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STAYING-ON AT SCHOOL AT SIXTEEN: THE IMPACT OF LABOR MARKET CONDITIONS IN SPAIN

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Abstract

Despite the recent increase in educational investment, Spain still ranks towards the bottom of the OECD country list for the level of its human capital stock and the new inflow of high school graduates. We address this issue by empirically investigating the impact of family characteristics and local labor market conditions on the demand for secondary education beyond the age of 16. Our results show that the record levels of Spanish youth unemployment, that should discourage an early entry into the labor market, do not seem to have enhanced substantially the probability of staying on at school at 16. It seems instead that parents' education is the main determinant of enrollment rates in Spain. This sort of inter-generational dependence clearly implies a strong persistence in the Spanish stock of human capital, and a slow convergence towards OECD standards.

Keywords: enrollment rates, local labor markets.

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1. Introduction

Over the last twenty years, unemployment has become the most important problem faced by the Spanish economy. The last two decades have also been characterized by a process of educational expansion reflected in the growth of enrollment in post-compulsory education. This expansion has been more spectacular than in any other OECD country (OECD, 1986). However, the proportion of youngsters who stay on at school at ages 16 to 18 is still, by OECD standards, low in Spain.

In this paper we investigate the main determinants of the decision to stay in school at age 16, paying special attention to the importance of labor market conditions. On the one hand, it can be assumed that high unemployment rates are driving young people to postpone their entrance into the labor market, by reducing the opportunity cost of their educational investment. This tends to generate a positive effect of current youth unemployment on the probability of staying on at school.

On the other hand, higher prime age unemployment may imply tighter budget constraints for families with teenage children, therefore discouraging enrollment into secondary education. Furthermore, an increase in adult unemployment may increase the probability of expected future unemployment, which might reduce the returns to education, and hence reduce the demand for schooling (see Micklewright, Pearson and Smith, 1990).

Figures 1 and 2 show the evolution of unemployment rates and enrollment rates (at sixteen) for males and females, over the last fifteen years. At the beginning of the 1980s unemployment rose very rapidly in Spain, surpassing the 20% mark in 1985. At that moment, the rate of joblessness for youngsters (aged 16 to 19) was well above 50%, when only 60% of sixteen year olds were staying at school. From 1985 to 1991, the economic recovery brought strong employment growth. However, the unemployment rate did not fall below 12% for males and 24% for females. It can be shown that unemployment rates did not fully reflect the substantial employment growth of this period due to two facts. First, because of a rapidly rising number of women entering the labor force. Secondly, because very large cohorts, belonging to the Spanish baby-boom of the sixties, were entering the labor market in the

eighties. In the last five years, unemployment has risen again, reaching a 30% rate for females. Moreover, the unemployment rate for young workers has gone up by more than 10 points, up to a level of 46% for males and 56% for females.

Figure 1: Enrollment rates and unemployment rates for men, 1980-1995. Source: EPA and Education Statistics.

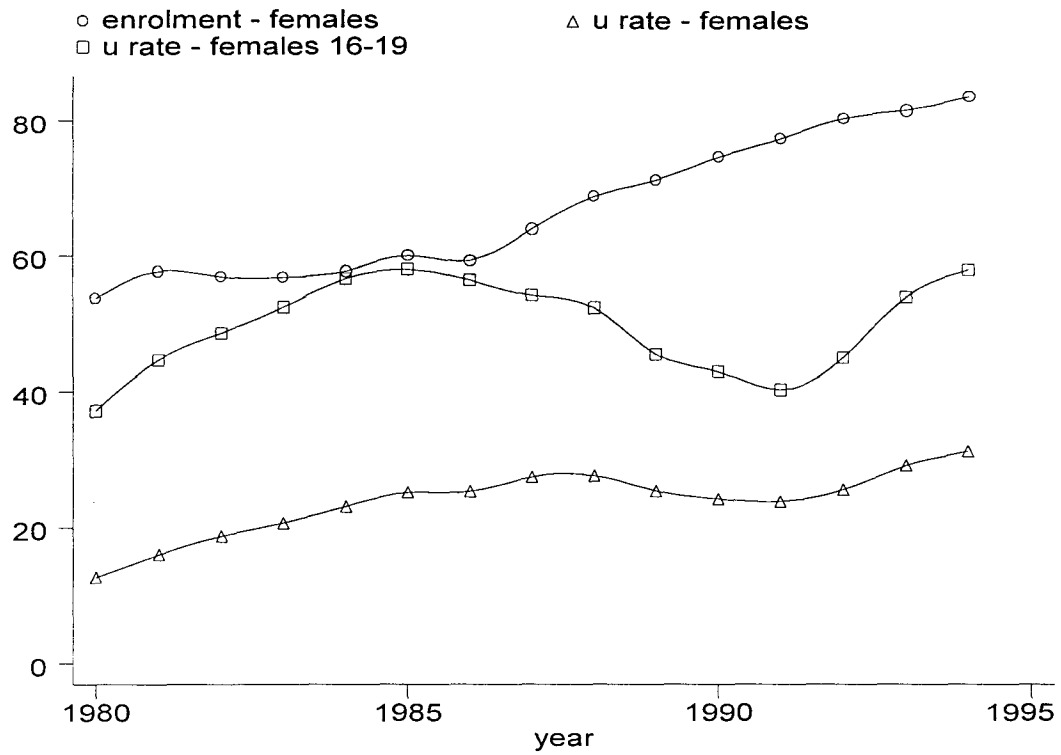

Figure 2: Enrollment rates and unemployment rates for females, 1980-1995. Source: EPA and education statistics.

It should be remarked that in 1980 both enrollment rates and unemployment rates of males and females were quite similar. By 1995, the situation has changed dramatically against women, whose unemployment rate is considerably higher than that for males. Also, their enrollment rate is currently six points higher (83.7) than that of males (77.7). It is therefore worth asking if labor market conditions exert different effects on the behavior of young men and women.

The organization of this paper is as follows. In the next section the main characteristics of secondary education in Spain are summarized and Spanish enrollment rates are compared with those of other OECD countries. Section three describes the data sets to be used in this paper. Section four presents the estimates of probability models for the decision of staying on at school. In section five multinomial models contrast the demand for education of youngsters with the alternative states of working and being out of work. The last section concludes and summarizes the main findings.

2. Secondary education in Spain and the OECD

The data to be analyzed in this paper refers to the educational system established in Spain in 1970. In 1990 a new law (LOGSE) has been approved but the implementation of the new programs is gradual. It is expected that in 1999 the new primary and secondary education will completely replace the present ones.

Before the approval of the new law, education was compulsory only until age fourteen. However, youngsters were not allowed to enter the labor market before they were 16 years old. Furthermore, the new educational programs have been operating on an experimental basis since 1986 approximately.

