-2.54 (3.15)	7.72** (3.88)
Five months after registration	-8.79** (4.37)	-2.04 (3.28)	10.84*** (4.42)
Six months after registration	-4.59 (5.01)	-4.58 (3.46)	9.16* (4.74)

Sources: FH-D3 (Pôle Emploi) and DPAE (Acoss) files over 2012-2013.

Field: 21,390 job seekers who registered at the unemployment agency during the first six months in 2012 in France.

*Notes: percentage points. Standard errors within parentheses. *(respectively ** and ***) refers to significance at a 10 percent (repectively at a 5 percent, at a 1 percent) level.*

However, these results may be (at least) partly due to the fact that Table 3 also includes reduced activity spells among employment situations 6 or 12 months after the beginning of RA.

Table 4 excludes this kind of jobs in order to consider only jobs that are associated to regular (full-time) jobs that are found by individuals to go out of unemployment, *i.e.* without being registered at the same time at the unemployment agency. In this case, only one difference

remains between treatment and control groups. Whatever the time horizon we consider, there are more frequently temporary jobs among job seekers who are employed 6 or 12 months after their entry into reduced activity than among other job seekers[15].

3.3 Results

We want to evaluate the impact of reduced activity for job seekers to go out of unemployment and on the kind of labor contract that is associated to the regular (full-time) job that is found. As mentioned in Section 3.1, we thus have to take into account for selection bias, controlling for all individual observed characteristics that potentially impact the entry into RA and the situation on the labor market 6 or 12 months after the entrey into RA. To proceed, we apply dynamic matching methods and follow SIANESI (2004).

3.3.1 Employment rate

Table 5. Effect of reduced activity on employment rate for job seekers who experienced reduced acivity.

Date of entry into RA \ Time horizon	6 months after entry into RA	12 months after entry into RA
When registering at *Pôle Emploi*	-4.94*** [-7.36; -2.81]	-4,79*** [-6,98; -2,01]
One month after registration	-5.70** [-9.38; -0.21]	-1,04 [-7,86; 1,92]
Two months after registration	-7.66** [-11.61; -0.84]	-4,92 [-8,62; 3,52]
Three months after registration	-5.41** [-13.29; -0.03]	-2,07 [-11,81; 5,30]
Four months after registration	-3.16 [-12.46; 4.05]	-5,92 [-14,98; 2,53]
Five months after registration	-7.23 [-16.13; -1.46]	-5,66 [-16,22; 2,11]
Six months after registration	-0.84*** [-17.38; -6.29]	-1,90 [-13,37; 11,78]

Sources: FH-D3 (Pôle Emploi) and DPAE (Acoss) files over 2012-2013.
Field: 21,390 job seekers who registered at the unemployment agency during the first six months in 2012 in France.
*Notes: percentage points. Nearest neighbor estimates. Within brackets, bootstrapped confidence intervals at a five percent level, considering 200 replications. *(respectively ** and ***) refers to significance at a 10 percent (repectively at a 5 percent, at a 1 percent) level.*

In a first step, for every dates of entry into RA and thus for every treatment and control groups, we estimate the probability for a job seekers to experience RA, conditionally on a large set of observed variables.[16] To that purpose we consider the following list of control variables for the specification of all seven estimated logistic models (Section 2.2.1): demographic data (gender, age; marital status; number of children), the level of diploma and

---

[15] Figures in Appendix 2 confirm this finding whatever the time horizon we consider.

[16] Proceeding as such is equivalent to estimating a discrete hazard model, with all the estimated parameters allowed to be specific with the date of entry into treatment, and thus with the time elapsed between the date at which the given job seeker registers at the unemployment agency and the date of entry into RA (SIANESI, 2004).

the qualification of the given job seeker; the reason (and the month) for (of) registration at the unemployment agency; the kind of job that is seeked; the kind of unemployment benefit, the replacement rate for unemployed people who benefit from unemployment benefits, and the regim for unemployment benefit.[17] When we use dynamic matching, it is also important to check whether or not individuals from both treatment and control groups are comparable in terms of their observed characteristics. Figures that display probability densities of estimated propensity scores in both kinds of groups for every date of entry into RA show that there is a large common support (Appendix 3[18]).

In the second step, we use the single propensity score nearest neighbor matching estimator to evaluate the effects on labor market outcomes of reduced activity for job seekers who experienced RA for every dates of entry into RA.

Table 5 contains our first findings considering the employment rate as an outcome. It shows that 6 months after entry into RA reduced activity would have diminished the employment rate for job seekers who experienced RA. On the contrary, 12 months after entry into reduced activity, there would not have been any effects anymore for the given individuals.

3.3.2 Labor contract

Let us now focus on the kind of labor contract that is associated to the regular (full-time) job that is found by the job seeker to go out of unemployment. Either considering a time horizon of 6 or 12 months afeter the entry into RA, Table 6 shows that RA would have reduced the probability for job seekers to get a regular (full-time) job charcterized by an open-ended contract. Besides, RA would have increased the probability for job seekers to have a temporary job.

However, if we exclude from employment situations all labor contracts corresponding to a reduced activity, RA would only have increased the probability for job seekers to get a temporary job as a regular (full-time) job to go out of unemployment (Table 7[19]).

---

[17] In the present verison of this article, included time varying variables are measured at the date of registration at the French unemployment agency for the current unemployument spell. Otherwise, we will later take account for trajectories of job seekers on the labor market before their first registration as the unemployment agency in 2012. In particular, we will include additional control variables such as the number of months where the job seeker benefits from unemployment benefits, the number of months experienced in RA or the number of months experienced as unemployed before the beginning of 2012.

[18] Corresponding estimated coefficients for the seven logit models that were estimated are available on request.

[19] Figures in Appendix 4 shows these findings for every treatment group.

Table 6. Effect of reduced activity on the kind of labor contract for the regular (full-time) job that is found by job seekers 6 or 12 months after their entry into RA. *All kinds of jobs (including reduced activity) are considered for a given time horizon.*

