Entry of young economists into working life: analysis of the determinants of first unemployment duration

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This article studies the determinants of the unemployment duration for a cohort of young graduates: those who obtained their university degree in Business, Economics, Management and Marketing in the academic year 2001/2002 at the University of Seville, Spain. After estimating an ordered logit model for duration data, we conclude that graduates’ final marks effect a positive impact on their labour insertion. Working while studying and the educational level of the mothers of the graduates also decrease the duration of this first unemployment. No significant effect is found for gender or type of degree dummies.

I. Introduction

Participation in higher education has increased in almost all European countries in the last two decades; increases in enrollment due to higher participation rates rather than an increase in population at the relevant ages. In this context of expansion of higher education, new cohorts of graduates may have greater difficulties to find quickly their first job in comparison to young people in the past. On the other hand, the convergence among the national systems of higher education by 2010 seems inevitable and desirable. The Ministers of Education of 29 Members of the European Union signed the Declaration of Bologna in 1999 that states the importance of obtaining the harmonic development of a European area of higher education by 2010. In this context of an employment/competitiveness oriented university system, the systematic and periodic evaluation of the transition from university to work becomes also vital.

In order to study the entry of university graduates into working life, in this article we focus on a cohort of young economists: those who completed degrees in the economic area at the University of Seville, Spain. Young economists’ transition from higher education to work is analysed using a graduate survey, which among other questions contains information about the duration of unemployment prior to the first job (months). An ordered logit model is used to model duration data. One of the implications of our empirical findings is that the type of degree may not have any impact on the unemployment duration for graduates.

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II. Data Collection

Although ‘first destination surveys’ are common in other European countries (e.g. United Kingdom), they are absent in Spain. Consequently, we had to design our own survey. More precisely, we designed a questionnaire, which was sent to graduates from the Seville University Management School – graduates in the four possible degrees: Business Studies, Economics Sciences, Management Sciences and Marketing Studies. In order to have a broad perspective (job history), only former students who had finished their studies in academic year 2001/2002 were selected. The questionnaire was sent by postal mail to the whole population of these graduates (982 individuals) in 2006. We obtained a response rate somewhat superior to 20%, an acceptable rate considering the extension of the questionnaire. Based on the survey, we have been able to reconstruct the academic and job history of these graduates.

Interviewees were requested to inform on the time spent looking for work (months) after graduation – excluding casual jobs. Thus, information on the active job search time, before the first employment, would measure the duration of the first unemployment after the graduation. While the overall unemployment for graduates in Social Sciences is high in Spain, nevertheless Table 1 shows that most of graduates in our sample had been seeking work after graduation for 6 months or less only – a nonnegligible 16% found a stable job immediately after graduation (in less than a month). By degrees, a first observation is that the quickest transition from the University to the labour market appears for Business Studies. On the other hand, both the degrees in Management Sciences and Marketing Studies show relatively high quotas for a two-month duration of first unemployment. Lastly, an important percentage of those who studied Economics Sciences (a more theoretical degree) had been looking for a first job for 7 months or more.

III. Explaining the Time-to-first-job: Methodology and Empirical Findings

The job search theory provides a valuable framework for the analysis of duration of unemployment (Stigler, 1962; McCall, 1970; Mortensen, 1970). In the applied works, since Lancaster’s (1979) paper on unemployment, duration models have become commonly used in the literature – see Kiefer (1988) for a survey. Having a reference this framework, the primary aim of this section is to explain the time-to-first-job after graduation. As a first approach, we have estimated the survival function by means of the Kaplan–Meier nonparametric method; the results appear in Fig. 1. The survival function shows the probability that an unemployment duration is greater than a determined number of months. The results in this respect show that the survival function descends very quickly in the first months. This indicates that graduates in our study easily leave the first unemployment. In fact, almost 85% of graduates take less than 12 months to find their first job – and almost 70% less than 6 months, by which we may state that the unemployment of the economists of our sample is basically frictional.

