Education Economics, Vol. 8, No. 2, 2000

The Primary School Dropout in Spain: The Influence of Family Background and Labor Market Conditions

CARLOS PERAITA & MARGARITA PASTOR

ABSTRACT *The most outstanding event in the Spanish education system in the past two decades has been the overall improvement of enrolment in all educational levels. However, the primary school dropout rate in Spain is relatively high, and the evidence indicates that being a dropout is a permanent condition. This is the first study on dropouts in Spain, and it uses individual-level data from the Living and Working Conditions Survey (1985) to analyze the determinants of dropping out of primary school in Spain. This paper focuses on the impact of family socio-economic background and labour market conditions on dropping out. The results from logistic regression for dropping out are consistent with earlier literature. Specifically, they indicate that family socio-economic status variables are significant factors in determining the probability of dropping out, and the youth labour market conditions also have an impact on primary school dropout behaviour. Finally, some policy recommendations are discussed.*

Introduction

The most outstanding event in the Spanish education system in the past decade has been the overall improvement of enrolment in all educational levels. However, the primary school dropout rate in Spain is relatively high, and the evidence indicates that being a dropout is a permanent condition. Primary school dropouts are one of the most pressing social problems in Spain. To the best of our knowledge, no other study has undertaken the identification of some of the economic determinants in Spain primary school dropouts. This paper empirically studies these determinants through the application of a logit model with instrumental variables (an *IV* ordered logit estimation).

During the early 1980s, Spain experienced profound changes affecting their political, social, and economic systems. They were years of educational reforms, development of vocational education, and expansion of the university system. Nevertheless, the basics of the educational system was established in 1970 when compulsory school attendance was required for children up to 14 years of age (currently, compulsory education has been extended up to 16). Primary school had,

Carlos Peraita & Margarita Pastor, Departamento de Análisis Económico, Facultad de C. Económicas y Empresariales, Universidad de Valencia, Campus dels Tarongers, Av. dels Tarongers s/n, 46022 Valencia, Spain. Tel: +34 96 382 8259; Fax: +34 96 382 8249; E-mail: carlos.peraita@uv.es.

ISSN 0964-5292 Print; 1469-5782 Online/00/020157–12

in 1985, eight grades of compulsory attendance, usually for ages between 6 and 14 years. Successful students typically move from primary to secondary school when they are 14 or 15 years old, and then move from secondary school to higher education at the age of 18–19. The new entrant ratio to secondary school in that theoretical starting age reached 47% in 1985, and the fraction of students completing secondary school was around 80%. However, as will be noted later, dropping out of primary school is qualitatively a more important problem than dropping out of secondary school.

The elementary education system in Spain includes both a private and a public sector. The private sector in the primary school system basically includes schools owned by Catholic religious orders. These schools have a special agreement with the State, and generally charge monthly tuition fees. The central government or the regional governments directly finance public primary schools. These have never charged regular tuition fees, although there are small charges due to some extra teaching activities. Nevertheless, there does not exist an allocation model based on explicit and rational criteria to assign public funds among schools in a particular region.

Children's accession to primary school in Spain has become universal and has therefore reached the least privileged social groups. This fact has been one of the most outstanding events in the Spanish education system in the past decade. There is a strong consensus among economists and education policy-makers that the primary education sector is not up to the challenges it faces. Spanish primary students show a high dropout rate, despite the fact that secondary education enrolment grew rapidly during the 1980s and 1990s under the influx of the baby-boom 1960 cohort into the school system. Primary school attendance at the first grade was complete during the early 1980s, but the primary school dropout rate has remained dramatically high over the years. With our data survey, the total amount of youth aged 14–18 who are primary school dropouts was 17% in 1985. The primary school dropout rate, an indicator of school quality, plays a critical role in the government's effort to improve the skills of Spanish young workers, because primary (and secondary) education provide the basic skills that individuals need for the future general training they undertake.