Kind of labor contract \ Date of entry into RA	Open-ended contract	Fixed-term contract	Temporary job
Time horizon: 6 months after the begining of the reduced activity spell			
When registering at *Pôle Emploi*	-5.77*** [-11.71; -3.29]	-1.57 [-4.48; 3.89]	7.34*** [3.13; 11.60]
One month after registration	-14.84*** [-18.22; -4.13]	-5.59** [-13.94; -0.22]	20.42*** [10.68; 25.54]
Two months after registration	-6.02** [-22.05; -1.31]	-1.63 [-11.93; 5.39]	7.64** [4.23; 22.05]
Three months after registration	-13.90*** [-23.87; -2.63]	-6.76 [-12.12; 7.90]	20.66*** [3.56; 23.32]
Four months after registration	-11.94** [-26.31; -1.06]	-0.17 [-12.10; 9.30]	12.11** [3.70; 25.00]
Five months after registration	-12.62** [-31.36; -5.52]	3.56 [-6.50; 17.85]	9.06 [-1.77; 23.47]
Six months after registration	-18.75*** [-40.36; -6.42]	3.57 [-13.07; 17.28]	15.18** [4.59; 32.57]
Time horizon: 12 months after the begining of the reduced activity spell			
When registering at *Pôle Emploi*	-11.55*** [-15.58; -8.38]	3.32** [0.20; 7.01]	8.23*** [4.59; 12.48]
One month after registration	-13.47*** [-18.61; -4.84]	-3.01 [-7.85; 2.70]	16.48*** [7.14; 20.94]
Two months after registration	-15.45*** [-20.38; -2.67]	0.94 [-9.97; 5.94]	14.50*** [2.49; 21.47]
Three months after registration	-17.29*** [-23.26; -5.56]	1.76 [-9.89; 7.36]	15.53*** [6.60; 24.31]
Four months after registration	-4.94 [-19.73; 3.92]	-2.23 [-13.23; 7.84]	7.18** [0.00; 22.45]
Five months after registration	-10.38** [-26.81; -2.79]	-1.63 [-11.73; 11.73]	12.02** [4.28; 26.44]
Six months after registration	-14.28 [-29.91; 3.36]	-0.89 [-20.87; 4.59]	15.18** [1.83; 33.26]

Sources: FH-D3 (Pôle Emploi) and DPAE (Acoss) files over 2012-2013.
Field: 21,390 job seekers who registered at the unemployment agency during the first six months in 2012 in France.
*Notes: percentage points. Nearest neighbor estimates. Within brackets, bootstrapped confidence intervals at a five percent level, considering 200 replications. *(respectively ** and ***) refers to significance at a 10 percent (repectively at a 5 percent, at a 1 percent) level.*

4. Conclusion

In this paper, we evaluate the impacts of French program reduced activity. We consider its effects on the employement rate of job seekers, as it is usually done in the corresponding literature, but over a more recent time period. Moreover, contrary to what is usually done in this literature, we also focus on the effects of RA on the particular kind of labor contract of the corresponding regular (full-time) job that is occupied by unemployed people when they go out of unemployment.

Our findings are the following. First, reduced activity would diminish the employment rate of people who experience RA, but only if we consider the situation of individuals 6 months after the entry into RA; 12 months after the entry into RA, there is no effect anymore. Second, experiencing reduced activity would diminish the probability for considered individuals to have a regular (full-time) job characterized by a labor contract with an undetermined duration, 6 months after the entry into RA; it is not the case anymore if we consider the situation of the individual on the labor market 12 months after the entry into RA. Moreover, experiencing reduced activity would increase the probability for an individual to get a temporary job to go out of unemployment, and thus whatever the time horizon we consider.

In line with our paper, we can consider the following extensions. First, we could evaluate the impacts of reduced activity on other characteristics of the regular job (for instance: business sector of activity and size of the establishment that offers the regular job). Second, we could analyze the effect of reduced activity on sub-sample of job seekers who experienced reduced activity (for instance: distinguishing those with unemployment benefits and other kinds of job seekers). Third, we could study the effects of various kinds of reduced activity and thus to what extent the heterogeneity of treatment is important in the case of RA: reduced activities may differ in terms of some features such as hours of work, wages, or the duration of the labor contract associated to the considered reduced activity. Thus, the effects of RA may give rise to heterogenous results following the kind of reduced activity we consider. Fiunally, our findings were obtained over a time period where the economic situation was particularly bad, contrary to that one considered in other studies that were conducted since the 2000s. Hence, taking account for the economic situation may also allow us to test for the robustness of our results on the impacts of reduced activity.

Table 7. Effect of reduced activity on the kind of labor contract for the regular (full-time) job that is found by job seekers 6 or 12 months after their entry into RA. *Only jobs (excluding reduced activity) are considered for a given time horizon.*

Kind of labor contract \ Date of entry into RA	Open-ended contract	Fixed-term contract	Temporary job
Time horizon: 6 months after the begining of the reduced activity spell			
When registering at *Pôle Emploi*	-3.62 [-10.89; 1.76]	-4.67 [-8.12; 4.37]	8.29* [-0.14; 11.94]
One month after registration	-9.31** [-19.75; -2.22]	-7.61* [-17.93; 0.01]	16.92*** [9.63; 26.37]
Two months after registration	-9.01* [-21.05; 0.73]	-3.97 [-12.46; 8.62]	12.98** [1.53; 18.64]
Three months after registration	2.05 [-20.98; 8.39]	-1.14 [-13.29; 11.89]	-0.91 [-7.27; 16.97]
Four months after registration	-5.96 [-27.50; 5.42]	-3.66 [-17.08; 12.64]	9.62** [0.01; 24.58]
Five months after registration	-2.83 [-30.27; 6.16]	-9.52 [-22.61; 9.78]	12.35** [0.01; 27.22]
Six months after registration	-15.56* [-30.68; -3.55]	8.89 [-15.06; 15.15]	6.67 [-4.54; 29.17]
Time horizon: 12 months after the begining of the reduced activity spell			
When registering at *Pôle Emploi*	-6.80** [-11.26; -0.86]	2.63 [-2.23; 5.54]	4.17 [-1.56; 8.29]
One month after registration	-5.50*** [-16.79; -1.24]	-7.05** [-12.07; -1.00]	12.56*** [8.27; 23.47]
Two months after registration	-3.81 [-14.91; 2.71]	-7.84 [-13.56; 1.02]	11.64*** [3.05; 20.34]
Three months after registration	-9.28 [-19.19; 4.44]	-5.17** [-14.64; 4.20]	14.46*** [2.80; 21.96]
Four months after registration	-9.00 [-22.45; 5.78]	-1.44 [-13.60; 6.80]	10.44* [-2.04; 21.77]
Five months after registration	-15.51* [-26.90; -3.29]	-0.75 [-14.50; 6.87]	16.26* [-0.46; 25.44]
Six months after registration	-8.50*** [-26.94; 4.08]	0.01 [-13.26; 9.18]	8.50* [-2.05; 28.57]

Sources: FH-D3 (Pôle Emploi)and DPAE (Acoss) files over 2012-2013.

Field: 21,390 job seekers who registered at the unemployment agency during the first six months in 2012 in France.

*Notes: percentage points. Nearest neighbor estimates. Within brackets, bootstrapped confidence intervals at a five percent level, considering 200 replications. *(respectively **and ***) refers to significance at a 10 percent (repectively at a 5 percent, at a 1 percent) level.*

References

ABBRING J. AND VAN DEN BERG G., 1990, "The nonparametric identification of treatment effects in duration models", *Econometrica* 71(5), pp. 1491–1517.

AURAY S. AND LEPAGE-SAUCIER, 2016, "Les emplois atypiques et l'activité réduite favorisent-ils le retour à l'emploi régulier ? Un effet tremplin mesuré dans le contexte français", *Research report*, Pôle Emploi.

