Evaluating job search programs for old and young individuals: Heterogeneous impact on unemployment duration

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Synopsis[1]

- Using an **area-pilot experiment**, we identify the causal impact of two active labor market policies
- The program targeting **older long-term unemployed** had a marginally **positive impact** on the transition to employment
- The program targeting **young unemployed** had a marginally **negative impact** on the transition to employment
- **Heterogeneity**: worse results for **young workers**, **over 40 years**, **less educated** and **females**.

[1] This presentation is based on Centeno, Centeno & Novo (2009).

Outline

1 Description of Inserjovem and Reage programs
- 1.1 Treatment and control units
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1 Description of Inserjovem and Reage programs

We study large-scale **active labor market policy (ALMP)** implemented in Portugal in 1998.

Similar programs implemented in other European countries have been subjected to evaluation Larsson et al. (2003), Sianesi (2004) study the Swedish Youth Practice Program, and Blundell et al. (2004) or Giorgi (2005) the British New Deal Program. Kluve (2006) surveys microeconometric evaluation of ALMP in European countries.

The Portuguese programs aimed at **preventing long-term unemployment** and are primarily composed of **job search support initiatives**, involving **vocational guidance, counseling, monitoring and training**.

Main goal: improve the **employability** of two target groups.

INSERJOVEM: individuals **aged less than 25** years, who **must be enrolled prior to completion of 6 months of unemployment**

REAGE: individuals **aged 25 or more**, who **must be enrolled before the 12th month of registered unemployment**

Program **participation is mandatory**. The mandatory characteristic of the programs **reduces the potential for self-selection** into the programs, which constitutes the main source of bias.

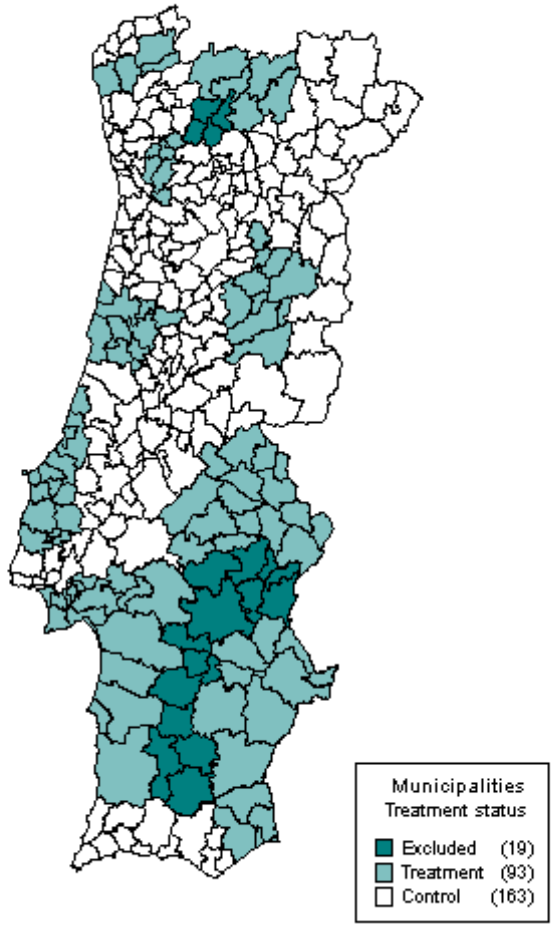
1.1 Treatment and control units

The programs were launched in **June 1998 in a limited number** of Employment Offices. This created *unintentionally* an **area-based pilot group**.

Treatment units: Eligible individuals registered in pilot EOs.

