The Lock-in Effects of Part-Time Unemployment Benefits

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Motivation

- Rise in temporary work, part-time work, self-employment $\Longrightarrow$ Part-time unemployment benefits provided to persons working on non-regular jobs who are seeking a regular job.
    - Job seekers who accept a non-regular job while on claim, can cumulate labor earnings with part of their unemployment benefits.
- Part-time unemployment benefits are widespread in Europe.
- In France, almost one over two unemployment benefit recipients works while on claim during his unemployment spell.

$\hookrightarrow$ Unfortunately, very little is known on this program.

$\hookrightarrow$ Importance of selection effects $\Longrightarrow$ difficult to estimate the causal impact of part-time unemployment benefits

Why part-time unemployment benefits?

Effects on unemployment:

- May shorten unemployment spells if non-regular jobs act as **stepping stones** towards regular jobs
- Potential **lock-in effects** : part-time unemployed look for regular jobs less intensively

What we do

Randomized experiment

- Send emails to inform job seekers about the program
- Rely on administrative data to follow job seekers during 3 years after the informational treatment

Choice motivated by the **lack of knowledge** about this program among job seekers:

- 40% of job seekers do not know the existence of the program.
- Among people unaware of the program:
  - 50% think that they would lose all their unemployment benefits when working while on claim
  - 81% think that their benefit exhaustion date would not be extended if they work while on claim

What's new

- The literature mostly relies on the timing-of-events approach developed by Abbring and Van Den Berg (2003) and aims to identify the causal impact of working while on claim

  $\hookrightarrow$ But knowing the existence of the program may have an impact on behaviors even without working while on claim

  $\hookrightarrow$ Cannot identify the impact of the existence of the program itself

- Our experiment allows us to get credible identification of the effects of part-time unemployment benefits on:
  - Behavior of unemployment insurance recipients
  - Unemployment insurance expenditure

▸ Related literature

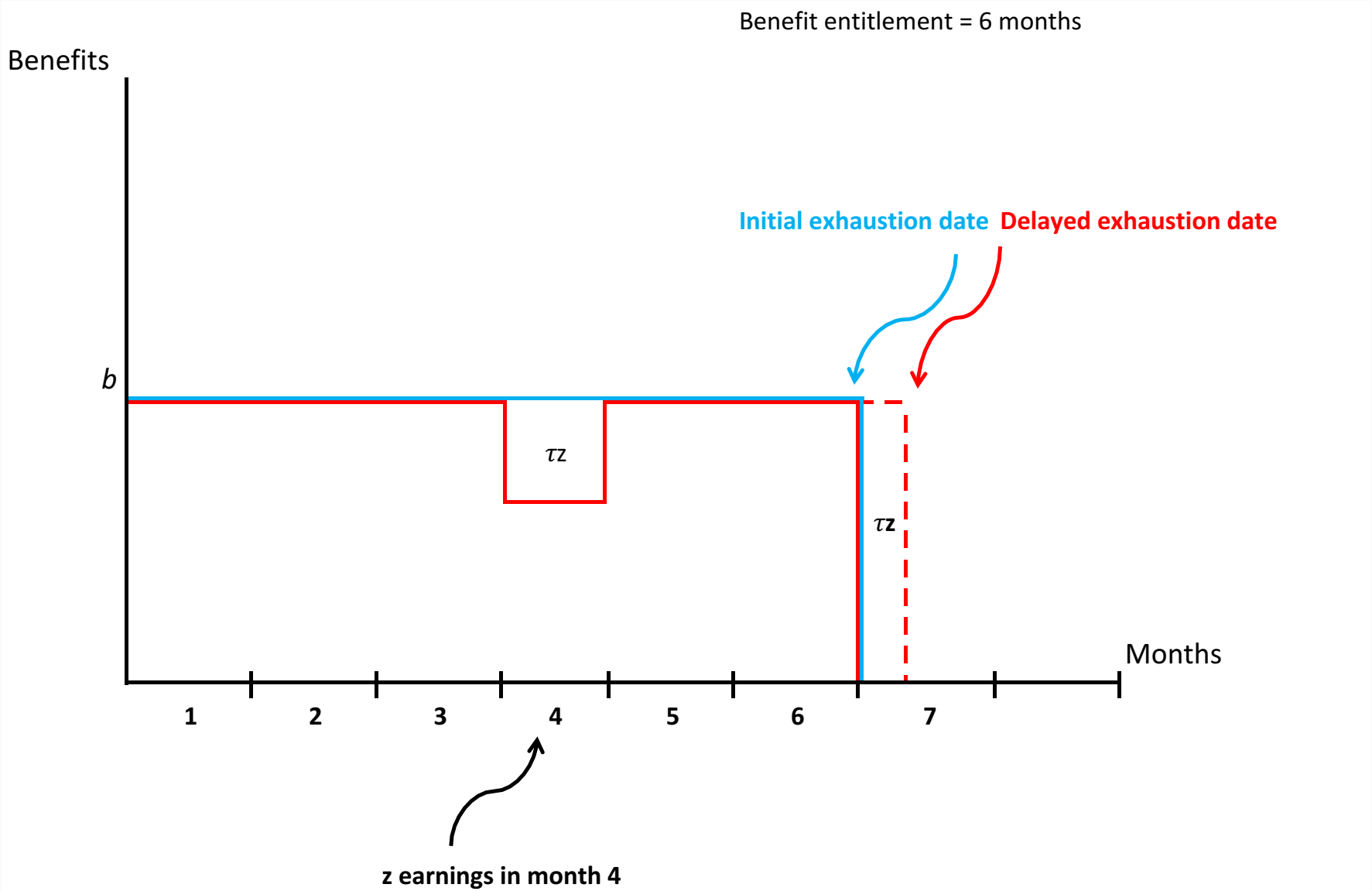
Institutional background

Institutional background

Aim of the program: provide incentives to job seekers who are looking for regular jobs to **accept non-regular jobs** in the mean time.

- job seekers who do not work get benefits b
- job seekers who earn z from non-regular jobs get benefits $b - \tau z$, where $\tau < 1$, hence total income is $b + (1 - \tau)z$
- saved benefits τz are rolled over to the end of the entitlement period

Institutional background



Institutional background

- Initial unemployment insurance capital B_0
- Benefits paid each month, b are deduced from the insurance capital B_t
- Benefits exhaustion date T such that $B_T = 0$
- Monthly income of a worker whose labor earnings amount to z_t in month t is equal to

$$\min[b + (1 - \tau)z_t, z_t]$$

  where w is the reference monthly wage, and τ is the tax rate on labor earnings while on claim

- Law of motion of B_t

$$B_{t+1} = \max[B_t - b + \tau z_t, 0]$$

▸ Labor earnings and disposable income of unemployment insurance recipients

Theoretical framework

Theoretical framework

Job search model in which

- look for regular jobs: arrival rate $\lambda(e_t)$ depends on job search intensity e_t
- get job offers in a distribution of temp jobs with different wages at exogenous arrival rate while looking for regular jobs
- face a small fixed cost to work while on claim κ
- accept temp job offers if the associated wage z_t is large enough

$\hookrightarrow$ The decision to work while on claim depends on the **dynamic marginal tax rate** m_t.

$$(1 - m_t)z_t > \kappa \tag{1}$$

▸ Value function of unemployed workers

Theoretical framework

The **dynamic marginal tax rate** depends on:

- the instantaneous tax τ on earnings from work while on claim
- the probability that the taxed earnings will be retrieved after the benefits exhaustion date

$$m_t = \tau \left(1 - \beta^{T-t} \prod_{j=t}^{T-1} [1 - \lambda(e_j)] \right)$$

where:

- β: discount factor, T: benefits exhaustion date
- $\prod_{j=t}^{T-1} [1 - \lambda(e_j)]$: survival probability in unemployment at exhaustion date T

Theoretical framework

Negative relation between the dynamic marginal tax rate and the propensity to work while on claim

$\Longrightarrow$ If the informational treatment increases the propensity to work while on claim, the informational treatment can be **interpreted as a drop in the expected dynamic marginal tax rate to its actual level**

Theoretical framework

What is the impact of a drop in the dynamic marginal tax rate on unemployment duration?

- Direct effects: stepping stone and lock-in effect (i.e. the job arrival rate λ depends on the propensity to work while on claim)
- Indirect effect : attraction effect
  - Forward looking nature of the optimization problem: the possibility to work while on claim in the future influences current job search behavior.

$\hookrightarrow$ The overall effect depends on the magnitude of each effect.