FONTAINE M. AND ROCHUT J., 2014, "L'activité réduite: quel impact sur le retour à l'emploi et sa qualité?", *Revue économique,* Vol. 65, No. 4, pp.621-643.

FREDERIKSSON P. AND JOHANSSON P., 2008, "Dynamic treatment assignment: the consequences for evaluations using observational data", *Journal of Business & Economic Statistics*, Vol. 26(4), pp. 435-445.

FREMIGACCI F., 2011, "Evaluer l'impact de l'assurance chômage sur les trajectoires individuelles: de la théorie à la pratique", *Applied Economics*, Vol. 26, pp. 49-95.

FREMIGACCI F. AND TERRACOL A., 2013, "Subsidized temporary jobs: lock-inand stepping stone effects", *Applied Economics*, Vol. 45(33), pp. 4719-4732.

FREMIGACCI F. AND TERRACOL A., 2014, "L'activité réduite en France : effet d'enfermement et effet tremplin", Travail et Emploi, Vol. 3(139), pp. 25-37.

FRÖLICH M. 2006, "A note on parametricand nonparametric regression in the presence of endogenous control variables", *IZA Discussion Paper,* No. 2126.

GERFIN M., LECHNER M. AND STEIGER H., 2005, "Does subsidized temporary employment get the Unemployed back to work? An econometric analysis of two different schemes", *Labour Economics*, Vol. 12 (6), pp. 807-835.

GRANIER P. AND JOUTARD X., 1999, "L'activité réduite favorise-t-elle la sortie du chômage?", *Economie et Statistique*, No. 321-322, pp. 133-148.

GURGAND M., 2009, "Activité réduite: le dispositif d'incitation de l'Unedic est-il incitatif?", *Travail et Emploi*, No. 89, January, pp. 81-93.

JOUTARD X., HAVET N., PENOT A. AND AITBIHIOUALI L., 2016, "Les différentes formes d'activité réduite et leurs impacts sur les trajectoires professionnelles des actifs expériementés", *Research report*, Pôle Emploi.

KYYRÄ T., 2010, "Partial unemployment insurance benefits and the transition rate to regular work", *European Economic Review,* No. 54, pp. 911-930.

KYYRÄ T., PARROTTA P. AND ROSHOLM M., 2009, "The effect of receiving UI benefits on unemployment duration", *IZA Discussion Paper, No. 3920.*

LALIVE R. VAN OURS J. AND ZWEIMÜLLER J., 2008, "The impact of active labour market programmes on the duration of unemployment in Switzerland", *Economic Journal, 118,* pp. 235-257.

LECHNER M., 2008, "Matching estimation of dynamic treatment models: some practical issues", published in MILLIMET D. SMITH J. AND VYTLACIL E. (EDS.), Advances in Econometrics, 21, *Modelling and evaluating treatment effects in econometrics, 21,* pp. 289-333.

ROSENBAUM P. AND RUBIN D., 1983, "The central role of the propensity score in observational studies for causal effects", *Biometrika,* Vol. 70(1), pp. 41-55.

RUBIN D., 1974, "Estimating causal effects of treatments in randomized and nonrandomized studies", *Journal of Educational Psychology,* 66(5), pp. 688-701.

SIANESI B., 2004, "An Evaluation of the Swedish System of Active Labor Market Programs in the 1990s", *Review of Economics and Statistics*, vol. 86, No. 1, pp. 133-155.

TERRACOL A., 2013, "L'activité réduite: frein ou tremplin au retour à l'emploi", *notes de l'IPP,* No. 4, February.

Appendices :

Appendix 1. For job seekers who registered at the French unemployment agency for the first time in 2012, employment rate, distinguishing job seekers who experienced RA at a given month, and other kinds of unemployed people who never experience RA or only later. Considered time horizon after the entry into RA: 6 or 12 months.
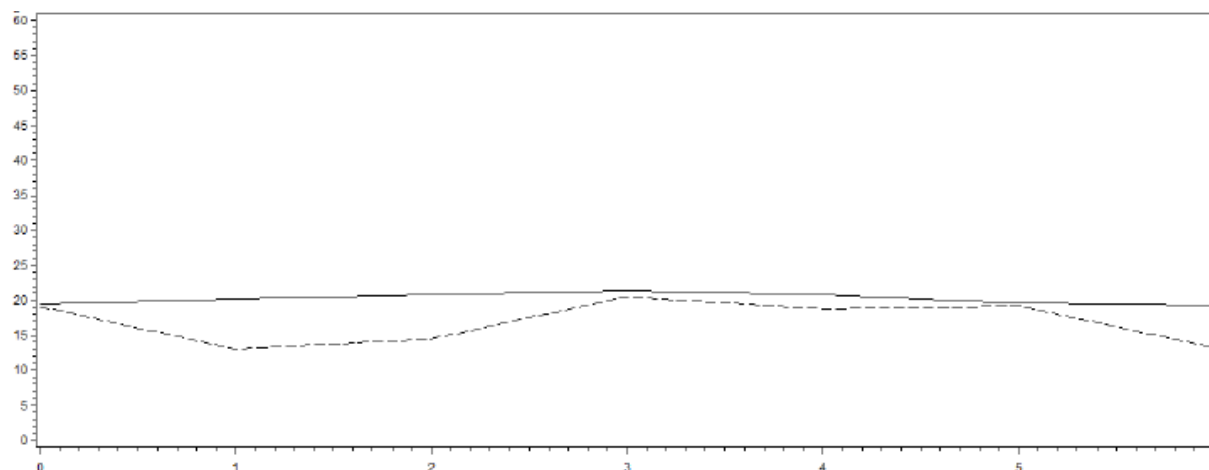
Employment rate: 6 months after registration to the unemployment agency
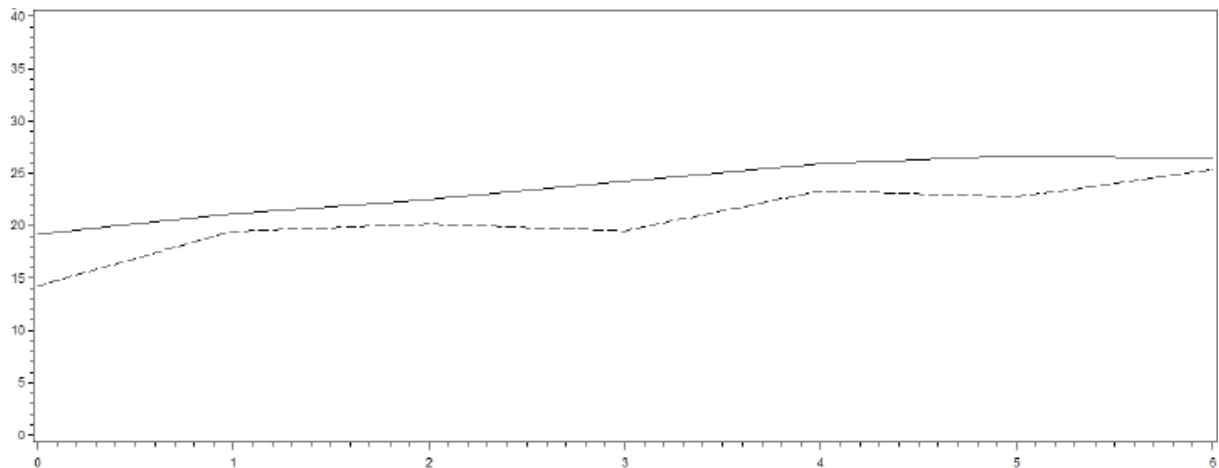
Sources: FH-D3 (Pôle Emploi) and DPAE (Acoss) files over 2012-2013.
Field: 21,390 job seekers who registered at the unemployment agency during the first six months in 2012 in France.
Notes: legends: abscissa: number of months elapsed since the registration to the unemployment agency; ordinate: percentage. Dashed line: reduced activity experience; straight line: no reduced activity.
Reading note: 6 months after the beginning of an experience of RA, the employment rate of job seekers who experienced reduced activity 3 montths after their registration the unemployment agency is 19.5 percent whereas it is about 24.3 for other job seekers.