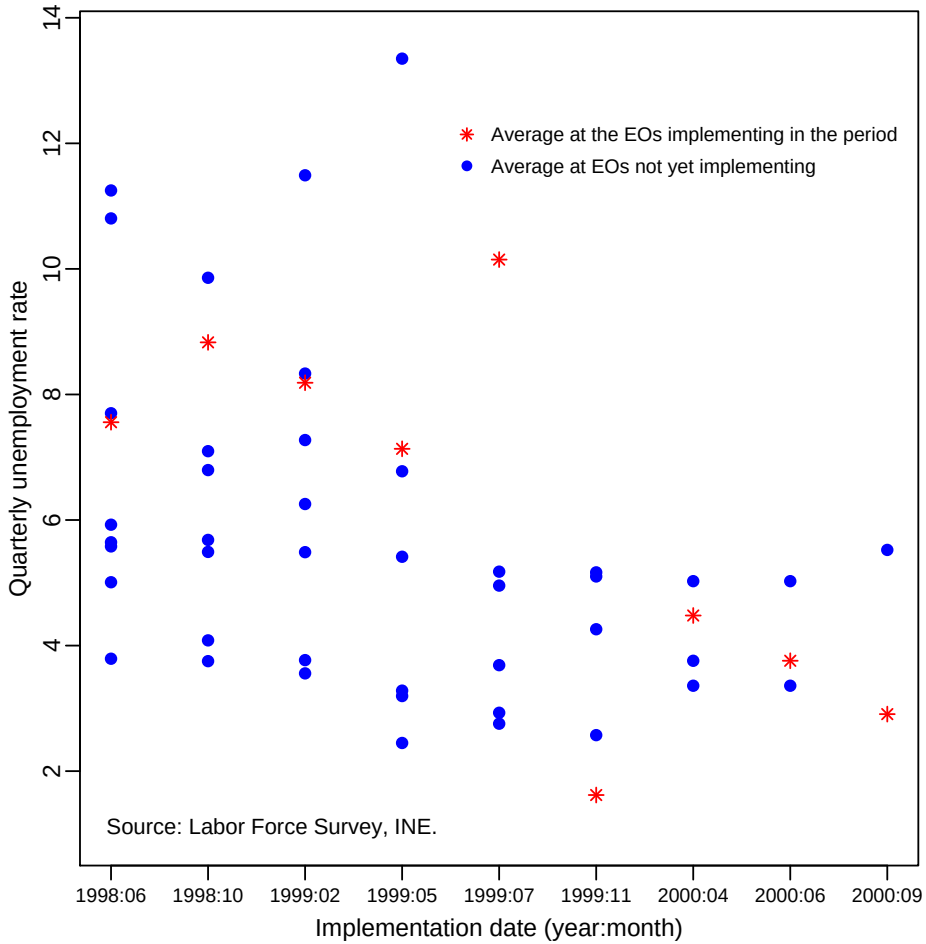
Control units: Eligible individuals, but registered in EOs that did **not** implement the policies during 1998.

Employment Offices (EO): Treatment and exclusion status



Enrollment started in June, 1998; Control EOs did not start enrollment until January, 1999

Selection of EO and Regional Unemployment



1.2 Data

SIGAE database collected by the EOs; January 1997 – December 2002.

For estimation purposes, we only considered individuals enrolled during these periods:

- **Before** period: 6 months (December 1997 – May 1998)
- **After** period: 6 months (July 1998 – December 1998)

Note that we follow these individuals up to December 2002 if needed.