▸ Drop in dynamic marginal tax rate

Experimental design

The treatment

People in the treatment group received **3 successive emails** sent by public employment services on 31 January, 28 February, and 31 March 2017

- The main text of the email focuses on the two incentives created by the program
- It is accompanied by an example which introduces a hypothetical worker and shows what happens to his benefits if he works while on claim
- An attached file with further information and a link to a simulator are also provided

▸ Screenshot of the email

Sample

Randomization took place on all registered job seekers who were:

- Registering **for the first time** at the Employment Agency between 1 July 2016 and 30 November 2016
- **Eligible** for unemployment benefits and **still on claim** at the time of the treatment
- **Did not experience part-time unemployment** before the treatment
- Not subject to very specific rules: temporary workers (in temp agencies), childminders, entrepreneurs, artists, and technicians working in the culture sector.

$\hookrightarrow$ Final sample : 115 547 obs

Randomization design

2 levels of randomization

- Local agency level → Treated vs untreated areas
- Job seeker level → Treated vs Control (in treated areas)

Local agency level	Treated areas		Untreated areas
Assignment prob.	4/5		1/5
Number of agencies	687		171
Number of job seekers	118 724		29 790
Job seeker level	**Treated (T)**	**Controls (C)**	**Super-controls (SC)**
Assignment prob.	1/2	1/2	
Number of job seekers	59 370	59 354	29 790

Randomization design

▸ Summary statistics

Results

Take up

High take up:

- 85% of treated individuals opened at least one email
- 3 on 4 people opened the first email
- About 7% used the simulator at least once

Empirical Analysis

In what follows we estimate models of the following form:

$$y_i = \alpha + \beta Z_i + \delta C_i + \gamma X_i + \epsilon_i$$

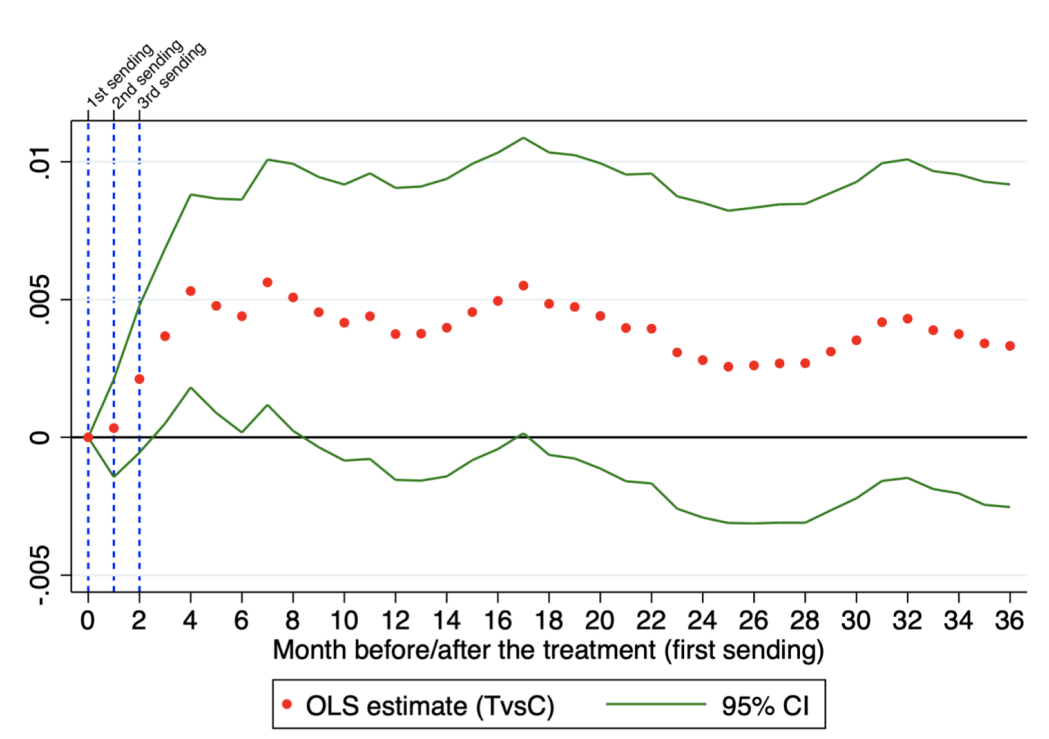
where

- Z_i is a dummy for being in the treated group
- C_i is a dummy for being in a treated area (i.e. being either in the treated group or in the control group)
- X_i is a vector of covariates that includes the variables reported in the summary statistics as well as months interacted with regions fixed effects

Thus,

- $\hat{\beta}$ are estimates of intention to treat (ITT)
- $\hat{\delta}$ estimates the potential spillover effects of the information provision

Treatment effect on part-time unemployment

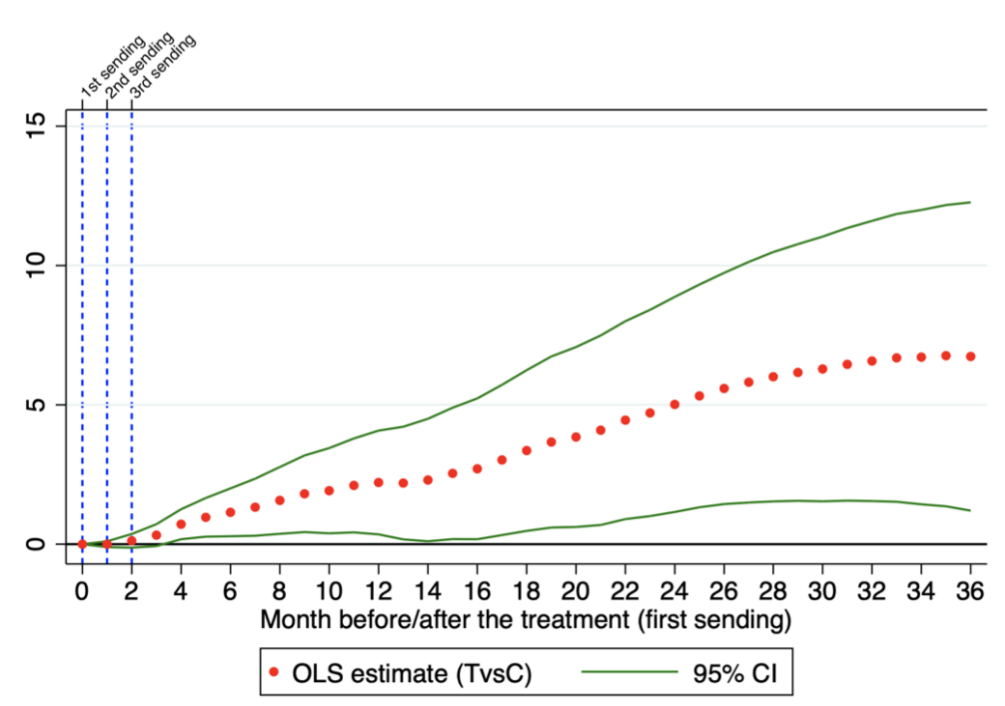


Treatment effect on the propensity to have worked while on claim at least once

→ Work while on claim increases until six months after the first email by 0.4 %, which corresponds to an increase of 6% with respect to the control group ▸ See Table

→ Negligible impact at the intensive margin ▸ Intensive margin

Treatment effect on part-time unemployment



Treatment effect on the cumulated numbers of hours worked while on claim

→ The impact corresponds to an increase of about 7 supplementary hours after 36 months (i.e. an increase of 5% with respect to the control group) ▸ See Table

→ Randomization inference ▸ See Table

Spillover with the control group

- Two types of spillover:
  - transmission of information → increase take-up of the control group
  - displacement effects → decrease take-up of the control group
- No significant differences between the control group and the supercontrol group ▸ See Table
  ↪ No spillover or the two effects cancel each other out?
- Focus on labor markets with low employment rate, where only the transmission of information is likely to operate : no transmission of information ▸ See Table
  ↪ Absence of both displacement effects and information transmission

Heterogeneous effects of the treatment

- Heterogeneous effects of the treatment
  - Machine-learning approach developed by Chernozhukov et al. (2018)

  $\rightarrow$ from zero effect to positive effects ▸ See Figure

  $\rightarrow$ Most affected: young, intermediate education level, higher reference wage, shorter employment spells before entry into unemployment ▸ See Table

- The heterogeneity of the impact of the informational treatment on the probability to work while on claim may arise from
  - differences in dealing with information received by email
  - differences in the propensity to work while on claim

Characteristics of individuals working while on claim in the treated group

- Characteristics of treated individuals working while on claim do not differ from those of other individuals also working while on claim, except for the duration of the last contract before the entry into unemployment ▸ See Table

- the treatment induces individuals to work while on claim whose observable characteristics are similar as those who have a high propensity to work while on claim $\rightarrow$ situation that should arise if the marginal tax on work while on claim dropped ▸ See Table