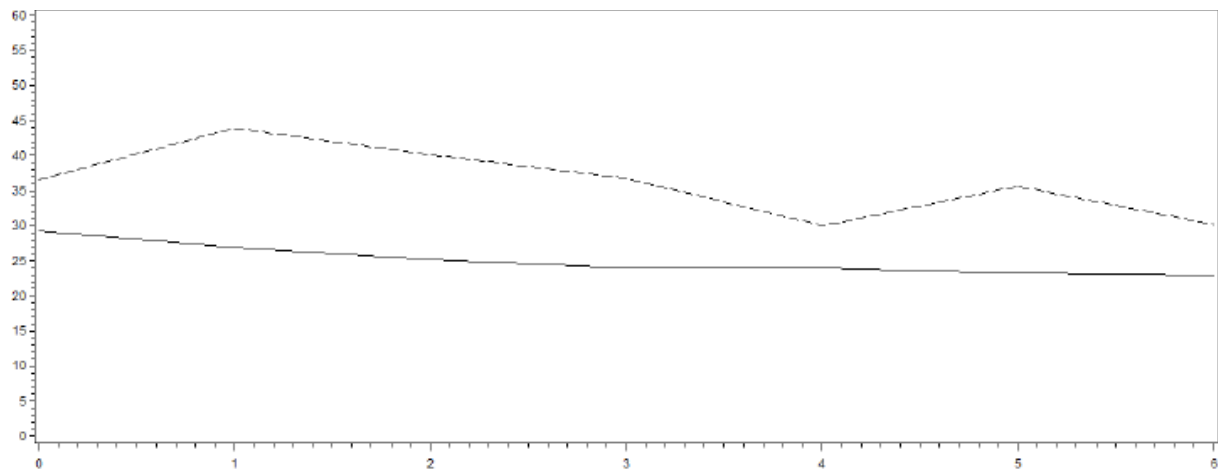*Employment rate: 12 months after registration to the unemployment agency*
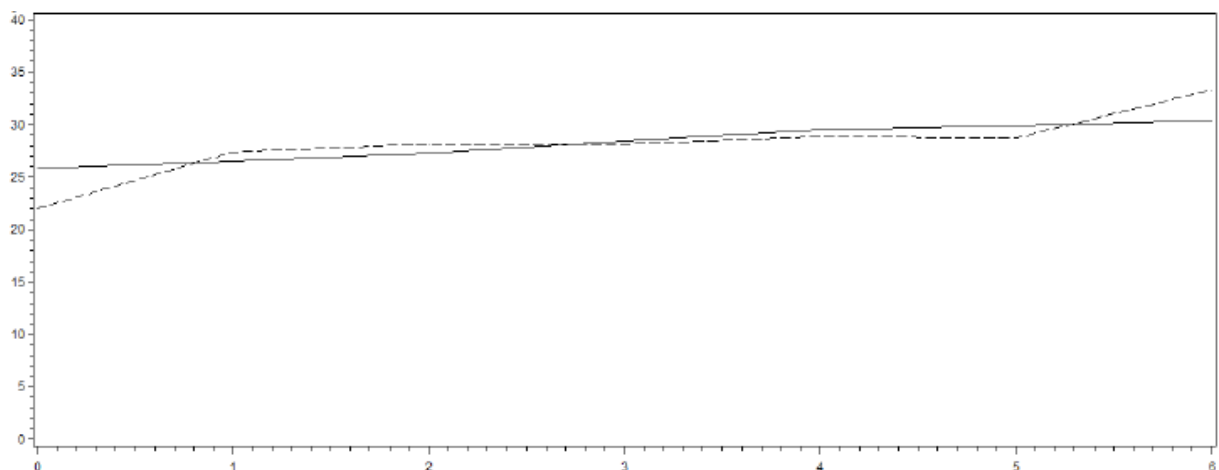
Sources: FH-D3 (Pôle Emploi) and DPAE (Acoss) files over 2012-2013.
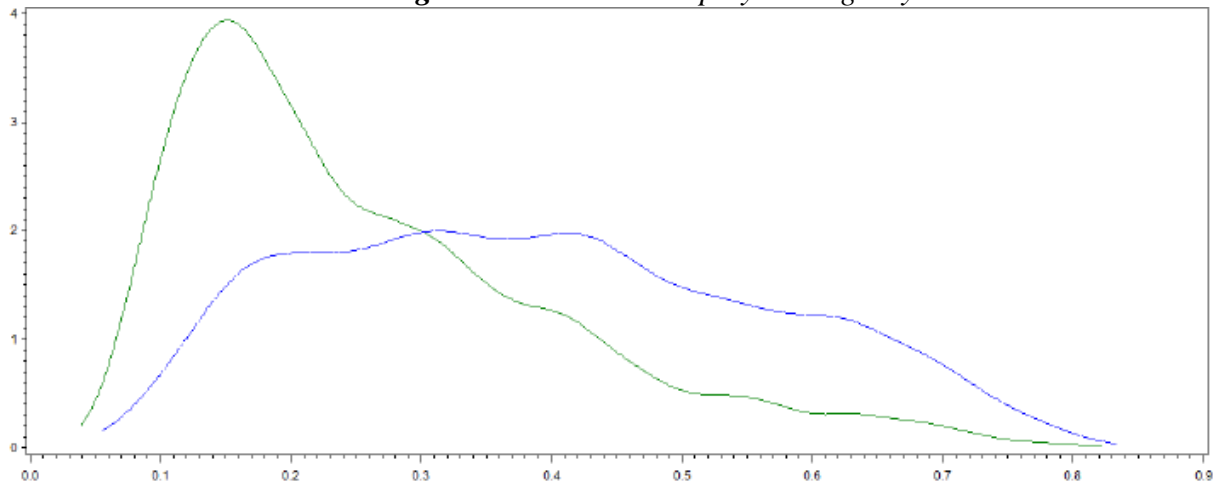*Field: 21,390 job seekers who registered at the unemployment agency during the first six months in 2012 in France.*
Notes: legends: abscissa: number of months elapsed since the registration to the unemployment agency; ordinate: percentage. Dashed line: reduced activity experience; straight line: no reduced activity.
Reading note: 12 months after the beginning of an experience of RA, the employment rate of job seekers who experienced reduced activity 3 montths after their registration the unemployment agency is 28.2 percent whereas it is about 28.4 for other job seekers.