In order to determine the factors, which explain the duration of the first unemployment spell of young graduates, we use the ordered logit model as
proposed by Han and Hausman (1990). A duration model, in its statistical form, is referred to as a hazard function. The hazard function may be used to describe the probability that a job search activity duration will end in a specific time interval, conditional on the fact that the duration has not ended in previous time intervals. This conditional probability is an important concept because the probability that an event ends in a certain time period is clearly dependent on the length of time the duration has lasted. The ordered logit model is a semi-parametric hazard model in which the baseline hazard is nonparametric, while the function of variables takes a particular functional form, which is typically linear.

Han and Hauserman (1990) proved that the ordered logit model also can be used to describe duration data. The focus of the model is on the probability that an event ends after different periods of time. The data to estimate this model are assumed to be generated as observations of failure times over discrete periods \( t = 0, 1, 2, \ldots, J \) for individuals \( i = 1, 2, 3, \ldots, n \). This is indicated as follows:

\[
\begin{align*}
0 & \quad T_1 & \quad T_2 & \quad T_3 & \quad \ldots & \quad T_J \\
& \quad 0, 1, 2, 3, \ldots, J
\end{align*}
\]

The lower line shows the values taken on by the dependent variable in the model. The dependent variable is zero if the job search activity is ended by the individual in the first time period, one if the job search activity is ended in the second time period, and so on. The model is based on the following specification:

\[
y = \beta X_i + \varepsilon_i \\
y_i = 0 \text{ if } y \leq \mu_0, \\
1 \text{ if } \mu_0 < y \leq \mu_1, \\
2 \text{ if } \mu_1 < y \leq \mu_2, \\
\ldots, \\
J \text{ if } y > \mu_{J-1}
\]

where \( y_i \) is the observed time period of job search for individual \( i \); the explanatory variables \( X \) may consist of characteristics of the job search and personal characteristics of the job seekers; and \( \beta \) indicates the parameter values of these variables. It is assumed that the explanatory variables of each individual \( X \) do not change with time. The error component reflects a number of different aspects that cannot be observed by the researcher, such as measurement errors, environmental circumstances and omitted explanatory variables. The ordered logit model results from the assumption that the distribution of the error component follows a standard logistic distribution. The \( \mu \)'s are unknown parameters, estimated for each time period.\(^2\)

An advantage of this model is that the parameters of the variables are invariant to the length of the

\(^2\) The estimates are obtained by using maximum likelihood. At the end of the estimation, estimates of the hazard rates can be computed by using the predicted cell probabilities for the ordered logit model at the means of the explanatory variables.
observed time periods – it circumvents also problems associated with heterogeneity. In our study, the dependent variable – the duration of unemployment prior to the first job (months) – has been grouped in seven time intervals. Table 2 shows the explanatory variables – observe that they do not change while graduates are looking for a job. In particular, we have considered: gender, final average marks, university degree, the level of studies of the mother, and finally two dichotomous variables indicating if the interviewee worked – or was enrolled in internship – while studying.

Estimation of the model parameters is also shown in Table 2. Which factors accelerate and which decelerate the transition from higher education to the labour market of the graduates in our survey? The results shown in Table 2 clearly demonstrate that one key factor that explains the time to first employment of higher education graduates is the final average marks: graduates with better marks increase the probability of finding the first job sooner, ceteris paribus. A first interpretation to this finding would be that, without previous job experience, academic records act as a positive signal on the expected productivity of the individual for the employer. However, we must look for an alternative interpretation, as the great majority of the interviewees (71%) states that average marks were not important in their access to the first employment. The alternative interpretation may be related to the ability, ambition, etc. of the job seekers. Students with better records are, in general, more ambitious, anxious and involved individuals, and may be searching more or more efficiently (greater ability to obtain relevant information on vacancies or better aptitudes to perform in an interview).