Treatment effect on unemployment

	1st year		2nd year		3rd year		All years	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A : Number of days of unemployment								
Treated (β)	-0.2729	-0.0612	-0.0439	-0.0532	0.6404	0.6301	0.3236	0.5158
	(0.8795)	(0.7682)	(0.8216)	(0.6924)	(0.6386)	(0.5874)	(1.7315)	(1.4446)
	[0.756]	[0.937]	[0.957]	[0.939]	[0.316]	[0.284]	[0.852]	[0.721]
In a treated area (δ)	2.0622	-0.0325	-0.5512	-0.5738	-1.5087	-0.5686	0.0022	-1.1749
	(1.9739)	(1.2097)	(1.4923)	(0.9803)	(1.0131)	(0.8028)	(3.1347)	(2.2030)
	[0.296]	[0.979]	[0.712]	[0.558]	[0.137]	[0.479]	[0.999]	[0.594]
Mean super control	320.89		112.32		54.87		488.07	
Panel B : Number of months with at least one day of unemployment								
Treated (β)	0.0225	0.0244	0.0149	0.0153	0.0307	0.0309	0.0680	0.0706
	(0.0276)	(0.0239)	(0.0292)	(0.0250)	(0.0241)	(0.0223)	(0.0628)	(0.0528)
	[0.416]	[0.308]	[0.609]	[0.540]	[0.203]	[0.167]	[0.279]	[0.182]
In a treated area (δ)	0.0304	-0.0162	-0.0393	-0.0257	-0.0698*	-0.0268	-0.0787	-0.0687
	(0.0538)	(0.0324)	(0.0522)	(0.0361)	(0.0406)	(0.0313)	(0.1107)	(0.0751)
	[0.572]	[0.617]	[0.452]	[0.477]	[0.086]	[0.392]	[0.478]	[0.360]
Mean super control	7.59		4.32		2.27		14.17	
Panel C : Exit from unemployment toward employment for at least 3 months								
Treated (β)	-0.0038	-0.0044	-0.0068**	-0.0075**	-0.0037	-0.0041	-0.0035	-0.0041
	(0.0034)	(0.0032)	(0.0031)	(0.0030)	(0.0031)	(0.0030)	(0.0028)	(0.0027)
	[0.261]	[0.169]	[0.029]	[0.014]	[0.241]	[0.176]	[0.211]	[0.137]
In a treated area (δ)	-0.0068	-0.0019	-0.0012	-0.0000	0.0021	0.0040	-0.0037	-0.0006
	(0.0068)	(0.0046)	(0.0051)	(0.0040)	(0.0047)	(0.0038)	(0.0048)	(0.0037)
	[0.323]	[0.682]	[0.819]	[1.000]	[0.650]	[0.302]	[0.441]	[0.873]
Mean super control	0.50		0.66		0.67		0.77	
Covariates	No	Yes	No	Yes	No	Yes	No	Yes
N	115547	115547	115547	115547	115547	115547	115547	115547

Treatment effect on unemployment outcomes

$\rightarrow$ Absence of significant effects implies that the increase in the number of days of work while on claim is annihilated by the drop in the exit rate : lock-in effects

$\rightarrow$ We observe even more important lock-in effects for exits longer than 3 months

Treatment effect on unemployment

	Potential Benefit Duration					
	All sample		$<$ 730 days		$\geq$ 730 days	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A : Prob. to be out of unemployment in the last quarter						
Treated (β)	-0.0048	-0.0052*	0.0012	0.0000	-0.0093**	-0.0096**
	(0.0032)	(0.0031)	(0.0047)	(0.0044)	(0.0044)	(0.0043)
	[0.129]	[0.094]	[0.792]	[0.995]	[0.035]	[0.028]
In a treated area (δ)	-0.0025	-0.0019	-0.0052	-0.0070	-0.0006	0.0028
	(0.0055)	(0.0044)	(0.0075)	(0.0062)	(0.0063)	(0.0055)
	[0.648]	[0.660]	[0.487]	[0.263]	[0.927]	[0.609]
Mean super control	0.47		0.41		0.51	
Panel B : Prob. to be out of unemployment in the last month						
Treated (β)	-0.0056*	-0.0059**	0.0033	0.0020	-0.0122***	-0.0125***
	(0.0031)	(0.0030)	(0.0047)	(0.0045)	(0.0043)	(0.0042)
	[0.068]	[0.046]	[0.493]	[0.648]	[0.004]	[0.003]
In a treated area (δ)	0.0024	0.0015	-0.0019	-0.0052	0.0055	0.0072
	(0.0053)	(0.0042)	(0.0074)	(0.0060)	(0.0062)	(0.0055)
	[0.655]	[0.725]	[0.798]	[0.385]	[0.371]	[0.193]
Mean super control	0.40		0.34		0.44	
Covariates	No	Yes	No	Yes	No	Yes
N	115547	115547	50887	50887	64660	64660

Treatment effect on unemployment in the last quarter or last month before the initial benefit exhaustion date

→ Randomization inference ▸ See Table

▸ PBD distribution

Cost/benefits for Unemployment Insurance

The treatment had no effect on the total amount of benefits payed

▸ See Table

- Impact of tax changes on expenditure = sum of 2 effects
  1. mechanical effects, i.e. the impact of tax changes keeping behavior unchanged
  2. behavioral effects, i.e. change in behavior

- We find that behavioral effects are equal to zero.

→ Reducing the dynamic marginal tax rate on earnings from work while on claim would raise UI expenditure

Conclusion

Providing information to job seekers about part-time unemployment insurance program induced:

- Job seekers to work more while on claim but also to remain unemployed longer
- Empirical literature suggests stepping stone effects of working on non-regular jobs in France

$\hookrightarrow$ Accounting for the attraction effect is very important to assess the full impact of part-time unemployment benefits

Policy implication

- Behavioral reactions to informational treatment did not increase labor supply and unemployment insurance expenditure at 3-year horizon
- Informational treatment $\sim$ reduction in the dynamic marginal tax rate $\rightarrow$ increase in UI expenditure
  $\hookrightarrow$ But ambiguous impact on welfare

Related literature

Part-time unemployment benefits:

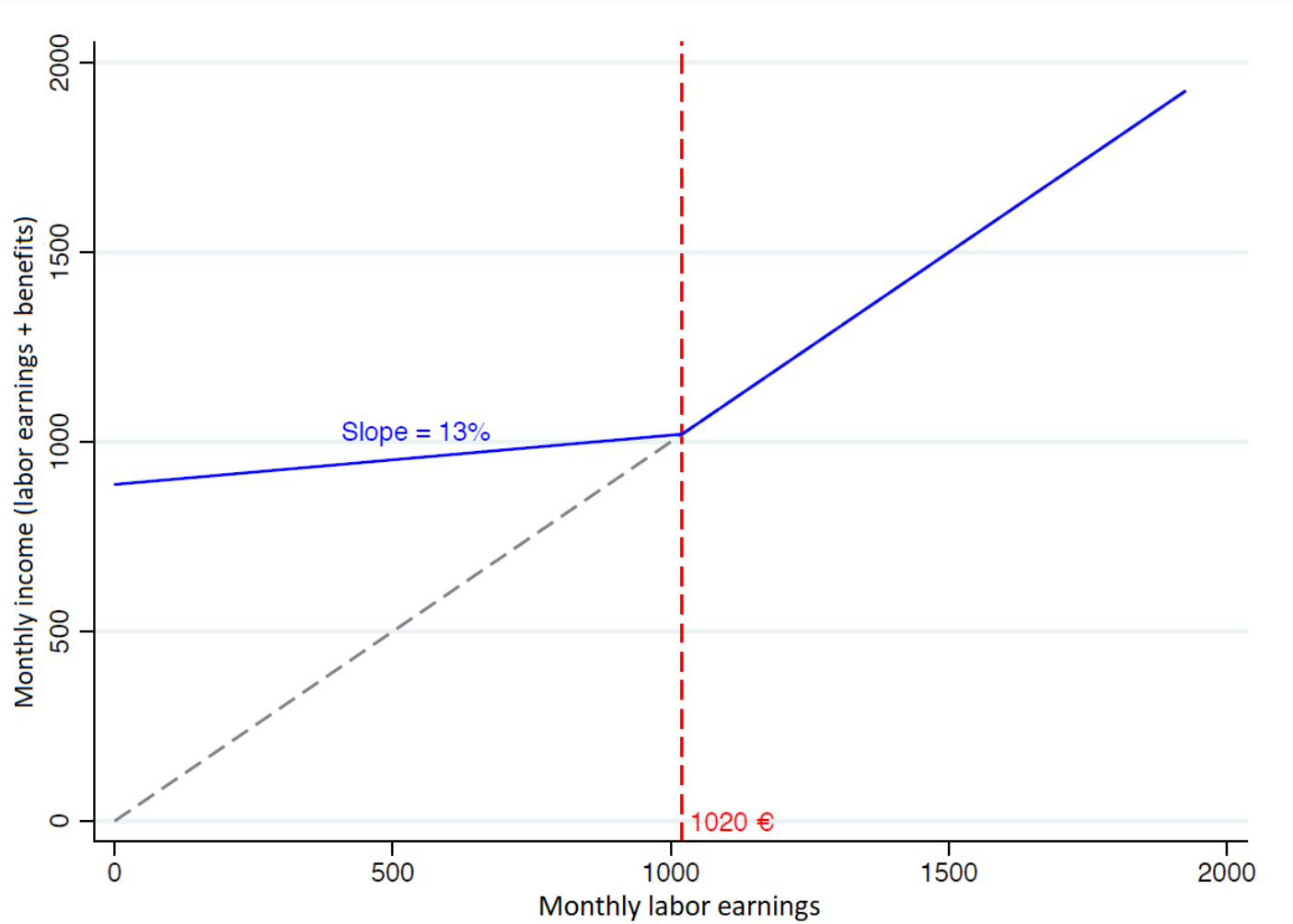
- US: McCall (1996), Le Barbanchon (2020)
- Europe: Belgium Cockx et al (2013), Denmark (Kyyrä et al. (2013)), Finland (Kyyrä (2010)), France (Fremigacci and Terracol (2013)), Germany (Caliendo et al. (2012))
- **RCT in the US**: Lee, Leung, O'Leary, Pei, Quach (2020, forthcoming Jole), Washington State in 1994: No effects on labor supply