The LOGSE implies not only the lengthening of compulsory education to 10 years (from age 6 to 16), but also the postponing of the decision to follow vocational education, and the reshuffling of vocational programs, which are now to be organized around specialized, flexible "modules".

Enrollment at the second stage of secondary education has increased at a very fast pace over the last fifteen years. In Table 1 we can see the evolution of net enrollment rates for ages 16 to 18, by type of program. During the 80's, the proportion of students enrolled in Vocational Programs remained stable among males at around 1/3. For female students, however, the importance of vocational education increased from 20 to over 25%. In the 1990s, the situation has changed slightly. The experimental implementation of the new secondary education leads to an increase in the number of students who follow a general (academic) curriculum until age 18.

The educational reform introduces new vocational programs of higher education, open to students who have completed general secondary education until age 18. It is expected that

these new programs will be an attractive option to university education for students graduating from high school (see San Segundo, 1997).

Compulsory education is financed with public funds, both in public and in most private schools, since the approval of a financing law in 1985.[1] However, post-compulsory schooling is only free of charge in public schools, although it is subsidized in some private centers. The percentage of secondary students enrolled in public schools has been growing steadily over the last 30 years. Today, more than 74% of students attend public schools, although regional differences are very significant. Thus, in the Basque Country this percentage falls to around 50%, and it is 60% in Barcelona. In several regions of the South of Spain (Andalucia, Extremadura, Castilla-La Mancha), public schools enroll at least 80% of secondary students.

Furthermore, over the last 15 years, grant programs have been expanded and they provide some financial help for more than 20% of secondary school students, at the post-compulsory level. It can be concluded that the growth of the public sector, together with the expansion of subsidies to private schools and the increase in the proportion of grant holders, amount to a clear reduction of the private cost of staying at school after age sixteen.

Despite the observed growth in educational investment during the past two decades, the Spanish stock of human capital still lags behind OECD standards. Only 28% of the population aged 25-64 has completed any post-compulsory schooling (either general or vocational), while the corresponding figure for the EU is 54% and that for the whole OECD is 62%. By focusing on younger generations, who have only recently entered the labor market, one can better appreciate the effect of the education policies mentioned above. Among those aged 25-44, the proportion of those who have completed some post-compulsory schooling rises to 47%, although this figure is still quite far from the European average of 67%.

Moving finally to the current investment in education, which is the purpose of this analysis, we compare in graphs 3 and 4 enrollment rates at ages sixteen and seventeen in most OECD

[1] Most private schools are wholly funded by the State, and they must comply with State rules regarding governing bodies, admission rules, class sizes, expenditure per student and so on.

countries for 1995. At least 16 countries had enrollment rates of 90% or higher for people aged sixteen. Spain is still below the OECD mean (88%), with a rate of 83%. At age seventeen, nine countries reach rates at or above 90%, while the Spanish figure is only 75%. For ages 16 to 18, the Mediterranean countries, together with the United Kingdom, have significantly smaller enrollment rates than their main economic competitors.

These charts also depict youth unemployment rates, that seem to have a slight negative relationship with enrollment rates, although this tendency is only significant for 16 year olds. In the next sections we will explore the effects of unemployment on education demand in more detail for the Spanish case. It is possible that the unfavorable situation faced by youngsters in the labor market has been helping to reduce the gap between enrollment rates in Spain and other OECD countries. However, participation rates in upper secondary education are still low if Spain is to converge to the EU average level of human capital stocks in the next few years.

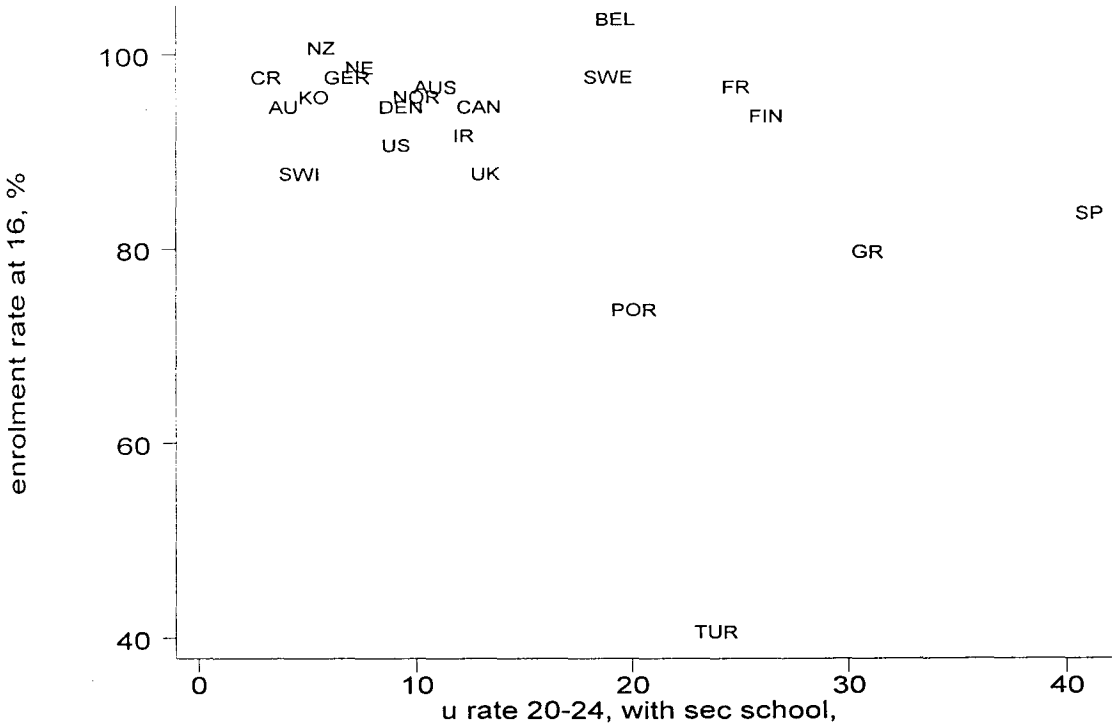

Figure 3: Enrollment rates at 16 and unemployment rates in OECD countries, 1995. Source: OECD, Education at a Glance, various issues.