Appendix 2. For job seekers who registered at the French unemployment agency for the first time in 2012, shares of particular kinds of labor contract, distinguishing job seekers who experienced RA at a given month, and other kinds of unemployed people who never experience RA or only later. Considered time horizon after the entry into RA: 12 months.

Open-ended contract
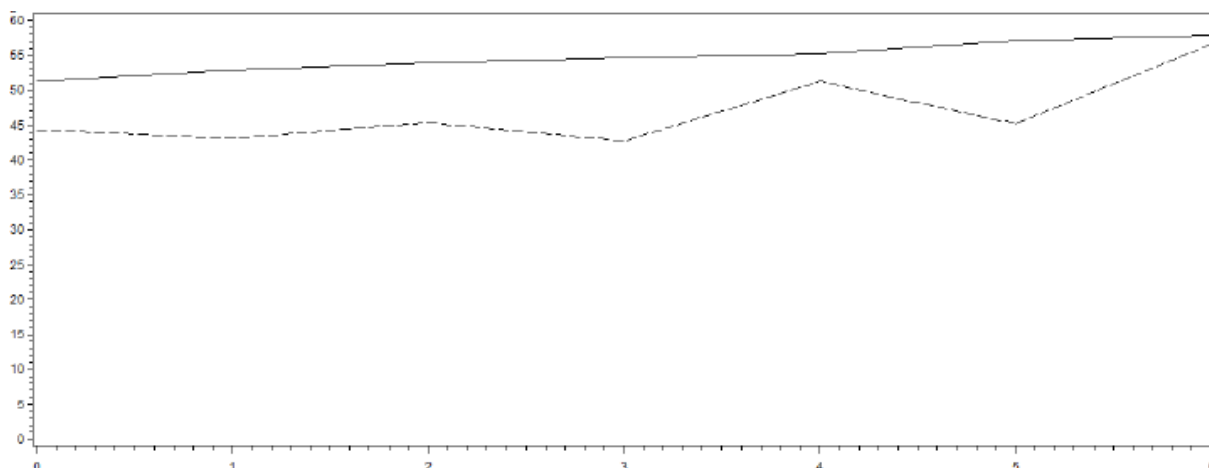
Sources: FH-D3 (Pôle Emploi) and DPAE (Acoss) files over 2012-2013.

Field: 21,390 job seekers who registered at the unemployment agency during the first six months in 2012 in France.

Notes: legends: abscissa: number of months elapsed since the registration to the unemployment agency; ordinate: percentage. Dashed line: reduced activity experience; straight line: no reduced activity.

Reading note: 12 months after the registration to the unemployment agency, among people who find a job, there is a larger part of jobs with open-ended contracts among job seekers who experienced at least one month reduced activity 3 montths after their registration the unemployment agency (42.7 percent) than among other types of unemployed people (54.7 percent).

Fixed-term contract

Sources: FH-D3 (Pôle Emploi) and DPAE (Acoss) files over 2012-2013.

Field: 21,390 job seekers who registered at the unemployment agency during the first six months in 2012 in France.

Notes: legends: abscissa: number of months elapsed since the registration to the unemployment agency; ordinate: percentage. Dashed line: reduced activity experience; straight line: no reduced activity.

Reading note: 12 months after the registration to the unemployment agency, among people who find a job, there is a larger part of jobs with fixed-term contracts among job seekers who experienced at least one month reduced activity 3 montths after their registration the unemployment agency (20.5 percent) than among other types of unemployed people (21.3 percent).

Sources: FH-D3 (Pôle Emploi) and DPAE (Acoss) files over 2012-2013.

Field: 21,390 job seekers who registered at the unemployment agency during the first six months in 2012 in France.

Notes: legends: abscissa: number of months elapsed since the registration to the unemployment agency; ordinate: percentage. Dashed line: reduced activity experience; straight line: no reduced activity.

Reading note: 12 months after the registration to the unemployment agency, among people who find a job, there is a larger part of temporary jobs among job seekers who experienced at least one month reduced activity 3 montths after their registration the unemployment agency (36.7 percent) than among other types of unemployed people (24.0 percent).

Appendix 3. Probability densities of estimated propensity scores at a given moment in time, distinguishing job seekers who experienced reduced activityand other kinds of unemployed people. Following the date of entry into RA.

Density of the estimated conditional probability of entry into reduced activity.
At the registration *to the unemployment agency.*

Sources: FH-D3 (Pôle Emploi) and DPAE (Acoss) files over 2012-2013.
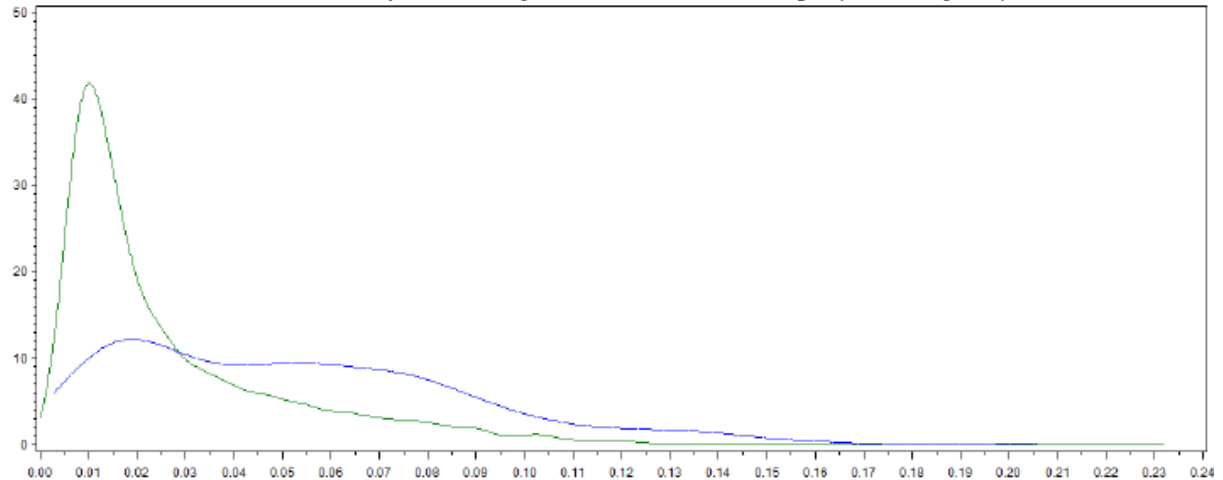*Field: 21,390 job seekers who registered at the unemployment agency during the first six months in 2012 in France.*