Consequences of information provision

- Job search : Altmann et al. (2018), Belot et al. (2018), Crépon et al. (2018), Darling et al. (2016)
- Labor supply : Chetty and Saez (2013)
- Take-up of social benefits (Currie (2006)) and unemployment benefits (Blank and Card (1991), Fontaine and Ketteman (2019))

▸ Go back

Labor earnings and disposable income



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Theoretical framework

Job search model in which

- the per period utility derived from consumption $c \geq 0$ and search effort $e \geq 0$ is equal to: $v(c) - e$
- job seekers look for regular jobs: arrival rate $\lambda(e_t)$ depends on job search intensity e_t
- earnings z_t associated with non-regular jobs are drawn in a stationary distribution in each period t
- accept these jobs if the associated wage is large enough
- job seekers face a small fixed cost to work while on claim κ

The value function of unemployed workers is :

$$U(B_t) = \mathbb{E}\left\{\max_{(e_t,\Omega_t)} v(c_t) - e_t + \beta\left[\lambda(e_t)W + (1-\lambda(e_t))U(B_{t+1})\right]\right\}$$

where:

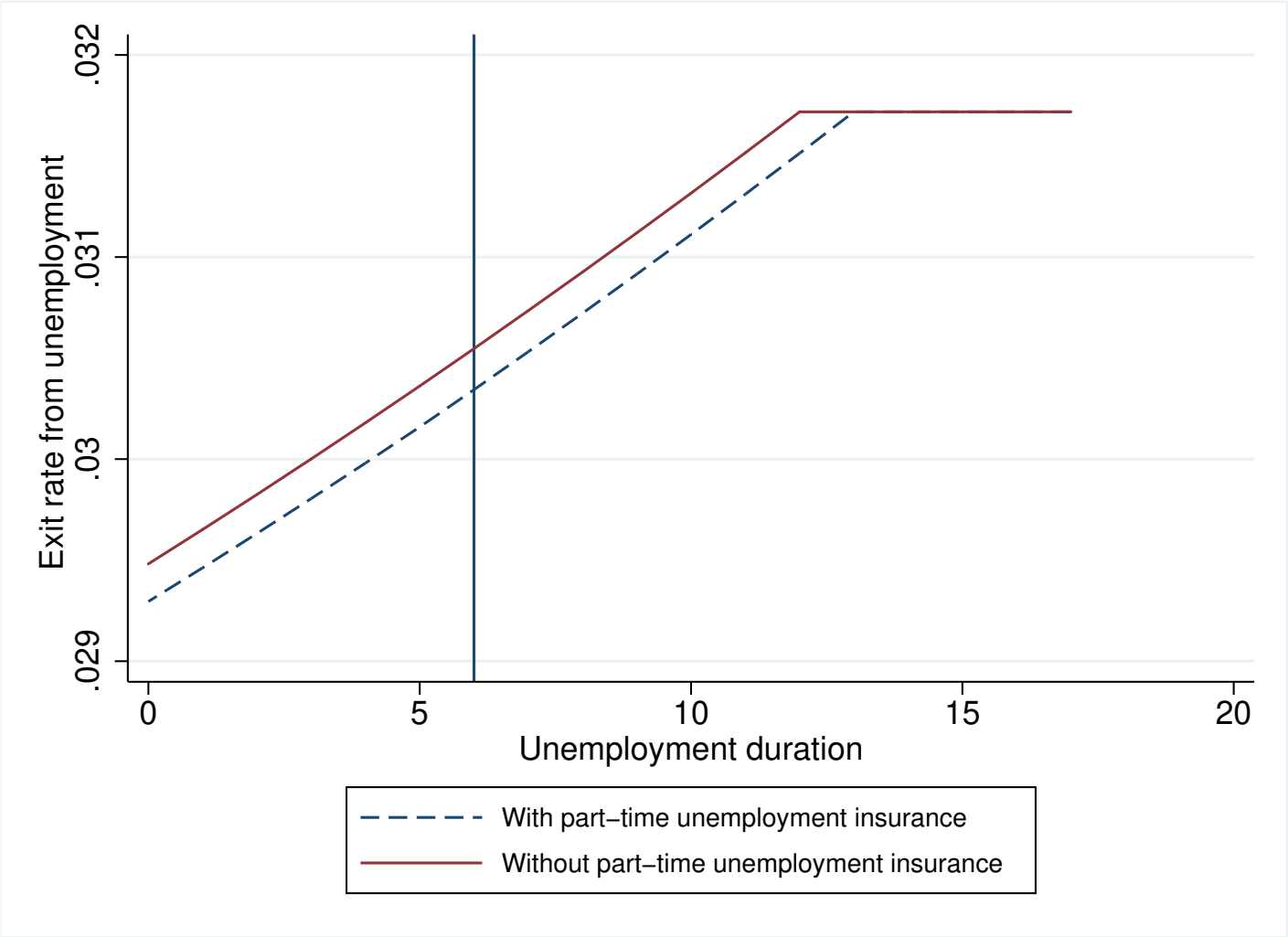
$$c_t = b(B_t) + \left[z(1-\tau) - \kappa\right]\Omega_t$$

subject to the law of motion:

$$B_{t+1} = \max\left[B_t - b + \tau z_t, 0\right]$$

▸ Go back

Drop in dynamic marginal tax rate



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Screenshot of the email

Bonjour,

Vous êtes aujourd'hui demandeur d'emploi indemnisable au titre de l'Allocation de Retour à l'Emploi (ARE). **Nous vous informons que vous pouvez travailler sans perdre votre allocation chômage.** Cette possibilité de cumuler votre salaire et votre allocation vous permet:
- **De disposer d'un revenu plus élevé** que votre seule allocation mais sans dépasser le montant de votre ancien salaire brut. Pôle emploi ne retire que 70 centimes d'allocation par euro brut gagné.
- **D'être indemnisé plus longtemps**. Le nombre de jours d'allocations non perçues en raison de votre cumul reste acquis.

A la fin de vos allocations, vous pouvez bénéficier de nouveaux droits grâce à cette activité dès que vous avez exercé 150 heures d'activité réduite.

Illustration:
Mme Dubois augmente son revenu mensuel de 180 euros brut si elle travaille 9 jours dans le mois au SMIC.

Mme Dubois bénéficie d'une allocation de 930 euros pour un mois de 31 jours sans activité. Elle travaille 9 jours sur un mois donné pour un salaire brut de 600 euros. Pôle emploi retire 70 centimes par euro brut gagné. Pôle emploi retire donc 420 euros brut (=0,7 x 600 euros) et continue à verser 510 euros d'allocation. Mme Dubois obtient un revenu mensuel brut de 1110 euros (600 euros de salaire brut + 510 euros d'allocation brute restante), **supérieur de 180 euros** aux allocations perçues pour un mois de chômage complet (930 euros).

Simuler le montant de votre allocation en cas de reprise d'activité

En pratique:
Chaque mois, l'activité professionnelle doit être déclarée au moment de votre actualisation mensuelle. Une copie du bulletin de salaire doit être envoyée aux services de Pôle emploi.

Pour plus d'information:
Les règles de cumul de votre allocation avec un salaire sont détaillées en pièce jointe.

Cordialement,
L'équipe Pôle emploi

Attention :
Ce courriel vous est envoyé automatiquement, merci de ne pas utiliser la fonction "répondre à l'expéditeur".