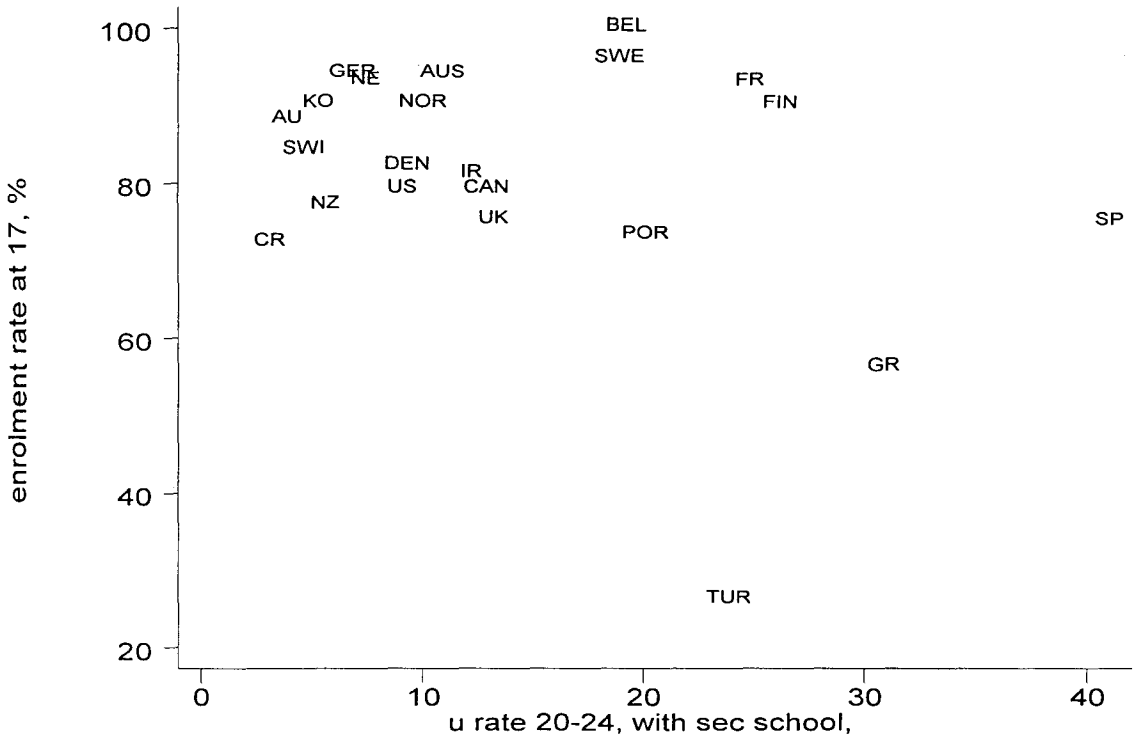

Figure 4: Enrollment rates at 17 and unemployment rates in OECD countries, 1995. Source: OECD, Education at a Glance, various issues.

3. The data

The data used in this paper come from the Spanish Labour Force Survey (EPA), that contains very detailed information about people aged 16 and over. The EPA provides abundant information on family characteristics of youngsters, with the exception of income. However, in studies that include data on family income, this variable is found to be insignificant in explaining the demand for education (see Rice, 1987). The main advantages of the EPA over other socioeconomic surveys lie, first of all, on them being available for the period 1987-1996, and, secondly, on the sample size (over 6,000 16 and 17 year olds in each wave). These two features allow us to analyze the effects of variations in regional unemployment on enrollment over a ten year period that corresponds to different moments of the business cycle (as shown in charts 1 and 2).

The sample used in this paper refers to 16 and 17 year olds surveyed in 1987, 1991 and 1996. Looking only at youngsters who were sixteen at the end (in the spring) of an academic year

could create problems in our analysis. A large part of the sample would be made of people who were fifteen at the beginning of the school year, hence they could not enter the labor market, and would be likely to stay at school until the end of the year. Therefore, we decide to inlcude both sixteen and seventeen year olds in our analysis. It can be computed that 36.3% of those aged sixteen or seventeen left school in 1987. In 1996, only 18.2% of the sample were out of the educational system.

In Table 3 we can observe that females have a higher staying-on rate than males for all the years considered except in 1987, when they are almost identical. At all levels, educational investments of women are today larger than those of men. Analyses of earnings equations confirm that economic returns to human capital appear to be higher for female workers than for males.[2] Therefore, even though consumption aspects can also be quite relevant, it appears that a human capital model can account for the different behavior of males and females over the last decade.

The probability models estimated include, first of all, a group of dummy variables that reflect father's and mother's educational levels. The next set of variables summarizes the socioeconomic status of the father (employer, professional, civil servant or wage earner in the private sector). Two dummies indicate if either parent is out of work at the time of the survey. The size of the household is introduced through two variables which measure the number of family members who are sixteen and older, and those who are younger and therefore cannot work. In the absence of direct information on households' income and assets, it is assumed that this last group can proxy budget constraints faced by large families. Two more variables control for those cases in which the youngster's father or mother are not present in the household.

The last set of variables to be introduced relate to the characteristics of the province of residence. Individual files for 1987 and 1996 were then matched with published EPA data on unemployment rates by province and sex. For 1991, the availability of data from the census

[2] See Alba and San-Segundo (1995) for an analysis of the 1990 EPA survey. San Segundo (1997) obtains similar results with the 1991 Family Budget Survey.

of population allowed to match individual files with more detailed information on unemployment rates by province, sex, age and educational qualification, and a number of other regional indicators.

It can be assumed that the situation of the labor market in the province of residence plays an important role in the decision of staying-on at school. First, because studying and working do not appear to be compatible for Spanish youngsters. Secondly, because entering the local labor market seems to be the relevant alternative to school for 16 year olds, who rarely live away from their parents. It can be noted from Table 3 that there is considerable variation in unemployment by province. Joblessness rates range from 4% to 31% for males in 1987, and from 9% to 47% for females. In 1991, the census provides detailed information about unemployment rates for youngsters who gain access to the labor market with different qualifications. The significance of these rates in explaining the decision to leave the educational system will be explored below. We will test the hypothesis that the probability of staying-on at school is positively related to the youth unemployment rate of the province of residence. It is usually argued that high unemployment reduces the opportunity cost of investing in education and therefore it encourages young people to stay in school longer.

For secondary school population, Spain also has marked regional variations in enrollment rates, with low levels of participation in the southern regions, followed by the Mediterranean area. At the other end of the spectrum we can find the provinces in the north of Spain, with higher than average enrollment rates even though some of them are part of objective-1 regions.

With our data sets we will investigate the effects of family background and regional unemployment on enrollment for boys and girls in each of the dates considered. We assess whether the general unemployment rate, and/or the unemployment rates for young workers with a high school diploma affect the decision to leave school.

Several other variables are used to represent the situation of different provinces in 1991: the (log of) per capita average disposable income, population density, and the stock of human

capital, measured by the percentage of the population who hold a university degree. Only this last variable does turn out to be significant.

4. The determinants of the probability of staying on at school

Table 4 contains the estimates of the parameters of logit functions that represent the probability of staying-on at school at age sixteen or seventeen. These results refer to 1991. Similar estimates for 1987 and 1996 are reported in Table 6. Preliminary analyses suggested that most coefficients were identical for males and females, therefore we present the results obtained with the pooled data set, although interactions between labor market variables and gender dummies are considered.

