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Regional Differences in Involuntary Job Loss and Re-Employment Across Europe

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Περιφερειακές Διαφορές στην Ακούσια Απώλεια Ανεργίας και η Πιθανότητα Επαναπρόσληψης στην Ευρώπη

Νικόλαος Θεοδωρόπουλος και Γεώργιος Βουχάρας

ΠΕΡΙΛΗΨΗ

Υπάρχουν σημαντικές διαφορές μεταξύ των Ευρωπαϊκών χωρών ως προς την ακούσια απώλεια θέσεων εργασίας και την πιθανότητα επαναπρόσληψης. Για παράδειγμα, η ακούσια απώλεια θέσεων εργασίας κυμαίνεται από 2,94% στην Ολλανδία έως 12,62% στη Λετονία, ενώ η πιθανότητα επαναπρόσληψης κυμαίνεται από 35,9% στη Ρουμανία έως 81,1% στην Τσεχική Δημοκρατία.

Σε αυτό το άρθρο χρησιμοποιούμε εναρμονισμένα αναδρομικά και διαχρονικά δεδομένα από όλη την Ευρώπη και το Ισραήλ για να εξετάσουμε τους καθοριστικούς παράγοντες της πιθανότητας επαναπρόσληψης. Στη συνέχεια υπολογίζουμε τις πιθανότητες επαναπρόσληψης μεταξύ γεωγραφικών περιοχών κατανέμοντας τις 27 χώρες της Ευρώπης και το Ισραήλ σε τέσσερις γεωγραφικές περιφέρειες και αποσυνθέτουμε τη σημαντική διαπεριφερειακή ετερογένεια που βρίσκουμε σε ένα ποσοστό που μπορεί να εξηγηθεί από διαφορές σε παρατηρήσιμα χαρακτηριστικά και σε ένα ποσοστό που οφείλεται από διαφορές σε μη παρατηρήσιμα χαρακτηριστικά.

Η γνώση των χαρακτηριστικών και των οικονομικών αποδόσεων αυτών των χαρακτηριστικών που σχετίζονται με τις διαφορές στην πιθανότητα επαναπρόσληψης είναι χρήσιμη για ενημέρωση των υπευθύνων χάραξης πολιτικής που σκοπό έχει τη βέλτιστη κατανομή των πόρων και την αύξηση των προοπτικών απασχόλησης των ακούσια ανέργων.

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Regional Differences in Involuntary Job Loss and Re-Employment Across Europe

Nikolaos Theodoropoulos* **and Georgios Voucharas**

Abstract

There are significant differences in involuntary job loss and re-employment probabilities across Europe. For instance, involuntary job loss varies between 2.94% in the Netherlands to 12.62% in Latvia, whereas the re-employment probability varies from 35.9% in Romania to 81.1% in the Czech Republic. We use harmonized retrospective longitudinal data across Europe to examine the determinants of the re-employment probability. We then go on and estimate cross-region re-employment probabilities by aggregating countries to regions and decompose the significant cross-region heterogeneity we find into a portion that can be explained by differences in observable characteristics and a portion that cannot be explained by regional variation in observable characteristics. Knowing which characteristics, and the returns to those characteristics as they relate to re-employment differences is helpful for informing policymakers in determining the best way to direct resources to increase the employment prospects of the unemployed.

Keywords: job loss, re-employment probability, regional heterogeneity

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1. Introduction

We examine the probability of re-employment wages when workers lose their jobs due to an involuntary reason, that is plant closures. According to Theodoropoulos and Voucharas (2023), there are many reasons through which plant closures can happen running from recessions to bad firm management.[1] Thus, a major and current public policy debate is on what policies can be implemented in order to ameliorate the negative and consequential effects that arise when workers lose their jobs due to exogenous events such as plant closures (Scarpetta et al., 2021).

To capture job loss due to plant closures and to construct labor market histories of workers we use retrospective and homogeneous longitudinal data from the third and seventh waves of the Survey of Health, Aging and Retirement in Europe (henceforth, SHARELIFE) which collects information on the entire job histories and wages of workers aged fifty plus. In this way, we are able to construct complete work histories at the individual level. Our sample includes 27 European countries and Israel over the period 1939-2016.

Our results suggest that people in Southern Europe face the highest probability of job loss and at the same time have the lowest re-employment probability. We uncover significant differences by gender, marital status, age and job seniority which are stronger in Southern Europe. Being in good health during childhood increases the employment probability only in Eastern Europe. Further, living in an urban area increases the re-employment probability in Eastern and Northern Europe, it decreases it in Western Europe and has no effect in Southern Europe. This heterogeneity can be understood by differences in cultures, social norms and institutions across European regions. We then decompose this cross-region heterogeneity we find into a portion that can be explained by differences in observable characteristics and a portion that cannot be explained by regional variation in observable characteristics and describe how our reduced form results can be informative for policymakers. The remainder of the paper proceeds as follows. Section 2 presents the data and Section 3 presents descriptive statistics in Tables and Figures. Section 4 presents the results, whereas Section 5 concludes.