Vous disposez d'un droit d'accès et de rectification aux informations qui vous concernent auprès de Pôle emploi conformément à la loi du 6 janvier 1978, modifiée, relative à l'informatique,aux fichiers et aux libertés.

▸ Go back

Summary statistics

	Means				p-value of the difference		
	All	T	C	SC	T - C	T - (C + SC)	T = C = SC
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Job seekers characteristics							
Female	.472	.473	.473	.467	.967	.496	.335
Age	32.645	32.639	32.632	32.683	.935	.831	.972
Young	.378	.375	.377	.386	.398	.82	.406
Prime age	.461	.464	.462	.449	.545	.475	.318
Senior	.161	.161	.16	.165	.77	.46	.7
Lower secondary education	.239	.239	.236	.242	.256	.21	.406
Upper secondary education	.432	.427	.432	.444	.101	.926	.081
Higher education	.329	.334	.332	.313	.485	.362	.301
Last contract duration $\leq$ 12 months	.338	.335	.336	.344	.743	.656	.675
Last contract duration $\leq$ 3 months	.089	.088	.09	.091	.249	.559	.465
Potential benefit duration	621.096	621.506	621.507	619.456	.999	.793	.948
... < 730 days	.44	.44	.441	.441	.652	.793	.9
... $\geq$ 730 days	.56	.56	.559	.559	.652	.793	.9
Daily Reference Wage	62.948	63.137	63.166	62.138	.93	.652	.901
... $\leq$ the mean	.678	.678	.677	.678	.961	.973	.999
... > the mean	.322	.322	.323	.322	.961	.973	.999
Days since entry in unemployment	108.321	108.471	108.298	108.069	.516	.891	.678
... $\leq$ 3 months	.4	.399	.401	.403	.474	.787	.687
... between 4 and 6 months	.6	.601	.599	.597	.474	.787	.687
Local agencies characteristics							
Unemployment rate	13.761	13.771	13.757	13.749	.676	.955	.912
Share of part time unemployment	.434	.433	.432	.438	.309	.35	.425
Share of long-term unemp	.429	.429	.429	.429	.398	.979	.668
Exit rate from unemp	.064	.064	.064	.064	.193	.431	.337
Number of claimants	4361.794	4366.773	4377.762	4320.004	.305	.624	.477
Number of participants	224.45	226.913	227.873	212.704	.213	.108	.127
N	115547	46191	46200	23156			

Summary statistics across experimental groups

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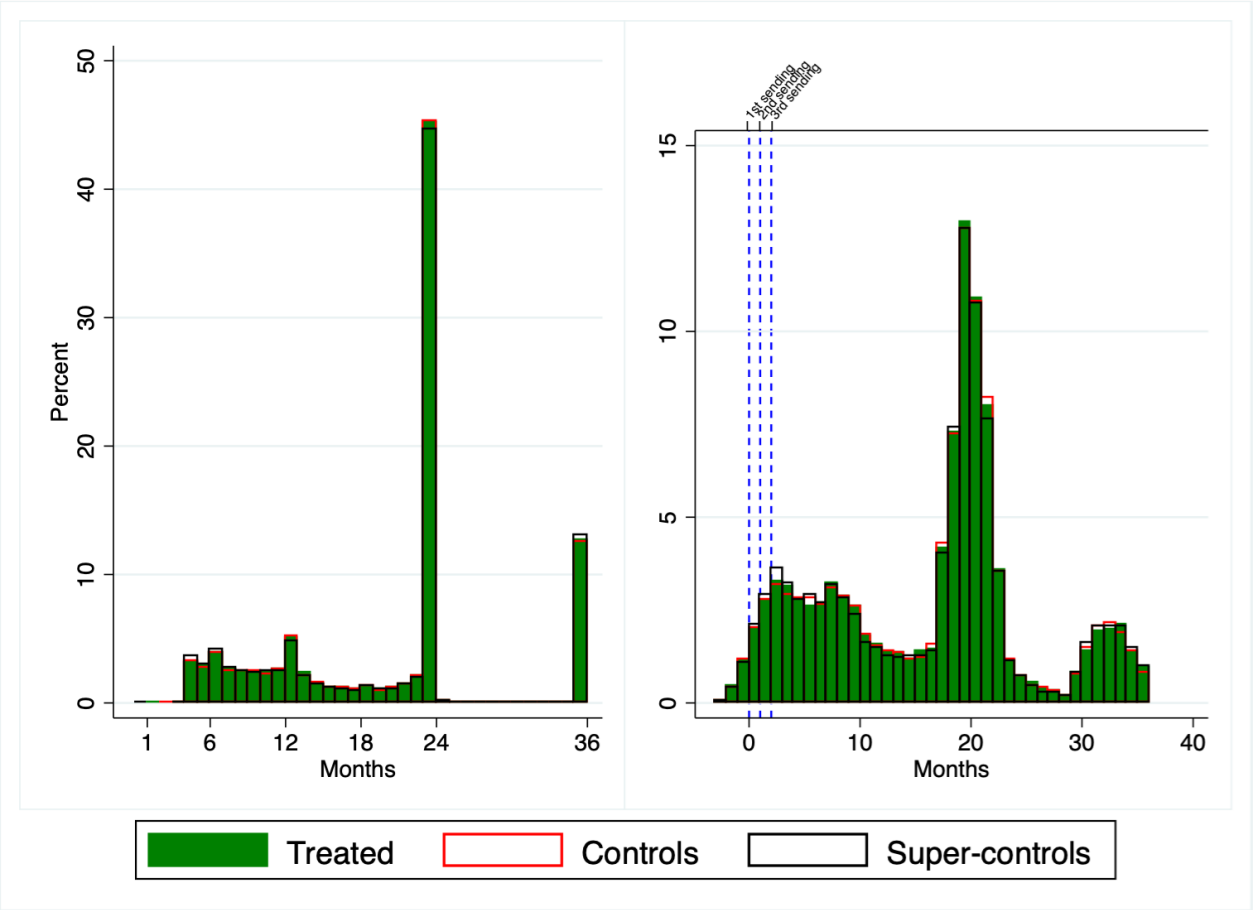
PBD distribution



Potential benefits duration at registration date (left panel) and treatment date (right panel)

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Prob. to work while on claim

	3 months		6 months		12 months		36 months	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A : Prob. to work while on claim at least once								
Treated (β)	0.0037**	0.0037**	0.0044**	0.0044**	0.0037	0.0038	0.0033	0.0033
	(0.0016)	(0.0016)	(0.0022)	(0.0022)	(0.0027)	(0.0027)	(0.0030)	(0.0030)
	[0.025]	[0.023]	[0.046]	[0.041]	[0.177]	[0.164]	[0.277]	[0.264]
In a treated area (δ)	-0.0021	-0.0006	0.0005	0.0037	-0.0017	0.0026	-0.0107*	-0.0038
	(0.0024)	(0.0020)	(0.0034)	(0.0026)	(0.0045)	(0.0032)	(0.0063)	(0.0040)
	[0.384]	[0.765]	[0.874]	[0.147]	[0.708]	[0.417]	[0.090]	[0.345]
Mean super control	0.06		0.11		0.19		0.30	
Panel B : Prob. to work while on claim at least two months								
Treated (β)	0.0013	0.0013	0.0033**	0.0033**	0.0045**	0.0046**	0.0037	0.0038
	(0.0010)	(0.0010)	(0.0017)	(0.0016)	(0.0022)	(0.0022)	(0.0027)	(0.0027)
	[0.221]	[0.219]	[0.044]	[0.041]	[0.043]	[0.037]	[0.184]	[0.163]
In a treated area (δ)	-0.0002	0.0005	0.0003	0.0023	0.0011	0.0045*	-0.0057	0.0002
	(0.0013)	(0.0013)	(0.0023)	(0.0019)	(0.0034)	(0.0026)	(0.0052)	(0.0036)
	[0.887]	[0.719]	[0.910]	[0.233]	[0.734]	[0.083]	[0.275]	[0.965]
Mean super control	0.03		0.06		0.12		0.23	
Panel C : Prob. to work while on claim at least three months								
Treated (β)	0.0003	0.0003	0.0030**	0.0030***	0.0038**	0.0039**	0.0047**	0.0049**
	(0.0005)	(0.0005)	(0.0012)	(0.0012)	(0.0018)	(0.0018)	(0.0024)	(0.0024)
	[0.624]	[0.616]	[0.011]	[0.009]	[0.035]	[0.029]	[0.050]	[0.037]
In a treated area (δ)	0.0005	0.0005	-0.0006	-0.0001	0.0008	0.0029	-0.0041	0.0001
	(0.0007)	(0.0006)	(0.0016)	(0.0015)	(0.0027)	(0.0023)	(0.0044)	(0.0032)
	[0.434]	[0.430]	[0.694]	[0.955]	[0.771]	[0.203]	[0.345]	[0.969]
Mean super control	0.01		0.03		0.08		0.17	
Covariates	No	Yes	No	Yes	No	Yes	No	Yes
N	115547	115547	115547	115547	115547	115547	115547	115547