We observe that both the occupational and educational level of the household head appear as strong determinants of enrollment in secondary education. This finding is consistent with the results obtained by Micklewright (1989) for the UK, Heckman and Holz (1990) for Panama, and Kodde and Ritzen (1988) for the Netherlands. All our estimates indicate that father's and - even more - mother's educational levels exercise a powerful influence on the educational demand of youngsters. Gains from parental education seem however to fade away beyond secondary education. Alba and San Segundo (1995) and San Segundo (1997) show that human capital increases beyond secondary schooling keep raising parents' income, although they do not seem to affect the educational demand of children. This result would suggest that low educational levels of parents (below secondary education) act as a cultural barrier rather than an economic one in determining youngsters' demand for education.

Parental experience of unemployment has a significant negative effect on the probability of staying-on at school, only in the case of the father being unemployed. Mother's unemployment experience does not affect the educational decision of youngsters.

As expected, family size exerts a negative impact on the probability of staying in the educational system. This negative effect is clearly associated to the presence with younger siblings. It appears that the number of family members younger than sixteen, and therefore unable to work, proxies budgetary problems in the household.

Before analyzing the impact of regional variables on the model, column one presents the parameters estimated when we include dummies for the provinces. Given that the specification in which local labor market variables are included may produce an overestimate of the level of significance of the parameters of interest,[3] we replace such variables in regression (1) with province dummies. These provincial effects on enrollment are jointly significant. In the last four columns of the Table we introduce regional characteristics that may explain these effects. It is worth noting that the estimated coefficients for the variables that measure individual and family characteristics, as well as their significance levels, remain practically unchanged.

With regard to the relationship between local unemployment and educational demand, the results are mixed. For males, local unemployment appears to have a positive significant impact on the probability of undertaking post-compulsory education. And this result holds at all dates considered (see Table 6).[4] Furthermore, this result holds for youth unemployment rates (which may measure opportunity costs, in column 2) and for the general unemployment rate of the province (column 3) when we introduce them separately. For females, the coefficients of the unemployment variables are all negative, although only that corresponding to the general unemployment rate (column 3) is statistically significant. The fact that labor market conditions have limited impact on women's decisions to quit the educational system can be at least partly related to their low rates of labor market participation. OECD (1993) report in fact that in 1991 young women (aged 25-34) had very low participation rates both in Spain (43%) and in the rest of Europe (47%).

[3] This is due to the presence of common-group effects, in the case in which some of the right hand side variables are more highly aggregated that the left hand side variable, see Moulton (1986).
[4] Note that, for 1987 and 1996, this is the only classification avalilable for local unemployment rates.

These results somehow resemble those found by Pissarides (1981) using time series data for the United Kingdom. Unemployment rates were insignificant for females and had a positive effect for males. Also for the UK, Rice (1987) finds a positive effect of unemployment on the demand for education using micro data for 1976. However, Micklewrigth, Pearson and Smith (1990) do not find that the education demand in the period 1978-1984 was related to unemployment.

For the United States, there is also conflicting evidence regarding the effects of labor market conditions on the demand for education. Grubb (1988) finds no significant effect of local unemployment for the demand of 2-year colleges in the US. Using a data set of more than US 800 colleges, Betts and Mc Farland (1995) estimate a significant positive effect of unemployment rates on enrollment at community colleges. Similarly, Kane (1994) finds instead that state unemployment rates have a positive impact on the probability of young blacks finishing high school in the US, over the period 1973-1988. However, no effect is found on the decision to attend college.

For the Spanish case, in the last two columns of Table 4 two unemployment rates are considered simultaneously. Youth unemployment has a positive impact on the staying-on decision, while the general adult unemployment rate has a negative impact for both males and females. Therefore, it can be concluded that youth rates measure opportunity costs of studying and adult rates proxy unemployment expectations and/or budgetary restrictions faced by households suffering unemployment. According to human capital theory, a decline in opportunity costs should rise the demand for education, while an increase in the expected unemployment rate could reduce it.

In column five these effects of unemployment remain when a measure of the human capital stock of the provinces is introduced in the equation. The percentage of adults with a university degree has a significant positive effect on the probability of staying-on at school. This variable can proxy cultural and socioeconomic determinants of the demand for education, but it can also be interpreted as a measure of supply restrictions. The number of

places available in secondary education in each province (and its geographic distribution) is very likely to be determined by the intensity of educational demand in the past. There is a high degree of inertia in educational inequalities between the provinces. Other province indicator such as average income or population density were also included in the regressions but they always turned out to be non-significant.

5. Staying on at school versus working and non-working

The effect of local labor market variables on career decisions of youngsters may be more clearly assessed when we distinguish, for those that are not in the schooling system, between employment and non employment. Among those that are out of work, we do not distinguish further between job search and inactivity, given that such distinction would be particularly faint at this early stage of career (see Lynch, 1989).

Table 5 reports the results of a multinomial logit model in which we estimate the determinants of the probability of staying at school and of being out of work versus the probability of being currently employed. The specifications estimated are the same as those reported in Table 4. The effect of all family and individual controls does not change significantly across specifications, and their effect on the probability of staying on at school is very similar to what found in the binomial logit estimates. However, it is worthwhile to notice that the relationship between mother education and the probability of studying versus working is monotonic, and no longer hump-shaped as it was the probability of studying versus any alternative state. If youngsters are not at school, it follows therefore that having a mother with university education enhances their probability of being non-employed rather than working. This probably reflects the effect of a higher reservation wage for those who are brought up in a family with a higher average level of education or socio-economic status.

The number of family members, both below and above the age of 16, still has a negative impact of the probability of staying on at school, and raises instead the probability of being out of work.

Belonging to numerous households seems therefore to affect negatively youth human capital formation, via both underinvestment in education and in work experience.

Turning next to local labor market variables, we find that, whenever only one unemployment concept is included in the regression, this clearly increases the probability of being jobless, and also rises the probability of being at school, for both males and females. Both the general unemployment rate (by sex and province) and the youth unemployment rate for those with secondary education (again, disaggregated by sex and province) act therefore as proxies of the opportunity cost of staying longer in the educational system. The negative coefficient that we found on unemployment rates for females in regressions (2) and (3) of Table 4 seems therefore to capture its effect on the probability of being at school versus that of being out of work. When adult and youth unemployment are included simultaneously in regressions (3) of Table 5, their relative roles become very clear. Higher unemployment rates for young secondary school graduates reduce the incentive for an early entry into the labor market for both males and females. And, if youngsters have already left school, then they are more likely to be out of work. Adult unemployment rates act instead as a proxy for the expectation of higher future unemployment, thus lowering the expected future returns to education and the probability of being enrolled into the schooling system. However, it does not affect the probability of employment versus non-employment, therefore confirming the idea of a dual Spanish labor market, with some degree of segregation between the youth and the adult segment. These results are also robust to the introduction of the proportion of the local population with university education, that increases both the probability of being at school and that of being out of work. This latter effect might be - once more - capturing the effect of higher reservation wages in provinces with higher average levels of human capital.

