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EXPLAINING THE TRANSITIONS OUT OF UNEMPLOYMENT IN SPAIN:
THE EFFECT OF UNEMPLOYMENT INSURANCE

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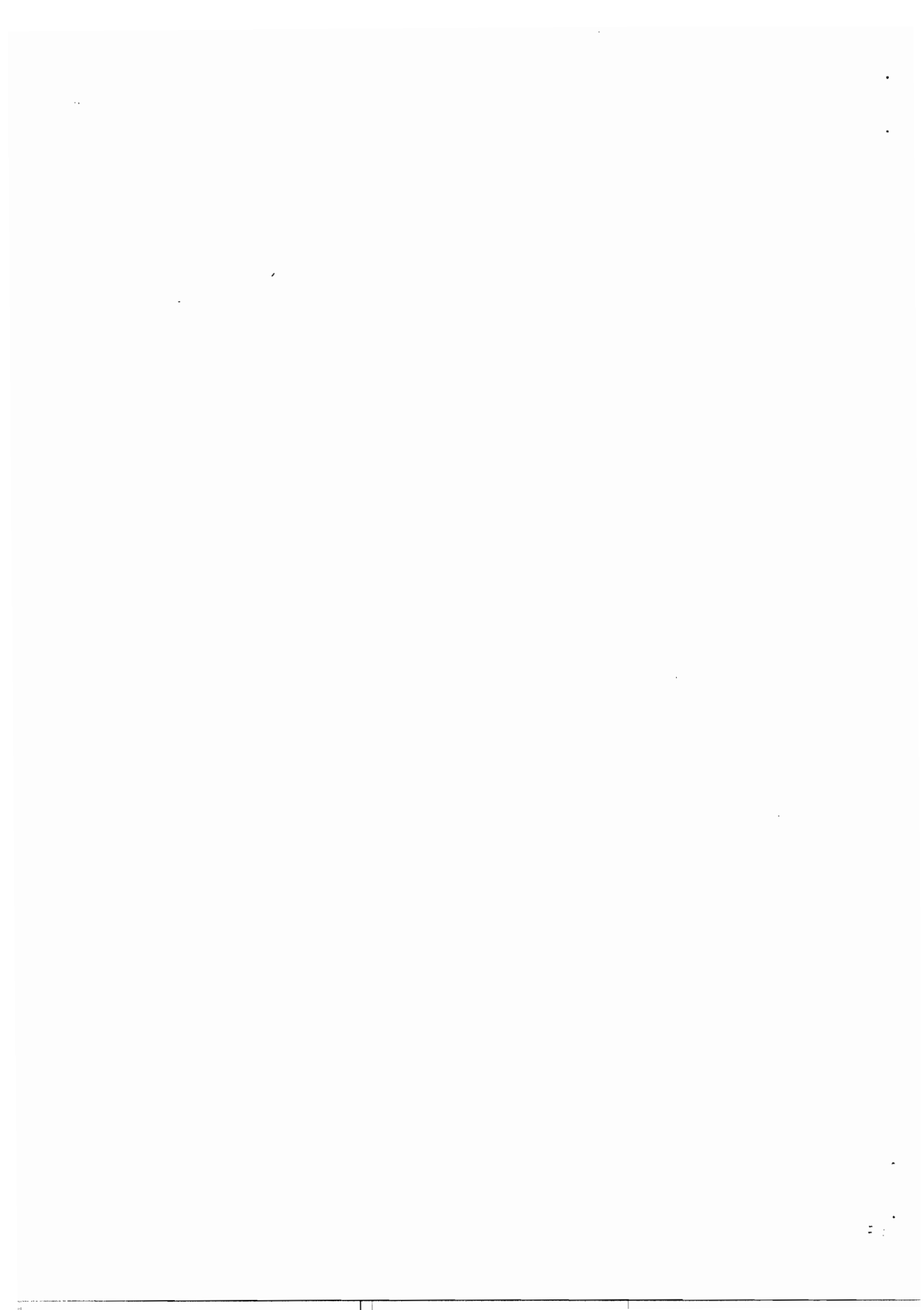
Abstract

In this article we study the factors that affect the transitions out of unemployment in Spain. We pay special attention to the impact of unemployment insurance benefits on the re-employment probability. We use a multinomial logit model, and data from the EPA matched files from the second quarter of 1987 to the fourth quarter of 1995. Consistent with previous work, we find a negative effect of unemployment insurance receipt on the re-employment probability, and on withdrawal from the labor force. More importantly, we find a differential effect of benefit receipt when comparing time periods before and after 1992. In april of that year the labor authority made eligibility requirements for unemployment insurance more restrictive, and curtailed benefit amounts.

Key Words

Transition out of unemployment; Unemployment insurance receipt; Re-employment probability.