Summary statistics	Reage			Inserjovem		
	Mean		Difference	Mean		Difference
Variables	Control	Treatment		Control	Treatment	
Age	41.02	41.34	0.33	21.36	21.18	-0.18
Female	0.55	0.59	0.05	0.62	0.64	0.02
Married	0.72	0.74	0.02	0.15	0.16	0.00
Handicapped	0.01	0.01	0.00	0.01	0.01	0.00
Foreigner	0.01	0.01	0.00	0.01	0.01	0.00
Reason to register						
Inactive	0.04	0.05	0.01	0.38	0.41	0.02
Quitted	0.05	0.05	0.00	0.05	0.04	-0.01
Fired[(1)]	0.64	0.60	-0.04	0.41	0.37	-0.04
Other	0.27	0.30	0.03	0.16	0.18	0.02
Education level						
4 or less years	0.51	0.56	0.05	0.09	0.09	0.00
6 years	0.20	0.20	0.00	0.29	0.29	0.00
9 years	0.13	0.12	-0.01	0.23	0.25	0.02
High school	0.11	0.09	-0.02	0.30	0.31	0.01
College	0.05	0.03	-0.02	0.09	0.07	-0.03
Regions						
North	0.49	0.16	-0.33	0.50	0.18	-0.32
Center	0.10	0.19	0.09	0.14	0.21	0.07
Greater Lisbon	0.38	0.43	0.05	0.32	0.40	0.07
Alentejo	0.00	0.17	0.17	0.00	0.16	0.16
Algarve	0.03	0.02	-0.01	0.03	0.02	-0.01
Unemployment spell						
Complete durations[(2)]	32.39	30.48	-1.91	14.81	14.11	-0.69
No. observations	31,121	11,285		24,511	10,879	
By unemployment exits:						
Placed[(3)]	6,037	2,424		3,950	1,769	
Training	694	482		1,017	674	
Cancelled[(4)]	24,390	8,379		19,544	8,436	

Notes: (1) It includes end of temporary job and fired unemployed. (2) Unemployment spell duration measured until the individual exits unemployment. (3) Refers to transitions to employment using EOs services or own placement. (4) Refers to registrations cancelled by the EOs due to irregularities.

2 Unemployment duration: Average treatment effects on the treated

2.1 Estimators

- **Unconditional D-in-D**

$$Y_{it} = \beta_0 + \beta_1 Treat + \beta_2 After + \alpha After \times Treat + \varepsilon_{it}$$

- **Conditional D-in-D**

$$Y_{it} = \beta_0 + \beta_1 Treat + \beta_2 After + \alpha After \times Treat + X\Theta + \varepsilon_{it}$$

- **D-in-D Matching**

$$\alpha_{DDM} = E\left[Y_{1t} - \hat{E}\left[Y_{0t} | \Pr[D=1]\right]\right] - E\left[Y_{1t'} - \hat{E}[Y_{0t'} | \Pr[D=1]]\right]$$

2.2 Common trend assumption

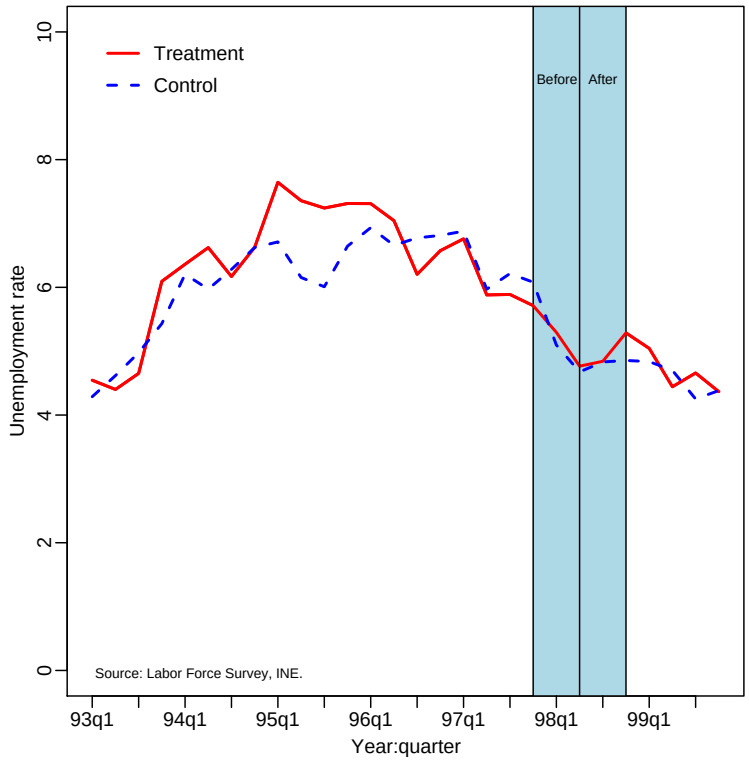


Figure 1: Quarterly unemployment rates for the treatment and control areas.