We finally compute a set of predicted probabilities of being enrolled in education for different types of youngsters, using the results of regression (5). Our reference individual is a boy aged 16, whose parents have no qualifications, the mother being out of work and the father being a private sector employee, and whose household includes one individual under 16 and four individuals ages 16 or more. We also impose that the province of residence has average levels of unemployment (15.5% for adults and 31% for youngsters), and low levels of human capital

(4% of the population have a university degree). We compute that for this individual the predicted probability of being enrolled in education is 53%, while for a woman with the same characteristics it is 62%. This probability raises substantially to 85% if we allow both parents to have completed lower secondary education, and rises further to 93% if they both have university degrees. Changing father profession to civil servant instead only raises the probability of staying on at school at 64%. Similarly, changing the characteristics of the local labor market, does not affect substantially such probability. If the individual lives in a high unemployment province (with 25% adult unemployment and 50% youth unemployment) the probability of staying on at school is 60%, and if he lives in a province with 10% of college graduates the probability goes to 59%. We can therefore conclude that family education is by far and large the main determinant of enrollment rates of youths in Spain, and that very little else is explained by local labor market indicators, although these last variables have the expected qualitative sign on the enrollment probability. This sort of inter-generational dependence clearly implies strong persistence in the stock of human capital in Spain, and a slow adjustment to OECD standards.

6. Concluding remarks

Completion of upper secondary education (until the age of 18) is becoming the norm in OECD countries (see OECD, 1997). If Spain does not wish to deviate from this norm, effort should be made in order to encourage youngsters to stay at school longer.

This paper investigates empirically the impact of family characteristics and labor market conditions on the demand for secondary education after the age of 16. The decision to undertake post-compulsory education is influenced greatly by the cultural and social background of the household, with a substantial impact of parental education level on educational demand.

It is also likely that secondary school students partially base their decisions regarding additional education on observed unemployment rates. The direction of these effects confirms prior beliefs, especially for men. We find that an increase in youth unemployment rises the demand

for education, due to the reduction in opportunity costs of schooling. Additionally, a negative impact of general unemployment is identified. This effect could indicate a relationship between a rise in unemployment and a rise in unemployment expectations.

For female students, the models reveal a weak relationship between regional variations in unemployment and education demand. However, it can be observed in Figure 2 that women have both higher unemployment rates and enrollment rates than men. It appears likely that their unfavorable labor market situation exerts a significant influence on their decision to stay at school longer than before. Our probability models could only show that variations in the unemployment rates between the provinces are not very important, when females face such high unemployment rates in the last few years.

In general, we can conclude that high youth unemployment rates may have made some contribution to the rise in enrollment, and further improvements of grant policies could ease the budgetary constraints faced by students coming from low socio-economic background. However, the main determinant of the decision to stay on at school beyond the age of sixteen seems to be the educational level of parents. This finding is also consistent with the results of Kane (1994) for blacks in the US, which show that the growth of parents' educational levels is the main contributing factor towards the improvement of the educational situation of children.

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Table 1
Enrollment in higher education

	Vocational education [A]			General education [B]			[A]/([A]+[B]), %		
	1980/81	1990/91	1994/95	1980/81	1990/91	1994/95	1980/81	1990/91	1994/95
	MALES								
16 YEARS	18,9	25,7	22,7	32,7	45,1	55,1	36	36	29
17 YEARS	14,3	20,6	20,6	31,3	40,0	48,4	31	34	30
18 YEARS	10,4	17,1	18,8	--	--	-	--	--	-
	FEMALES								
16 YEARS	12,5	19,2	18,4	38,8	57,2	65,2	23	25	22
17 YEARS	9,4	16,7	18,2	37,2	50,7	59,0	19	25	24
18 YEARS	6,8	15,2	18,4	--	--		--	--	-

Table 2: Descriptive Statistics

	1987	1991	1996
Staying-on rate	0.624	0.723	0.818
Females	0.486	0.498	0.484
Seventeen years	0.505	0.505	0.515
Ed.Mother Primary	0.574	0.563	0.485
Secondary-1st stage	0.053	0.098	0.176
Secondary-2nd stage	0.028	0.042	0.094
University Ed. Mother	0.036	0.047	0.068
Ed. Father Primary	0.532	0.500	0.436
Secondary-1st stage	0.050	0.080	0.137
Secondary-2nd stage	0.058	0.073	0.120
University Ed. Father	0.064	0.078	0.090
Father-Employer	0.049	0.056	0.062
Father-Professional	0.060	0.073	0.119
Father-Civil Servant	0.123	0.130	0.137
Father-Pr.Wage Earner	0.349	0.393	0.358
Father-Unemployed	0.075	0.058	0.093
Mother-Unemployed	0.036	0.055	0.100
Family Members >16 yrs	4.225	4.133	3.996
Family Members <16 yrs	1.110	0.976	0.742
Father-not present	0.079	0.083	0.090
Mother-not present	0.020	0.018	0.016
number of observations	6,699	6,860	6,150

SOURCES: Active Population Surveys (EPA, 2nd quarter). Samples of sixteen and seventeen year olds.

TABLE 3
Unemployment Rates - Provincial data

	1987		1991		1996	
	males	females	males	females	males	females
minimum	3.77	8.99	5.53	12.15	5.46	12.54
maximum	30.97	46.83	28.32	43.63	31.03	52.13
National average	16.99	27.91	14.87	26.78	17.72	29.51

Sources: Active Population Surveys (EPAs) for 1987 and 1996 (2nd quarter). Census for 1991.

Unemployment rates in 1991

	Youngsters		Youngsters with Secondary Ed.	
	males	females	males	females
minimum	10.06	20.01	11.49	18.70
maximum	43.90	56.07	48.72	59.53
National Average	24.91	37.10	28.61	39.38

Source: Census (INE). 2nd quarter, 1991.

