RE-EMPLOYMENT PROBABILITIES OF YOUNG WORKERS IN SPAIN

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Abstract

We use the Labour Force Survey (EPA) to study labour market performance of experienced young men and women in Spain. More particularly, we use matched EPA files for the period 1987-1996 to analyse re-employment probabilities among workers aged 16-29 who posses work experience. A discrete hazard rate model, assuming competing risks, allows us to investigate the factors that affect the probability of leaving unemployment for becoming either employed or inactive. In addition to a set of explanatory variables related to personal and previous job characteristics, we include year dummies to control for the effects of the economic cycle and other relevant factors that may have changed over the period of study. As an alternative measure for the business cycle, GDP growth is used. Duration dependence is incorporated in the model in a flexible way by including quarterly dummies.

Keywords: re-employment probability; discrete-time model; youth unemployment.

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1. Introduction

In the second quarter of 1995, 41.8 per cent of workers aged 16-24 were unemployed in Spain. This figure compares to an unemployment rate of 19.9 per cent for people with 25-54 years of age. Despite declining labour force participation rates, Spanish youth unemployment appears extremely high, even by European standards.[1] Improving the youth labour market continues to pose a challenge to labour market policies in many countries (OECD (1992)). Because of having the highest overall unemployment rate in the OECD area, Spanish young workers face comparatively harder conditions to integrate themselves in the world of work.

From the extensive literature that has studied the youth labour market, we know that the latter has specific features which contribute to explain the relatively poorer employment performance of young workers (Wachter and Kim (1984), Rees (1986), Lynch (1989), Topel and Ward (1992), Narendranathan and Elias (1993)). For instance, that many youths share participation in the labour force with school attendance; that young workers change labour force status much more frequently than adults; that many young persons live with their parents, which means that they tend to be less pressed to find work and to remain in the labour force; and, that early work experience has a significant impact on future career developments.

In previous work, Alba-Ramírez (1996a) finds that a key issue to study youth unemployment is the success in finding the first job. Having contact with the labour market for the first time, after school, young people must overcome the natural obstacle of lacking experience. In a context of high unemployment (see Appendix 1), first job seekers are obliged to compete for employment with experienced workers. The latter have an advantage in finding work because they know better how to search for a job, i.e., using already created networks; and also because employers tend to have a taste

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[1] In 1991, when the Spanish labour market was at its best, the youth employment rate in Spain was 30.5 per cent, and in the European Community the corresponding figure was 17.6 per cent.

for workers with work experience. Thus, the employment performance of new entrants to the labour market is usually worse than that of workers who have worked before.[2]

In this article, we focus on the labour market performance of experienced young workers. In particular, we study the transition from unemployment to employment and to inactivity of men and women aged 16-29 who have already acquired some work experience. By imposing additional restrictions on the sample used, we are able to concentrate on a group of young workers who are highly attached to the labour market.[3] This also warranties lower heterogeneity in the group of young job seekers whose labour force transitions we study. We apply a discrete-time duration model, and use matched files from the Spanish Labour Force Survey (EPA).

In the following section, we present a discrete hazard model under competing risks. In section 3 we describe the data and indicate the criteria for sample selection. In section 4 we estimate the model and give results on labour force transitions of experienced young workers. Finally, in section 5, we summarize the results and conclude. Appendix 1 contains some relevant features of labour market policies and institutions, and an overview of youth unemployment over the last two decades in Spain.

2. A Discrete Hazard Model for Labour Force Transitions

As described in the next section, we can study transitions from unemployment by using quarterly matched files from EPA. Because in this date set we are able to follow individuals for a maximum

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[2] Alba-Ramírez (1996a) finds that the exit rates from unemployment is about twice as high among experienced young workers than among first job seekers. For instance, 9.3 per cent of teenagers looking for the first job in the second quarter of 1995 were reported employed three months later; the equivalent transition rate was 23.7 per cent for teenagers who had some work experience. For persons aged 20-29 the differences in transitions probabilities were also quite important.

[3] Lynch (1989) adopts a similar strategy in her study of unemployment duration among U.S. young men and women.

of six quarters, it is possible to apply a discrete-time duration model. In a discrete-time model, an

individual's unemployment spell is represented by a random variable, T, which can take on positive

integer values only. We observe a total of n independent individuals (i = 1, ...,n) beginning a some

natural starting point t = 1. In the data described in the previous section, such point is the quarter

when the worker becomes unemployed. Each observation continues until time t_i, at which point an

event occurs or the observation is censored. The unemployment spell can end, T = t, in any of j

states: j = 1 (employment) or j = 2 (inactivity). The observation is censored when the surviving

individual is observed at quarter t_i but not at quarter $t_i + 1$. It is assumed that the time of censoring

is independent of the hazard rate for the occurrence of events, at least after controlling for other

factors. Also, it is assumed that the set of two states at which unemployment spells can end is

absorbing and equal for each person.

For modelling the transition from unemployment to employment or to inactivity, we define

the discrete transition rate. For the i-th person the transition rate into state j (j=1,2) in interval t,

$\lambda_{ij}(t_i)$, is the conditional probability of a transition to state j in this interval, given that individual i has

been unemployed until t.[4]

(1) $\lambda_{ij}(t_i|x_i(t_i)) = Pr[T_i = t_i,\ J = j | T_i \geq t_i,\ x_i(t_i)]$

where $x_i(t_i)$ is a vector of covariates for individual i, some of which can be time-variant. Assuming

that the competing risks are independent, the hazard rate from unemployment is given by

(2) $h_i(t_i|.) = \sum_{j=1}^{2} \lambda_{ij}(t_i|.)$

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[4] According to the simple job search model (Lippman and MacCall (1976)), given a stationary reservation wage, the re-employment probability is the results of two probabilities, the rate at which offers arrive times the probability that a random offer is accepted. In our competing risk model, unemployed workers can either obtain a job or leave the labour force.

The conditional probability of remaining unemployed in period t is given by

(3) $\quad Pr[T_i > t_i | T_i \geq t_i.] = 1 - h_i(t_i |.)$

And not conditioning on the individual's previous unemployment history, the survivor function up to period t is

(4) $\quad Pr[T_i \geq t_i |.] = S(t_i |.) = \prod_{\tau=1}^{t-1} (1 - h_i(\tau |.))$

Then, the transition into state j in period t can be expressed in terms of the respective transition rate and the survivor function as

(5) $\quad Pr[T_i = t_i, J = j |.] = \lambda_{ij}(t_i |.) \prod_{\tau=1}^{t-1} (1 - h_i(\tau |.))$

To derive the likelihood function for this model, we need to define the following indicator function:

δ_{ij} = 1, if individual i makes a transition to state j

$\quad$ = 0, otherwise

Assuming independence of all observations, the sample likelihood function is given by

(6) $\quad \mathcal{L} = \prod_{i=1}^{n} \prod_{j=1}^{2} [Pr(T_i = t_i, J = j |.)]^{\delta_{ij}} [Pr(T_i > t_i |.)]^{1 - \delta_{ij}}$

In terms of the transition and hazard rates, we can write

(7) $\quad \mathcal{L} = \prod_{i=1}^{n} \prod_{j=1}^{2} [\lambda_{ij}(t_i | x_i(t_i))]^{\delta_{ij}} [\prod_{\tau=1}^{t-1} (1 - h(\tau | x_i(\tau)))]$

Now we just need to specify the transition rates and derive the corresponding survivor function. Then,

we can plug both expressions into the likelihood function in order to estimate the coefficients. For the transition rate we chose the logistic specification that, with multiple events, generates the multinomial logit model (Maddala (1983)). It allows for the three possible labour force states considered: employment, inactivity, and unemployment, which is the base category.