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1. Introduction

The number of unemployed workers at a given time is the net balance of flows in and out of unemployment. The unemployment rate increases if inflows grow faster than outflows. Spain's labor market offers a good example of how unemployment steadily rises when the economy is unable to create jobs for new entrants and for displaced workers: in the mid-70s the unemployment rate was around 4 percent, ten years later the rate had climbed to almost 22 percent (see Figure 1). Labor market rigidities have repeatedly been blamed for such a negative and long lasting labor shedding process.¹

Although the Spanish labor market of the 1990s is far more flexible than that of the 1970s or early 1980s, the exit rate from unemployment is still considered low, even by European standards.² Hence, the high and persistent unemployment rate that exists. Such a rate diminished significantly in the second half of the 1980s. The 1984 employment promotion program -based on fostering fixed-term employment contracts- reduced employers' reluctance to hire new workers. The reason being that dismissing (temporary) workers became much easier, and also cheaper. Lured by the advantages of the new employment relationship, employers replaced permanent employees with temporary ones, to the extent that in 1991 a third of the employed had a fixed-term contract.

More recently, unemployment again rose quickly in Spain: by 8 percentage points from 1991 to 1994. Although this can largely be attributed to a cyclical downturn, the depth of the employment crisis raises some questions about the dynamics of the Spanish labor market. For instance, how is the use of fixed-term contracts affecting the flow into unemployment? What factors are determinants of the flow out of unemployment?

This article takes the latter strand of analysis to contribute to a better understanding of the dynamics of the Spanish labor market. We study the determinants of the transitions out of unemployment by using a multinomial logit model. Such framework permits to estimate the effects of a number of variables on an individual's transition from unemployment to either employment or

¹ See Blanchard and Jimeno (1995), for some explanations.

² See OECD (1987).

inactivity. The data used are obtained from matched files of the quarterly labor force survey (EPA), for the period 1987.2 to 1995.4. This period includes a complete business cycle, with a high in 1991 and a trough in 1993. The employment recovery has been slow since the latter date. To reduce heterogeneity we consider men aged 20-59 who possess work experience and are unemployed at a given quarter of the period 1987.2-1995.4. Within that period, we study unemployment outflows as indicated by workers' labor market status in two consecutive quarters.

One of the main results in this article is that we find a differential effect of unemployment insurance on the re-employment probability when comparing periods before and after 1992. We are tempted to interpret this finding as a consequence of the unemployment insurance reform in April 1992, which tightened eligibility requirements and curtailed benefit amounts.

2. Conceptual Framework: A Multinomial Logit

To study the determinants of labor market transitions, we use a multinomial logit model (Maddala (1983)).³ The probability that an unemployed person in quarter t is observed employed or out of the labor force in quarter $t+1$, can be expressed as a conditional expectation function, $P(Y = k | X) = p_{ki}$, where $k=1,2,3$ if individual i becomes employed, leaves the labor force or remains unemployed, respectively; and X is a vector of individual characteristics and other factors that affect labor market transitions.

The probability that individual i experiences a transition from unemployment to employment is:

$$p_{ii} = \frac{\exp(X_i\beta_1)}{1 + \exp(X_i\beta_1) + \exp(X_i\beta_2)}$$

and the probability that the individual leaves the labor force is:

³ This framework has been used by a number of studies. For example Barron and Mellow (1981), and Poterba and Summers (1995).

$$p_{2i} = \frac{\exp(X_i\beta_2)}{1 + \exp(X_i\beta_1) + \exp(X_i\beta_2)}$$

Among the set of explanatory variables, X , we include demographic characteristics (age, education, marital status); variables related to the individual's previous labor market experience (reason for job loss, sector of employment, duration of previous job, activity before starting job search); variables related to the job search process (whether attending school/following training courses while looking for work or not, time out of work and searching for a job, situation with respect to the public employment office and whether or not receiving unemployment insurance benefits); a dummy to take into account the pressure or willingness to take a job. To control for the influence of the business cycle on labor market transitions we include in the regression yearly dummies. Also, to control for seasonal variations we include dummies for the initial quarter. Moreover, we include dummies for rotation groups in the EPA sample.

Among the factors that can affect the transitions out of unemployment we pay special attention to receipt of unemployment insurance benefits (UI), duration of the unemployment spell, and the business cycles as picked up by yearly dummies. Furthermore, we create interaction terms between UI receipt and unemployment duration, and between UI receipt and yearly dummies. These interaction terms serve to test how the UI receipt effect on the re-employment probability depends on the other two variables.

3. Data: The Active Population Survey (EPA)

The data used are obtained from the Active Population Survey (EPA), a quarterly sample of some 60,000 households. These data set is suitable for analyzing employment transitions because of its panel structure. As a sixth of the EPA sample rotates every quarter, in principle we can follow a person for a maximum of six quarters. Matched EPA files have recently been made available by the Spanish National Institute of Statistics (INE). Place of residence, and the code to identify members of the same household have been dropped from the matched files. Age is available as grouped in five year brackets, and other variables are also available only in a more compressed format than the original one.

The time period available expands from the second quarter of 1987 to the fourth quarter of 1995. This period includes part of the phase of strong employment growth that lasted until the early 1990's, the deep employment crisis of 1992 and 1993, and the weak recovery that started in 1994. Therefore, the data permit to analyze labor market transitions over a complete cycle of the Spanish economy.