TABLE 4: STAYING ON AT SCHOOL AT 16 AND 17: binomial logit estimates -1991

	(1)	(2)	(3)	(4)	(5)
constant	0.606	0.118	-0.215	-2.268	-0.232
	(2.3)	(0.6)	(1.2)	(7.927)	(1.0)
age=16	0.621	0.594	0.593	0.449	0.598
	(10.0)	(10.0)	(10.0)	(4.680)	(9.9)
female	0.317	1.111	1.086	0.017	1.211
	(5.2)	(5.0)	(5.6)	(0.054)	(5.3)
Primary educ	0.649	0.664	0.688	-0.415	0.624
(Mother)	(7.4)	(7.9)	(8.3)	(3.192)	(7.3)
Secondary educ,	1.136	1.125	1.152	-0.167	1.083
1st stage (Mother)	(7.4)	(7.7)	(7.9)	(0.662)	(7.3)
Secondary educ	1.906	1.954	1.983	-0.352	1.917
(Mother)	(7.0)	(7.4)	(7.5)	(0.730)	(7.1)
University educ	1.817	1.851	1.877	1.449	1.798
(Mother)	(6.1)	(6.5)	(6.5)	(1.806)	(6.2)
Mother out of work	-0.072	-0.089	-0.099	0.328	-0.102
	(0.5)	(0.7)	(0.8)	(1.567)	(0.8)
Mother not present	0.364	0.398	0.371	-0.364	0.354
	(1.6)	(1.9)	(1.7)	(1.050)	(1.6)
Primary educ	0.474	0.520	0.520	0.353	0.486
(Father)	(5.0)	(5.8)	(5.8)	(2.572)	(5.3)
Secondary educ,	1.080	0.946	0.941	0.406	0.036
1st stage (Father)	(6.3)	(6.1)	(6.0)	(1.548)	(5.9)
Secondary educ	1.180	1.270	1.269	0.825	1.224
(Father)	(6.3)	(7.0)	(7.0)	(2.428)	(6.6)
University educ	0.803	0.923	0.922	0.466	0.872
(Father)	(3.2)	(3.9)	(3.9)	(0.999)	(3.6)
Father private	0.035	0.024	0.026	0.037	0.015
wage earner	(0.5)	(0.3)	(0.4)	(0.321)	(0.2)
Father civil servant	0.494	0.467	0.455	0.326	0.467
	(4.1)	(4.0)	(3.9)	(1.618)	(3.9)
Father employer	0.694	0.633	0.638	-0.551	0.662
	(4.1)	(3.8)	(3.9)	(1.838)	(3.9)
Father professional	0.551	0.472	0.480	0.816	0.498
	(2.3)	(2.1)	(2.1)	(1.774)	(2.2)
Father out of work	-0.533	-0.547	-0.576	0.643	-0.548
	(4.2)	(4.5)	(4.7)	(3.653)	(4.4)
Father not present	0.135	0.173	0.180	0.433	0.135
	(1.0)	(1.4)	(1.4)	(2.289)	(1.1)
Family <16 yrs	-0.243	-0.253	-0.247	0.096	-0.243
	(8.6)	(9.3)	(9.1)	(2.561)	(8.8)
Family >16 yrs	-0.105	-0.097	-0.096	0.115	-0.101
	(4.0)	(3.8)	(3.8)	(3.022)	(3.9)
u-rate province		0.018			-0.020
males		(2.8)			(1.4)
u-rate province		0.016			-0.029
females		(3.0)			(2.9)
u-rate province			0.017	0.035	0.029
16-24 & educ, males			(4.3)	(3.9)	(3.2)
u-rate province			-0.006	0.014	0.012
16-24 & educ, fem.			(1.4)	(1.8)	(1.6)
Province dummies	yes	no	no	no	no
Log-likelihood	-3460	-3504	-3505	-3496	-3492
No. observations	6860	6860	6860	6860	6860

TABLE 5: STAYING ON AT SCHOOL AT 16 AND 17: Multinomial logit estimates - 1991

	(1)		(2)		(3)	
	School	Out of Work	School	Out of Work	School	Out of Work
constant	0.697	-0.822	-0.525	-2.268	-0.901	-2.513
	(1.6)	(1.5)	(2.4)	(7.9)	(4.0)	(8.2)
age=16	0.856	0.475	0.815	0.449	0.819	0.455
	(11.6)	(4.9)	(11.2)	(4.7)	(11.3)	(4.7)
female	0.762	0.818	0.912	0.017	0.892	-0.044
	(10.3)	(8.5)	(3.8)	(0.1)	(3.3)	(0.1)
Primary educ	0.420	-0.479	0.478	-0.415	0.486	-0.451
(Mother)	(4.0)	(3.6)	(4.7)	(3.2)	(4.8)	(3.5)
Secondary educ,	0.986	-0.242	1.009	-0.167	1.020	-0.208
1st stage (Mother)	(5.2)	(0.9)	(5.5)	(0.7)	(5.5)	(0.8)
Secondary educ	1.545	-0.460	1.647	-0.352	1.768	-0.361
(Mother)	(4.8)	(0.9)	(5.1)	(0.7)	(5.2)	(0.7)
University educ	3.006	1.380	3.070	1.449	3.069	1.383
(Mother)	(4.1)	(1.7)	(4.2)	(1.8)	(4.2)	(1.8)
Mother out of work	0.243	0.338	0.214	0.328	0.191	0.298
	(1.4)	(1.6)	(1.3)	(1.6)	(1.1)	(1.4)
Mother not present	0.130	-0.424	0.181	-0.364	0.365	-0.396
	(0.5)	(1.2)	(0.7)	(1.1)	(2.5)	(1.1)
Primary educ	0.623	0.313	0.686	0.353	0.675	0.327
(Father)	(5.6)	(2.2)	(6.3)	(2.6)	(6.2)	(2.4)
Secondary educ,	1.085	0.442	1.062	0.406	1.057	0.397
1st stage (Father)	(5.6)	(1.7)	(5.6)	(1.5)	(5.5)	(1.5)
Secondary educ	1.742	0.775	1.835	0.825	1.806	0.766
(Father)	(6.7)	(2.3)	(7.1)	(2.4)	(7.0)	(2.3)
University educ	1.359	0.446	1.484	0.466	1.469	0.441
(Father)	(3.8)	(0.9)	(4.3)	(1.0)	(4.2)	(0.9)
Father private	0.049	0.036	0.036	0.037	0.050	0.059
wage earner	(0.6)	(0.3)	(0.4)	(0.3)	(0.6)	(0.5)
Father civil servant	0.634	0.308	0.631	0.326	0.621	0.334
	(4.1)	(1.5)	(4.2)	(1.6)	(4.1)	(1.7)
Father employer	0.305	-0.475	0.206	-0.551	0.229	-0.513
	(1.8)	(1.6)	(1.2)	(1.8)	(1.3)	(1.7)
Father professional	1.059	0.897	0.934	0.816	0.955	0.834
	(2.8)	(1.9)	(2.5)	(1.8)	(2.6)	(1.8)
Father out of work	-0.186	0.678	-0.223	0.643	-0.246	0.656
	(1.2)	(3.8)	(1.4)	(3.7)	(1.6)	(3.7)
Father not present	0.311	0.366	0.390	0.433	0.365	0.400
	(2.0)	(1.9)	(2.6)	(2.3)	(2.5)	(2.1)
Family <16 yrs	-0.215	0.099	-0.217	0.096	-0.221	0.100
	(6.4)	(2.3)	(6.7)	(2.6)	(6.8)	(2.7)
Family >16 yrs	-0.061	0.096	-0.042	0.115	-0.048	0.107
	(2.0)	(2.5)	(1.4)	(3.0)	(1.5)	(2.8)
u-rate province			0.033	0.040		
males			(4.3)	(3.8)		
u-rate province			0.012	0.048		
females			(1.6)	(5.3)		
u-rate province					2.990	3.085
16-24 & educ, males					(6.4)	(4.7)
u-rate province					1.827	4.180
16-24 & educ, fem.					(3.3)	(5.9)
Province dummies	yes		no		no	
Log likelihood	-4631		-4736		-4724	
No. Observations	6860		6860		6860	