The Spanish labour participation rate for the group aged 16–19 was 54% in 1985, and that group represented around 7% of the active population at large. Additionally, there was an important problem with the child labour because a significant group of children aged 14–15 was indeed illegal in the labour marker (most of them in the services sector). The changes in the Spanish economy have reduced employment opportunities for primary school dropouts. In Spain, youth unemployment rates (aged 16–19) are, of course, usually higher than among adult population. Between 1980 and 1985, the youth unemployment rate of 16–19 year olds was around 53% for males and 47% for females. In this scenario, the employment opportunities for dropouts are beneath labour market opportunities for youth, in this particular cohort that has graduated in primary school. In fact, dropouts bring very little formal education to a labour market characterized by high skill requirements, and this is a reason for the low earnings of primary school dropouts. Besides, their life-cycle earnings decline slightly because dropouts are less likely to participate in training than non-dropouts and, as a result, they have fewer opportunities to acquire job-specific skills (Murnane *et al.*, 1997). Regarding this point, however, from 1980 to 1985, the educational level of the employed population was low. In 1985, around 70% of employed males and 60% of females

lacked a secondary education, and the percentage of workers with higher education was 10% for males and 15% for females. Because education has become more valuable in the labour market due to a relative increase in the demand for skilled labour, the earnings gap between the higher educated and the lower educated workers is steadily increasing. Therefore, workers with the lowest levels of education are becoming relatively poorer. Dropout students follow this pattern, and they create a cycle where the low socio-economic status probably is an intergenerational schooling 'trap'. Consequently, the importance of studying the determinants of dropping-out behaviour across both family background and labour market conditions arises since the evidence found in most of the youth labour market studies indicates that school dropouts have the poorer labour market prospects.

The Coleman report (1966) focused attention on the relationship between inputs and outputs in the education sector. The report reached the conclusion that, after controlling for the effect of family background on the level of schooling achieved, there was little evidence that the level of education sector resources was statistically significant on student test scores. The influential paper by Card and Krueger (1992) offers support for a positive relation between school resources and students' educational attainment. These studies offer support for an extensive literature devoted to estimate production functions for the education sector and the subsequent controversy on the appropriate measures of output. In this paper, we have measured the student outcome in primary education sector in a rather dramatic way, and have established a dichotomized behaviour for the young students: either dropouts or completed primary level. We also look at children's dropout behaviour attending to the effect of family background (the family inputs) with micro-level data, controlling for the effect of primary resource levels on a school quality system by regions and by urban–rural characteristics.

The remainder of this article is organized as follows. The next section presents a simple logistic model of the determinants of dropping out of primary school. We also provide the descriptive statistics of the sample and some information about the family background and labour market characteristics related with the decision on dropping out. In the third section, we offer the specification of the model already discussed, including both the estimated coefficient and the marginal effects. Some concluding comments and policy recommendations based on the results discussed close the paper.

Empirical Specification and Data

Lack of adequate data has thus far made it difficult for researchers to estimate the determinants of dropping-out school behaviour in Spain. However, our estimates are based on household data obtained from the Living and Working Conditions Survey (ECVT survey), a Spanish nation-wide household survey conducted by the Spanish Department of Economics and Public Finance in 1985. It was carried out in order to collect information on personal characteristics, like family background, schooling, labour market participation, and household time allocation of a stratified random sample of more than 60 000 individuals, aged 14 and older. We use the household data on single individuals, aged between 14 and 18, who were living in their parents' home. Furthermore, by excluding observations with missing values for relevant variables, we end up with a homogeneous sample containing 3095 individuals. By making use of the questions asked in the interview, it is possible to distinguish primary school dropouts from current primary school students and

graduates in other higher school levels before being interviewed. Unfortunately, with the data available, we are unable to know when an individual did drop out, and hence we cannot estimate a hazard model.

The *ECVT* survey does not include questions that provide measures of individual attributes and academic abilities like test scores and 'first choice' of university studies. In order to capture the influence of this kind of characteristic, we have introduced in the regressions the proxy variable 'cultural household equipment'. In addition, the *ECVT* survey defines the educational attainment in a rather restrictive way, since it excludes informal education and training, and only focuses on formal schooling (measured by the years of schooling).