For individual i, the transition rate to state j in period t is given by

$$(8) \quad \lambda_{ij}(t_i | \alpha_j(t_i), z_i(t_i)) = \frac{\exp(\alpha_j(t_i) + \beta_j' z_i(t_i))}{1 + \sum_{j=1}^{2} \exp(\alpha_j(t_i) + \beta_j' z_i(t_i))}$$

and the survivor function is

$$(9) \quad S(t_j|.) = \prod_{t=1}^{t-1} \left[\frac{1}{1 + \sum_{j=1}^{2} \exp(\alpha_j(t_j) + \beta_j' z_i(t_j))} \right]$$

where $\alpha_j(t_i)$ is a vector of dummies variables for each period (quarter) workers remain unemployed, $z_i(t_i)$ is a vector of explanatory variables which may vary with time, β_j is the vector of parameters to be estimated, and by definition, $x_i(t_i) = [\alpha_j(t_i), z_i(t_i)]$. Note that $\alpha_j(t_i)$, known as the baseline hazard, describes in a flexible way the time dependency of the transition process. We specify it by quarter dummies which coefficients for transitions to employment can differ from those for transitions to inactivity.

In the discrete hazard model described above, each discrete time unit for each individual is treated as a separate observation or unit of analysis. Foer the data set used in this article, which is described in the next section, the dependent variable or unit of analysis is the individual's quarter of unemployment. It takes the value of 1 if a certain event occurred to that worker in that time unit, and

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zero otherwise. As workers are interviewed every three-month intervals, the event that takes place is observing a transition either to employment or to inactivity.

It can be shown that the likelihood function for the discrete-time model as expressed by equation (7) is equivalent to a multinomial logit model where, assuming independence between the three states, all individual observed time units are pooled (Allison (1982)). As Allison points out, it is important to realize that, "...unlike the likelihood function for the continuous-time model, the discrete-time likelihood cannot be factored into separate components for each of the m kinds of events. Hence ML [maximum likelihood] estimation must be done simultaneously for all kind of events." (p. 88).[5] Accepting the model specification, the estimates for α_j and β_j posses the standard properties of the maximum likelihood estimations.

3. Data and Sample Selection

The Labour Force Survey (EPA) has been used for figures in the Appendix. The same data is used for analysing labour marker transitions of young workers. This is possible by taking advantage of the panel structure of the EPA, in which a sixth of the sample (some 60,000 households) rotates every quarter. This allows to follow a person for a maximum of six quarters. With some restrictions, EPA files suitable for studying labour market transitions have just 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.

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[5] It should also be pointed out that when there are many kinds of risks or events it becomes cumbersome to specify each type of them in order to apply the multinomial methodology. In this case, a simpler alternative analogous to that of the continuous time method, consists of treating as censored those spells which end in states different from the one under consideration. The binomial model can then be used. However, unlike the multinomial logit estimator, in this case the binomial estimator is not fully efficient. See Allison (1982), p. 90 and references there in. Also, see Narendranathan and Stewart (1993) and Jenkins (1995) for expositions of the binomial model.

The time period available expands from the second quarter of 1987 to the fourth quarter of 1996. 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 recovery since 1994. Therefore, the data permit to analyse transitions over a complete cycle of the Spanish economy. We do this by pooling all individuals whose labour force state we observe for at least two consecutive quarters beginning at the first interview. Restricting the sample to youth aged 16-29, Table 1 shows the result of the attempt to match individual observations from the second quarter of 1987 to the fourth quarter of 1996. Conditioning on being in the household at the first interview, we obtain a sample of 22,706 unemployed men and 25,426 unemployed women, aged 16-29.

As indicated in Table 1, in selecting the sample for this article we first consider all unemployed persons whose labour force state is observed at the first and one or more posterior adjacent quarters. About 65 percent of individuals were observed for the six consecutive quarters - maximum length of permanence in the sample of a rotating panel. Spells that follow a missing quarter, even though they may be adjacent, are ignored. For instance, and individuals who is in the survey at the first and the second quarter, is missing in the third, and re-appear in the fourth, fifth and sixth quarters is only considered for labour force transition between the first and the second quarter. If he or she remains unemployed in the second quarter, the observation will be censored. Note in Table 1 that there are 549 men and 656 women that fit such pattern. After applying this selection criteria, we obtain a sample of 20,418 men and 22,693 women.

The next step in sample selection consists of retaining those unemployed persons who indicated to have worked before, resulting a sample of 24,536 observations. Of these, we consider only those who, when first interviewed, reported to have lost or left the previous job 3 or fewer months ago -7,660 observations. Because we wish to analyse a sample of unemployed youths who are highly attached to the labour force, we exclude 322 women and 418 men because they indicated

to be attending school when first interviewed. Moreover, we use a question on the person's activity before starting job search in order to retain in the sample only those who reported to be working, 95 and 92 percent of men and women, respectively. By deleting observation for which relevant variables are missing, we end up with a sample of 4,055 men and 2,419 women, which generate 9,208 and 6,125 quarterly spells (time units) of unemployment for men and women, respectively. Of the 4,055 men in the sample, we observe a complete spell for 3,061 -2,656 become re-employed and 405 inactive. Of the 2,419 women in the sample, 1,611 completed their spell by finding a job (1,249) or leaving the labour force (362).

4. Estimation and Results

In order to estimate the discrete-time hazard model described in section 2, subject to the available information indicated in the previous section, we consider the following groups of explanatory variables:[6]

(i) *Demographic variables*. Dummies for three age groups, four educational levels, and marital status.

(ii) *Previous job characteristics*. Dummies for type of previous employment (wage and salary job in the private or the public sector, or self-employment); five dummies for duration of the previous job; three dummies for reasons for loosing or leaving the previous job; and five sectoral dummies.

(iii) *Variables related to job search*. Dummies for the worker's situation at the public employment office (registered receiving benefits, registered without benefits, and not registered); four dummies for willingness to accept a job that implies: change of residence, a different activity than in the previous job, lower wage, or less qualified occupation; three dummies for type of job searched

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[6] As indicated earlier, these variables are deemed to pick up the effect of personal and other characteristics on the probability of receiving a job offer and the probability that the offer is acceptable; and, also, on the probability of leaving the labour force. Unfortunately, we lack information on the individual's region of residence and household composition to control for local labour market conditions and family structure.

(full-time only, full-time but part-time would be acceptable, and other possibilities).

(iv) *Calendar time dummies*. Four seasonal dummies indicating the quarter in which the worker became unemployed, and year dummies for the year in which that event took place. The latter are intended to control for the business cycle and other factors that changed over the period of study.

(v) *Aggregate variable*. As an alternative to year dummies, we use the quarterly rate of change of the gross domestic product (GDP) from the second quarter of 1987 to the sixth quarter of 196. This is indented to pick up the effect of the business cycle on labour market transitions.

(vi) *Unemployment duration dummies*. Three dummies to control for the number of months unemployed at the time of the first interview (one, two, or three months); and five quarterly dummies, one for each quarter the worker remains unemployed after becoming so during the three months preceding the first interview.