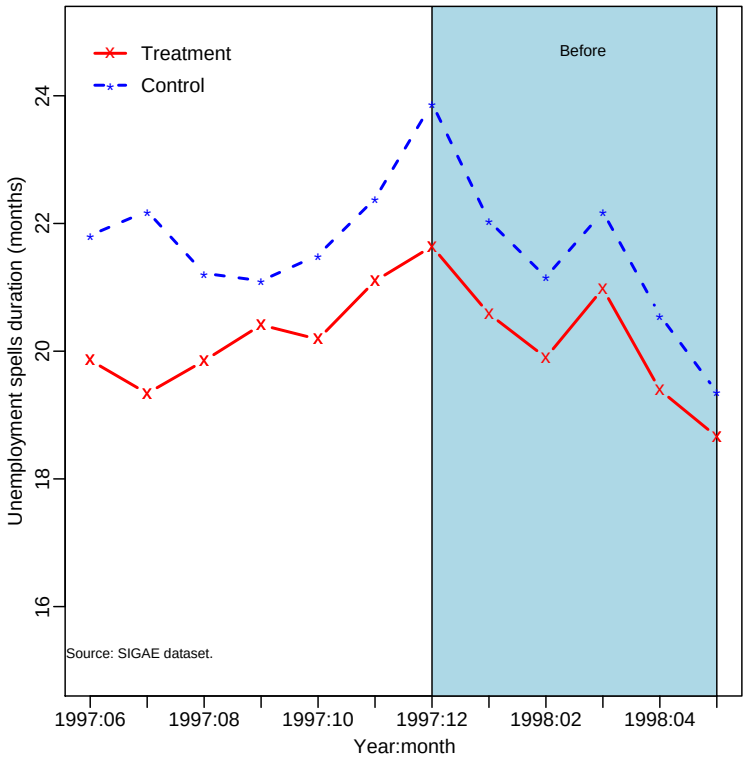


Figure 2: Monthly average unemployment spells duration for treatment and control areas

2.3 Estimates

Propensity scores: estimation based on probit models for placed individuals by program and period

	Reage				Inserjovem			
	After		Before		After		Before	
Variables	Coeff.	Std. Errors	Coeff.	Std. Errors	Coeff.	Std. Errors	Coeff.	Std. Errors
Age	-0.05	(0.01)	-0.02	(0.01)	0.22	(0.14)	0.24	(0.14)
Age^2	0.00	(0.00)	0.00	(0.00)	-0.01	(0.00)	-0.01	(0.00)
Married	0.10	(0.04)	0.10	(0.04)	0.08	(0.05)	0.12	(0.05)
Female	0.01	(0.03)	0.10	(0.03)	-0.02	(0.04)	0.01	(0.04)
Education$^{(1)}$								
4 or less years	0.79	(0.09)	0.67	(0.08)	0.60	(0.10)	0.29	(0.10)
6 years	0.57	(0.09)	0.55	(0.08)	0.49	(0.09)	0.27	(0.08)
9 years	0.38	(0.09)	0.40	(0.09)	0.49	(0.09)	0.27	(0.08)
High school	0.35	(0.09)	0.33	(0.09)	0.41	(0.08)	0.20	(0.08)
Reason to register$^{(2)}$								
Inactive	0.27	(0.10)	0.26	(0.12)	0.26	(0.05)	0.25	(0.05)
Quitted	-0.14	(0.07)	-0.11	(0.08)	0.01	(0.10)	-0.08	(0.10)
Others	0.09	(0.04)	0.15	(0.03)	0.23	(0.06)	0.14	(0.06)
Immigrant	-0.35	(0.17)	-0.38	(0.18)	0.14	(0.24)	-0.33	(0.27)
Handicapped	0.38	(0.20)	-0.18	(0.18)	-0.03	(0.25)	0.34	(0.25)
Region$^{(3)}$								
North	-1.29	(0.04)	-1.15	(0.04)	-1.24	(0.04)	-1.24	(0.04)
Center	-0.01	(0.05)	-0.04	(0.04)	-0.17	(0.05)	-0.27	(0.05)
Algarve	-0.87	(0.11)	-1.02	(0.09)	-0.96	(0.12)	-1.14	(0.10)
Constant	0.24	(0.31)	-0.55	(0.29)	-2.81	(1.54)	-2.87	(1.53)
No. observations	8,469		9,854		5,724		6,220	
Pseudo R^2	0.15		0.13		0.14		0.14	