Unfortunately, we cannot work with measures of the quality of educational resources to primary students, because the ECVT survey does not contain information about the student–teacher ratio, nor about the total teaching experience of teachers or the proportion of teachers with more than a college degree in the region. Although the quality level of an educational input is positively related with the return to schooling, and therefore it is associated with the dropout rate, we cannot in this paper give any specifications of the model including the measures of the primary school system quality already discussed. Ehrenberg and Brewer (1994) showed that school and teachers characteristics generally appear to influence 'gain scores' more than they do dropout probabilities. Obviously, the goal of this paper is not to analyze whether the changes in educational inputs are predictors of regional dropout rates. We present a logistic model that jointly values the influence of children's family background and environmental characteristics on their decision to drop out of primary school.

Table 1 presents a full list of variables, their definitions, and some descriptive statistics on the dropout and non-dropout sample of 3095 individuals aged 14–18 in 1985 (the cohort for primary school attendance is aged 6–14). The dropout rate of the sample is 17%, and there is no difference by gender. The dependent variable used in the analysis is equal to one if an individual dropped out of primary school before being interviewed, and equals zero otherwise.

We have estimated a cross-sectional model of the form

$$y^{\star}_i = \beta' \mathbf{X}_i + \varepsilon_i \tag{1}$$

where $y_i^{\star}$ is a latent variable, but primary school student i can be observed to leave school if $y^{\star}_i > 0$, $\mathbf{X}_i$ is the vector of explanatory variables that includes a set of family background characteristics and two broad measures of local labour market conditions, and ε_i is a disturbance term.

As described earlier, $y_i^{\star} = 1$ if individual i is a dropout, and 0 otherwise. The vector $\mathbf{X}_i$ contains three groups of explanatory variables. The first group includes one discrete variable for cultural household equipment. This proxy variable is derived through an ordered logit estimation (0,1,2), where the instrumental variables are a set of social-cultural dummies for the household head and other family members (including 'cultural household equipment', 'usages for non-market time', etc.). The second group of variables tries to measure a family's socio-economic endowment. It comprises the following background characteristics: five (0 or 1) dummies for social class levels ('low class' is the omitted category); and six levels for parents' income (the bottom level is the omitted category). Additionally, we have a continuous variable for the number of older and younger siblings living in their parents' home, and another for the number of household members with

Table 1. Definitions of selected characteristics, sample means and standard deviations for the youth aged 14–18

Variable	Mean	Standard deviation
Primary school dropout (a dummy variable; 1 = the young drop out of primary school)	0.17	
Cultural household equipment (expressed in levels (=0,1,2), and is an instrumental variable (ordered logit estimation for a set of family member's cultural activities and certain home furnitures))	0.90	0.80
City size (a dummy variable; 1 = the young resides in a city)		
more than 100 000 inhabitants or region capital	0.46	
50 000–100 000 inhabitants	0.06	
20 000–50 000 inhabitants	0.11	
Less than 20 000 inhabitants	0.37	
Unemployment rate (regional youth unemployment rate by gender)	0.53	0.12
Family social class (a dummy variable; 1 = the young declares to belong to)		
High and high-middle class	0.05	
Middle class	0.43	
Middle-low class	0.25	
Low class	0.20	
Social class not available	0.07	
Family income per month (a dummy variable: 1 = the young pertains to a family income)		
More than 150 000 ptas	0.03	
100 000–150 000 ptas	0.06	
75 000–100 000 ptas	0.13	
50 000–75 000 ptas	0.20	
25 000–50 000 ptas	0.19	
Less than 25 000 ptas	0.12	
Family income not available	0.23	
Unemployment benefits (number of household members with unemployment benefits)	0.07	0.29
Older siblings the (number of siblings who are older than the reference young)	0.81	1.03
Younger siblings (number of siblings who are younger than the reference young)	1.19	1.33
Grants (dummy variable; 1 = any household member receiving a student grant)	0.09	

Note: 'Not available' is a dummy variable (=1) if the respondent did not know the monthly family income or the family social class.

unemployment benefits. The rationale for including the aforementioned continuous variable in the model lies in that it seems an appropriate proxy to capture family environments with severe unemployment situations. Therefore, in this way, we will show the negative effect of situations with unemployed family members (especially unemployed parents) on school attendance, because the probability of moving from school to the labour force is higher when a family member is unemployed. The presence in the family of public funds committed to student grants is also included as an independent variable. We expect grants to represent a disincentive on dropping-out behaviour among children in the family.