2. Data Description

Our analysis relies on historical data on labor market trajectories drawn from the Jobs Panel Episode dataset (henceforth, JEP). The latter is a generated dataset derived

[1] Theodoropoulos and Voucharas (2023) provide a thorough review of both the job loss and the job finding literatures.

from information collected from SHARELIFE (i.e., Wave 3 and Wave 7) which documents the employment history of respondents over their life course. Each respondent in JEP provides information on his/her employment and unemployment histories (such as working and unemployment spells, job industry and title, level of first and last wage, reason left the job and working hours), fertility and relationships (such as the number of children and their dates of birth and marital status), pension and retirement (such as level of pension and age of retirement) as well as other characteristics such as years of education, country of residence and year of birth, among others.

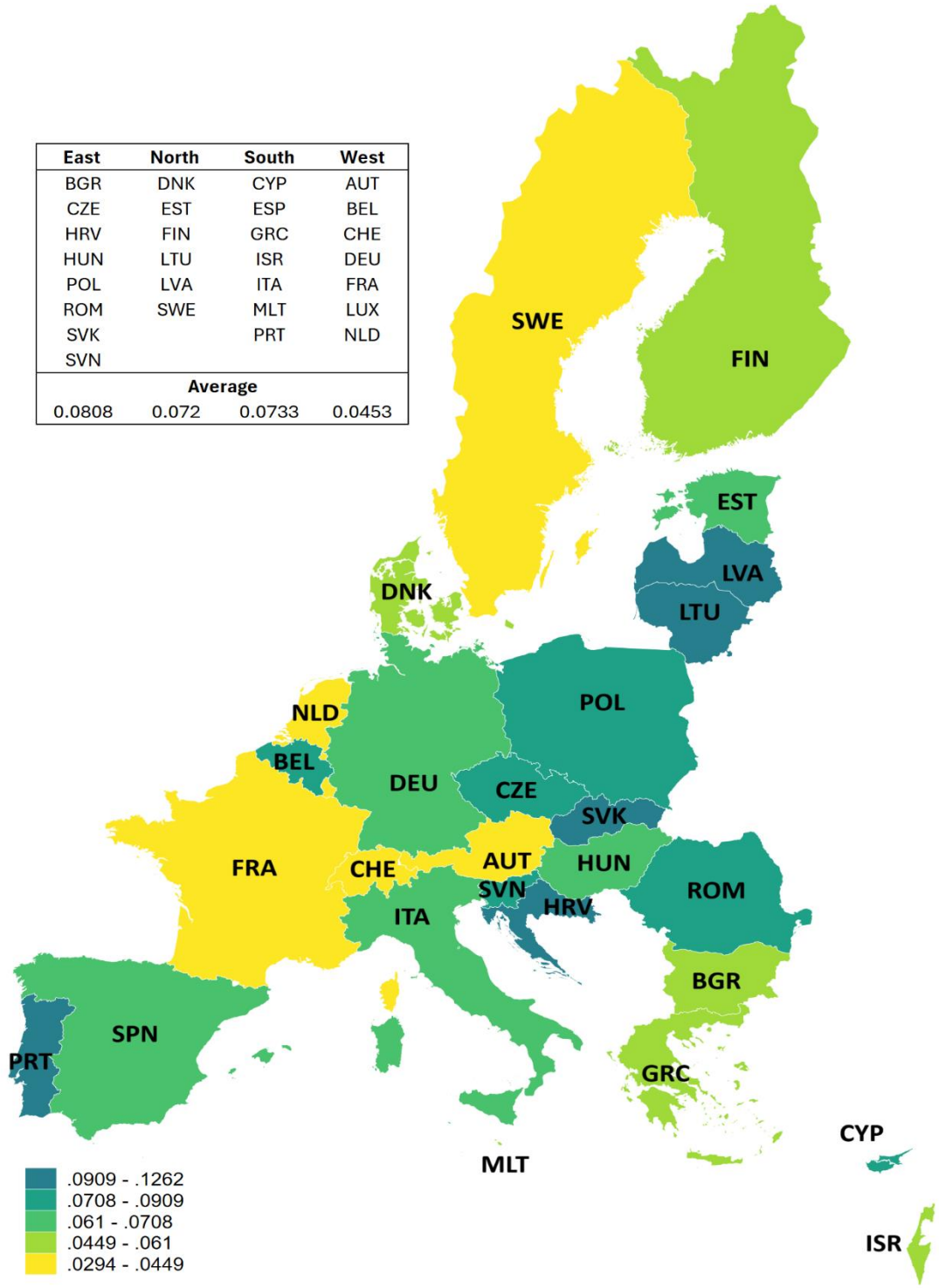
In addition, we utilize SHARELIFE to draw information on the health status of each respondent, the type of his/her residence as well as the area he/she lives in. The sample of analysis includes 27 European countries and Israel and covers the period 1939 to 2016. Respondents in our final sample are aged between 18 and 64 years old.