In this article we first use a general sample, and later a slightly more restricted one. For selecting the larger sample we start with all men aged 20-59,⁴ unemployed at a given quarter of the period 1987.2 to 1995.4, after having worked before. By retaining those persons who were interviewed in the subsequent quarter, we obtain a sample of 130,669 observations.⁵ Then we exclude workers for whom the variable values for time since leaving the previous job, unemployment duration or situation with respect to the employment office are missing (2,541 observations). Because information on previous job's characteristics is only available for people who left their job less than 36 months ago, we exclude 19,169 observations where such information is missing. Also, we exclude workers who reported unemployment duration of more than 36 months (2,885 observations).⁶ We are left with a sample of 106,174 observations. The restricted sample, to be described later, serves to take a closer look at the effect of unemployment insurance on labor market transition probabilities.

In the following section we present the maximum likelihood estimates of the multinomial logit parameters. We adopt the usual normalization rule of setting the parameters equal to zero in the equation for those who remain unemployed in the subsequent quarter.

⁴ We concentrate on men because we lack the relevant information on family background which is crucial for studying labor market transitions of women, such as number of other members in the household and their labor market situation.

⁵ Because of the EPA's rotation scheme, a sixth of the individuals interviewed in a given quarter is not present in the subsequent quarter. Of the remaining sample, about 15 per cent is lost because of attrition.

⁶ Workers who report unemployment duration -time looking for a job- longer than time since leaving the previous job may have started their job search well before becoming unemployed. Otherwise, the discrepancy between the two variables may result from error.

4. Results

To study the determinants of exit rates from unemployment to employment and out of the labor force, we consider the labor force status in quarter $t+1$ of unemployed men in quarter t . In the sample used, of all unemployed men in a given quarter of the time period available, 24.85 percent obtained a job in the subsequent quarter, and 3.93 percent left the labor force. Table 1 contains the results of estimating the multinomial logit model that can be applied to the data, as well as the corresponding derivatives.⁷

As expected, the re-employment probability decreases with age. Such probability is a third lower for 50-54 year olds, and a half lower for those aged 55-59, as compared with the average worker in the sample. On the other hand, workers in these two age groups are significantly more likely to drop out of the labor force. Workers 55-59 years old are twice as likely to leave the labor force as the average individual in the sample. The variable education increases the likelihood of re-employment only for workers with vocational education. Married men are also more likely to become employed and less likely to leave the labor force by 33 percent and 28 percent, respectively.

Unemployed men attending school or following training courses are less likely to become employed and more likely to drop out of the labor force. Workers in this situation, 4.7 percent of the sample, have low attachment to the labor force because their opportunity cost of unemployment is probably low. An indicator of labor force attachment or pressure to accept a job can be obtained through a dummy that we call "willingness to accept a job". It takes on one if the worker indicates that he is ready to take a job even though it implies moving, changing the type of work, and lower than expected wage and occupation. Around 29 percent of unemployed men report to be willing to accept a job under those conditions. Despite that disposition, their re-employment probability is significantly lower than that for comparable workers. However, those workers' determination to obtain a job appears reflected in their higher attachment to the labor market: they are 21 percent less likely to leave the labor force than the average unemployed man in the sample who is not willing to accept a job under the referred conditions.

⁷ For the transition from unemployment to the j_{th} situation, the marginal effect of an exogenous variable, x , is obtained at the sample means applying the formula: $\delta p_j / \delta x = p_j (\beta_j - \sum p_k \beta_k)$, where $k=1,2$.

Most experienced workers indicated that right before starting their work search they had separated from a job. However, there are workers in the sample who indicated that they were not working. We have included in the regressions dummies to control for those who were in school (2 percent), or were in the military, doing housework or other activity (4 percent). Those who were students prior to looking for work are significantly more likely to leave the labor force. We can distinguish people who were working prior to their job search by the reason for job loss; the main reason being end of contract (72 percent). Workers laid off and job leavers for other reasons (early retirement, quitting, etc.) are less likely to become employed and more likely to drop out of the labor force than those whose contract ended. This result reflects the fact that workers with a fixed-term contract move more often from one job to the other. It means that they are more employable and, at the same time, that they share a higher risk of experiencing unemployment. Hence, there is a higher labor turnover resulting from the institution of fixed-term contracts.

Dummies for sector of employment show that re-employment probabilities are particularly high among agriculture sector (farming and fishing) workers, and strikingly low among service sector workers. The result for agriculture workers is no surprise given the usually short duration of agriculture jobs. This implies that workers are obliged to move from job to job with high frequency. The result for the service sector cannot be so easily justified. It may be due to the fact that service sector workers form a very heterogeneous group. Tenure in the previous job of one year or more reduces the likelihood of becoming employed. Workers who held their previous job for 3 years or longer are 14 percent less likely to become employed than the average worker in the sample. If that job was in the public sector, the re-employment probability decreases further, and the probability of leaving the labor force increases.

Before discussing the effects on labor market transitions of unemployment duration, yearly dummies, and the situation with respect to the employment office, some comments on the effects of seasonal and rotation group dummies are in order. Seasonal dummies refer to the initial quarter of the two consecutive quarters from which we assess labor market transitions. We find that the probability of transition to employment increases significantly in the second and fourth quarters of the year. Note that the second quarter marks the beginning of tourist sector jobs, and the fourth quarter dummy may pick up the Christmas and New-Year job openings. On the other hand, the probability of leaving the labor force appears higher for the third and fourth quarters. Regarding the rotation group dummies, it

seems that workers in the fifth interview show a higher probability to become employed. Also, workers in the third, fourth and fifth interview seem to be more likely to become inactive. The finding of these rotation group effects indicates some bias in the individual's responses. In particular, the effect on transition out of the labor force may indicate that some people are borderline between unemployment and inactivity. If asked a sufficient number of consecutive quarters, their responses tend to be closer to the latter status.