Finally, the third group includes two measures of local labour market conditions, i.e. regional unemployment rates among male and female youths (aged 16–19). Unemployment rates were obtained from the Spanish Active Population Survey, and were collected for the fourth quarter of 1985. A total of 17 regions were used in the analysis, corresponding with the administrative division of Spain. Although the sample consists of individuals between 14 and 18 years of age, and that presumably most of them dropped out of primary school before 1985, the Spanish youth labour market conditions in 1985 were practically identical to the corresponding conditions five or more years earlier.[1] We may conclude that labour market conditions in 1985 were similar to the labour market conditions when most of the youngsters in the sample were at the risk of dropping out. There are dramatic differences across regions in the youth unemployment rates, as well as by gender. The youth unemployment rates are, on a national average, higher among males than females. In general, the youth unemployment rates are higher in developed and industrialized regions. For example, the male unemployment rate is highest in Madrid (63.13%) and País Vasco (60.79%), and lowest in Galicia (28.88%) and Rioja (38.84%). The highest female unemployment rates are in Cataluña (72.03%) and Rioja (88.44%), and the lowest, below 35%, are in Galicia (34.74%) and Castilla-La Mancha (32.18%). At this point, we are considering the implicit hypothesis in Duncan's (1965) model that alludes to the relationship between unemployment rate and the proportion of students who dropped out of school. Additionally, we include a set of four (0 or 1) city-size dummy variables as proxy for regional and urban–rural residence differentials (big city is the omitted category). This set of dummies tries to capture the different response of primary school students to employment opportunities in their respective residential areas.

Table 2 provides more information on the dropout sample. First, it shows that belonging to any behavioural characteristic among dropouts is similar for males and females. Among dropouts, almost two-thirds came from low-income families, and only 1.5% came from high-income families. However, nearly 30% are from low social class families, while only 1.1% come from above middle social class families. The literature on dropouts supports the argument that dropouts are more likely to come from families characterized by a low socio-economic status (Chuang, 1997). In terms of geographical location, around 50% were living in urban areas, and one-quarter of them was living in the south.

As presented in Table 2, the youths are more inclined to drop out of primary school when they are more likely to reside in regions with high regional youth unemployment rate (four percent points higher than the national youth unemployment rate). If the regional unemployment rate is thought of as a general indicator of regional labour market conditions, we can use the regional youth unemployment rate as an indicator both of starting youth wages for dropouts as well as of the probability of finding a job when leaving school. Duncan (1965) found that,

Table 2. Descriptive statistics for primary school dropout youth

Description	Male	Female	All
Living in a rural area (%)	54.3	46.9	50.7
Living in an urban area (%)	35.1	34.7	34.9
Living in a southern region (%)	28.7	29.4	29.0
Living in a region with high local youth unemployment rate (%)	41.1	44.7	42.9
Having at least two older siblings (%)	21.1	25.2	23.2
Having at least two younger siblings (%)	36.6	41.6	39.1
Family receiving unemployment benefits (%)	10.9	7.3	9.1
Family with monthly income < 75 000 ptas (%)	68.3	69.8	69.1
Family with monthly income > 100 000 ptas (%)	1.1	1.9	1.5
Low social class (%)	27.2	28.6	27.9
Above middle social class (%)	1.5	0.8	1.1
Number of observations	265	262	527

controlling for student cohorts, the national unemployment rate was negatively associated with the school dropout rate. In fact, a recent study (Rees & Mocan, 1997) finds evidence that regional labour market conditions affect the probability of dropping out, because there is a negative relationship between the regional youth unemployment rate and the proportion of students who leave school.