Every job loss event documented in JEP is paired with a specific explanation provided by the respondent regarding the reason leading to his/her unemployment. More specifically, a respondent may lose his/her job for the following reasons: *resigned*, *laid off*, *by mutual agreement*, *a temporary job had been completed*, *retired* or *his/her plant or office closed down*. In our analysis, we are interested in exploring cases of involuntary job loss. For this reason, we rely on job losses that are attributed to cases where the plant or office shut down.

Figure 1 offers a visual representation of the share of job losses due to plant or office closure on the total job number of job losses across countries over the period our analysis. The darker the green color, the higher the job loss rate. Yellow color indicates countries with low share of job loss. The figure reveals a high level of heterogeneity across countries in terms of involuntary job losses. For instance, the Netherlands (2.94%), Sweden (3.26%) and Switzerland (3.26%) have the lowest shares of involuntary job losses.

FIGURE 1
Share of job loss due to plant or office closure across SHARE countries

East	North	South	West
BGR	DNK	CYP	AUT
CZE	EST	ESP	BEL
HRV	FIN	GRC	CHE
HUN	LTU	ISR	DEU
POL	LVA	ITA	FRA
ROM	SWE	MLT	LUX
SVK		PRT	NLD
SVN			
Average			
0.0808	0.072	0.0733	0.0453



Source: Authors' calculations using the SHARE Job Panel Episodes Dataset. Release version: 8.0.0

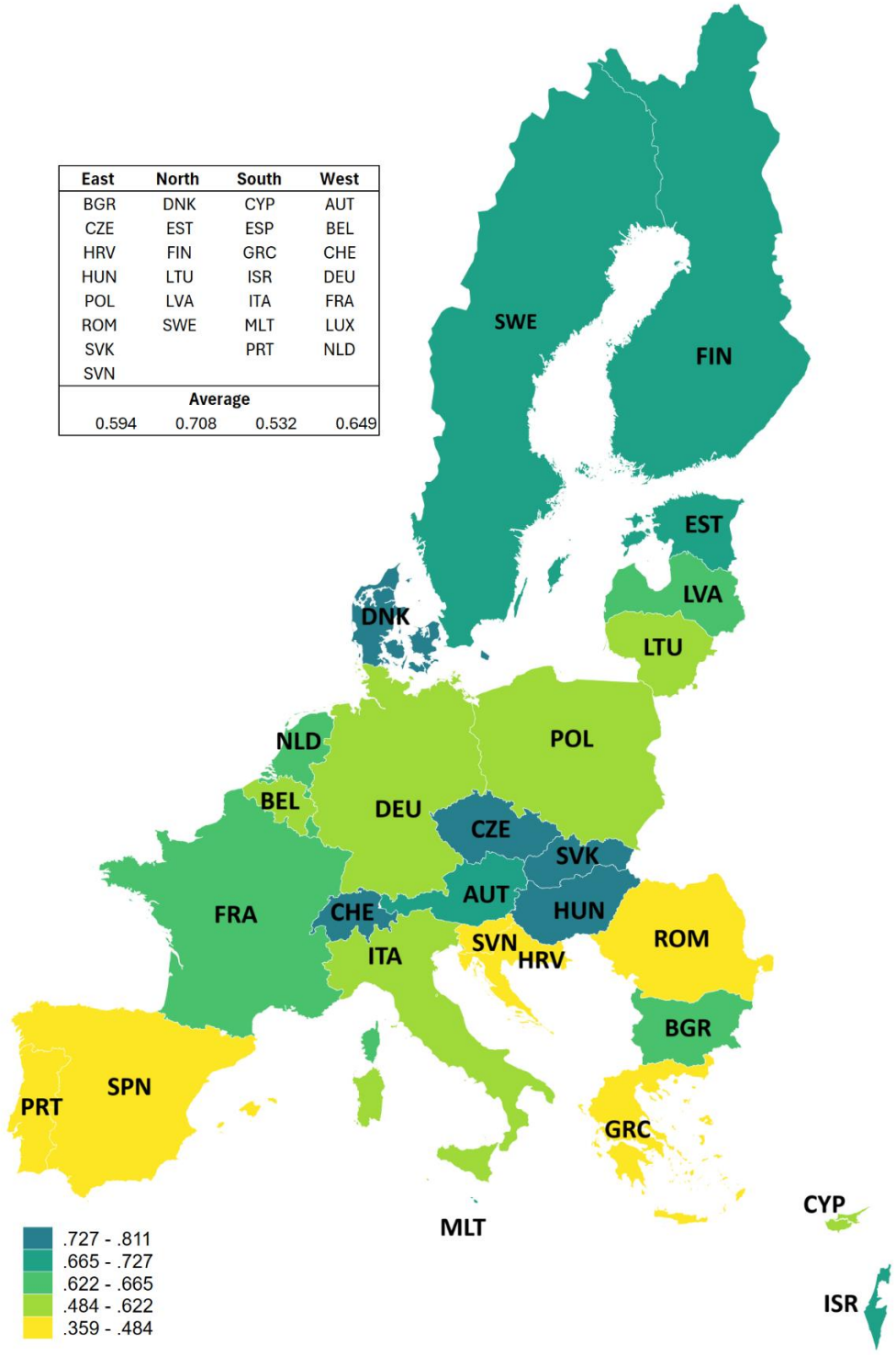
In contrast, Croatia (10.71%), Portugal (11.93%) and Latvia (12.62%) suffer the highest involuntary job losses. In terms of regions[2], on average, Eastern countries report the highest involuntary job loss rates (8.08%) and Western countries the lowest ones (4.53%). Northern and Southern countries report 7.2% and 7.33%, respectively.