Given the properties of the discrete-time duration model described in section 3 (Allison 1982), together with the discrete nature of the data, we estimate a multinomial logit model on pooled individual time-unit observations. Unemployed workers in the initial quarter can become either employed or inactive in any of the subsequent quarters.[7] We follow Flinn and Heckman (1983) to make sense of this distinction, contrary to what is claimed by Clark and Summers (1982), for example. The former rejects the hypothesis that unemployment and out of the labour force are behaviorally meaningless distinctions. In this article, distinguishing between transitions to employment or transitions to inactivity along the unemployment spell is particularly useful for taking into account that some young workers may stop searching to return to school or become inactive as a consequence of conscription. Also, a transition from unemployment to out of the labour force can occur if the

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[7] A shortcoming of observing labour force states in one-quarter intervals is that we certainly miss some of the very short employment or inactivity spells.

person falls discouraged in looking for work.[8]

Before discussing the estimation results, it is useful to look at the empirical hazard rates from unemployment to employment or to inactivity. The hazard (or transition) rate from state i to state j is defined as the proportion of persons who enter state j in time t+1 given that they had remained in state i until time t. Because we know an individual's labour force state for a maximum of six consecutive quarters, we can calculate hazard rates over five quarterly periods.

Table 2 presents the Kaplan-Meier estimates or empirical hazard rates from unemployment to employment and from unemployment to inactivity -averaged for the period 1987-1996- for men and women. It is clear that men are more likely to become employed and less likely to leave the labour force than women. From the first to the second quarter, about 33 percent of men and 22 percent of women become employed, and 4.6 percent of men and 7.3 percent of women become inactive. As time passes, the probability of leaving unemployment diminishes for both sexes, particularly since the fourth quarter. On the other hand, the hazard rates from unemployment to inactivity do not change much over the unemployment spell.

Negative duration dependence is common in unemployment duration studies. Usually, this phenomenon persists after controlling for observed heterogeneity. Experience tells us that by introducing unobserved heterogeneity in the model its estimation becomes more complicated without adding much to the main results.[9] In this paper we have opted for keeping the statistical model as

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[8] Although it is hard to discriminate between the different reasons for becoming inactive, an advantage of the competing risk model is that we can obtain a neater result for the re-employment probability because we estimate the discrete-time hazard model simultaneously for the two kinds of exits from unemployment.

[9] Bover et al. (1997) estimate a discrete-time duration model with unobserved heterogeneity on a data set that, as the one used in this paper, was obtained from matched EPA files. When taking into account unobserved heterogeneity, their model does not produce significantly different results from those obtained with a general hazard model. In fact, as Meyer (1990) shows, this is likely to happen

simple as possible; and, at the same time, we try to reduce heterogeneity by considering a sample of

youths deemed to be highly attached to the labour market. Tables 3 and 4 contain the proportions for

each variable and the estimated coefficients with their asymptotic t-statistics in absolute values. In

what follows, we first indicate the resulting relationship between explanatory variables and the

probability of making a transition to either employment or inactivity. Then we focus on the predicted

hazards rates for workers with specific characteristics.

4.1. *Individual and Other Characteristics*

Age has quite different effects on transitions by gender. Men aged 16-19 exhibit a lower probability

of re-employment and higher probability of becoming inactive. On the other hand, women aged 25-29

are less likely to become employed, and age has no effect on transitions to inactivity. Secondary

vocational and university education have strong effects on the probability of obtaining a job among

women. However, the dummy for university education obtains a negative and slightly significant

coefficient for men's transition to employment. Married men and married women are, respectively,

more and less likely to become employed. Also, married women exhibit a strong probability of

leaving unemployment to become inactive.

As for the impact of previous job characteristics on the transition rates, some results are

worthy to mention. Among men, the re-employment probability is higher for workers whose previous

job tenure was 3-11 months. For both, men and women longer tenure at the previous job means

longer unemployment duration. To interpret this results one should take into account that longer

duration of the previous job entails more specific human capital, and also make workers more likely

to be eligible for unemployment compensation. Note that more than 70 percent of unemployed youth

stayed in their previous job for less than one year, which is an indication of very high turnover among

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when the hazard rate is allowed to be nonparametric, which is the case with the Cox proportional
hazard model and the discrete-time duration model.

our sample of unemployed youths. On the other hand, men who previously worked in "other services" are found to be less likely to find work.

Variables deemed to be related to job search provide some interesting results. Both, men and women, not registered at the public employment office are more likely to find work and also to become inactive. However, being registered and receiving benefits does not obtain a significant coefficient in the multinomial regressions. The three dummies that indicate the situation with respect to the public employment office, as quarterly reported, are allowed to vary over the unemployment spell.[10] The dummy equals to one if the worker is willing a accept a job that implies a lower than expected wage, given his or her qualifications, obtains a positive and significant coefficient for men and an insignificant coefficient for women. This could be interpreted as a more flexible reservation wage among unemployed men. Also remarkable is the result that workers who indicate to be searching for a full-time job only (15.5 percent of men and 12.7 percent of women) show a higher probability of finding work. The coefficient is highly significant for men and slightly significant for women. The dummy that equals one if the worker is looking for a full-time job but he or she would be ready to accept a part-time job is also associated with a higher probability of re-employment among male job seekers.

Regarding calendar time variables, becoming unemployed in the fourth quarter reduces significantly the probability of employment among men and increases significantly the probability of inactivity among women. Year dummy variables, aimed at picking up the cyclical effect on transition rates, show some differences by gender. Compared to 1987, the transition to employment declined

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[10] By examining quarterly data on the worker's relation with the public employment office, we found quite bizarre patterns. Many changes in benefit receipt throughout the unemployment spell seem difficult to explain. Thus, instead of making any hard-to-justify adjustment, we decided to use the row data on the worker's status at the employment office. Alba-Ramírez (1996b) indicates some caveats in using matched EPA files to study the effect of unemployment compensation on unemployment duration.

significantly for men who became unemployed in 1992 or after, and for women who became

unemployed in 1990 or after. This can be seen more clearly in Figure 1, where the predicted

transition rates to either state are depicted for the reference worker defined below. The figure shows

that transition to employment reached a minimum in 1992 for men and in 1993 for women. On the

other hand, the transition to inactivity is increasing over the period among men and more stable

among women, except for the strong increase in the probability of leaving the labour force in 1991

and 1992.

4.2. Predicted Hazard Rates

Tables 5 and 6 present the predicted hazard rates decomposed into transitions to employment and

transitions to inactivity for men and women, respectively. The first row of each table and panel

contains quarterly hazard rates of the reference group, and the remaining rows refer to predicted

hazards calculated for workers with specific characteristics, keeping other explanatory variables

constant. The difference between hazards of the reference group and that resulting from changing a

specific covariate indicates the latter's marginal effect on the probability of making a transition at a

given quarter of the unemployment spell.

For the reference group,[11] the probability of becoming employed during the second quarter

after entering unemployment (a spell duration of 3 to 6 months) is 42 percent among men and 38

percent among women. On the other hand, the probability of leaving the labour force in such quarter

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[11] The characteristics of the reference group are: Aged 20-24, academic secondary education, not
married, lost a temporary job, employed for 3-5 months in a previous public-sector job, the job was
in manufacturing, registered without benefits, not willing to move to another area, not willing to
accept a change in activity, not willing to accept a lower than expected wage, not willing to accept
a lower occupation, looking for any job regardless of work-time, and became unemployed in the first
quarter of 1987. As the sample is composed of new entrants to unemployment -when first interviewed
the person has been unemployed for 3 or fewer months- in order to calculate predicted hazards the
reference worker is set to have an initial unemployment duration equal to that of the average worker
in the sample. This is reasonable because we compute quarterly hazards in order to be consistent with
the nature of the data.