2.1. Unemployment Duration, Yearly dummies and Unemployment Insurance

The effects of unemployment duration, yearly dummies and unemployment insurance benefits on labor market transitions deserve separate consideration, particularly because they are related to each other. First we focus on the independent effects of these variables as reported in Table 1. It is clear from Table 1 that unemployment duration dummies have a negative and very significant impact on employment transitions. The re-employment probability decreases as time out of work extends. It is apparent that the effect is roughly linear up to the second year out of work. On the other hand, no effect of unemployment duration on the probability of leaving the labor force is obtained, except for the fact that the dummy 12-23 months obtains a negative and significant coefficient.

Yearly dummies are deemed to pick up the economic cycle effect on employment transitions. They also obtain very significant coefficients as reflected in Table 1. The re-employment probability increased up to 1989, decreased in 1992, plummeted in 1993, and started to recover in 1994. Years 1992 and 1993 are of strong employment decline in Spain (see Figure 1). Thereafter the employment recovery has been slow. Regarding the transition to inactivity, the coefficients for yearly dummies are positive and significant from 1990 to 1994. Although the decline in re-employment probability is deepest in 1993 (37 percent), the increase in the probability of leaving the labor force is largest in 1992 (78 percent). This is probably related to the kind of employment adjustment that took place in Spain at the time: many permanent workers lost their jobs at the early stages of the employment crisis. Because these are more likely to be older workers, they are expected to show a higher propensity to retire early.

Assessing the impact of the unemployment insurance benefits on labor market transitions with

the data at hand poses several problems.⁸ Certainly we can construct dummies from the survey question which asks of workers to indicate their situation with respect to the public employment office (INEM). The possible answers are: (1) Register receiving some kind of unemployment insurance benefits, (2) Register without receiving benefits, and (3) Not registered. On average, 47 percent of unemployed men in the sample report to be receiving unemployment benefits at a given quarter, and 5 percent indicate not to be registered at the INEM. The problem with this information is that some unemployed people may have applied for UI and could be waiting for response from the INEM at the moment of survey interview. Because information on the application for benefits is not available in the EPA, we can still look at the situation with respect to the employment office in the subsequent quarter. By doing so, we find that 15 percent of the unemployed not receiving UI at the sample's initial quarter report to be receiving benefits in the subsequent quarter (8,279 persons).

If we consider UI recipients workers who receive benefits at the initial or subsequent quarter, we obtain a better measure of the number of people on unemployment insurance. However, by doing this we are likely to overestimate the (negative) effect on the re-employment probability of the UI receipt variable. The reason is that we do not observe situations in which after having applied for UI, the worker became re-employed even though UI actually was or could have been granted. With these shortcomings in mind, we can still estimate the UI effect on labor market transitions by creating dummies for each of the three possible situations at the employment office. We try three possibilities: first, we create the UI dummy that takes on one if the worker is registered and receives UI either in the initial or the subsequent quarter; second, we redefine such dummy by making it equal to one only if the worker is registered and receives benefits in the initial quarter; and third, we estimate the multinomial regressions excluding the unemployed who were not receiving benefits in the initial quarter and indicated to be doing so in the subsequent quarter. The first strategy corresponds to that of Table 1, and the particular results from the other two cases are contained in Table 2.

As Table 1 shows, receipt of benefits as defined in this case, reduces significantly the re-employment probability by .1118, which represents a 50 percent decline with respect to that of the sample average worker who is registered but does not receive benefits. Also, it is found that the

⁸ The effect of unemployment insurance on labor market transitions has been explored in many studies. Atkinson and Micklewright (1991) surveyed the literature. For Spain there are several studies, one of the earliest is Alba-Ramírez and Freeman (1990), and one of the most recent is Bover et al. (1996).

dummy for not being registered at the employment office obtains a positive and significant coefficient, although the derivative is small. In addition, receipt of benefits significantly reduces the probability of leaving the labor force, and absent INEM registration increases it by 50 percent.

As indicated earlier, the definition for UI receipt dummy used in Table 1 can overestimate such a variable's effect on the employment transition. To gauge the extent to which that can happen we also use the two alternative strategies described above. Table 2 shows that when we define the UI dummy as equal to one only when the worker is receiving benefits in the initial quarter, its effect on employment transition is significant, albeit quite small. The derivative is one tenth of that reported in Table 1. Moreover, by excluding UI claimants who were granted benefits with delay (as we can find out by looking at the subsequent quarter), we obtain a positive and significant coefficient for the impact of UI receipt dummy on transition to employment. In this case the derivative is .0733, which translates to a reduction in the re-employment probability of 27.5 percent, almost half of the reduction in the expected probability obtained from estimates in Table 1. Thus, although it is hard to estimate the actual impact of UI receipt on employment transition with EPA data, we can say that the effect is quite strong and is likely to be close to the latter result reported.⁹

2.2. Variations in the Effect of Unemployment Insurance

In this subsection we address the following questions: (1) Does the effect of UI on labor market transitions vary across different lengths of unemployment duration? (2) Has such affect changed along the business cycle? and, (3) Has the 1992 reforms of the UI system affected the re-employment probability of UI recipients? To answer these questions we use a more restricted data sample. We exclude workers whose previous job was in the agricultural sector (15,970 observations), or was not a wage and salary job (3,788 observations). By doing so, we expect to reduce heterogeneity in the sample, given that agriculture workers are subject to a different UI system, and that non wage/salary workers are not eligible for unemployment insurance benefits.