Treatment effect on the probability to work while on claim

▶ Go back

Extensive margin

	3 months		12 months		36 months	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A : Cumulative number of months with work while on claim						
Treated (β)	0.0052*	0.0052*	0.0254**	0.0260**	0.0782***	0.0812***
	(0.0027)	(0.0027)	(0.0109)	(0.0108)	(0.0293)	(0.0290)
	[0.053]	[0.051]	[0.020]	[0.016]	[0.008]	[0.005]
In a treated area (δ)	-0.0017	0.0004	0.0035	0.0163	-0.0303	0.0082
	(0.0037)	(0.0033)	(0.0166)	(0.0130)	(0.0502)	(0.0366)
	[0.642]	[0.912]	[0.834]	[0.209]	[0.546]	[0.823]
Mean super control	0.10		0.57		1.70	
Panel B : Cumulative number of hours worked while on claim						
Treated (β)	0.3230	0.3259	2.1532**	2.2149**	6.4473**	6.7340**
	(0.2016)	(0.2001)	(0.9633)	(0.9485)	(2.8676)	(2.8181)
	[0.109]	[0.104]	[0.026]	[0.020]	[0.025]	[0.017]
In a treated area (δ)	-0.2362	-0.0676	-0.8573	0.0625	-4.6537	-1.6120
	(0.2607)	(0.2422)	(1.4521)	(1.1837)	(5.0166)	(3.6733)
	[0.365]	[0.780]	[0.555]	[0.958]	[0.354]	[0.661]
Mean super control	5.75		40.70		135.62	
Panel C : Cumulative earnings (in euro) from work while on claim						
Treated (β)	5.6210**	5.6575**	33.0513**	33.7244***	104.3254***	107.4585***
	(2.5364)	(2.5167)	(12.8756)	(12.6225)	(39.8029)	(38.4577)
	[0.027]	[0.025]	[0.010]	[0.008]	[0.009]	[0.005]
In a treated area (δ)	-4.7117	-2.9677	-17.3072	-8.7657	-70.3628	-44.2654
	(3.5402)	(3.2363)	(20.2628)	(15.6455)	(71.5434)	(49.5247)
	[0.184]	[0.359]	[0.393]	[0.575]	[0.326]	[0.372]
Mean super control	69.46		501.78		1709.82	
N	115547	115547	115547	115547	115547	115547
Covariates	No	Yes	No	Yes	No	Yes

Treatment effect on part-time unemployment: extensive margin

▸ Go back

Intensive margin

	3 months		12 months		36 months	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A : Cumulative number of hours worked while on claim at the intensive margin						
Treated (β)	-0.0200	-1.4426	7.1282*	5.5718	16.7444**	11.3161
	(2.3061)	(2.2151)	(3.9264)	(3.4865)	(8.3361)	(7.5458)
	[0.993]	[0.515]	[0.070]	[0.110]	[0.045]	[0.13 4]
In a treated area (δ)	-0.8517	0.7068	-2.6126	-2.5034	0.4418	-0.9476
	(3.0287)	(2.6508)	(6.1278)	(4.6174)	(14.1505)	(9.3651)
	[0.779]	[0.790]	[0.670]	[0.588]	[0.975]	[0.919]
Mean super control	89.20		215.80		446.51	
Panel B : Cumulative earnings (in euro) from work while on claim at the intensive margin						
Treated (β)	27.4618	-1.6892	122.7403**	88.6023**	289.2814**	191.0127*
	(29.5058)	(26.7263)	(54.6951)	(44.5939)	(117.8574)	(100.0897)
	[0.352]	[0.950]	[0.025]	[0.047]	[0.014]	[0.057]
In a treated area (δ)	-40.0733	-18.0860	-68.2410	-74.0666	-34.6073	-73.2656
	(46.4326)	(33.8810)	(96.6964)	(57.1514)	(223.4429)	(121.3045)
	[0.388]	[0.594]	[0.481]	[0.195]	[0.877]	[0.546]
Mean super control	1076.53		2656.41		5619.95	
N	7435	7435	21840	21840	34317	34317
Covariates	No	Yes	No	Yes	No	Yes

Treatment effect on part-time unemployment: intensive margin

▸ Go back

Randomization inference

	3 months			12 months			36 months		
	Coeff.	p-value		Coeff.	p-value		Coeff.	p-value	
	estimate	model based	rand. inference	estimate	model based	rand. inference	estimate	model based	rand. inference
Panel A : Extensive margin									
Panel A.1 : Cumulative number of months with work while on claim									
Treated (β)	0.0052	0.0505	0.061	0.0260	0.0156	0.015	0.0812	0.0052	0.005
In a treated area (δ)	0.0004	0.9116	0.903	0.0163	0.2090	0.210	0.0082	0.8230	0.816
Panel A.2 : Cumulative number of hours worked while on claim									
Treated (β)	0.3246	0.1043	0.115	2.2044	0.0196	0.022	6.7753	0.0156	0.021
In a treated area (δ)	-0.0628	0.7950	0.807	0.0595	0.9598	0.962	-1.5359	0.6735	0.672
Panel A.3 : Cumulative earnings (in euro) from work while on claim									
Treated (β)	5.6575	0.0246	0.027	33.7244	0.0075	0.007	107.4585	0.0052	0.007
In a treated area (δ)	-2.9677	0.3591	0.337	-8.7657	0.5753	0.572	-44.2654	0.3714	0.366
Covariates		Yes			Yes			Yes	
N		115547			115547			115547	
Panel B : Intensive margin									
Panel B.1 : Cumulative number of hours worked while on claim									
Treated (β)	-1.4552	0.5109	0.499	5.5382	0.1105	0.136	11.5298	0.1239	0.139
In a treated area (δ)	0.7782	0.7681	0.765	-2.5141	0.5842	0.577	-0.7025	0.9397	0.939
Panel B.2 : Cumulative earnings (in euro) from work while on claim									
Treated (β)	-1.6892	0.9496	0.953	88.6023	0.0469	0.061	191.0127	0.0563	0.070
In a treated area (δ)	-18.0860	0.5935	0.581	-74.0666	0.1950	0.207	-73.2656	0.5459	0.574
Covariates		Yes			Yes			Yes	
N		7435			21840			34317	

Treatment effect on part-time unemployment : model vs. randomization based inference

▸ Go back

Randomization inference

	Potential Benefit Duration								
	All sample			< 730			≥ 730		
	Coeff.	p-value		Coeff.	p-value		Coeff.	p-value	
	estimate	model based	rand. inference	estimate	model based	rand. inference	estimate	model based	rand. inference
Panel A : Prob. to be out of unemployment in the last month									
Treated (β)	-0.0059	0.0452	0.053	0.0020	0.6477	0.635	-0.0125	0.0031	0.002
In a treated area (δ)	0.0015	0.7247	0.693	-0.0052	0.3843	0.346	0.0072	0.1924	0.164
Panel B : Prob. to be out of unemployment in the last quarter									
Treated (β)	-0.0052	0.0935	0.093	0.0000	0.9949	0.995	-0.0096	0.0273	0.020
In a treated area (δ)	-0.0019	0.6598	0.611	-0.0070	0.2625	0.215	0.0028	0.6091	0.589
N		115547			50887			64660	
Covariates		Yes			Yes			Yes	

Treatment effect on unemployment : model vs. randomization based inference

▸ Go back

Extensive margin

	3 months		12 months		36 months	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A : Cumulative number of months with work while on claim						
Treated (β)	0.0052*	0.0052*	0.0254**	0.0260**	0.0782***	0.0812***
	(0.0027)	(0.0027)	(0.0109)	(0.0108)	(0.0293)	(0.0290)
	[0.053]	[0.051]	[0.020]	[0.016]	[0.008]	[0.005]
In a treated area (δ)	-0.0017	0.0004	0.0035	0.0163	-0.0303	0.0082
	(0.0037)	(0.0033)	(0.0166)	(0.0130)	(0.0502)	(0.0366)
	[0.642]	[0.912]	[0.834]	[0.209]	[0.546]	[0.823]
Mean super control	0.10		0.57		1.70	
Panel B : Cumulative number of hours worked while on claim						
Treated (β)	0.3230	0.3259	2.1532**	2.2149**	6.4473**	6.7340**
	(0.2016)	(0.2001)	(0.9633)	(0.9485)	(2.8676)	(2.8181)
	[0.109]	[0.104]	[0.026]	[0.020]	[0.025]	[0.017]
In a treated area (δ)	-0.2362	-0.0676	-0.8573	0.0625	-4.6537	-1.6120
	(0.2607)	(0.2422)	(1.4521)	(1.1837)	(5.0166)	(3.6733)
	[0.365]	[0.780]	[0.555]	[0.958]	[0.354]	[0.661]
Mean super control	5.75		40.70		135.62	
Panel C : Cumulative earnings (in euro) from work while on claim						
Treated (β)	5.6210**	5.6575**	33.0513**	33.7244***	104.3254***	107.4585***
	(2.5364)	(2.5167)	(12.8756)	(12.6225)	(39.8029)	(38.4577)
	[0.027]	[0.025]	[0.010]	[0.008]	[0.009]	[0.005]
In a treated area (δ)	-4.7117	-2.9677	-17.3072	-8.7657	-70.3628	-44.2654
	(3.5402)	(3.2363)	(20.2628)	(15.6455)	(71.5434)	(49.5247)
	[0.184]	[0.359]	[0.393]	[0.575]	[0.326]	[0.372]
Mean super control	69.46		501.78		1709.82	
N	115547	115547	115547	115547	115547	115547
Covariates	No	Yes	No	Yes	No	Yes