As it was stated above, the focal point of this paper is to examine the re-employment probabilities of displaced workers. Before we proceed to the main analysis, we shed further light on the nature of the data and present Figures 2 and 3. In particular, Figure 2 depicts the percentage of displaced workers that got re-employed one year after their employment. Darker colors correspond to higher re-employment probabilities. More specifically, displaced workers face the lowest probability of finding a job next year in Romania (35.9%), Croatia (37.4%) and Portugal (42.1%). In contrast, displaced workers are more likely to be re-employed in Switzerland (78.4%), Denmark (79.2%) and the Czech Republic (81.1%). In terms of regions, on average, Southern (53.2%) and Eastern (59.4%) countries report the lowest probabilities and Western (69.4%) and Northern (70.8%) the highest ones.

Figure 3, presents the correlation between the share of job loss and re-employment probabilities across countries. Each point corresponds to the average value of each country and the line with the shaded area represents the linear fit with a 95% confidence interval. Overall, the scatter plot suggests a negative relationship, indicating that respondents in countries facing higher involuntary job loss have lower re-employment probability. In Cyprus, 8.61% of job losses were attributed to plant or office closures and 57.14% of the respondents found a job within one year after displacement.

[2] We aggregate countries into geographical regions in order to generate a significant number of observations for our analysis. The aggregation is done as follows: *East*= Bulgaria (BGR), Czech Republic (CZE), Croatia (HRV), Hungary (HUN), Poland (POL), Romania (ROM), Slovakia (SVK), Slovenia (SVN); *North*= Denmark (DNK), Estonia (EST), Finland (FIN), Lithuania (LTU), Latvia (LVA), Sweden (SWE); *South*= Cyprus (CYP), Spain (ESP), Greece (GRC), Israel (ISR), Italy (ITA), Malta (MLT), Portugal (PRT); *West*= Austria (AUT), Belgium (BEL), Switzerland (CHE), Germany (DEU), France (FRA), Luxembourg (LUX), Netherlands (NLD).

FIGURE 2
Share of people re-employed within one year after displacement across SHARE countries



Source: Authors' calculations using the SHARE Job Panel Episodes Dataseta Release version: 8.0.0

FIGURE 3
Involuntary job loss due to plant or office closures and re-employment across SHARE countries

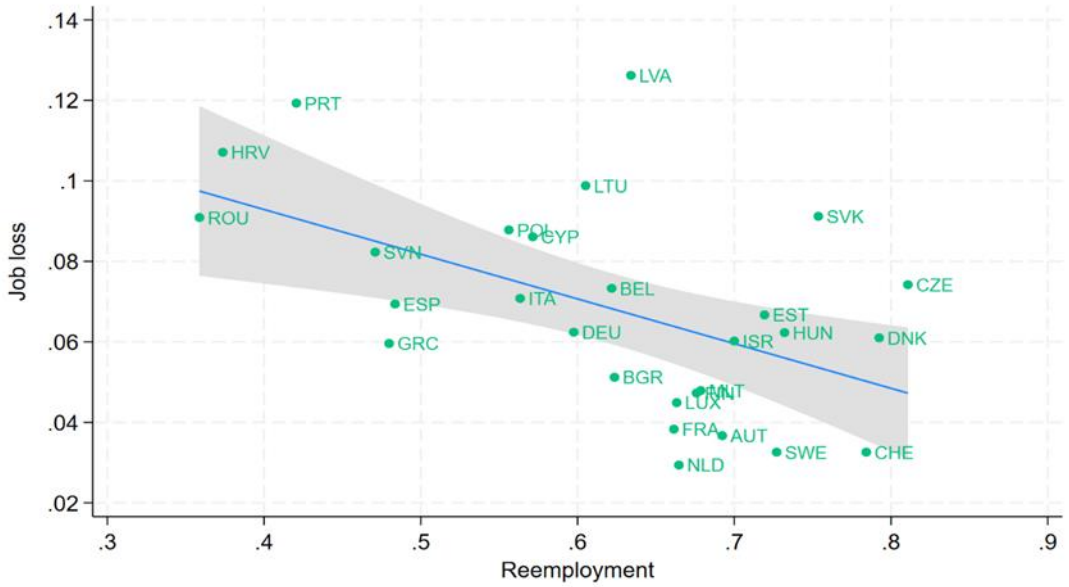


Table 1 reports descriptive statistics. R*e-employment* equals 1 if the respondent found a job within one year after displacement. F*emale* equals 1 if the respondent is female, age captures the years of the age of the respondent and *years of education* captures the years the respondent spent in full-time education. *Years of tenure* measures the number of years the respondent spent in his/her previous job before displacement. *Married* takes the value 1 if the respondent is married and *Children* corresponds to the number of children the respondent has at the time of displacement. *Excellent/Very Good Health* is a dummy variable that takes the value 1 if respondent's childhood health was reported to be either very good or excellent. *Private residence* equals 1 if the respondent owns a private residence, and *Live in urban area* equals 1 if the respondent lives in a big city or the suburbs or outskirts of a big city.