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is 2 and 3 percent for men and women respectively. For those who remain unemployed when observed at the second quarter, the probability of re-employment declines significantly for men (by 10 percent), and stays constant for women. From the third to the fourth quarter the transition rate to employment increases a one percentage point among men, and decreases by a one percentage point among women. Thereafter, Tables 5 and 6 show that the re-employment probability strongly declines for both men and women. Whereas 38 percent of unemployed men become employed from the third to the fourth quarter of the unemployment spell, three months later the re-employment probability is 26 percent, which represents a decline of 37 percent. For women, the corresponding decline in the re-employment probability is 16 percent, from 37 to 31 percent. From the fifth to the sixth quarter - the maximum period for which we can follow unemployed people- the decline in the re-employment probability is 12 percent for men, and 29 percent for women.

The effects of characteristics on the hazard rate have been indicated in the previous sub-section. Tables 5 and 6 contain the predicted hazards for some specific characteristics which obtained significant coefficients in the estimated multinomial models. For women aged 16-19 the hazard to employment is not significantly different from that for 20-24 year old women. However, among men teenagers exhibit a lower probability of becoming employed. University education strongly increases the hazard to employment among women but reduces it for men. One possible explanation for this result could be related to a high reservation wage among men with university education.[12]

Being married increases the hazard to employment among men, and decreases the hazard to employment among women. At the beginning of the unemployment spell, the referred increase for men is 15 percent and the decrease for women is 22 percent. However, married women are more likely to leave the labour force than unmarried women. Because we lack other controls for women's

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[12] For men aged 20-64, Bover el al. (1997) find a relatively weak effect of education on the probability of leaving unemployment. For university education, they find a decreasing effect over the unemployment spell.

family responsibilities, the dummy for being married is likely to pick up the probable existence of children and the constrains they impose on female labour force participation. Without information on household composition we are unable to control for factors that affect the labour force decisions of married women, as for instance spouse's labour market status.

As indicated earlier, variables related to job search produce interesting results. We do not obtain that registered unemployed youth receiving unemployment insurance benefits exhibit a lower probability of re-employment.[13] As explained, this could be caused by measurement error in the variable that indicates the individual's situation at the public employment office.[14] However, it is clear that unemployed young persons who are not registered (6.5 of men and 7.3 percent of women in the sample) are significantly more likely to become employed and, at the same time, more likely to leave the labour force than those registered. This result, that holds for both men and women, suggests that there may be two types of non-registered workers: more employable and less attached to the labour force, two attributes that are hard to separate from these workers' ineligibility for unemployment benefits.

Men willing to accept a job that pays a lower than expected wage are about 9 percent more likely to become employed when observed the second time after entering unemployment. The marginal probability keeps roughly constant over the unemployment spell. This results is consistent

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[13] For a sample of U.S. youths, Lynch (1989) finds that various measures for benefit receipt do not appear to significantly affect their re-employment probability.

[14] Bover et al. (1997) use a measure for benefit receipt that differs from the quarterly row data in order to correct for delay in receipt of benefits attributable to the administrative process for entitlement. They establish that unemployed workers without benefits when first interviewed and reported receiving benefits when subsequently interviewed are considered to be benefit recipients from the beginning of the unemployment spell to the last quarter in which the worker declares to be receiving benefits. As indicated by Alba-Ramirez (1996b), this may cause a bias in the estimated effect of benefit receipt on re-employment probabilities. Another reason for not adopting such strategy in this paper is that, for youth, we have observed erratic changes in benefit status throughout the unemployment spell.

with a job search model where workers who are willing to reduce their reservations wage should leave unemployment earlier (Burdett and Vishwanath (1988)).

Of the characteristics included in the multinomial regression, that of searching for a full-time job only (14.5 percent of men and 13 percent of women) has the strongest impact on the re-employment probability among men. As compared with the reference group, the corresponding hazard is 21 percent higher at the beginning of the unemployment spell, and about 29 percent higher when survivor workers are observed six quarters later. The dummy also obtains a positive and significant coefficient for women. Men who are looking for a full-time job but would be willing to accept a part-time job (30 percent of the sample) are also more likely to find work. This result may indicate that workers who would only accept a full-time job search more intensively, have higher income needs, or simply are more confident about their job prospects.

4.3. *The Effect of the Business Cycle*

As the data used correspond to a period in which the Spanish economy experienced high GDP growth, entered in a deep recession, and slowly recovered, we are able to study how this economic cycle affected the transitions out of unemployment of young workers. In principle, one may think that downturns reduce the re-employment probability as firms stop hiring and lay off workers. On the other hand, the recovery brings more job offers. However, workers are more likely to accept job offers when they are harder to come by, and the opposite is true when the situation of the labour market improves. With regard to the transition out of the labour force, one can expect that it increases as a result of discouragement in sluggish labour markets, whereas economic recovery makes job search more successful.

As indicated earlier, a first manner of taking into account the effect of the business cycle on the transitions from unemployment is by using year dummies. In this respect, the last two rows of

Tables 5 and 6 (Figure 1) document the fact that 1992 is a through in the business cycle, and that by 1995 the re-employment probabilities for the reference group were still well below those for 1987, particularly among men (see Figure A1). This is also reflected in the latter's higher probability of leaving the labour force. As labour market conditions deteriorate, unemployed youth face harder re-employment probabilities and become more prone to stop actively looking for a job. Note, however, that this "discourage effect" is less apparent for women than for men, after controlling for observed heterogeneity.

Although, year dummies are very useful to show the timing of business cycle effects on labour market transitions, there is the problem that other factors associated with calendar time cannot be separated from the genuine business cycle effect. For this reason, we use an alternative manner of picking up such an effect which consists of replacing year dummies with the GDP rate of change, measured at every quarter over the same quarter of the previous year. It is important to realize that the indicated variable is allowed to vary over each individual's unemployment spell. The use of GDP growth instead of year dummies is the only difference of the new specification compared with those presented in Tables 3 and 4.[15] Given that the coefficients for the other variables changed little in comparison with those reported in Tables 3 and 4, in Table 7 we only present results for GDP growth.

The business cycle, as measured by GDP growth, has a strong effect on the re-employment probability of men and of women. An increase of 4 percentage points in GDP increases the hazard rate of the first quarter by 7.65 percentage points (24 percent) for men, and by 7.75 percentage points (31 percent) for women. The positive effect of GDP growth on the re-employment probability is

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[15] Based on this new specification, we tried several dummies to control for institutional changes occurred during the data period. For instance, the reform of the unemployment compensation system carried out in April of 1992. Results did not show any significant dummy effect, except for a reduced probability of leaving the labor force among women since the second quarter of 1992. Also, when we included an interaction term between GDP growth and unemployment duration, it was negative but insignificant for men and negative and slightly significant for women.

stronger among workers unemployed for longer time. At the fifth quarter of unemployment, 4 points

of increase in GDP increases the re-employment probability by 31 percent for men and by 38 percent

for women.

As regards the relationship between GDP growth and the transition to inactivity, Table 7

indicates that there is no effect for men and a negative effect for women. Women's transition to out

of the labour force declines by almost a third when the GDP increases by 4 percentage points. This

results is not surprising because it is well known that women's labour force participation tends to be

highly responsive to economic fluctuations and the state of the labour market.

5. Summary and Conclusions

This articles has addressed some dynamic aspects of the youth labour market in Spain. The focus has

been on assessing the impact of a number of variables on the re-employment probability of

experienced young men and women. We used matched EPA files in order to pool all possible rotating

panels for the period that extends from the second quarter of 1987 to the fourth quarter of 1996. By

employing a discrete-time hazard model, within a competing risk framework, we were able to analyse

transitions from unemployment to both employment and inactivity. In order to reduce heterogeneity

in the sample of experienced young workers, we imposed some restrictions for warranting high labour

market attachment.