Treatment effect on part-time unemployment: extensive margin

▸ Go back

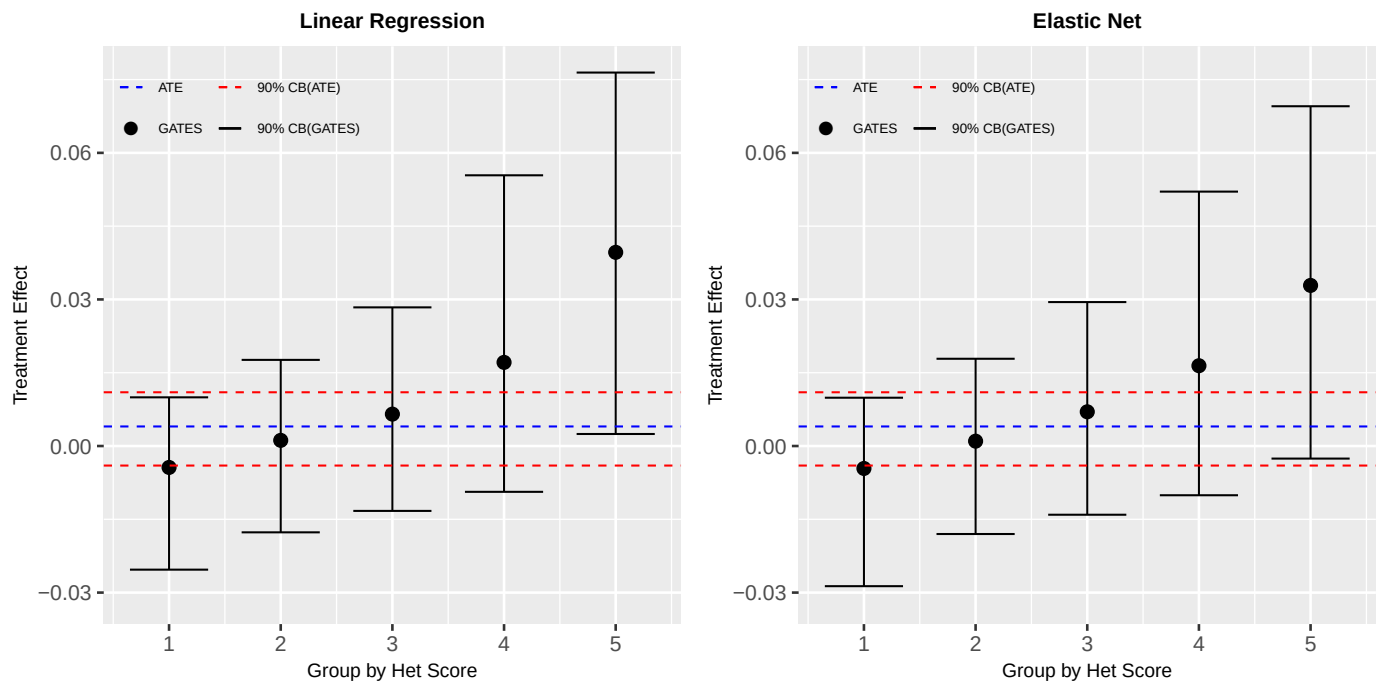
Spillover effects

	3 months		12 months		36 months	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A : Cumulative number of months with work while on claim						
Control	-0.0015	0.0006	0.0047	0.0142	-0.0367	-0.0114
	(0.0043)	(0.0041)	(0.0187)	(0.0162)	(0.0545)	(0.0430)
	[0.725]	[0.891]	[0.799]	[0.379]	[0.501]	[0.790]
Low	0.0025	-0.0035	0.0545**	-0.0219	0.2887***	-0.0278
	(0.0066)	(0.0075)	(0.0236)	(0.0276)	(0.0691)	(0.0754)
	[0.707]	[0.638]	[0.021]	[0.429]	[0.000]	[0.713]
Low X Control	-0.0005	-0.0003	-0.0018	0.0012	0.0316	0.0309
	(0.0079)	(0.0073)	(0.0301)	(0.0267)	(0.0879)	(0.0723)
	[0.946]	[0.970]	[0.953]	[0.965]	[0.719]	[0.669]
Mean super control	0.10		0.57		1.70	
Panel B : Cumulative number of hours worked while on claim						
Control	-0.2188	-0.0466	-0.4772	0.2655	-3.7746	-1.3492
	(0.3031)	(0.2926)	(1.5610)	(1.3726)	(5.2196)	(4.1148)
	[0.471]	[0.873]	[0.760]	[0.847]	[0.470]	[0.743]
Low	0.7206	-0.0510	8.7680***	0.2101	39.7589***	3.5531
	(0.5002)	(0.5525)	(2.1647)	(2.3707)	(7.4701)	(7.7616)
	[0.150]	[0.926]	[0.000]	[0.929]	[0.000]	[0.647]
Low X Control	-0.0246	-0.0472	-0.8199	-1.0094	-1.1072	-3.0131
	(0.5859)	(0.5532)	(2.7197)	(2.4288)	(9.3550)	(7.6591)
	[0.966]	[0.932]	[0.763]	[0.678]	[0.906]	[0.694]
Mean super control	5.75		40.76		135.85	
Panel C : Cumulative earnings (in euro) from work while on claim						
Control	-2.9422	-0.9830	-7.4255	0.2810	-38.7499	-12.8498
	(3.9135)	(3.6114)	(22.1168)	(17.4544)	(73.9316)	(53.5499)
	[0.452]	[0.786]	[0.737]	[0.987]	[0.600]	[0.810]
Low	13.4765*	2.6427	142.4420***	15.2339	641.1864***	106.4218
	(7.1747)	(7.7183)	(31.2417)	(31.7882)	(112.2593)	(104.2902)
	[0.061]	[0.732]	[0.000]	[0.632]	[0.000]	[0.308]
Low X Control	-4.9249	-5.9131	-24.7816	-33.4379	-71.7663	-122.5675
	(8.0957)	(7.6851)	(38.4159)	(33.3205)	(137.1450)	(107.4938)
	[0.543]	[0.442]	[0.519]	[0.316]	[0.601]	[0.255]
Covariates	No	Yes	No	Yes	No	Yes
Mean super control	69.46		501.78		1709.82	
N	69356	69356	69356	69356	69356	69356

Spillover effects on part-time unemployment

▸ Go back

Heterogeneous effects (ML)



GATES of prob. to work while on claim at least once

Note: The outcome - probability to work while on claim at least once - is measured 12 months after the treatment date. Point estimates and 90% adjusted confidence intervals uniform across groups based on 100 random splits in half. Heterogeneity groups are formed using ML proxy distribution S which we cut at 50^{th}, 75^{th}, 90^{th}, 95^{th} percentiles. For example, Group 1 corresponds to the bottom 50% of S and Group 5 to the top 5%.