TABLE 5 (cont.): STAYING ON AT SCHOOL AT 16 AND 17: Multinomial logit estimates - 1991

	(4)		(5)	
	School	Out of Work	School	Out of Work
constant	-0.901	-2.552	-1.423	-2.954
	(4.0)	(8.3)	(5.3)	(8.0)
age=16	0.823	0.456	0.830	0.462
	(11.3)	(4.7)	(11.4)	(4.8)
female	1.128	0.010	1.042	0.023
	(3.8)	(0.0)	(3.8)	(0.1)
Primary educ	0.437	-0.451	0.413	-0.470
(Mother)	(4.2)	(3.5)	(4.0)	(3.6)
Secondary educ,	0.974	-0.198	0.944	-0.221
1st stage (Mother)	(5.3)	(0.8)	(5.1)	(0.9)
Secondary educ	1.639	-0.358	1.601	-0.387
(Mother)	(5.1)	(0.7)	(5.0)	(0.8)
University educ	3.005	1.393	2.998	1.388
(Mother)	(6.6)	(1.7)	(4.1)	(1.7)
Mother out of work	0.198	0.309	0.196	0.308
	(1.2)	(1.5)	(1.2)	(1.5)
Mother not present	0.156	-0.385	0.151	-0.390
	(0.6)	(1.1)	(0.6)	(1.1)
Primary educ	0.645	0.318	0.630	0.308
(Father)	(5.9)	(2.3)	(5.8)	(2.2)
Secondary educ,	1.045	0.387	1.049	0.396
1st stage (Father)	(5.4)	(1.5)	(5.5)	(1.5)
Secondary educ	1.776	0.764	1.748	0.749
(Father)	(6.8)	(2.2)	(6.7)	(2.2)
University educ	1.419	0.411	1.389	0.387
(Father)	(4.1)	(0.9)	(4.0)	(0.8)
Father private	0.053	0.057	0.028	0.038
wage earner	(0.6)	(0.5)	(0.3)	(0.3)
Father civil servant	0.636	0.333	0.630	0.329
	(4.2)	(1.7)	(4.2)	(1.6)
Father employer	0.245	-0.512	0.256	-0.502
	(1.4)	(1.7)	(1.1)	(1.7)
Father professional	0.984	0.862	1.008	0.885
	(2.6)	(1.9)	(2.7)	(1.9)
Father out of work	-0.204	0.661	-0.219	0.651
	(1.3)	(3.7)	(1.4)	(3.9)
Father not present	0.344	0.396	0.311	0.370
	(2.3)	(2.1)	(2.1)	(1.9)
Family <16 yrs	-0.211	0.101	-0.210	0.102
	(6.5)	(2.7)	(6.4)	(2.7)
Family >16 yrs	-0.050	0.108	-0.050	0.109
	(1.6)	(2.8)	(1.6)	(2.8)
u-rate province	-0.055	-0.029	-0.038	-0.017
males	(3.2)	(1.2)	(2.1)	(0.7)
u-rate province	-0.025	0.011	-0.022	0.013
females	(1.9)	(0.6)	(1.7)	(0.8)
u-rate province	5.967	4.733	5.127	4.073
16-24 & educ, males	(5.6)	(3.2)	(4.7)	(2.7)
u-rate province	3.317	3.403	3.090	3.229
16-24 & educ, fem.	(3.3)	(2.6)	(3.1)	(2.5)
% with college edu			8.481	6.613
in province			(3.5)	(2.0)
Province dummies	no		no	
Log likelihood	-4714		-4707	
No. Observations	6860		6860	

TABLE 6: STAYING ON AT SCHOOL AT 16 AND 17 - Binomial logit estimates - 1987 and 1996

	1987		1996	
	(1)	(2)	(1)	(2)
constant	-0.304	-0.624	1.071	0.066
	(1.2)	(3.7)	(1.0)	(0.3)
age=16	0.518	0.514	0.694	0.659
	(9.1)	(9.3)	(9.3)	(9.0)
female	0.089	0.509	0.475	1.047
	(1.6)	(3.1)	(6.4)	(5.3)
Primary educ	0.757	0.871	0.434	0.506
(Mother)	(9.5)	(11.0)	(4.1)	(4.8)
Secondary educ,	1.200	1.371	0.823	0.878
1st stage (Mother)	(6.6)	(7.8)	(5.6)	(6.1)
Secondary educ	1.466	1.603	1.695	1.732
(Mother)	(5.5)	(6.1)	(6.8)	(7.1)
University educ	1.558	1.671	2.030	2.098
(Mother)	(6.5)	(7.1)	(5.3)	(5.5)
Mother out of work	-0.343	-0.339	-0.013	-0.078
	(2.3)	(2.3)	(0.1)	(0.7)
Mother not present	0.555	0.660	-0.107	0.036
	(2.8)	(3.4)	(0.4)	(0.1)
Primary educ	0.308	0.355	0.612	0.628
(Father)	(3.5)	(4.3)	(5.3)	(5.6)
Secondary educ,	0.955	0.963	0.985	0.961
1st stage (Father)	(5.4)	(5.6)	(6.1)	(6.0)
Secondary educ	1.495	1.553	1.493	1.504
(Father)	(7.6)	(8.2)	(7.1)	(7.3)
University educ	1.190	1.200	2.216	2.228
(Father)	(5.1)	(5.3)	(5.2)	(5.2)
Father private	0.114	0.150	0.069	0.021
wage earner	(1.6)	(2.3)	(0.7)	(0.2)
Father civil servant	0.595	0.564	0.543	0.535
	(5.4)	(5.3)	(3.3)	(3.3)
Father employer	0.870	0.765	0.129	0.035
	(5.4)	(4.9)	(0.7)	(0.2)
Father professional	0.050	-0.003	0.799	0.780
	(0.2)	(0.0)	(3.0)	(2.9)
Father out of work	-0.207	-0.216	-0.457	-0.475
	(1.8)	(2.0)	(3.7)	(3.9)
Father not present	0.153	0.246	0.037	0.134
	(1.2)	(2.1)	(0.2)	(0.9)
Family <16 yrs	-0.175	-0.178	-0.302	-0.300
	(7.3)	(7.6)	(7.5)	(7.6)
Family >16 yrs	-0.117	-0.101	-0.104	-0.091
	(4.9)	(4.4)	(3.2)	(2.8)
u-rate province		0.018		0.018
males		(3.2)		(2.4)
u-rate province		-0.003		-0.007
females		(0.8)		(1.2)
Province dummies	yes	no	yes	no
Log-likelihood	-3809	-3876	-2378	-2452
No. observations	6699	6699	6150	6150