Density of the estimated conditional probability of entry into reduced activity.
One month *after the registration to the unemployment agency.*
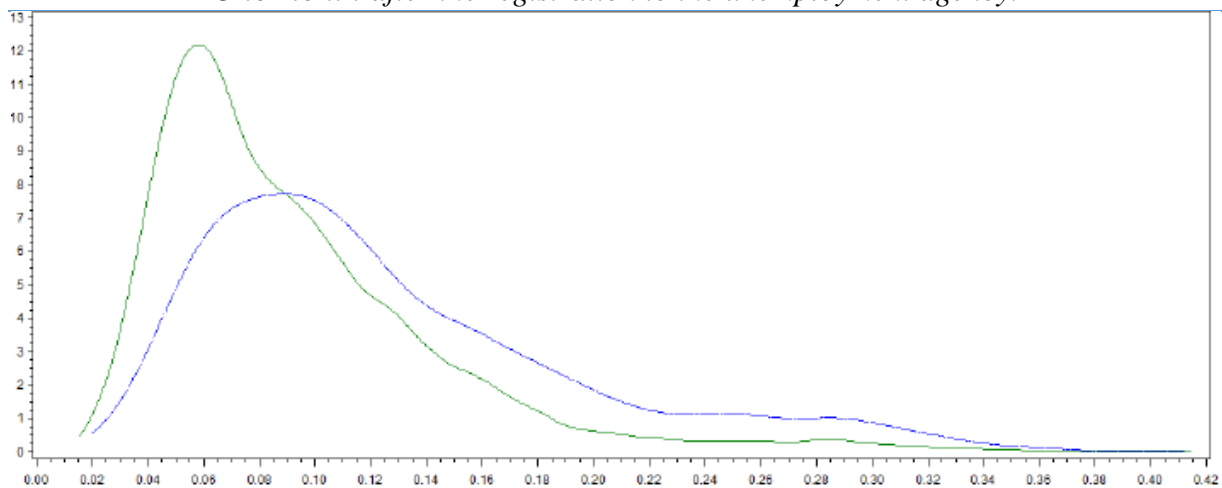
Sources: FH-D3 (Pôle Emploi) and DPAE (Acoss) files over 2012-2013.
Field: 21,390 job seekers who registered at the unemployment agency during the first six months in 2012 in France.

Density of the estimated conditional probability of entry into reduced activity. **Two months** after the registration to the unemployment agency.
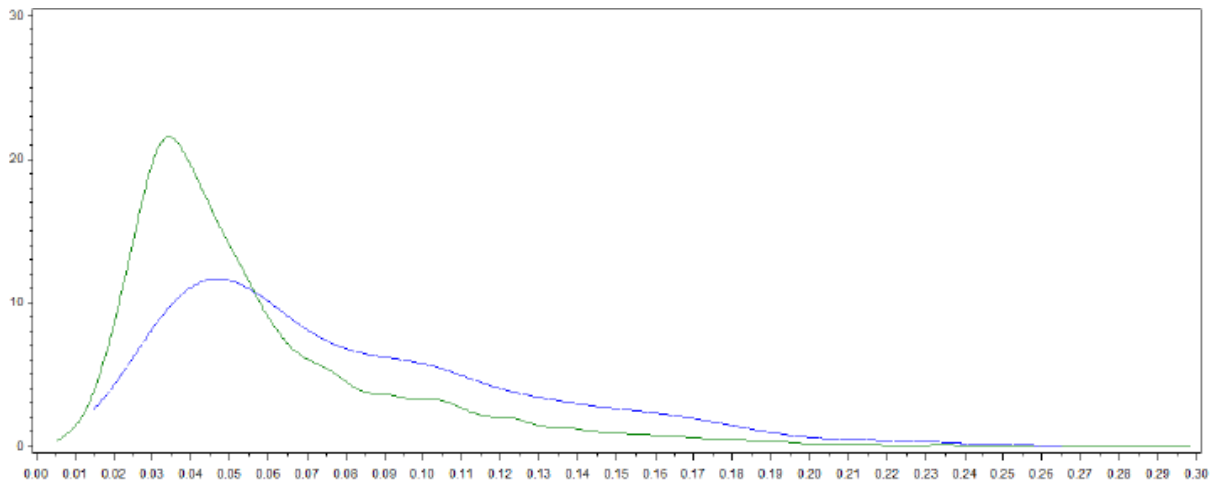
Sources: FH-D3 (Pôle Emploi) and DPAE (Acoss) files over 2012-2013.
Field: 21,390 job seekers who registered at the unemployment agency during the first six months in 2012 in France.

Density of the estimated conditional probability of entry into reduced activity. **Three months** after the registration to the unemployment agency.
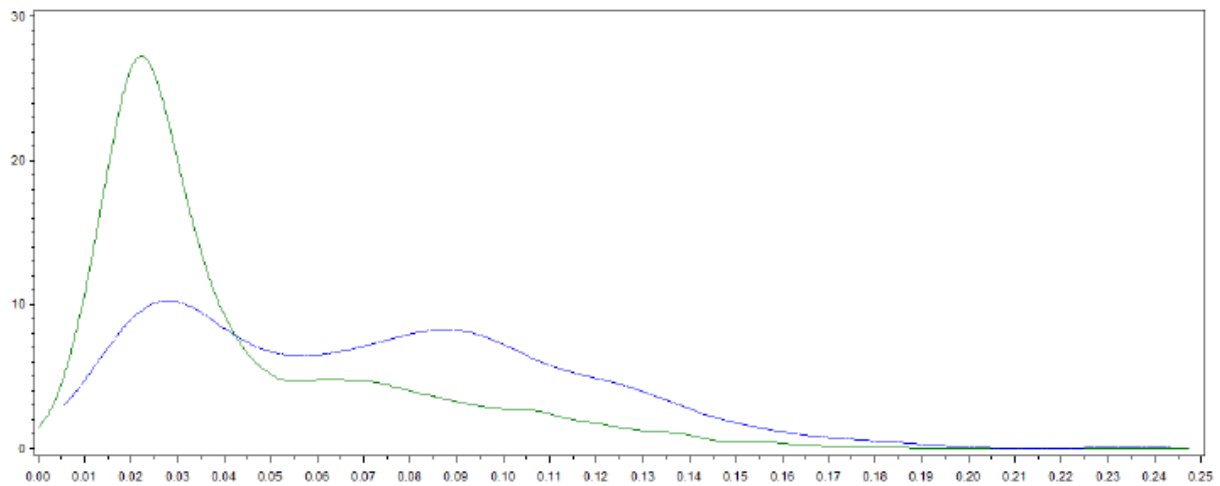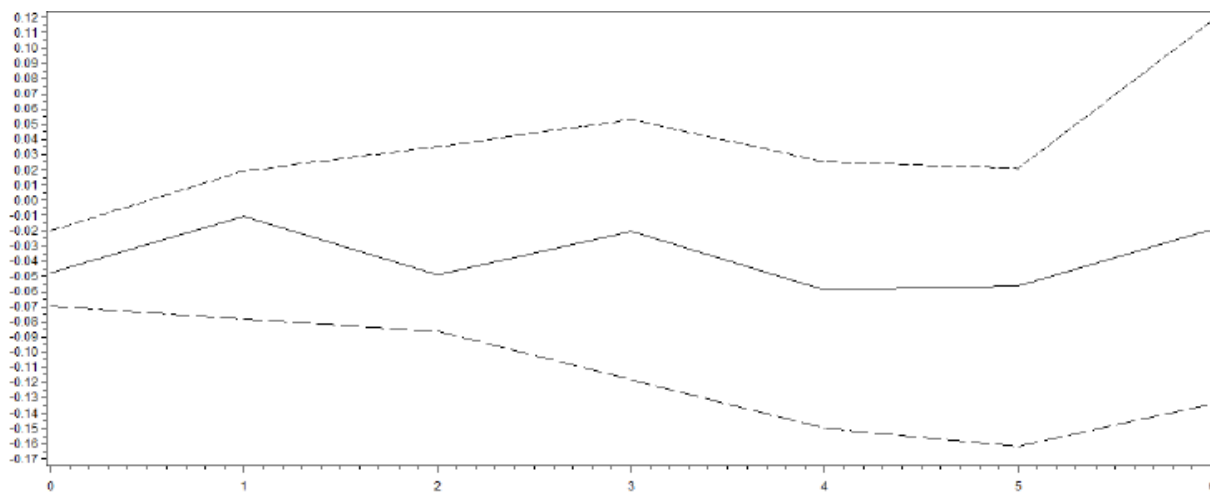