Among the main results we should emphasize the following: (1) Women with university

education exhibit a significantly higher re-employment probability, whereas university education is

associated with a significantly lower re-employment probability among men; (2) contrary to the result

for women, marriage increases the re-employment probability among men; (3) men who are willing

to accept a job that entails a lower than expected wage show a higher probability of finding work; (4)

men and women who indicate to be looking for a full-time job exhibit a higher probability of re-

employment, which is particularly stronger among men; (5) predicted hazard rates show duration dependence for men from the very beginning of the unemployment spell, whereas for women such duration dependence becomes apparent only for those who remain unemployed for more than three quarters; (6) Growing GDP improves the re-employment probability among men and women, but it reduces the probability of leaving the labour force only among young women.

A shortcoming of this article is the impossibility to control for local labour market conditions and family structure. The nature of the data used prevented us from doing so. However, the results presented in this paper shed some light on labour force transitions of experienced young workers in Spain, where youth unemployment is much higher than in other European countries. It would probably be too ambitious to derive public policy recommendations from the results obtained in this article. For more confident policy implications, further work is needed to clarify the observed differences in the effects of formal education and of job search related variables on the re-employment probabilities. Along these same lines, improving the currently available matched EPA files to include relevant missing information will be helpful in future work.

Appendix 1. Youth Labour Market Policy and Performance

As a background for the analysis undertaken in this paper, we present relevant features of labour market policy and performance of young workers. In this Appendix we do not distinguish between those who possess and do not possess previous work experience. It is important to take into account that specific policy measures tend to be targeted at youth in general. The aim of devoting part of this Appendix to youth labour market policies is just to provide a glimpse of the institutional framework, rather than to assess how effective policy measures have been in helping youth to find work.

1. Youth Labour Market Policy: Training and Apprenticeship Contracts

A major policy event in recent history of the Spanish labour market is the regulation of fixed-term employment contracts enacted in October of 1984. The Government's objective was to promote employment by providing a legal instrument for circumventing firing restrictions on permanent workers: Fixed-term contracts allow firms to hire workers whose employment relation can be terminated at a certain date with a severance payment much lower than that for permanent workers. Up to 1996, successive labour market reforms did not alter the nature of the distinction between temporary and permanent employment in the labour legislation.[16]

As far as youths are concerned, the 1984 decree regulated two specific types of fixed-term contracts: the apprenticeship contract ("contrato para la formación") and the training contract ("contrato en prácticas"). The apprenticeship contract was designed for 16-20 years old workers who lacked formal qualifications. This contract holders were supposed to complement work with training. The time devoted to the latter activity was not remunerated, and could range from one fourth to one half of total time stipulated in the contract.

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[16] A more recent labour market reform, in 1997, created a new type of indefinite contract with lower severance pay for certain groups of unemployed workers. We just mention this reform, but do not go into more details because it lies outside the time framework of our study.

The training contract was thought of for young workers with a formal qualification that could be applied at the work place. This contract could only be given to young people within the first four years following graduation from an academic or vocational institution. In 1988, a new regulation of the training contract gave employers special incentives to hire graduates from vocational schools registered as unemployment for two o more years and first job seekers also registered for two o more years.

The duration of training and apprenticeship contracts could be of 3 months to 3 years. Firms hiring workers under these types of contracts were given fiscal incentives and subsidies: In particular, reductions of employers' contribution to the Social Security of 75 to 100 per cent; as well as subsidies depending on targeted groups, contract duration, and firm size.

Recent labour market reforms have substantially modified the regulation of apprenticeship and training contracts. The reductions in Social Security contributions were suppressed in April of 1992 for both types of contracts, and other fiscal incentives were linked to net employment creation and the conversion of temporary workers into permanent status. The apprenticeship contract was finally abolished in December of 1993, and in its place the government created the so called "contrato de aprendizaje", a legal figure that already existed in other European countries.

The new apprenticeship contract ("contrato de aprendizaje") has features which are quite different from the "contrato de formación". Its duration is between 6 months and 3 years, and can be used for hiring workers aged 16-25 years. At least 15 per cent of working time must be devoted to training, and the wage cannot be lower than 70, 80 and 90 per cent of the minimum wage in the first, second and third year of the contract duration, respectively. Apprenticeship contract holders are

not entitled to unemployment benefit upon subsequent unemployment.[17]

2. *Youth Labour Market Performance*

The upper panel of Figure A1 shows that youth unemployment rate increased continuously from the mid-1970's to the mid-1980's, it declined thereafter and increased significantly in the most recent economic downturn. A sluggish labour market gave way to the recovery in employment growth since 1995. It is to be noted that the teenager unemployment rate has been more responsive to the business cycle than unemployment of 20-24 year olds: both groups' unemployment rates get closer in upswings and distance in downturns.

The lower panel of Figure A1 presents the ratios between youth and adult unemployment rates. We can observe a decline in the relative unemployment rate of youths, which is more pronounced for teenagers, particularly among women. In the most recent years, it can be detected a worsening of the relative employment performance of 16-19 year olds. This has to be assessed against the background of a diminishing supply of young workers, due to a declining trend in their share of total population, and in their labour force participation. For instance, the presence of teenagers in total labour force went from 7.7 per cent in 1985 to 4.1 per cent in 1995.

Furthermore, because young workers stay longer in the educational system, they enter the labour force better equipped with formal education. This should have contributed to improve the youth labour market in general. However, the Spanish unemployment rate of young workers was roughly the same in 1995 than it was ten years earlier. This suggests that it has become harder for young people to find work in the 1990's than in the 1980's.

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[17] The number of training and apprenticeship contracts signed since January 1985 increased until the end of the 1980s and leveled off just until the date in which subsidies and Social Security relief were eliminated. The new apprenticeship contract, however, has not been as successful as its predecessor.

Given that the present article focuses on experienced young workers, it will be useful to provide an indicator of their weight in total youth unemployment. Table A1 contains the proportion of job seekers with work experience by three age groups, as well as the unemployment rate of each age group from 1987 to 1995. As reflected in the table, in 1987 young job seekers with experience counted for one fourth of unemployed teenagers, and one half of the unemployed aged 20-24 years. The proportion increased significantly up to 1993 and declined thereafter. For a given age group, the proportion of experienced young job seekers tends to be lower among women, with more marked gender differences for older groups. The cross tabulation of age and sex by years indicates that a higher proportion of first job seekers corresponds to higher unemployment rate. However, by looking at age-sex groups one can see that similar unemployment rates are associated with higher proportions of first job seekers in the 1980s than in the 1990s.