Second, our estimates show that, all things equal, working while studying and getting internships are important determinants of the university-to-work transition. Notably, graduates who work while studying accelerate the process of insertion in the world of work. This effect can be due to the increase of the market value of acquired experience, but possibly also to the contacts that graduates with experience have established with the companies.

Third, as regards the mother’s education, the findings in Table 2 suggest that graduates whose mother has primary education or less have a slower transition from university to the world of work with respect to those individuals whose mother had middle high school. This result, which also was found by others (e.g. Biggeri et al., 2001), reveals the well-known fact that well-educated parents pass on their children information about the conditions of the labour market, as well as skills appreciated in the workplace (communication, negotiation, etc.). This variable approximates socio-economic and cultural level of origin of the student. The educated families with a more prosperous socio-economic condition tend to provide more opportunities so that their members find adequate jobs: as stated by interviewees, one of the main means of access to the first job is relatives and personal contacts.

Contrary to the received view of women facing greater difficulties than men in finding adequate jobs, in our study the estimated coefficient associated to the variable gender is not statistically significant, so the transition is neither faster nor slower for men and women.

Finally, statistically significant differences in the access to the first employment are not observed according to the type of degrees of the economic area. This seems to confirm, in the context of our sample, the hypothesis of the existence of a homogenous labour market for the economists coming from different degrees, at least concerning labour insertion issues.

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1 Estimation of the hazard function can also be carried out following parametric methods of survival. However, these models present two main problems: (i) unobserved heterogeneity, essentially the result of an incomplete specification; and (ii) the form adopted by the hazard function (exponential, Weibull, log-normal, etc.). To avoid these problems, especially the second one, Cox’s (1972) model of proportional hazards is very popular in survival studies. In practice, however, we must test if the assumption of proportional hazards is satisfied by our data. Also, as we have censored data – all graduates had completed their first period of unemployment – a discrete model of duration of unemployment is preferable.

2 In order to avoid the multicollinearity problem, only the educational level of the mother has been included in the analysis.

3 As we work with a homogenous sample of graduates who finish their studies simultaneously and operate in a local labour market, we do not include context variables, such as, the rate of youth unemployment.

4 Similar results are reported by Biggeri et al. (2001).

5 Good grades (or marks) can be seen as a positive signal of productivity or effort by the employers, if they associate educational success with success in the workplace. Employers can be expected to recruit those applicants they consider to be both most productive and least costly for the kind of work required by the job.

6 We also include Business graduates in this market, in spite of being a short-cycle degree. Lassibille et al. (2001) and Fernandez (2006) even find evidence that short-cycle degrees are more labour oriented and young people attending them find a job more quickly. In our sample, being a short-cycle graduate improves labour insertion, although not statistically significantly – as shown in Table 1, most of 23% of these graduates found employment in less than a month. As a consequence, we may conclude the need to increase the labour orientation of the long-cycle degrees included in our sample.
IV. Concluding Remarks

Based on a graduate survey, we analyse the entry into the employment of young economists, who graduated from the University of Seville in the academic year 2001/2002. In order to determine the factors, which explain the duration of the first unemployment spell, we specify and estimate a flexible parametric proportional hazards model. A number of conclusions can be drawn from our study.

First, graduates’ final marks accelerate the labour insertion: the greater the mark, all other constant, the faster the exit from unemployment.

Second, working or being enrolled in training while studying accelerates the process of insertion in the world of work. Therefore, new graduates entering the labour market without previous work experience are in a weaker position.

Third, the lower the education of the mother – proxy for the socio-economic background of the student – the longer it takes to obtain the first employment. This result calls for a greater emphasis in equal opportunity policies.

Finally, statistically significant differences in the access to the first employment are not observed by gender or according to the type of completed university studies. Thus, there seems to exists a homogenous labour market for economists coming from the different ‘related’ degrees. The relative speed to obtain their first work provides an indication of the relative smoothness of their transition to the job market – frictional unemployment, basically.

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References