Sources: FH-D3 (Pôle Emploi) and DPAE (Acoss) files over 2012-2013.
Field: 21,390 job seekers who registered at the unemployment agency during the first six months in 2012 in France.

Density of the estimated conditional probability of entry into reduced activity.
Four months *after the registration to the unemployment agency.*
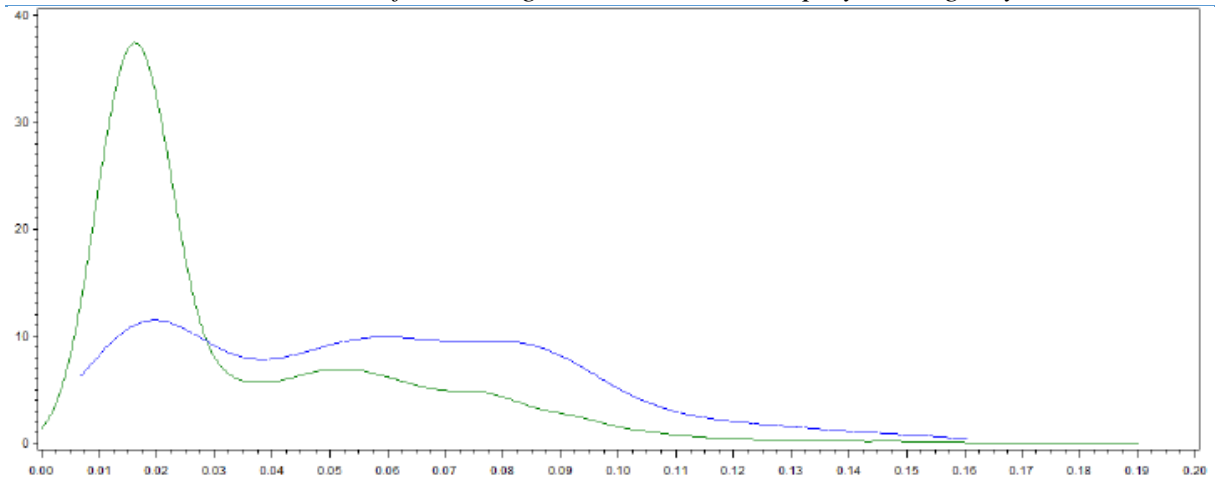
Sources: FH-D3 (Pôle Emploi) and DPAE (Acoss) files over 2012-2013.
Field: 21,390 job seekers who registered at the unemployment agency during the first six months in 2012 in France.

Density of the estimated conditional probability of entry into reduced activity.
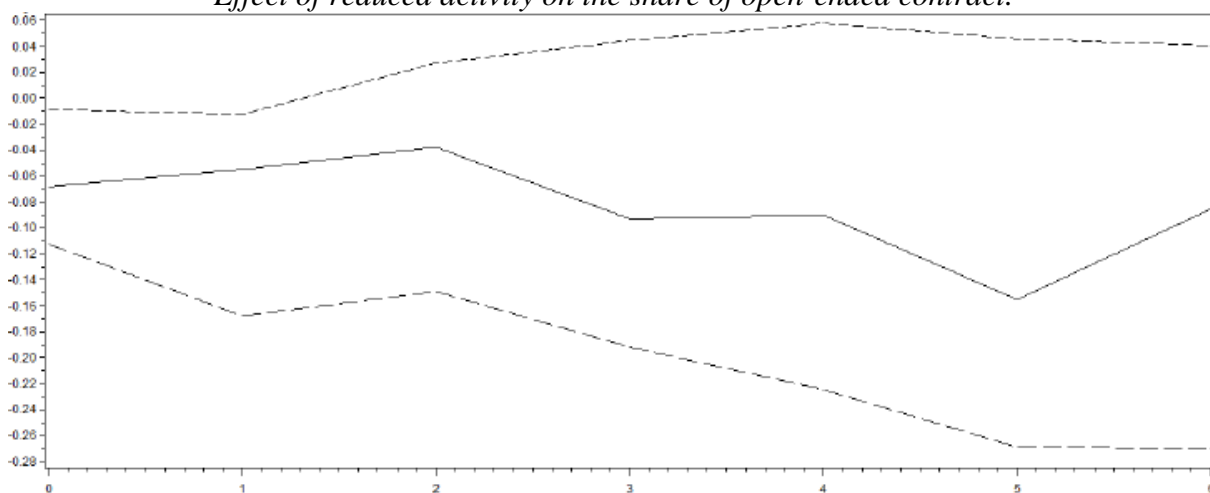**Five months** *after the registration to the unemployment agency.*

Sources: FH-D3 (Pôle Emploi) and DPAE (Acoss) files over 2012-2013.
Field: 21,390 job seekers who registered at the unemployment agency during the first six months in 2012 in France.