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Table 1. Distribution of Unemployed Workers Aged 16-29 According to the Sequence of Interviews

Quarterly interviews	Men			Women		
	Freq.	Percent	Cum.	Freq.	Percent	Cum.
1.....	1067	4.70	4.70	1282	5.04	5.04
12....	774	3.41	8.11	977	3.84	8.88
1.3...	76	0.33	8.44	75	0.29	9.18
1..4..	34	0.15	8.59	35	0.14	9.32
1...5.	18	0.08	8.67	20	0.08	9.40
1....6	32	0.14	8.81	34	0.13	9.53
123...	648	2.85	11.67	874	3.44	12.97
12.4..	61	0.27	11.94	80	0.31	13.28
12..5.	33	0.15	12.08	39	0.15	13.44
12...6	46	0.20	12.28	45	0.18	13.61
1.34..	54	0.24	12.52	72	0.28	13.90
1.3.5.	17	0.07	12.60	29	0.11	14.01
1.3..6	13	0.06	12.65	18	0.07	14.08
1..45.	40	0.18	12.83	32	0.13	14.21
1..4.6	22	0.10	12.93	16	0.06	14.27
1...56	43	0.19	13.12	51	0.20	14.47
1234..	643	2.83	15.95	825	3.24	17.71
123.5.	70	0.31	16.26	117	0.46	18.17
123..6	110	0.48	16.74	101	0.40	18.57
12.45.	77	0.34	17.08	103	0.41	18.98
12.3.6	40	0.18	17.26	71	0.28	19.26
12..56	123	0.54	17.80	116	0.46	19.71
1.345.	129	0.57	18.37	166	0.65	20.36
1.34.6	33	0.15	18.51	47	0.18	20.55
1.3.56	55	0.24	18.75	72	0.28	20.83
1..456	106	0.47	19.22	128	0.50	21.34
12345.	958	4.22	23.44	1237	4.87	26.20
1234.6	556	2.45	25.89	620	2.44	28.64
123.56	574	2.53	28.42	643	2.53	31.17
12.456	633	2.79	31.20	736	2.89	34.06
1.3456	549	2.42	33.62	656	2.58	36.64
123456	15072	66.38	100.00	16109	63.36	100.00
Total	22706	100.00		25426	100.00	

Note: In the first column a dot indicates that the interview is missing. Numbers in bold are quarters (or spells) used to generate the sample for estimations.
Source: Matched EPA files, second quarter of 1987 to fourth quarter of 1996.

Table 2. Empirical Hazard Rates from Unemployment to Employment and to Inactivity. Pooled Sample of Workers 16-29 years of age

	Men		Women	
	Employment	Inactivity	Employment	Inactivity
Initial Sample:	4,055		2,419	
Follow-up Quarters				
Second	33.19	4.61	22.28	7.31
Third	28.50	3.78	21.79	5.59
Fourth	28.45	5.25	20.84	5.23
Fifth	18.77	3.99	16.59	5.87
Sixth	16.15	3.87	11.11	5.45

Note: The hazard rate is defined as the proportion of persons who change labour force satatus each quarter, after having remained unemployed up to that same quarter.
Source: Matched EPA files, second quarter of 1987 to the fourth of 1995.

Table 3. Determinants of Transitions from Unemployment to Employment and to Inactivity. Multinomial Logit Estimates and Asymptotic t-Statistics. Men

	Sample proportions	To employment		To inactivity	
		Coeff.	|t|	Coeff.	|t|
Constant		-.3027	1.78	-3.3150	8.11
Aged 16-19	.1499	-.1393	1.84	1.455	1.67
Aged 20-24	.4591				
Aged 25-29	.3908	-.0045	0.08	-.4418	2.86
Primary education or less	.3523	-.0608	1.13	.0745	0.63
Secondary (academic)	.4995				
Secondary (vocational)	.1227	.0343	0.45	-.1138	0.60
University	.0254	-.3436	1.98	.4201	1.12
Married	.1695	.2555	3.85	-.1285	0.62
Previous job characteristics					
Self-employment	.0198	.1036	0.50	-.2402	0.48
Wage/salary (Public)	.1095				
Wage/salary (Private)	.8705	.0181	0.20	-.0995	0.47
Tenure 0-2 months	.3226	-.1615	2.21	-.2220	1.34
3-5	.1911				
6-11	.2139	-.0653	0.87	.1133	0.70
12-35	.1835	-.1878	2.32	-.0090	0.05
36+	.0887	-.3118	2.97	-.3623	1.30
Lost a temporary job	.8322				
Layed-off	.0852	-.0862	0.95	.0404	0.19
Other	.0825	.0297	0.30	.0483	0.22
Farming/fishing	.2060	.1312	1.48	.1960	0.99
Manufacturing	.1779				
Construction	.2522	-.0268	0.35	-.4086	2.27
Trade/hotel	.1940	-.0709	0.89	.1823	1.13
Other services	.1696	-.1773	1.97	-.2085	1.01
Job search related variables					
Receiving benefits	.3553	-.0057	0.10	-.0174	0.13
Registered without benefits	.5799				
Not registered	.0647	.3323	3.42	.4609	2.58
Willing to change residency	.5090	.0056	0.10	.1833	1.58
Willing to change activity	.7944	-.0213	0.29	.0274	0.16
Willing to accept lower wage	.5981	.1531	1.80	.1040	0.55
Willing to accept lower category	.6716	-.1463	1.57	-.1693	0.81
Look for full-time job only	.1548	.3527	5.19	.1199	0.76
Part-time job acceptable	.2982	.1159	2.10	-.0589	0.47
Seasonal and yearly variables					
First quarter	.2505				
Second quarter	.2218	.0181	0.26	.0698	0.44
Third quarter	.2391	.0407	0.59	.1378	0.89
Fourth quarter	.2884	-.1309	1.93	-.0218	0.14
Year 1987	.0691				
Year 1988	.1028	-.0145	0.12	.1809	0.60
Year 1989	.1152	.0130	0.11	.3780	1.32
Year 1990	.1048	-.0352	0.31	.3157	1.06
Year 1991	.1194	-.1266	1.12	.6691	2.43
Year 1992	.1333	-.4289	3.77	.5484	2.00
Year 1993	.1466	-.3870	3.46	.3330	1.20
Year 1994	.1184	-.2412	2.10	.9770	3.60
Year 1995	.0900	-.2186	1.79	.7003	2.38
Unemployment duration dummies					
Unemployed 1 month or less	.4410				
Unemployed 2 months	.2994	-.1792	3.18	-.1228	0.97
Unemployed 3 months	.2591	-.2743	4.54	-.1109	0.82
Quarter 1	.4403				
Quarter 2	.2468	-.1920	3.28	-.2624	1.90
Quarter 3	.1530	-.1438	2.06	.1242	0.84
Quarter 4	.0925	-.6900	7.22	-.2717	1.38
Quarter 5	.0672	-.8657	7.46	-.2795	1.22
Proportion of cases		.288		.044	
Log likelihood		-6,724			
Number of individuals		4,055			
Number of quarterly spells		9,208			

Note: The sample is composed of unemployed men aged 16-29. See text for details on criteria for sample selection.
Source: Matched EPA files, second quarter of 1987 to fourth quarter of 1996.

Table 4. Determinants of Transitions from Unemployment to Employment and to Inactivity. Multinomial Logit Estimates and Asimptotic t-Statistics. Women