⁹ If we define the expected duration of unemployment spells as the inverse of the re-employment probability, it takes about 12 months to obtain a job for the average worker in the sample. This period will be 6 months longer for UI recipients according to estimates in Table 1, and 3.3 months longer if we consider estimates in the lower panel of Table 2.

Table 3 reports the multinomial logit estimates for the particular dummy variables on which we focus our attention.¹⁰ For UI receipt, we use the same definition as in Table 1: the corresponding dummy takes on one if the individual receives benefits in either the initial or the subsequent quarter. The multinomial logit regression is specified as in Table 1, except for the inclusion of interaction terms. The first panel of Table 3 shows that by restricting the sample, the coefficients for the dummy variables on which we are focusing do not change much with respect to those reported in Table 1.

Given the rules of the Spanish unemployment insurance system (see Appendix 1), as time out of work lengthens, the amount of benefits received decreases. Thus, one can expect a progressive weakening of the UI (negative) effect on employment transition along the unemployment spell. To test this one needs to analyze re-employment probabilities according to UI status at different points of the unemployment spell.¹¹ The data sample used in this article does not allow for this because we only observe labor market status at two consecutive quarters.

The data contain a cross section of individuals whose incomplete unemployment spell -as reported in the initial quarter- can vary from one month to three years. Thus, we can estimate a multinomial logit model with interaction terms between duration dummies and the UI receipt dummy. By doing so, we are able to ascertain the UI effect on labor market transitions across different lengths of unemployment duration. The results are presented in the second panel of Table 3. It is clear that the negative effect of UI receipt on the re-employment probability is very strong for workers in the first two months of their unemployment spell, it is significantly smaller in the 3-5 month bracket, declines further for durations of 6-11 months, and decreases very little from there on. However, note that the effect is still quite important for UI recipients who have been unemployed for one year or longer. In the latter case, the re-employment probability declines by one third. This compares to a decline of more than 50 percent for UI recipients whose incomplete unemployment duration is shorter than six months.

¹⁰ Fully reported results for Table 2 and for Table 3, are available from the author upon request.

¹¹ Narendranathan and Stewart (1993) present estimates of the variation of benefit effect throughout the unemployment spell in the United Kingdom. For Spain, Bover et al. (1996) find a declining hazard as unemployment duration increases.

We can also test how the effect of UI receipt on the re-employment probability changed over the period 1987-1995. This is an interesting exercise for at least two reasons. One reason is that in this period we observe a phase of increasing employment, and another phase of declining employment. Thus, the data allow for exploring the effect of UI in a context of economic fluctuations. Other reason is that unemployment insurance rules were modified in April 1992, making benefits significantly less generous. As reflected in Appendix 1, such reform reduced duration and the amount of benefits. In addition, benefit became subject to the income tax since 1994.

As the third panel of Table 3 shows, some of the interaction terms between UI receipt and yearly dummies are significantly different from zero, in particular UI*1994 and UI*1995, which obtain a positive coefficient. On the other hand, UI*1992 obtains a negative and significant coefficient at the 10 percent level. These results suggest that by making the unemployment insurance system less generous, the labor authority reduced the negative incentive of benefits on the re-employment probability. However, the goal was achieved with delay. In fact, the negative and significant coefficient for UI*1992 suggests that the re-employment probability among UI recipients was at its lowest in that year. This may be related to the timing of the economic recession and, also, to the fact that many permanent workers lost their jobs around that date. It is in 1993 when the UI negative effect on the re-employment probability appears to start declining. This is consistent with the fact that it is not until the beginning of 1994 when the majority of UI recipients had become eligible under the new rules.

As compared with the average worker in the sample who was registered without benefits, the re-employment probability of a UI recipient was 30 percent lower in the period 1994-95, and about 50 percent lower in the period 1987-91.¹² Because the reform of the UI system coincided with the beginning of a period of labor shake out, followed by a weak recovery, its impact was probably smaller than it could have been in a phase of employment growth. If the effect of UI on the re-employment probability depends on the business cycle, we cannot separate out the latter's contribution to the observed weakening of the UI effect from that attributable to the UI reform. Because the data used comprises a whole business cycle, we are more confident that the law change has been

¹² We also estimated separated equations for several time periods, and found the change in UI dummy impact on the re-employment probability to be the most noticeable difference in estimates by periods.

determinant.¹³

5. Conclusions and Interpretations

In this article we contribute to studying the dynamics of the Spanish labor market. We analyzed the determinants of the transitions out of unemployment over the period 1987-95. We devoted special attention to the effect on the re-employment probability of the following variables: receipt of unemployment benefits, duration of the unemployment spell, and the business cycle as proxied by yearly dummies. For analyzing the effect of UI receipt on labor market transitions using EPA matched files, we pointed out some problems and offered alternative estimates. Moreover, we used interaction terms for testing the UI impact on the re-employment probability along the unemployment spell and throughout the period 1987-1995.