Density of the estimated conditional probability of entry into reduced activity.
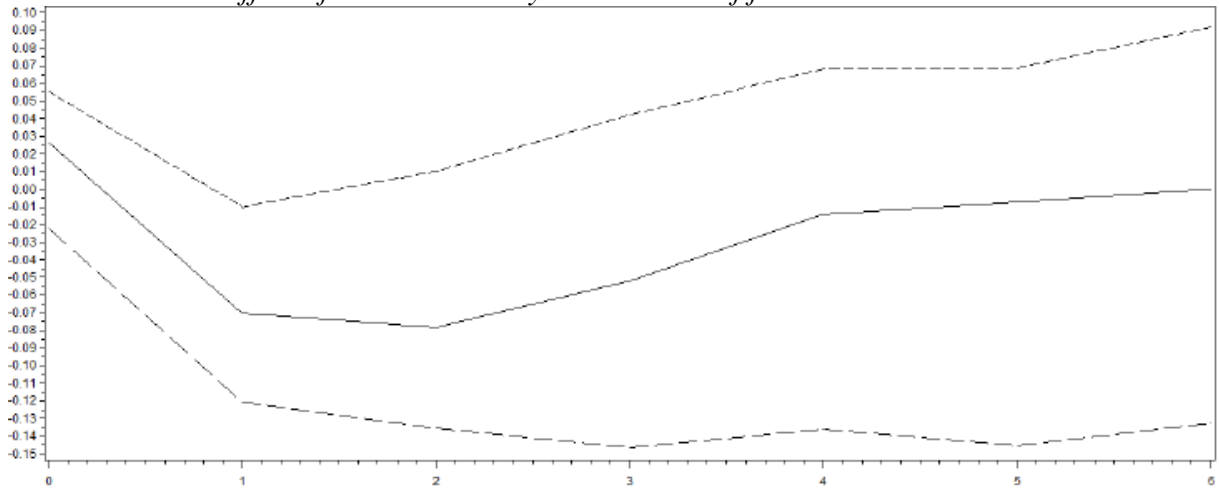***Six months*** *after the registration to the unemployment agency.*
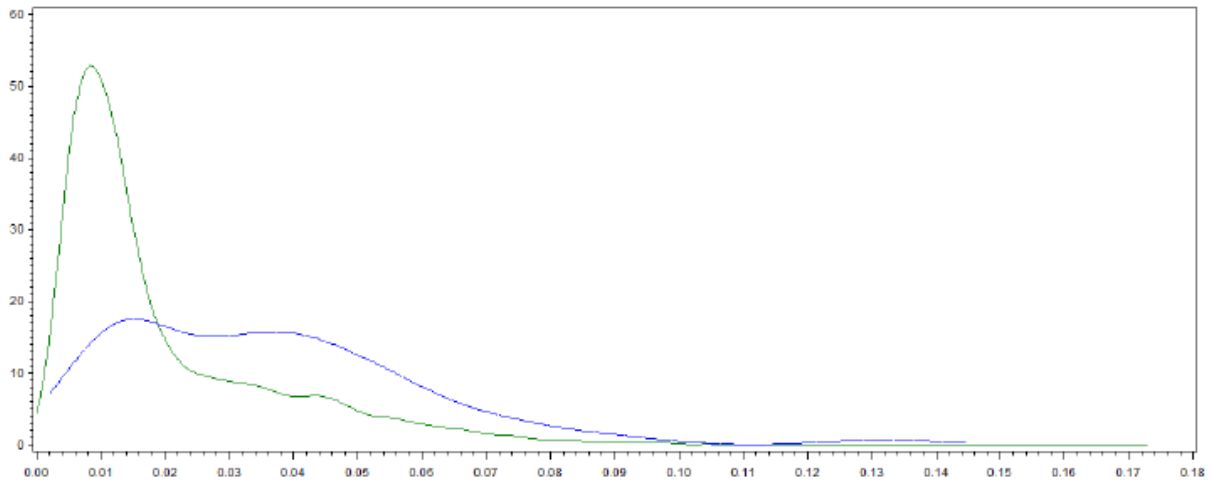
Sources: FH-D3 (Pôle Emploi) and DPAE (Acoss) files over 2012-2013.
Field: 21,390 job seekers who registered at the unemployment agency during the first six months in 2012 in France.

Appendix 4. Effect of reduced activity on the employment rate and on the kind of labor contract that characterized the regular job found by job seekers to go out of unemployment. Considered time horizon: 12 months after the entry into reduced activity.

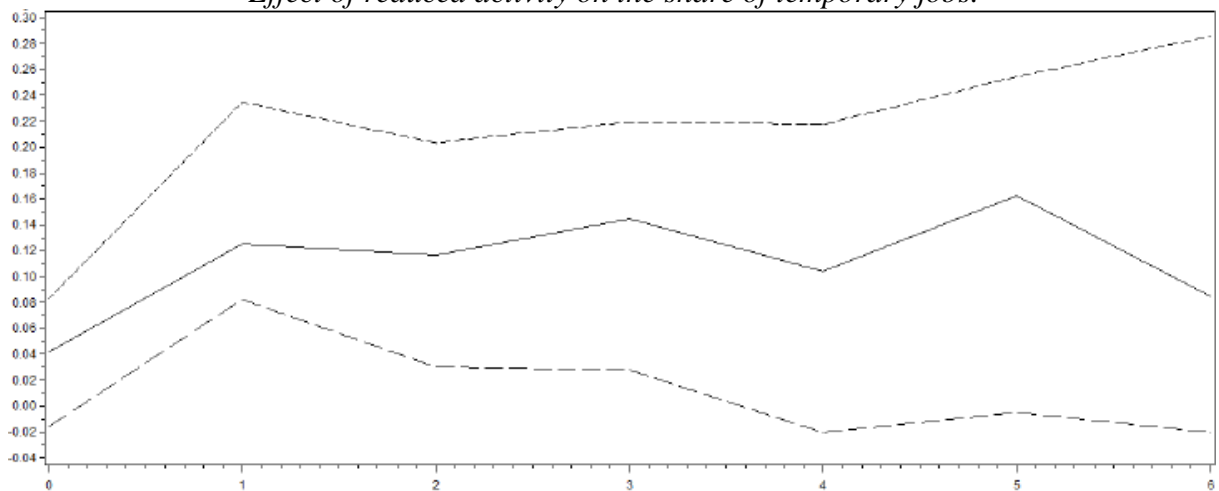*Effect of reduced activity on employment rate.*

Sources: FH-D3 (Pôle Emploi) and DPAE (Acoss) files over 2012-2013.
Field: 21,390 job seekers who registered at the unemployment agency during the first six months in 2012 in France.
Notes: dahed lines: lower and upper bound of the confidence interval of the estimated effect of reduced activity.

Effect of reduced activity on the share of open-ended contract.

Sources: FH-D3 (Pôle Emploi) and DPAE (Acoss) files over 2012-2013.
Field: 21,390 job seekers who registered at the unemployment agency during the first six months in 2012 in France.
Notes: dahed lines: lower and upper bound of the confidence interval of the estimated effect of reduced activity.

Effect of reduced activity on the share of fixed-term contract.

Effect of reduced activity on the share of temporary jobs.