▸ Go back

Characteristics of the most and least affected by the treatment

	Linear Regression			Elastic Net		
	Most Affected	Least Affected	Difference	Most Affected	Least Affected	Difference
	(1)	(2)	(3)	(4)	(5)	(6)
Job seekers characteristics						
Female	0.480	0.462	0.020	0.491	0.452	0.035
	-	-	[0.127]	-	-	[0.003]
Elderly	0.123	0.187	-0.064	0.101	0.203	-0.099
	-	-	[0.000]	-	-	[0.000]
Young	0.485	0.330	0.151	0.471	0.326	0.147
	-	-	[0.000]	-	-	[0.000]
Intermediary aged	0.380	0.489	-0.102	0.412	0.474	-0.066
	-	-	[0.000]	-	-	[0.000]
Lower education	0.196	0.281	-0.086	0.163	0.286	-0.119
	-	-	[0.000]	-	-	[0.000]
Upper education	0.527	0.392	0.143	0.520	0.379	0.147
	-	-	[0.000]	-	-	[0.000]
Higher education	0.269	0.324	-0.045	0.291	0.336	-0.038
	-	-	[0.000]	-	-	[0.001]
Last contract inf to 3 m	0.274	0.024	0.256	0.315	0.023	0.285
	-	-	[0.000]	-	-	[0.000]
Last contract inf to 12 m	0.494	0.269	0.235	0.540	0.273	0.271
	-	-	[0.000]	-	-	[0.000]
Daily reference wage	69.34	57.85	11.730	83.62	56.84	26.350
	-	-	[0.000]	-	-	[0.000]
PBD	567.1	640.0	-73.81	557.5	649.8	-95.27
	-	-	[0.000]	-	-	[0.000]
Local agencies characteristics						
Number of participants	179.4	226.9	-46.65	198.4	231.8	-33.43
	-	-	[0.000]	-	-	[0.000]
Number of claimants	3901	4319	-430.6	3998	4400	-430.4
	-	-	[0.000]	-	-	[0.000]
Share of part-time unemployed	0.444	0.429	0.011	0.427	0.429	-0.002
	-	-	[0.000]	-	-	[0.416]
Share of recurrent job seekers	0.426	0.427	-0.001	0.420	0.429	-0.008
	-	-	[0.554]	-	-	[0.000]
Unemployment rate	13.37	14.05	-0.668	13.04	14.02	-0.961
	-	-	[0.000]	-	-	[0.000]

Note: The outcome is measured 12 months after the treatment date. Medians over 25 splits. p-values for the hypothesis that the parameter is equal to zero in brackets. The most affected group refers to the top 5% of the distribution of $\hat{S}(Z)$ whereas the least affected group refers to the bottom 50%.

Outcome: Prob. to work while on claim at least once

▸ Go back

Comparison of individuals working while on claim

	Means				p-value of the difference		
	All	T	C	SC	T - C	T - (C + SC)	T = C = SC
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Job seekers characteristics							
Female	.504	.508	.501	.5	.503	.431	.728
Age	31.169	31.08	31.213	31.266	.547	.451	.751
Young	.418	.422	.413	.42	.345	.447	.636
Prime age	.462	.461	.466	.456	.639	.895	.774
Senior	.12	.117	.121	.125	.474	.308	.563
Lower secondary education	.236	.234	.239	.235	.53	.625	.805
Upper secondary education	.488	.488	.489	.486	.92	1	.978
Higher education	.276	.278	.272	.279	.477	.661	.732
Last contract inf to 12 m	.353	.357	.347	.354	.272	.365	.535
Last contract inf to 3 m	.103	.108	.098	.104	.077	.137	.18
Potential benefit duration	611.635	611.155	612.156	611.589	.833	.852	.975
PBD inf to 730 days	.448	.451	.448	.445	.759	.664	.905
PBD sup or eq to 730 days	.552	.549	.552	.555	.759	.664	.905
Daily Reference Wage	60.125	60.546	59.673	60.155	.281	.422	.547
DRW below the mean	.66	.663	.663	.648	.994	.554	.581
DRW above the mean	.34	.337	.337	.352	.994	.554	.581
Days since entry in unemp	105.976	106.241	105.793	105.789	.569	.548	.835
Tenure inf to 3 months	.423	.426	.423	.416	.772	.586	.754
Tenure between 4 and 6 months	.577	.574	.577	.584	.772	.586	.754
Local agencies characteristics							
Number of participants	214.148	217.323	214.428	206.974	.177	.18	.33
Number of claimants	4356.972	4371.09	4340.28	4361.041	.322	.706	.637
Share of part time unemp	.444	.443	.443	.449	.797	.46	.571
Share of long-term unemp	.431	.431	.431	.431	.866	.962	.988
Exit rate from unemp	.064	.064	.064	.064	.535	.547	.781
Unemployment rate	13.817	13.761	13.917	13.733	.102	.48	.296
N	13240	5419	5218	2603			

Columns (1), (2), (3) and (4) report the means of characteristics of individuals working while on claim at least once after the start of the treatment in our final sample, for the treatment, the control and the super control group, respectively. Columns (5)–(8) report the p-values for the difference between assigned to treatment (T) and assigned to control (C) (column 5), the difference between assigned to treatment (T) and non assigned (C + SC), and for the joint significance of assignment status (T, C and SC). See Table 2 for a description of the variables.

Summary statistics on individuals working while on claim at least once 6 months after the start of the treatment

▸ Go back

Predicted part-time unemployment activity

	After 3 months	After 12 months	After 36 months
	(1)	(2)	(3)
Panel A : Prob. to work while on claim at least once			
Treated	0.001	-0.000	0.001
	(0.0018)	(0.0032)	(0.0037)
	[0.611]	[0.892]	[0.873]
Treated × Above median	0.010**	0.010*	0.007
	(0.0040)	(0.0055)	(0.0060)
	[0.011]	[0.069]	[0.218]
Mean super control	0.06	0.19	0.30
Panel B : Cumulative number of months with work while on claim			
Treated	0.001	0.006	0.038
	(0.0032)	(0.0114)	(0.0250)
	[0.833]	[0.574]	[0.133]
Treated × Above median	0.013**	0.048**	0.100
	(0.0063)	(0.0234)	(0.0649)
	[0.037]	[0.039]	[0.123]
Mean super control	0.10	0.57	1.70
Panel C : Cumulative number of hours worked while on claim			
Treated	-0.102	-0.565	1.696
	(0.1952)	(0.8271)	(1.8660)
	[0.601]	[0.494]	[0.364]
Treated × Above median	1.591***	7.105***	12.116*
	(0.5294)	(2.1583)	(6.3581)
	[0.003]	[0.001]	[0.057]
Mean super control	5.75	40.76	135.85
Panel D : Cumulative earnings (in euro) from work while on claim			
Treated	-0.445	-7.187	14.584
	(2.1089)	(8.4265)	(18.8816)
	[0.833]	[0.394]	[0.440]
Treated × Above median	21.132***	102.325***	210.609**
	(7.0557)	(28.4939)	(84.0406)
	[0.003]	[0.000]	[0.012]
Mean super control	69.46	501.78	1709.82
Covariates	Yes	Yes	Yes
N	92391	92391	92391

Treatment heterogeneity conditional on predicted part-time unemployment activity

Note: "Above median" designates individuals for whom predicted outcome is above the median. For each outcome duration, the predicted outcome is estimated by an OLS regression using individuals from the super control group only. Individuals from the super control group are not included in the regressions presented in this table to avoid potential bias coming from endogenous stratification as described in Abadie et al. (2018).

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Cost/benefits for Unemployment Insurance

	1st year		2nd year		3rd year		All years	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A : Unemployment insurance payments (in euro) net of taxes								
Treated (β)	17.8523	14.3936	17.5196	11.8149	44.1053	39.9145	79.4772	66.1230
	(60.8117)	(37.3070)	(57.7522)	(43.5648)	(44.1595)	(38.9552)	(136.3212)	(88.9861)
	[0.769]	[0.700]	[0.762]	[0.786]	[0.318]	[0.306]	[0.560]	[0.458]
In a treated area (δ)	209.4736	7.7940	55.5871	-34.8871	-38.6731	-27.2595	226.3877	-54.3526
	(331.1745)	(59.8563)	(250.3965)	(55.2242)	(101.4381)	(52.9725)	(664.6942)	(133.9399)
	[0.527]	[0.896]	[0.824]	[0.528]	[0.703]	[0.607]	[0.733]	[0.685]
Mean super control	8037.85		4359.63		1733.18		14130.67	
Panel B : Unemployment insurance payments (in euro)								
Treated (β)	-21.8523	-19.6775	15.7559	9.6450	43.6383	39.0961	77.9293	63.5818
	(70.4514)	(40.6618)	(56.4778)	(40.5892)	(42.8495)	(36.4314)	(136.1165)	(83.6473)
	[0.757]	[0.629]	[0.780]	[0.812]	[0.309]	[0.284]	[0.567]	[0.447]
In a treated area (δ)	277.5063	32.5086	61.9056	-33.9465	-23.3730	-22.2426	243.1289	-51.6785
	(406.8660)	(85.8022)	(263.1796)	(51.9653)	(116.3471)	(50.8493)	(701.5659)	(128.4427)
	[0.495]	[0.705]	[0.814]	[0.514]	[0.841]	[0.662]	[0.729]	[0.688]
Mean super control	12098.31		4981.52		2447.24		15811.83	
Covariates	No	Yes	No	Yes	No	Yes	No	Yes
N	115547	115547	115547	115547	115547	115547	115547	115547

Treatment effect on UI payments

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