	Sample proportions	To employment		To inactivity	
		Coeff.	|t|	Coeff.	|t|
Constant		-.4221	1.81	-3.0238	7.26
Aged 16-19	.2099	.0124	0.14	.1639	1.01
Aged 20-24	.4382				
Aged 25-29	.3518	-.1327	1.64	.0574	0.43
Primary education or less	.2339	-.0456	0.53	-.1130	0.83
Secondary (academic)	.5322				
Secondary (vocational)	.1642	.2296	2.40	-.3502	1.95
University	.0695	.4887	3.59	-.2250	0.85
Married	.2524	-.3057	3.37	.9722	7.54
Previous job characteristics					
Self-employment	.0200	-.4233	1.35	-.0987	0.24
Wage/salary (Public)	.1333				
Wage/salary (Private)	.8465	-.0209	0.17	-.1066	0.52
Tenure 0-2 months	.2754	-.1177	1.22	.0575	0.34
3-5	.2132				
6-11	.2207	-.1571	1.61	-.0114	0.06
12-35	.1797	-.3100	2.81	-.4018	1.99
36+	.1108	-.3215	2.31	.1042	0.48
Lost a temporary job	.8109				
Layed-off	.0742	-.1432	1.03	.2626	1.24
Other	.1147	-.1083	0.90	.4313	2.38
Farming/fishing	.1338	.0724	0.56	.7113	3.40
Manufacturing	.2055				
Construction	.0150	-1.3038	2.74	.6181	1.65
Trade/hotel	.3093	-.0166	0.17	.2698	1.61
Other services	.3361	-.1133	1.08	-.1164	0.62
Job search related variables					
Receiving benefits	.3178	-.1187	1.49	-.1383	1.07
Registered without benefits	.6091				
Not registered	.0729	.4884	4.09	.4137	2.10
Willing to change residency	.3007	.0707	0.95	.1445	1.12
Willing to change activity	.7484	-.0879	0.94	-.1578	1.02
Willing to accept lower wage	.5506	-.0156	0.13	-.1492	0.78
Willing to accept lower category	.6111	.0394	0.32	.1856	0.92
Look for full-time job only	.1268	.1633	1.61	.1538	0.90
Part-time job acceptable	.3391	-.0042	0.05	.0793	0.65
Seasonal and yearly variables					
First quarter	.2558				
Second quarter	.2117	-.0373	0.38	.1200	0.71
Third quarter	.2643	-.1400	1.51	.1692	1.06
Fourth quarter	.2680	-.0971	1.03	.3360	2.16
Year 1987	.0582				
Year 1988	.0937	-.1627	1.01	-.3805	1.18
Year 1989	.1131	-.0950	0.61	-.0290	0.10
Year 1990	.1283	-.3715	2.35	-.1850	0.65
Year 1991	.1289	-.4550	2.83	.4378	1.61
Year 1992	.1172	-.4448	2.72	.6409	2.39
Year 1993	.1691	-.6640	4.24	.0952	0.35
Year 1994	.1120	-.4224	2.60	.1480	0.51
Year 1995	.0791	-.2978	1.71	.1407	0.44
Unemployment duration dummies					
Unemployed 1 month or less	.4464				
Unemployed 2 months	.3028	-.0954	1.22	-.0322	0.25
Unemployed 3 months	.2506	-.0888	1.08	-.0546	0.39
Quarter 1	.3949				
Quarter 2	.2509	-.0022	0.02	-.2734	1.95
Quarter 3	.1621	-.0464	0.49	-.3221	1.93
Quarter 4	.1111	-.3166	2.71	-.2076	1.11
Quarter 5	.0808	-.7772	5.06	-.3588	1.64
Proportion of cases		.204		.062	
Log likelihood		-4,245			
Number of individuals		2,419			
Number of quarterly spells		6,125			

Note: The sample is composed of unemployed women aged 16-29. See text for details on criteria for sample selection.
Source: Matched EPA files, second quarter of 1987 to fourth quarter of 1996.

Table 5. Predicted Hazard Rates for Men

	Quarters				
	1⇒2	2⇒3	3⇒4	4⇒5	5⇒6
1.- FROM UNEMPLOYMENT TO EMPLOYMENT					
Reference Group	41.62	37.23	38.06	26.50	23.23
Aged 16-19	35.74	32.14	32.12	22.37	19.48
University education	33.17	29.31	29.92	20.14	17.46
Married	48.03	43.45	44.36	31.84	28.15
Previous job tenure = 12-35 months	37.15	32.96	33.75	23.01	20.05
Not registered at INEM	49.34	44.87	45.58	33.10	29.34
Willing to accept a lower wage job	45.29	40.80	41.63	29.53	26.01
Search for a full-time job only	50.25	45.68	46.53	33.83	30.02
Year 1992	31.16	27.47	28.00	18.72	16.19
Year 1995	35.62	31.69	32.19	22.00	19.14
2.- FROM UNEMPLOYMENT TO INACTIVITY					
Reference Group	2.05	1.71	2.45	1.98	2.05
Aged 16-19	8.66	7.26	10.18	8.24	8.48
University education	3.50	2.88	4.13	3.23	3.31
Married	1.61	1.36	1.94	1.62	1.69
Previous job tenure = 12-35 months	2.18	1.81	2.60	2.06	2.12
Not registered at INEM	2.76	2.34	3.33	2.81	2.95
Willing to accept a lower wage job	2.12	1.78	2.55	2.10	2.19
Search for a full-time job only	1.96	1.66	2.37	2.00	2.10
Year 1992	4.07	3.35	4.79	3.72	3.80
Year 1995	4.39	3.64	5.19	4.12	4.24

Source: Calculated from estimation results shown in Table 3.

Table 6. Predicted Hazard Rates for Women

	Quarters				
	1⇒2	2⇒3	3⇒4	4⇒5	5⇒6

1.- FROM UNEMPLOYMENT TO EMPLOYMENT

	1⇒2	2⇒3	3⇒4	4⇒5	5⇒6
Reference Group	38.47	38.68	37.68	31.49	22.57
Aged 16-19	38.57	38.83	37.83	31.61	22.68
University education	50.71	50.88	49.81	43.02	32.36
Married	29.97	30.50	29.66	24.16	16.92
Previous job tenure = 12-35 months	31.77	31.89	30.96	25.45	17.77
Not registered at INEM	49.88	50.24	49.20	42.35	31.84
Willing to accept a lower wage job	38.25	38.43	37.42	31.26	22.38
Search for a full-time job only	42.22	42.48	41.45	34.97	25.45
Year 1992	27.78	28.15	27.32	22.17	15.36
Year 1995	31.55	31.78	30.87	25.33	17.72

2.- FROM UNEMPLOYMENT TO INACTIVITY

	1⇒2	2⇒3	3⇒4	4⇒5	5⇒6
Reference Group	2.85	2.19	2.12	2.60	2.54
Aged 16-19	3.33	2.55	2.48	3.04	2.97
University education	1.84	1.41	1.37	1.74	1.79
Married	7.98	6.19	5.99	7.17	6.84
Previous job tenure = 12-35 months	2.15	1.64	1.59	1.92	1.83
Not registered at INEM	3.43	2.64	2.57	3.25	3.33
Willing to accept a lower wage job	2.48	1.90	1.84	2.26	2.21
Search for a full-time job only	3.10	2.38	2.31	2.86	2.84
Year 1992	6.10	4.71	4.55	5.43	5.13
Year 1995	3.63	2.79	2.69	3.25	3.10

Source: Calculated from estimation results shown in Table 4.

Table 7. The Effect of the Business Cycle on Young Workers' Transitions From Unemployment

	Men		Women	
	To Emp.	To Inact.	To Emp.	To Inact.
Coeff.	.082	-.021	.090	-.072
t	7.3	-0.9	5.6	-2.8

Predicted transition rates by quarters

Δ GDP = 0 %

	Men		Women	
1-> 2	31.83	4.10	25.03	5.01
2-> 3	28.30	3.34	25.42	3.79
3-> 4	28.95	4.80	24.74	3.62
4-> 5	19.54	3.74	20.01	4.22
5-> 6	16.98	3.83	13.67	4.00

Δ GDP = 4 %

	Men		Women	
1-> 2	39.48	3.36	32.78	3.42
2-> 3	35.52	2.77	33.14	2.58
3-> 4	36.30	3.98	32.33	2.46
4-> 5	25.32	3.21	26.69	2.94
5-> 6	22.21	3.31	18.70	2.85

Note: The reported coefficients correspond to those obtained for the GDP growth, defined as the rate of change in each quarter over the same quarter a year earlier. The model specification for results shown in Tables 3 and 4 was used, where the year dummies have been replaced with the GDP growth as a measure of the business cycle. The reference group for calculating the predicted transition rates has the same characteristics than those indicated in note 11.
Source: Matched EPA files, second quarter of 1987 to fourth quarter of 1994.