TABLE 7: STAYING ON AT SCHOOL AT 16 AND 17: Multinomial logit estimates - 1987

	(1)		(2)	
	School	Out of Work	School	Out of Work
constant	0.664	-0.188	-0.698	-1.340
	(1.614)	(0.390)	(3.363)	(5.626)
age=16	0.618	0.194	0.617	0.201
	(8.620)	(2.322)	(8.715)	(2.434)
female	0.383	0.520	0.446	0.118
	(5.341)	(6.252)	(2.174)	(0.484)
Primary educ	0.737	-0.106	0.859	-0.083
(Mother)	(7.381)	(0.937)	(8.930)	(0.760)
Secondary educ,	1.224	-0.190	1.423	-0.102
1st stage (Mother)	(4.905)	(0.592)	(5.802)	(0.323)
Secondary educ	1.941	0.637	2.060	0.642
(Mother)	(4.374)	(1.203)	(4.681)	(1.224)
University educ	1.782	0.025	1.912	0.010
(Mother)	(5.021)	(0.052)	(5.442)	(0.022)
Mother out of work	-0.060	0.382	-0.111	0.313
	0.304	(1.809)	(0.570)	(1.509)
Mother not present	0.641	-0.087	0.230	0.244
	(2.496)	(0.518)	(1.586)	(0.849)
Primary educ	0.194	-0.166	0.294	-0.086
(Father)	(1.808)	(1.407)	(2.824)	(0.752)
Secondary educ,	1.093	0.370	1.120	0.404
1st stage (Father)	(4.253)	(1.207)	(4.412)	(1.334)
Secondary educ	1.489	-0.062	1.593	0.151
(Father)	(5.347)	(0.178)	(5.781)	(0.435)
University educ	1.042	-0.429	1.104	-0.373
(Father)	(3.130)	(0.976)	(3.336)	(0.854)
Father private	0.282	0.204	0.300	0.183
wage earner	(3.303)	(2.032)	(3.607)	(1.877)
Father civil servant	1.104	0.683	1.062	0.660
	(6.914)	(3.681)	(6.741)	(3.604)
Father employer	0.739	-0.666	0.620	-0.703
	(3.870)	(2.189)	(3.304)	(2.332)
Father professional	0.365	0.366	0.272	0.302
	(1.133)	(0.912)	(0.845)	(0.753)
Father out of work	0.174	0.597	0.148	0.575
	(1.203)	(3.978)	(1.042)	(3.893)
Father not present	0.105	-0.087	0.230	-0.030
	(0.704)	(0.518)	(1.586)	(0.181)
Family <16 yrs	-0.205	-0.036	-0.206	0.030
	(6.994)	(1.129)	(7.165)	(0.954)
Family >16 yrs	-0.079	0.056	-0.057	0.067
	(2.635)	(1.674)	(1.931)	(2.031)
u-rate province			0.043	0.046
males			(6.124)	(5.583)
u-rate province			0.024	0.041
females			(4.022)	(6.197)
Province dummies	yes		no	
Log likelihood	-5357		-5469	
No. Observations	6699		6699	

TABLE 8: STAYING ON AT SCHOOL AT 16 AND 17: Multinomial logit estimates - 1996

	(1)		(2)	
	School	Out of Work	School	Out of Work
constant	2.216	0.957	-0.021	-1.334
	(2.096)	(0.836)	(0.068)	(3.457)
age=16	1.002	0.509	0.958	0.492
	(9.306)	(3.934)	(9.139)	(3.867)
female	1.074	0.915	1.313	0.749
	(9.821)	(7.060)	(3.584)	(1.718)
Primary educ	0.392	-0.156	0.498	-0.108
(Mother)	(2.617)	(0.902)	(3.406)	(0.635)
Secondary educ,	0.864	-0.029	0.950	-0.021
1st stage (Mother)	(4.200)	(0.118)	(4.717)	(0.931)
Secondary educ	1.927	0.218	2.024	0.298
(Mother)	(5.134)	(0.466)	(5.448)	(0.643)
University educ	2.017	1.054	3.045	1.147
(Mother)	(3.965)	(1.247)	(4.154)	(1.360)
Mother out of work	0.158	0.262	0.072	0.214
	(0.902)	(1.292)	(0.423)	(1.079)
Mother not present	0.405	0.762	0.643	0.923
	(0.871)	(1.495)	(1.407)	(1.828)
Primary educ	0.247	-0.461	0.344	-0.356
(Father)	(1.503)	(2.464)	(2.152)	(1.940)
Secondary educ,	0.698	-0.307	0.711	-0.257
1st stage (Father)	(3.080)	(1.112)	(3.196)	(0.939)
Secondary educ	1.218	-0.155	1.301	-0.053
(Father)	(4.075)	(0.419)	(4.248)	(0.146)
University educ	0.892	-1.352	0.999	-1.217
(Father)	(2.030)	(1.962)	(2.302)	(1.767)
Father private	0.147	0.052	0.085	0.022
wage earner	(1.143)	(0.327)	(0.683)	(0.140)
Father civil servant	0.749	0.320	0.735	0.302
	(3.316)	(1.082)	(3.143)	(1.036)
Father employer	-0.119	-0.561	-0.268	-0.676
	(0.574)	(1.828)	(1.329)	(2.238)
Father professional	0.997	0.178	0.941	0.130
	(2.599)	(0.356)	(2.496)	(0.262)
Father out of work	-0.149	0.475	-0.193	0.431
	(0.837)	(2.342)	(1.113)	(2.177)
Father not present	0.043	0.099	0.210	0.218
	(0.199)	(0.401)	(0.998)	(0.907)
Family <16 yrs	-0.221	0.126	-0.231	0.117
	(3.968)	(2.054)	(4.308)	(1.898)
Family >16 yrs	-0.036	0.091	-0.018	0.101
	(0.766)	(1.677)	(0.404)	(1.868)
u-rate province			0.035	0.040
males			(3.630)	(3.295)
u-rate province			0.012	0.027
females			(1.110)	(2.302)
Province dummies	yes		no	
Log likelihood	-3141		-3258	
No. Observations	6150		6150	