Despite data limitations, we found a negative and significant impact of UI receipt on the transition to employment and also on the transition to inactivity. In addition, the effect on the re-employment probability appears stronger for shorter spells of unemployment, but it is still quite high for unemployment durations longer than one year. More importantly, we obtained evidence of a differential effect of UI over the period of study. Although in 1993 the negative effect of UI receipt on the re-employment declined, as indicated by the corresponding interaction term, it is in 1994 and 1995 when the estimated effect became significantly smaller than in previous years.

Given the modification of the unemployment insurance law carried out in April 1992, one can interpret the latter result as a change in job search behavior among UI recipients. By reducing the generosity of the unemployment insurance system, the Spanish labor authority has provided a natural experiment for assessing the impact of unemployment insurance on labor market transitions. It is beyond the scope of this paper to gauge the extent to which the new unemployment insurance system has contributed and will contribute to reduce unemployment in Spain. This is worth investigating, together with the effects of curtailed unemployment insurance benefits on labor market welfare.

¹³ The fact that UI reform was in 1992 makes it harder to draw any conclusion about possible changes of benefit effect on the re-employment probability over the business cycle. One could expect such effect to increase in recessions years because, as found in this article, UI receipt discourages workers from dropping out of the labor force.

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Table 1
Multinomial Logit Estimates of the Determinants of Labor Market Transitions of Male Unemployed Workers

	Employment		OLF		Sample Mean	Derivatives	
	Coeff.	t	Coeff.	t		Employ.	OLF
Age 20-24 years					.2421		
25-29	-.0587	2.58	-.1254	2.42	.2003	-.00974	-.00416
30-34	-.1248	4.62	-.1922	2.99	.1420	-.02142	-.00603
35-39	-.1103	3.56	-.0910	1.23	.1029	-.01971	-.00236
40-44	-.2055	6.11	-.0672	0.84	.0881	-.03771	-.00053
45-49	-.2599	7.22	.0290	0.35	.0771	-.04882	.00363
50-54	-.4498	11.71	.4277	5.51	.0744	-.08818	.02054
55-59	-.6865	16.57	.9681	13.33	.0727	-.13766	.04325
No education					.1529		
Primary	.0104	0.43	-.1371	2.75	.4015	.00328	-.00527
Second. academ.	.0116	0.41	-.1534	2.53	.3199	.00366	-.00590
Second. vocat.	.1233	3.47	-.1100	1.43	.0876	.02410	-.00536
University	-.0362	0.74	.1038	1.18	.0379	-.00777	.00427
Married	.4278	21.79	-.1825	4.10	.4997	.08167	-.01107
Attend school	-.2068	5.15	.9754	16.88	.0474	-.04814	.03884
Willingness	-.0565	3.39	-.2367	6.07	.2895	-.00824	-.00838
Left a job					.9519		
Was in school	.0035	0.06	.6259	7.35	.0190	-.00545	.02359
Other	.0290	0.74	.0954	1.19	.0391	.00448	.00331
End of contract					.7248		
Laid-off	-.1079	4.28	.1219	2.35	.1475	-.02133	.00565
Other	-.0913	3.19	.2948	5.46	.1275	-.01993	.01202
Agriculture					.1504		
Industry	-.4342	15.55	-.1264	1.96	.1982	-.07984	-.00053
Construction	-.3132	13.02	-.1012	1.76	.3001	-.05750	-.00076
Retail/hotel	-.5094	17.88	-.0502	0.78	.1743	-.09463	.00307
Other services	-.5104	16.83	-.0781	1.16	.1768	-.09455	.00203
Tenure <3 m.					.2142		
3 -5 months	.0155	0.64	-.0682	1.24	.1616	.00356	-.00272
6 -11	.0347	1.47	-.1663	3.09	.2231	.00810	-.00662
12-35	-.0673	2.60	-.1865	3.26	.1919	-.01074	-.00638
36+	-.1847	6.43	-.0078	0.13	.2089	-.03442	.00150
Private sect.					.8425		
Public sect.	-.0811	3.00	.1311	2.38	.1167	-.01642	.00574
Other	.0663	1.48	-.0357	0.42	.0406	.01274	-.00199
First quarter					.2497		
Second	.0910	4.40	.0126	0.27	.2619	.01686	-.00041
Third	-.0234	1.10	.1012	2.20	.2494	-.00535	.00405
Forth	-.0962	4.40	.1350	2.87	.2388	-.01928	.00603
1st interview					.2035		
2nd	.0160	0.68	.0804	1.55	.2014	.00219	.00288
3rd	.0028	0.12	.1090	2.11	.2010	-.00053	.00408
4th	.0068	0.29	.1480	2.89	.1977	-.00017	.00552
5th	.0592	2.53	.1589	3.09	.1961	.00950	.00542
Regist. at INEM					.4703		
UI receipt	-.6077	36.14	-.1695	4.41	.5536	-.11184	-.00046
Not registered	.0688	2.11	.5461	9.06	.0540	.00752	.01994
Unem. dur.<3 m.					.2602		
3 -5 months	-.1609	7.74	-.0095	0.18	.1918	-.02995	.00121
6 -11	-.4229	20.15	-.0457	0.94	.2199	-.07852	.00240
12-24	-.7467	32.36	-.0970	1.96	.2092	-.13850	.00362
24+	-.8787	30.71	.0117	0.21	.1187	-.16421	.00902
Year 1987					.0718		
1988	.0839	2.35	.0355	0.38	.0910	.01531	.00052
1989	.1218	3.44	.0770	0.83	.0941	.02199	.00171
1990	.0880	2.44	.1944	2.11	.0896	.01453	.00648
1991	.0214	0.60	.4988	5.77	.0970	-.00086	.01862
1992	-.3256	9.23	.7325	9.12	.1226	-.06796	.03083
1993	-.4724	13.85	.3313	4.10	.1631	-.09145	.01712
1994	-.2606	7.74	.4529	5.65	.1627	-.05308	.01964
1995	-.2117	5.81	.5246	6.14	.1076	-.04465	.02187
Constant	.1033	2.17	-3.2047	28.39			
P		.2485		.0393			
Log likelihood							-71,699
Number of observations							106,174