As Table 1 shows, 63% of the respondents in the sample of analysis found a job after one year of displacement. Fifty-three percent of the respondents are female and the average age is 41 years. On average, respondents have 13.6 years of education, and their job tenure was on average 13 years. About 78% of the respondents are married and have approximately two children. Approximately, 60% of them reported excellent or very good childhood health, 63% live in urban areas and 62% own a private residence.

TABLE 1
Descriptive Statistics

	Total sample				**East**		**North**		**South**		**West**	
Variable	Mean	Std. dev.	Min	Max	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.
Re-employment	0.6309	0.4826	0	1	0.5947	0.491	0.7083	0.4546	0.5329	0.4991	0.6491	0.4773
Female	0.5293	0.4992	0	1	0.5557	0.497	0.5324	0.499	0.5003	0.5001	0.5112	0.5
Age	41.2877	10.8738	18	64	41.7461	9.466	41.9902	10.7513	40.455	12.2102	40.4238	11.635
Years of education	13.5516	3.8597	0	30	13.6154	3.0051	14.8164	3.821	11.0558	4.54	13.6061	3.5995
Years of tenure	13.0328	9.8768	1	44	14.6615	9.8753	11.7847	9.1787	14.3361	10.671	11.6054	9.7175
Married	0.7767	0.4165	0	1	0.8444	0.3626	0.745	0.436	0.7606	0.4268	0.7394	0.4391
Children	1.6837	1.2288	0	8	1.8756	1.1449	1.7379	1.2086	1.5202	1.3261	1.4845	1.2453
Excellent/very good health	0.6014	0.4896	0	1	0.6555	0.4753	0.5232	0.4995	0.6672	0.4713	0.5827	0.4932
Live in urban area	0.6312	0.4825	0	1	0.5758	0.4943	0.6475	0.4778	0.7313	0.4434	0.6162	0.4864
Private residence	0.6189	0.4857	0	1	0.6724	0.4694	0.65	0.4771	0.6661	0.4717	0.4841	0.4998
Observations	11,342				3,489		3,274		1,809		2,770	

Notes: SHARELIFE, JEP Dataset 1939-2016.

3. Methodology and Results

3.1 Methodology

Our main estimated equation is:

$$Re - employed_{ict} = \beta_0 + X_{ict}\beta + \gamma_c + o_t + \delta_t + \varepsilon_{ict} \quad (1)$$

In equation (1), re-employed is a binary variable that takes the value of 1 if respondent i in country c in year t finds a job, and 0 otherwise. The γ_c are country fixed effects, the o_t are industry fixed effects and the δ_t are time fixed effects. The vector X_{ict} includes personal characteristics of respondent i.

The general form of the Oaxaca-Blinder decomposition is:

$$\Delta\overline{Re - employed} = (\beta_0^2 - \beta_0^1) + \bar{X}_2(\beta^1 - \beta^2) + (\bar{X}_1 - \bar{X}_2)\beta^1 \quad (2)$$

In equation (2), the numerical subscripts/superscripts equaling 1 and 2 refer to different European regions. Given that we aggregate the 27 European countries and Israel into four regions, we perform the decomposition three times. In each decomposition, we designate the Southern region as Region 1. This facilitates comparisons across the different decompositions. The first two terms on the right-hand side of equation (2) equal the regional gap in the re-employment probability due to differences in parameter estimates. The final term on the right-hand side is the gap in re-employment probability due to differences in average observable characteristics.

3.2 Results

Results from estimating equation (1) using the pooled sample of all countries appear in Table 2 in terms of average marginal effects. We provide results from five different estimations, for all countries (column 1) and then each column presents results for each region. All columns include country, region and time-fixed effects.