Matching covariates balancing property

Variables	Sample	Mean Treated	Mean Control	Reage t-test p-value[1]	% bias[2]	Reduction in |bias|
Age	Unmatched	40.67	39.71	0.000		
	Matched	40.68	40.96	0.317	-2.9	71.3
Married	Unmatched	0.75	0.73	0.030		
	Matched	0.75	0.76	0.834	-0.6	88.7
Female	Unmatched	0.56	0.53	0.003		
	Matched	0.56	0.55	0.221	3.5	51.3
Education						
4 or less years	Unmatched	0.56	0.47	0.000		
	Matched	0.56	0.56	0.966	-0.1	99.4
6 years	Unmatched	0.20	0.21	0.124		
	Matched	0.20	0.20	0.732	-1	73.8
9 years	Unmatched	0.12	0.14	0.001		
	Matched	0.12	0.12	0.777	0.8	90.4
High school	Unmatched	0.10	0.12	0.001		
	Matched	0.10	0.10	0.851	-0.5	93.9
Reason to register						
Inactive	Unmatched	0.03	0.02	0.066		
	Matched	0.03	0.02	0.255	3.3	23.3
Quitted	Unmatched	0.05	0.07	0.000		
	Matched	0.05	0.05	0.360	-2.4	75.5
Others	Unmatched	0.28	0.23	0.000		
	Matched	0.28	0.26	0.205	3.7	68.6
Observations:						
On common support		2,421	6,045			
Off common support		3	0			
		Unmatched	Matched			
|Bias| summary statistics:						
Mean		14.64	1.82			
Std. Dev.		21.39	1.30			
Maximum		92.15	3.73			
Minimum		3.51	0.08			
Pseudo $R^{2(3)}$		0.150	0.001			
LR test p-value		0.000	0.865			

Short-term average treatment effect on the treated (in months): By program and destination state out of unemployment

Exit type	Program	No. observations	D-in-D		D-in-D Matching[1]	
			Unrestricted[2]	Restricted[3]	Kernel	Spline
			(1)	(2)	(3)	(4)
Placed	Reage	18,323	-0.39	-0.19	-0.40	-0.36
			(0.44)	(0.42)	(0.44)	(0.46)
	Inserjovem	11,944	-0.11	0.03	0.29	0.27
			(0.34)	(0.33)	(0.36)	(0.33)
Training	Reage	2,182	0.95	1.19	1.70	1.29
			(1.22)	(1.20)	(1.59)	(1.63)
	Inserjovem	3,168	-0.98	-0.91	-0.21	-0.16
			(0.62)	(0.61)	(0.78)	(0.80)
Cancelled	Reage	68,960	-0.03	0.28	0.13	0.21
			(0.25)	(0.23)	(0.28)	(0.29)
	Inserjovem	55,595	-0.54	-0.54	-0.26	-0.38
			(0.17)	(0.16)	(0.18)	(0.18)

Notes: Standard errors in parentheses. For the D-in-D Matching estimates the standard errors are bootstrapped-based (50 replications); (2) The column "unrestricted" refers to the D-in-D estimator based only on the simple differences of sample averages of the dependent variables. (3) The column "restricted" refers to D-in-D controling for the individuals' observed characteristics.

3 Future research

The analysis focus on **unemployment duration**.

With data availability, the analysis could have also considered the impact on **job stability**, **reemployment wages**.

The literature has also focused on the **threat effect**: unemployed workers "avoid" participating in this type of programs, moving to employment (or becoming active).

Questions?

Thank you.

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