Note: The data are from the Active Population Survey (EPA). The sample is composed of unemployed men at a given quarter of the period 1987-95, who were interviewed in the subsequent quarter. See text for more details on sample selection.

Table 2

The Effect of Unemployment Insurance Benefits on Labor Market Transitions
Multinomial Logit Estimates

1. The dummy for receipt of UI takes on one if the worker receives UI in the initial quarter

	Employment		OLF		Sample Mean	Derivatives	
	Coeff.	t	Coeff.	t		Employ.	OLF
Regist. at INEM					.4703		
UI receipt	-.0564	3.42	-.1009	2.68	.4756	-.00954	-.00326
Not registered	.2751	8.47	.5746	9.56	.0540	.04576	.01901
P	.2485		.0393				
Log likelihood		-72,349					
Number of observations		106,174					

2. Non UI recipients in the initial quarter who obtain benefits in the subsequent quarter are excluded

Regist. at INEM					.4301		
UI receipt	-.3833	22.10	-.1570	3.85	.5158	-.07329	-.00190
Not registered	.1544	4.59	.5677	8.98	.0539	.02427	.01967
P	.2665		.0390				
Log likelihood		-67,563					
Number of observations		97,895					

Note: See note to Table 1 for sample characteristics.

Table 3

The Effect of Unemployment Insurance Benefits on Labor Market Transitions
Multinomial Logit Estimates With and Without Interaction Terms

1. Without interaction terms

	Employment		OLF		Sample mean	Derivatives	
	Coeff.	t	Coeff.	t		Employ.	OLF
Regist. at INEM	(omitted)						
UI receipt	-.6158	-31.91	-.1189	-2.74	.5697	-.10764	.00103
Not registered	.0875	2.13	.5760	7.82	.0408	.01031	.02075

2. With interaction terms between UI receipt and unemployment duration

UI receipt	-.9324	-28.49	-.3338	-4.18	.5697	-.16160	-.00417
Not registered	.0777	1.88	.5701	7.73	.0408	.00864	.02062
UI*3 -5 months	.3688	7.58	.3332	2.82	.1265	.06213	.00917
UI*6 -11	.4824	10.02	.2751	2.51	.1127	.08270	.00599
UI*12-23	.4909	9.68	.1585	1.47	.1374	.08525	.00155
UI*24+	.5213	8.11	.4061	3.37	.1349	.08840	.01054

3. With interaction terms between UI receipt and yearly dummies

UI receipt	-.6919	-10.52	.0246	0.15	.5697	-.12236	.00708
Not registered	.0928	2.26	.5738	7.78	.0408	.01127	.02062
UI*1988	.1078	1.27	-.0301	-0.14	.0437	.01930	-.00208
UI*1989	-.0014	-0.01	-.0841	-0.39	.0494	.00050	-.00313
UI*1990	-.0047	-0.05	-.3436	-1.67	.0501	.00221	-.01280
UI*1991	-.0172	-0.20	.1377	0.70	.0607	-.00427	.00530
UI*1992	-.1474	-1.80	-.1320	-0.73	.0775	-.02485	-.00362
UI*1993	.1033	1.30	-.2438	-1.34	.1032	.02041	-.01003
UI*1994	.2990	3.86	-.2070	-1.15	.0953	.05463	-.01040
UI*1995	.2350	2.85	-.2141	-1.13	.0548	.04338	-.01010
P	.2289		.0389				

Number of observations 86,414

Notes:

1. The sample is composed of unemployed men at a given quarter of the period 1987-95, who were interviewed in the subsequent quarter, and had held a wage and salary job not in the agricultural sector. See text for more details on sample selection.

2. Specification for the three multinomial regressions is similar to that fully reported in Table 1, except for the inclusion of interaction terms.