In terms of family composition, 23% of dropouts had at least two elder siblings at their home. On the contrary, around 40% of the sample had at least two younger siblings present at their home. Regarding results in the literature showing that dropouts are more likely to come from large families, we find that more dropouts tend to have younger siblings than elder siblings at their home. Therefore, dropouts are more likely to come from the older children in the family. This dropout decision of the elder siblings is consistent with the possibility that, if any family members lose their jobs, some older children could be forced to leave school and enter the labour market. Finally, as presented in Table 2, less than 10% families with dropouts were receiving social benefits.

On the other hand, of course, are the successful students. Nearly two-thirds of these non-dropouts in the sample had obtained the primary school certificate, and around 20% had completed high school. Finally, among males, 18.3% currently attend primary school. Among females, this proportion is 17.5%. Unfortunately, we cannot observe whether this behaviour is motivated by the return to school of many dropouts, or it is a prolongation of studies to finally attain the primary school certificate. These figures indicate that the grade retention in primary school is a severe problem in Spain. We know that the retained students tended to have higher probabilities of not completing primary school, but we cannot analyze this evidence because our data survey does not have any additional information about this retention phenomenon. Thus, unfortunately, we cannot present an additional model focusing on the individuals aged 14–18 still enrolled in primary school, and therefore we cannot examine the effect of primary school retention on educational and labour market outcomes (see Eide & Showalter, 1999). Going back to the feature of the no-dropout sample, the percentages of individuals aged 14–18 in 1985 who participated in some human capital-enhancing activities were large (77% of males, 75% of females). Our ECVT survey also provides information on the youth who were aged 18–22 in 1985 (the next cohort), where the females who

graduated from primary school were just around four percent points higher than the male primary school certificate recipients (68% of males, 72% of females). However, male high school graduates and vocational recipients reached four percent points more than females (32% of males, 28% of females).

Estimation Results

Based on equation (1), the results of the logistic regression on the determinants of dropping out of primary school were run for all youths aged 14–18. The regression results are reported in Table 3, including the estimate coefficients and the marginal effects.[2] First, we estimated both the logistic specification and the marginal effects, on the one hand, with a gender dummy on the right-hand side in order to control for the possible differential effects of males and females on the probability of dropping out of primary school, respectively. The estimated coefficient of the gender was not statistically significant. On the other hand, we also estimated both male and female sub-samples, and the results again did not offer support for the hypothesis that the dropping-out behaviour differs from males to females. We may conclude that the gender gap among dropouts and non-dropouts in Spain did not exist in 1985. Therefore, concentrating on the specification for the entire sample, and excluding the gender variable, the estimated coefficients of the vector of independent variables and their marginal effects are presented in Table 3.

Most of the variables in Table 3 are of the expected signs and are statistically significant. The logistic model predicts accurately well the individuals' dropout behaviour; we obtained 96% of success in our predicted outcomes for no-dropout ($y = 0$) relative to the actual outcomes, and 46% for the dropout outcomes ($y = 1$). Concerning labour market characteristics, we examine the results of the two variables—city size and regional youth unemployment rate—discussed in the previous section. The effects of the regional youth unemployment rate (job availability) on the dropping-out decisions of our sample of teenagers show that the probability of dropping out of primary school is inversely related to the youth unemployment rate. In fact, the level of enrolment in primary school is positively related to the regional youth unemployment rate. This result is apparently consistent with the estimated coefficient of the unemployment rate obtained in other studies, showing that employment opportunities are an important factor of dropout behaviour (Rees & Mocan, 1997). However, since we do not have information on school quality variables (correlated with labour market conditions), our result should be accepted with caution because we cannot use estimation methods in order to avoid potential omitted variable problems.[3] Moreover, the estimation result of the marginal effect of the unemployment rate indicates that its influence on reducing the probability of dropping out is much stronger than, for example, on the level of cultural household equipment.

Concerning the place of residence variable results, the estimated coefficients of city-size dummies are positive and statistically significant. This suggests that the residence in rural areas (city size below 20 000 inhabitants) and in small towns positively affect the dropout behaviour. In contrast, living in region capitals or big cities would be associated with a reduction in the probability of primary school dropout. It is possible that the dropouts take into account that the employment opportunities are lower in big cities than in small towns and rural areas.