TABLE 2
Determinants of Re-Employment Probability

Dep. Var Reemployment (find)	(1) Full	(2) East	(3) North	(4) West	(5) South
Female	-0.1616***	-0.1301***	-0.1422***	-0.1894***	-0.2425***
	(0.0084)	(0.0158)	(0.0156)	(0.0165)	(0.0204)
Age	0.0410***	0.0586***	0.0319***	0.0462***	0.0454***
	(0.0031)	(0.0076)	(0.0059)	(0.0056)	(0.0073)
Age squared	-0.0593***	-0.0804***	-0.0455***	-0.0692***	-0.0633***
	(0.0037)	(0.0090)	(0.0067)	(0.0065)	(0.0086)
Years of education	0.0103***	0.0187***	0.0108***	0.0057**	0.0079***
	(0.0013)	(0.0028)	(0.0022)	(0.0025)	(0.0027)
Years of tenure	-0.0022***	-0.0003	-0.0018*	-0.0040***	-0.0042***
	(0.0005)	(0.0009)	(0.0009)	(0.0010)	(0.0013)
Married	-0.0167	0.0321	-0.0007	-0.0442**	-0.1110***
	(0.0112)	(0.0222)	(0.0189)	(0.0209)	(0.0302)
Children	-0.0045	-0.0018	0.0011	-0.0111	-0.0027
	(0.0039)	(0.0072)	(0.0070)	(0.0077)	(0.0100)
Excellent/very good health	0.0145*	0.0538***	-0.0002	-0.0167	0.0037
	(0.0087)	(0.0154)	(0.0161)	(0.0169)	(0.0227)
Live in urban area	0.0187**	0.0582***	0.0378**	-0.0604***	0.0031
	(0.0093)	(0.0165)	(0.0181)	(0.0178)	(0.0250)
Private residence	0.0047	0.0209	0.0189	-0.0048	-0.0196
	(0.0091)	(0.0172)	(0.0167)	(0.0176)	(0.0229)
Observations	11,342	3,457	3,214	2,744	1,791

Notes: Entries are average marginal effects after estimating a probit model where the dependent variable is binary (0,1). Country, industry and time dummies are included across all columns.
Robust standard errors are in parentheses. Levels of significance: *** $p<0.01$, ** $p<0.05$, * $p<0.1$

We find that compared to males the probability of being re-employed is lower for females. This is true for the whole sample and for each of the four regions. The largest negative effect is for females in the South where females have 24.3 percentage points lower re-employment probability than males. We find a concave profile of age with respect to the probability of being re-employed, suggesting that people in their prime ages are more likely to be re-employed as opposed to older people. Education has a positive effect on the re-employment probability. For instance, individuals with more years of education in the Eastern region have a higher re-employment probability by about 2 percentage points.

In contrast, the longer the number of years (*tenure*) the individual spent in his/her job before involuntary displacement, the lower the probability that the individual will get re-employed. This suggesting that individuals who have been in their job for a long time have accumulated firm-specific skills that get lost when the plant closes down. The

largest negative effect is found for individuals in Southern and Western Europe where thy face a lower re-employment probability of 4 percentage points.

Married individuals are less likely to be re-employed in the West and especially in Southern Europe where a married person has 11 percentage points lower re-employment probability compared to a non-married person. Having excellent or very good health in childhood is associated with a higher re-employment probability but only for Eastern Europe. Further, living in an urban area has a positive and significant effect on the re-employment probability for Eastern and Northern Europe, but a negative and significant effect for Western Europe.

Overall, we find that there are similarities in the results across the four regions, but also some differences either in the signs of the estimated coefficients or in the magnitudes, suggesting regional heterogeneity. As discussed in Jolly and Theodoropoulos (2023) and Theodoropoulos and Voucharas (2023), countries in the various regions across Europe have different cultures, social norms and institutions. Therefore, differences in the parameter estimates we observe in Table 2 are expected. Arguably, these differences should drive the regional differences that exist in the re-employment probability. Thus, the remainder of this section explores the extent to which coefficients and characteristics contribute to regional differences in the re-employment probability by using the Oaxaca-Blinder decomposition presented in equation 2.

To make comparisons across the decompositions, the reference group in each case is Southern Europe since countries in the South of Europe have the lowest re-employment probability relative to the other three regions. In other words, in referencing equation (2), Southern Europe is group 1. The results of the three decompositions are in Table 3. In Table 3, the columns labelled East, West and North refer to the European region being compared to Southern countries. The row labelled Southern Europe presents the average employment probability for those countries in that region. The row Region 2 presents the average re-employment probability of the region noted in the column headings. The row *Difference* presents the difference between the two re-employment probabilities. The row *Characteristics* is the gap in regional re-employment probabilities due to differences in average characteristics (explainable part) in the two regions. The row, labelled Coefficients is the gap in vaccination rates due to parameter heterogeneity (unexplainable part) between the two regions.

TABLE 3
Oaxaca – Blinder Decompositions by Region

	(1)	(2)	(3)
	East	West	North
Southern Europe	0.5310***	0.5310***	0.5310***
	(0.0117)	(0.0117)	(0.0117)
Region 2	0.5905***	0.6453***	0.7032***
	(0.0084)	(0.0090)	(0.0081)
Difference	-0.0595***	-0.1143***	-0.1722***
	(0.0144)	(0.0148)	(0.0142)
Characteristics	-0.1320***	-0.1590***	-0.1713***
	(0.0422)	(0.0387)	(0.0400)
Coefficients	0.0725*	0.0446	-0.0009
	(0.0436)	(0.0401)	(0.0412)
Observations	5248	4535	5005

Notes: The reference group is Southern Europe. Control variables are the same as in Table 2. Robust standard errors are in parentheses.
Levels of significance: *** p<0.01, ** p<0.05, * p<0.01.