Table A1. Percentage of Experienced Job Seekers and Unemployment Rate by Age Groups and Gender, 1987-1996

1. Men

	Proportion of Experienced Young Workers			Unemployment Rate		
	16-19	20-24	25-29	16-19	20-24	25-29
1987	27.9	53.8	75.9	45.5	35.1	22.1
1988	31.9	54.4	76.6	41.3	32.6	19.8
1989	37.9	56.7	75.8	31.1	26.0	17.8
1990	46.9	63.0	77.3	30.6	23.8	15.7
1991	49.7	66.5	80.6	28.4	24.0	15.9
1992	48.2	73.7	84.9	31.4	26.6	18.1
1993	53.6	78.2	86.1	46.4	36.3	25.0
1994	41.4	73.8	86.0	47.7	39.1	26.3
1995	40.4	67.9	81.9	46.1	33.2	24.7
1996	40.8	66.4	81.6	45.2	33.8	24.7

2. Women

	16-19	20-24	25-29	16-19	20-24	25-29
1987	20.0	39.4	57.8	55.0	46.7	31.5
1988	29.9	40.2	58.9	53.0	46.0	34.1
1989	32.0	43.9	61.3	45.5	41.3	31.7
1990	34.8	51.7	65.7	42.8	37.7	30.0
1991	41.0	57.1	65.4	40.1	35.9	29.3
1992	43.4	62.0	69.6	42.8	38.6	30.1
1993	44.4	64.4	73.6	54.3	43.7	34.8
1994	39.4	60.1	73.8	58.1	46.8	37.8
1995	34.1	56.0	71.7	55.1	45.8	36.7
1996	32.2	56.2	70.3	58.1	45.5	35.0

Source: EPA's second quarter of each year.

1. -From unemployment to employment

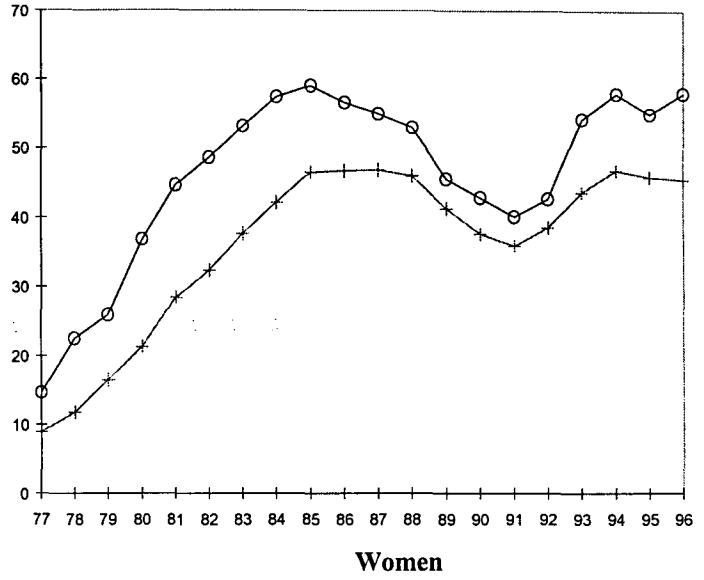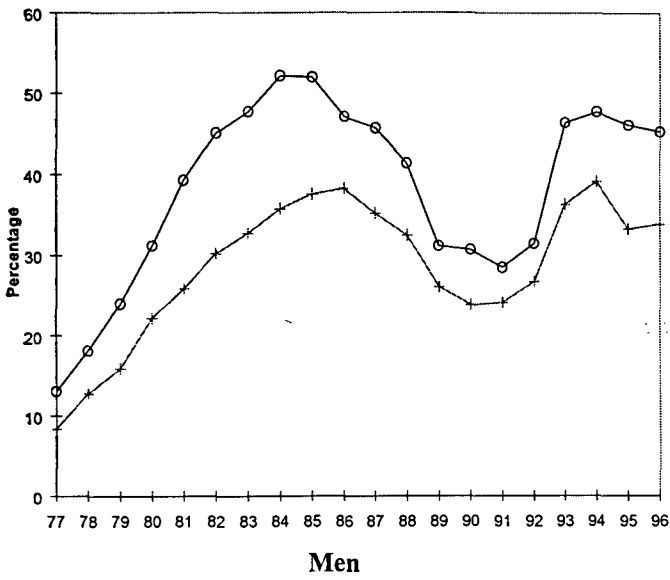
2. -From unemployment to inactivity

Figure 1. Predicted Transitions Rates

Source: Calculated from estimation results shown in Tables 3 and 4.
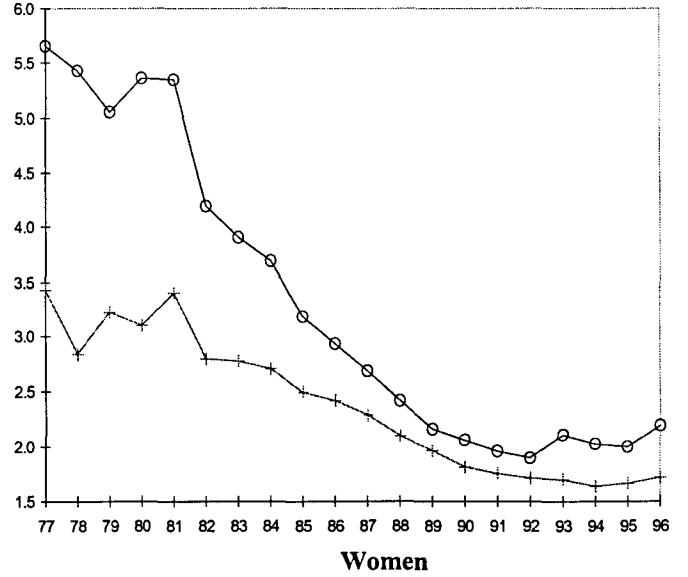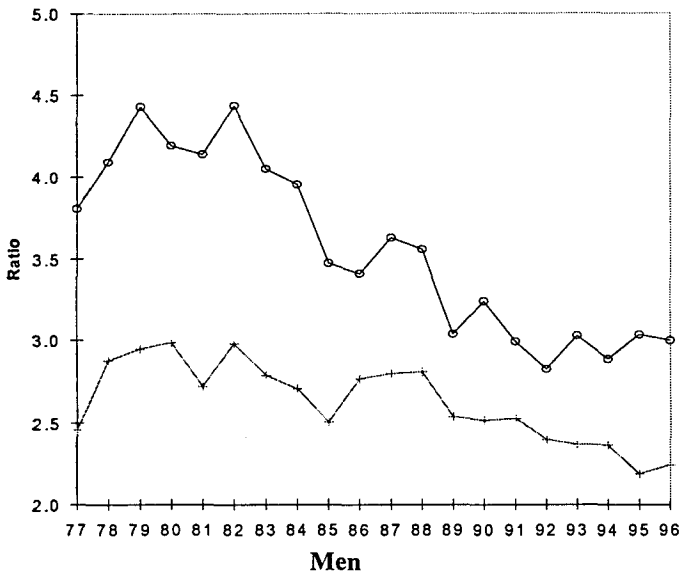
Figure A1. Unemployment Rates of Young Workers and Relative Unemployment Rates According to the Labour Force Survey (EPA), 1977-1996

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