However, the impact of regional labour market conditions on the decision to drop out should be different if we control for the income family level. It is possible

Table 3. Logistic regression estimates of determinants of dropping out of primary school

Variable	Coefficient	Standard error	Marginal effect
Constant	−0.516**	0.286	
Family background			
Cultural household equipment[a]	−0.373*	0.079	−0.041
Family social class			
High and high-middle class	−0.977*	0.451	−0.106
Middle class	−0.419*	0.141	−0.045
Middle-low class	−0.259**	0.138	−0.028
Low class	Omitted dummy		
Social class not available	0.066	0.198	
Family income per month			
More than 150 000 ptas	−3.272*	1.024	−0.356
100 000–150 000 ptas	−2.417*	0.418	−0.263
75 000–100 000 ptas	−1.433*	0.224	−0.156
50 000–75 000 ptas	−1.176*	0.171	−0.128
25 000–50 000 ptas	−0.711*	0.152	−0.077
Less than 25 000 ptas	Omitted dummy		
Family income not available	−1.045*	0.159	−0.114
Unemployment benefits	0.244**	0.148	0.026
Grants	−0.843*	0.221	−0.092
Older siblings	0.269*	0.047	0.029
Younger siblings	0.177*	0.036	0.019
Labor market characteristics			
City size			
More than 100 000 inhabitants	Omitted dummy		
50 000–100 000 inhabitants	0.810*	0.216	0.088
20 000–50 000 inhabitants	0.643*	0.169	0.070
Less than 20 000 inhabitants	0.560*	0.122	0.061
Unemployment rate	−0.776**	0.441	−0.084
Log-Likelihood	1211.621		
χ^2	401.387		
Number of observations	3095		
Predicted outcomes/actual outcomes	$y = 0$: 96% and $y = 1$: 45%		

Note: *Significant at the 5% level, ** significant at the 10% level.
[a]Instrumental variables (ordered logit estimation) are a set of social-cultural dummies for the household head and other family members. Iteration method is Dorldon–Fletcher–Powell Algorithm (DFP).

that if the family members lose their jobs, some children could be expected to leave school and enter the labour market. In this scenario, an increase in regional youth unemployment rate would affect positively the dropout rate. Ehrenberg and Brewer (1994) found evidence of a positive unemployment effect for white students from low-income families on the dropout probability. We find a significant positive effect for the unemployment benefits variable. These results imply that children from families with a high number of members receiving benefits tend to have a higher probability to drop out of primary school. The proxy variable for the families with members receiving unemployment benefits might be capturing the individual effect

of unemployment situations. This result is not contradictory with the already noted finding, since we find that youth from regions with higher unemployment rates are less likely to drop out of primary school.

In general, the studies investigating the role of socio-economic background in the determination of educational outcomes (test scores, school attendance, grade retention, and dropout rates) show that school dropouts are more likely to come from low socio-economic status families,[4] and also that dropouts are disproportionately high from racial/ethnic minority groups. The results from the family socio-economic background variables indicate that the higher the level of income and social class of a youth's parents, the less likely it is that the youth will drop out of primary school. In fact, our results show the negative effects of the family income and the social class on the primary school dropout decision. Also, we wished to test the hypothesis that the coefficients of both family income and social class were all equal. The Wald tests and their significance level (0%) reveal that the two vector coefficients are not equal. Moreover, the marginal effect results show that belonging to a high income level family (over 150 000 ptas per month) has a much stronger influence on reducing the probability of dropping out than belonging to the upper class.

The coefficient of the cultural household equipment variable is significant and has a negative effect on the probability of dropping out of primary school. This is evidence of a positive effect of the individual's academic aptitude, as well as family preferences on possible children's educational choice, on the probability of ascending in the scale of school level attained. These naïve findings suggest that unmeasured personal attributes are important in explaining dropping out of primary school. The positive signs of the number of elder and younger sibling coefficients indicate that there is a positive effect of siblingship size proxies on the individual probability of dropping out of primary school. Moreover, the estimated marginal effects suggest that dropouts are more likely to come from large families, but the marginal effect is higher for the young with elder siblings, while it is lower for young with an equal number of younger siblings.