As Table 3 shows, the differences in the re-employment probabilities between each European region and the countries in the South are sizeable and highly significant. For instance, the differences in the re-employment probabilities between the Eastern, Western and Northern regions are 6, 11.4 and 17.2 percentage points respectively. Column 1 focuses on the East versus the South. Results suggest that differences in observable characteristics are about twice as high compared to differences in the coefficients in explaining why the re-employment probability differences exist between these two groups of countries. In fact, if one were to predict the Eastern Europe re-employment probability using the Southern European regression function, then the Eastern re-employment probability would be 13.2 percentage points higher than the Eastern European one and equal to 66.3 percent. The gap in the re-employment probability due to parameter heterogeneity is positive and statistically significant at the 10% level, suggesting that differences in coefficients actually lead to reduction in the difference in the re-employment probability.

Column 2 presents comparisons between Western and Southern countries. For instance, the difference in the re-employment probability between Western and Southern Europe is 11.4 percentage points. Differences in observable characteristics are the only reason why the re-employment probability exists between the two groups of countries. If one were to predict the Western Europe re-employment probability using the Southern regression function, then the Western re-employment probability would be 11.4 percentage points higher than in Southern Europe and equal to 74.5 percent. The gap in the re-employment probability due to parameter heterogeneity is positive but statistically insignificant.

Column 3 shows comparisons between the Northern and Southern European countries. The difference in the re-employment probability between the Northern and Southern countries is 17.2 percentage points and the highest than the two previous decompositions. Further, if one were to predict the Northern Europe re-employment probability using the Southern regression function, then the Northern re-employment probability would be 17.2 percentage points higher than the Southern Europe and equal to 70.3 percent. The difference in the re-employment probability due to differences in average observable characteristics is higher than for the other two decompositions. The gap in the re-employment probability due to parameter heterogeneity is negative and statistically insignificant.

Table 4 presents the independent variables' contributions to the differences in the re-employment probability caused by differences in the observable characteristics. Examining which factors contribute to this difference is important for informing policymakers. If results show that some differences in observable characteristics lead to large differences in the re-employment probability, then policymakers can try to enact appropriate policies that help people with such characteristics (Theodoropoulos and Voucharas, 2023). A strong finding coming out across all columns of Table 4 is that schooling as captured by years of education increases the differences in the re-employment probability between all the European regions compared to the South. For instance, years of education are responsible for 15.5 percent of the difference in the re-employment probability due to differences in average characteristics between the Eastern and the Southern countries. Also, years of education are responsible for 12.3 (17.2) percent of the difference in the re-employment probability due to differences in average characteristics between the Wester (Northern) European countries and Southern Europe respectively.

TABLE 4
Contributions to the Difference in the Re-Employment Probability due to Characteristics

	(1)	(2)	(3)
	East	West	North
Female	0.0134***	0.0022	0.0068*
	(0.0038)	(0.0036)	(0.0036)
Age	-0.0579***	0.0021	-0.0750***
	(0.0179)	(0.0160)	(0.0195)
Age squared	0.0284	-0.0107	0.0645***
	(0.0176)	(0.0182)	(0.0196)
Years of education	-0.0205***	-0.0196***	-0.0294***
	(0.0068)	(0.0064)	(0.0096)
Years of tenure	0.0013	-0.0111***	-0.0102***
	(0.0013)	(0.0037)	(0.0034)
Married	0.0091***	-0.0025	-0.0015
	(0.0028)	(0.0016)	(0.0014)
Children	0.0010	-0.0001	0.0006
	(0.0036)	(0.0004)	(0.0022)
Excellent/very good health	0.0000	0.0003	0.0005
	(0.0003)	(0.0019)	(0.0032)
Live in urban area	0.0005	0.0004	0.0002
	(0.0040)	(0.0029)	(0.0020)
Private residence	0.0001	-0.0035	-0.0003
	(0.0003)	(0.0040)	(0.0004)
Observations	5248	4535	5005

Notes: The reference group is Southern Europe. Control variables are the same as in Table 2. Robust standard errors are in parentheses. Levels of significance: *** p<0.01, ** p<0.05, * p<0.01.

Table 5 is similar to Table 4. However, instead of showing contributions to the differences in the re-employment probabilities due to observable characteristics, Table 5 shows contributions to the differences in the re-employment probability caused by differences in coefficients. Knowing this information is important for policymakers. If the goal is to increase the re-employment probability of the most depressed labour market areas in Europe (i.e. Southern Europe), then the policy recommendation would be to enhance efforts to strengthen the association between the re-employment probability and these variables with positive coefficients in Southern Europe and to reduce the association between those variables with negative coefficients. Given that the decomposition for the West and the North shows that the difference in the re-employment probability due to parameter heterogeneity is insignificant and given that the gap is only significant at the 10-percent level for Eastern Europe, there are fewer commonalities in these results compared to those in Table 4. For Northern Europe, all coefficients are insignificant which is in line with the findings in the last row of Table 3. For Eastern and Western Europe, there are commonalities in terms of gender and marital status, suggesting that reducing the negative association between the re-employment probability and these two variables will increase the re-employment

probability in Southern European countries. These results are in line with those in Table 2 Column 5 which show that being female and being married are two characteristics associated with the largest negative re-employment probabilities in Southern Europe.