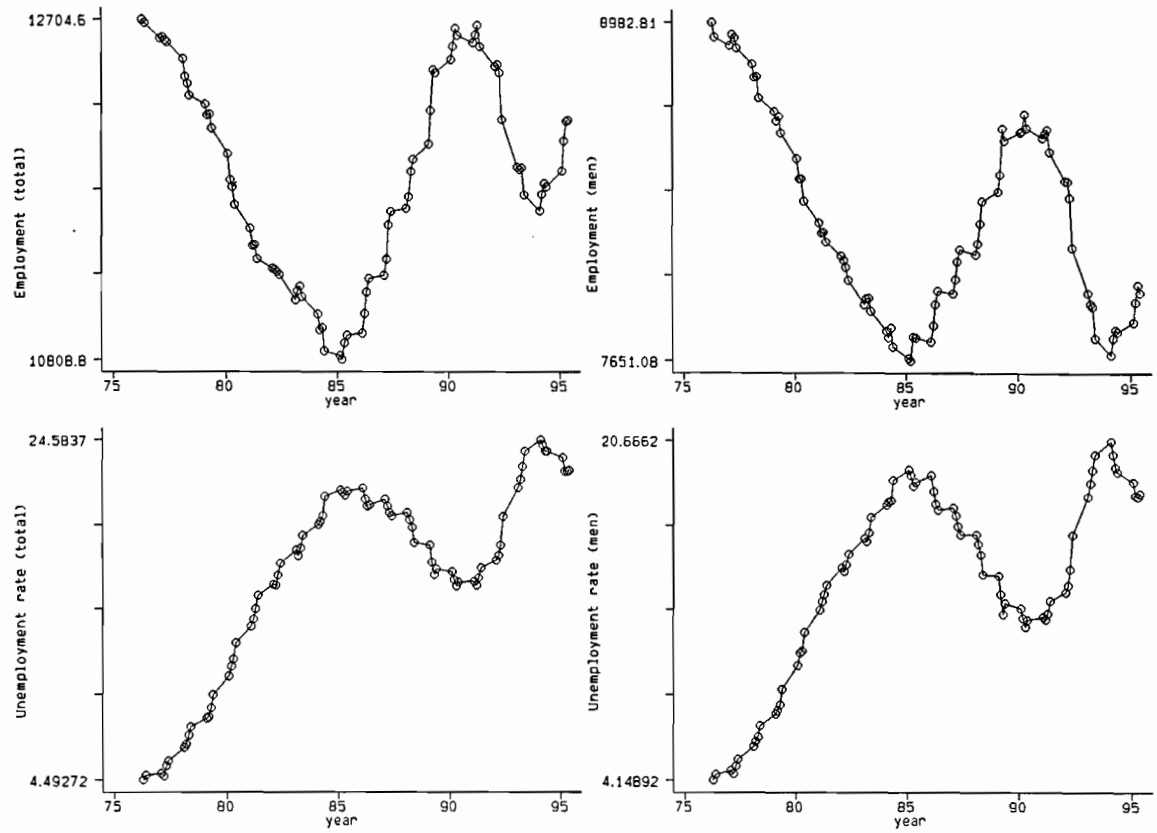


Figure 1. Evolution of employment and unemployment in Spain, 1976-95.

Appendix 1

The Unemployment Insurance System in Spain Before and After 1992

1. Contributory system

1.1. Duration of benefits

Period of contribution	Duration of benefits	
	1984	1992
1 -5 months	0 m.	0 m.
6 -11	3	0
12-17	6	4
18-23	9	6
24-29	12	8
30-35	15	10
36-41	18	12
42-47	21	14
48-53	24	16
54-59	24	18
60-65	24	20
66-71	24	22
>=72	24	24

1.2. Amount of benefits

Period of benefits	Amount of benefits	
	1984	1992
1-6 months	80 %	70
7-12	70	60
13-24	60	60

1. The period of contribution refers to social security contributions made during the 6 years (4 years before April 1992) of employment prior to the legal situation of unemployment, as recognized by the labor authority.

2. The amount is determined as a percentage of the average wage in the previous 12 months (6 months before April 1992) of employment. Workers are banded in contribution brackets according to 12 professional categories.

3. The minimum amount for contributory benefits is 75 % of the minimum wage (100 % with dependents), and the upper bound is 170 % of the minimum wage (195 % with one dependant, and 220 % with two or more dependents).

2. Assistance system for workers with dependents

2.1. Duration of benefits

Period of contribution	Duration of benefits		
	1984	1989	1992
1-2 months	0 m.	0 m.	0 m.
3	3	3	3
4	4	4	4
5	5	5	5
6-11			
Age < 45	18	18	21
Age >=45	18	24	24
>=12			
Age < 45	18	24	24
Age >=45	18	30	30

1. Workers aged 45 years or older, without dependents, who received contributory benefits for 12 months or longer are eligible for 6 months of assistance benefits. Since April 1992, all workers without dependents who made social security contributions for 6 or more months are eligible for 6 months of benefits.

2. Workers aged 45 years or older who received contributory benefits for 24 months qualify for an additional period of 6 months. Since April 1992, workers younger than 45 years who made contributions for 12-17 months (received contributory benefits for 4 months) are eligible for 18 months of benefits (24 months before April 1992).

3. Workers aged 52 years or older are eligible for benefits until retirement.

4. The amount of assistance benefits is 75 % of the minimum wage. Since 1989, the benefit amount varies with the number of dependents for workers aged 45 or older only if they had received contributory benefits for 24 months: 75 % of the minimum wage (one or no dependents), 100 % (two dependents), and 125 % (three or more dependents).