Conclusion

Despite its many shortcomings, the economic approach to dropping out determinants employed in this study broadly corroborates the common finding in the literature. There can be little doubt that economic status is positively related with educational success. Using a nationally representative sample, we have found that family background strongly influences the propensity to drop out. The dropouts are more likely to come from families with a low socio-economic status, the influence of gender is negligible, and the local youth labour market conditions have an impact on primary school dropping-out behaviour. These findings are consistent with models where parental investments in their children are liquidity constrained (imperfect capital markets) at lower levels of family income.

An empirical framework such as that developed here can be a valuable tool for policy-makers because it is concerned with the nature of the economic determinants of dropout, and therefore can be used in providing insights into the economically rational policy toward curtailing school failure and abandonment. It must be noted that these results draw attention on a central educational policy issue, i.e. the effect of the level of resources invested in primary education on student outcomes and, therefore, the desirable outcomes in terms of equity and efficiency. The topic of this

article is of Spanish national importance, because children that have faced more difficulties at the primary school level due to the aforementioned factors have a higher probability of increasing youth poverty. In spite of the improvement in educational equity in the recent evolution of the Spanish education system, less privileged children still have little opportunity to achieve successful outcomes in primary school. Making completion of primary school compatible with general economic prosperity may be a formidable challenge facing Spanish policy-makers in the next decade. Schooling makes youth more receptive to innovation, encourages mobility, and increases individual options.

These results reveal that, whatever elementary educational policies should be implemented in Spain, they should incorporate specific features for the low socio-economic status families. There is the necessity for establishing an educational policy of selective aids to be focused on the low family incomes, in order to equalize the probability of completing primary school for all children. Perhaps the programmes implemented during the primary school grades should include a component aimed at improving social-cognitive skills at school as a means of improving parental management skills in the home for the low-income families. However, the results suggest that family and labour market influences may be important determinants of student dropout. Unfortunately, both of these influences are beyond the direct control of the educational authorities. Additional research is needed in the future regarding the correct identification of the determinants of dropping-out behaviour in Spanish primary school.

Acknowledgements

The authors would like to thank two anonymous referees for their many helpful comments on an earlier draft. Any remaining errors are the authors' own. Special thanks go to R. Moner for his encouragement and helpful suggestions. C.P. gratefully acknowledges the financial support of the Subprograma de Estancias de Investigadores Españoles en Centros de Investigacion Extranjeros, and wishes to express his appreciation to the Graduate School of Education, Harvard University, for the appointment as a Visiting Scholar, 1998–99.

Notes

1. The Spanish Active Population Survey shows a dramatically high youth unemployment rate for males and females over the 1980s. Spain entered the decade with youth unemployment rates over 40% and, although the year 1984 marks the end of a phase of steady unemployment growth in Spain (56.4%), the unemployment rate remained well over 45% of the labour force aged 16–19 until 1987.
2. These marginal effects reported in Table 3 are evaluated for an individual with parents' income less than 25 000 ptas, low social class status, resident in a city with more than 100 000 inhabitants, and with other continuous characteristics variables held at their sample means. Therefore, they represent the derivatives of the probabilities with respect to a particular explanatory variable. Specifically, the marginal effect for the ith variable is $[\exp(x'\beta)]/\{[1+\exp(x'\beta]^2\}\beta_i$ for the logit model.
3. In their paper, Rees and Mocan (1997) used panel data estimation methods in order to avoid these potential omitted problems. They showed that the

estimation of a model without controls for community characteristics that are likely correlated with labour market conditions produce quite misleading results.

4. Unfortunately, there are no economic studies on dropouts in Spain. However, in the international educational outcome literature, many studies have examined whether family socio-economic background is related with school dropout behaviour. See, for example, Rumberger (1983, 1987), Natriello (1987), Olsen and Farkas (1989), Ehernberg and Brewer (1994), McMillen and Kaufman (1996), and Mora (1997).

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