TABLE 5
Contributions to the Difference in the Re-Employment Probability due to Coefficients

	(1)	(2)	(3)
	East	West	North
Female	-0.0705***	-0.0201*	0.0041
	(0.0176)	(0.0117)	(0.2043)
Age	-0.6500	-0.0792	-0.0426
	(0.5085)	(0.3270)	(2.1369)
Age squared	0.3686	0.1225	0.0252
	(0.2684)	(0.1726)	(1.2625)
Years of education	-0.1705***	0.0226	0.0038
	(0.0637)	(0.0415)	(0.1889)
Years of tenure	-0.0640**	-0.0002	0.0022
	(0.0272)	(0.0161)	(0.1103)
Married	-0.1379***	-0.0406*	0.0066
	(0.0390)	(0.0229)	(0.3301)
Children	-0.0019	0.0110	0.0005
	(0.0265)	(0.0158)	(0.0265)
Excellent/very good health	-0.0377*	0.0102	-0.0002
	(0.0212)	(0.0142)	(0.0085)
Live in urban area	-0.0364*	0.0338**	0.0018
	(0.0202)	(0.0166)	(0.0924)
Private residence	-0.0311	-0.0060	0.0020
	(0.0220)	(0.0119)	(0.1019)
Constant	-0.0705***	-0.0201*	0.0041
	(0.0176)	(0.0117)	(0.2043)
Observations	5248	4535	5005

Notes: The reference group is Southern Europe. Control variables are the same as in Table 2. Robust standard errors are in parentheses. Levels of significance: *** p<0.01, ** p<0.05,* p<0.01.

4. Conclusion

In this paper we use harmonized retrospective longitudinal data across Europe to first present the extent of involuntary job loss and then to examine the determinants of the re-employment probability. We then go on and estimate cross-region re-employment probabilities by aggregating countries to regions and decompose the significant cross-country heterogeneity we find across regions in differences due to characteristics and differences due to coefficients.

We find that people in Southern Europe face the highest probability of job loss and at the same time have the lowest re-employment probability. We uncover significant

differences by gender, marital status, age and job seniority which are stronger in Southern Europe. Being in good health during childhood increases the employment probability only in Eastern Europe. Further, living in an urban area increases the re-employment probability in Eastern and Northern Europe, it decreases it in Western Europe and has no effect in Southern Europe. This heterogeneity can be understood by differences in cultures, social norms and institutions across European countries. We then decompose this cross-country heterogeneity we find into a portion that can be explained by differences in observable characteristics and a portion that cannot be explained by regional variation in observable characteristics and describe how our reduced form results can be informative for policymakers. Knowing which characteristics and the returns to those characteristics as it relates to re-employment differences is helpful for policymakers in determining the best way to direct resources to increase the employment prospects of the involuntary unemployed.

References

Jolly, N., and Theodoropoulos, N., (2023), "Health shocks and spousal labor supply: An International perspective", *Journal of Population Economics,* 36 (2): 973-1004.

Scarpetta, S., Keese, M., Butler, S., Langenbucher, C. Lauringson, A and Xenogiani, T., (2021), "Designing active labour market policies for the recovery. OECD Report". Available from: https://read.oecd-ilibrary.org/view/?ref=1100_1100299-wthqhe00pu&title=Designing-active-labour-market-policies-for-the-recovery

Theodoropoulos, N., and Voucharas, G., (2023), "Firm closures and labor market policies in Europe: Evidence from retrospective longitudinal data", *Share Working Paper Series 86-2023*, DOI: 10.6103/wp.862023.

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Antonova, L., Aranda, L., Pasini, G., & Trevisan, E. (2014). Migration, family history and pension: the second release of the SHARE Job Episodes Panel.

Börsch-Supan, A., M. Brandt, C. Hunkler, T. Kneip, J. Korbmacher, F. Malter, B. Schaan, S. Stuck, S. Zuber, (2013), "Data Resource Profile: The Survey of Health, Ageing and Retirement in Europe (SHARE)." *International Journal of Epidemiology*. DOI: 10.1093/ije/dyt088.

Börsch-Supan, A., (2022), "Survey of Health, Ageing and Retirement in Europe (SHARE) Wave 3 – SHARELIFE." Release version: 8.0.0. SHARE-ERIC. Data set. DOI: 10.6103/SHARE.w3.800

Börsch-Supan, A., (2022), "Survey of Health, Ageing and Retirement in Europe (SHARE) Wave 7." Release version: 8.0.0. SHARE-ERIC. Data set. DOI: 10.6103/SHARE.w7.800

Brugiavini, A., Orso, C., Genie, M. G., Naci, R., & Pasini, G., (2019), "Combining the retrospective interviews of wave 3 and wave 7: the third release of the SHARE Job Episodes Panel", *SHARE Working Paper Series, 36, 1-18*.