

WHAT HELPS HOUSEHOLDS WITH CHILDREN IN LEAVING POVERTY? EVIDENCE FROM SPAIN[★]

Olga Cantó, Coral del Río and Carlos Gradín

ABSTRACT

In this paper we analyse the distinct effectiveness of demographic, labour market and welfare state transfers events in promoting exits from deprivation for childbearing households in Spain, a Southern European Country with high and persistent child poverty and a familial welfare regime. We undertake a thorough analysis of outflow rates and of the effect of events on them by household types using a detailed descriptive approach and a multivariate analysis to control for household heterogeneity. Our multivariate results imply that, in contrast with the descriptive analysis, the presence of children robustly reduces household's chances to step out of poverty. In turn, both methodologies show that the effectiveness of labour market events is consistently lower for childbearing households while their prevalence is particularly high. Also, both the prevalence and the effectiveness of events related to the beginning of state transfers are high for households without children.

[★] This research was supported by finance from the *Ministerio de Educación y Ciencia* (ref. SEJ2004-07373-C03-02/ECON).

Inequality and Poverty

Research on Economic Inequality, Volume 14, 1–29

Copyright © 2007 Elsevier Ltd.

All rights of reproduction in any form reserved

ISSN: 1049-2585/ doi:10.1016/S1049-2585(06)14001-6

1. INTRODUCTION

In most industrialised countries, the high levels of youth unemployment as well as the rise in low wages and temporary employment appear to be the most visible causes of the new forms of poverty. A direct result of this has been the increase in the incidence of poverty on young childbearing households, making children a largely vulnerable group among the poor in rich countries. In fact, recent studies on child poverty such as UNICEF (2005) or Matsaganis et al. (2005) show that child poverty is significantly higher than adult poverty in many OECD countries. According to evidence offered by Machin (1998), the consequences of the experience of poverty in childhood are likely to persist for long since the earnings of parents play an important role in the determination of the cognitive achievement of children and this seems to have an impact on economic mobility across generations and thus in the intergenerational transmission of poverty.

The recent literature on income distribution underlines the importance of analysing the routes out or into poverty – see Stevens (1999), Muffels (2000), Jenkins (2000), Jenkins and Rigg (2001), Layte and Whelan (2002), Cantó (2002, 2003), Jenkins and Schluter (2003) or Cappellari and Jenkins (2002, 2004). A first aim of the paper is to contribute to initial results in the literature on child poverty outflow rates in Spain appeared in Bradbury et al. (2001) or Cantó and Mercader-Prats (2002).

The analysis of outflow rates by household types is particularly interesting. In fact, Jenkins and Rigg (2001) note that the differences observed in poverty outflow rates across household types indicate the importance of looking at associations between transitions and trigger events separately for different groups. Indeed, Cantó (2003) suggests that different types of events help childbearing household's escape poverty compared to the rest of the population. In this paper we assess to what extent the welfare system and the socio-economic context in which households live make some events more successful than others in helping childbearing households leave poverty. In sum, our analysis provides answers for questions such as: Does the departure of youths help poor households leave poverty or does it have the opposite effect due to the loss of income? How does the household members' gain of a job promote exits from poverty for childbearing households relative to the rest of the population? Does starting to receive an unemployment benefit significantly help poor households with children to leave deprivation? Or is it starting to receive a pension benefit from co-habiting senior members more important in pulling them out of poverty?

Spain is a country where child poverty is relatively high and persistent: INE (2004b) reports that the child poverty rate in Spain in 2001 is ten points higher than that of adults and is also significantly more persistent. In comparison with

other European countries, Nolan and Maitre (2001) indicate that the child poverty rate in Spain in 1995 was one of the highest in the European Union (EU) just after Italy and the UK. In addition, Micklewright and Stewart (1999) report that in the late nineties Spanish child poverty was 25 per cent higher than the EU15 average. With respect to the evolution of the demographic trends in fertility and new household formation, the Spanish case is particularly unique. In comparison to other EU countries, Spain presents an extremely low fertility rate since 1988: 1.17 children per fertile woman in 1996 (Eurostat, 2005), a relatively low occurrence of divorces and breaking-offs: 12.5 divorces per 100 marriages in 1991 (INE, 2004a), and a very low rate of youth departure from the parental household: in 1995 more than half of those below 30 live in the parental home. With respect to the situation of the Spanish labour market, one of its main features in the late eighties and first half of the nineties is the high and persistent level of unemployment (the highest in the OECD countries) and the large number of fixed-term contracts. In this setting, it is most likely that labour market events of any member of the household become particularly important for the increase of the chances to leave poverty.

The welfare regime in Spain is the so-called *familial* or *residual*, which provides strong unemployment protection for breadwinners, wide coverage of the old-age pension system, and a relatively small proportion of state transfers available to families with children – see Esping-Andersen (1990) and Iacovou and Berthoud (2001). The most outstanding characteristic of this regime in the last decades has been the large improvement in the number and quantity of old-age pensions resulting in a consistent and significant reduction of poverty rates for households whose head is over 65 years of age. At the same time, cash benefits for children in low-income families have been seldom available. Indeed, Immervoll et al. (2000) situated Spain in the group of EU countries with low and ineffective child benefits. The only existing child benefit in Spain before 2003 is the means-tested *Prestaciones por hijo a cargo* which is addressed at households with dependent children under 18 years old. Matsaganis et al. (2005) calculate that approximately 13 per cent of all children received this benefit in 2001. In fact, a household with one child in Spain receives (if poor enough) around 20 per cent of the amount it would receive in Sweden, France, UK or Germany. Thus, within the EU, Spain is a country where social welfare policies are particularly weak towards poor households with children.

Surely, questions regarding dynamics are important for the debate on how to design public policies to reduce child poverty. In particular, understanding the reasons for stable upward mobility of household incomes is likely to help in designing efficient poverty alleviating policies. We are aware of an underlying structural model of poverty transitions that includes adults decisions on labour

market participation, fertility and marriage together with country-specific labour market rewards to occupation reflected in the structure of earnings equations (see Burgess and Propper, 1998). Our approach focuses on observed outcomes and avoids modelling each household member individual decision affecting household income dynamics. The advantage of our approach is its simplicity and the possibility of considering a large number of processes and outcomes. Further, we centre the analysis on events that *promote* exits from poverty (outflow) as different from those that *protect* households from falling in it (inflow) – see Ravallion (1996). This prevents us from trying to explain the poverty prevalence rate in Spain through the entry and exit rates and centres the discussion in the characterisation of the events that allow poor households to jump over the poverty threshold.

The paper is organised as follows. In Section 2 we present the two complementary frameworks of analysis, a short description of the dataset and our main methodological choices in the definition of poverty. In Section 3 we present a descriptive analysis of the poverty outflow and the effect of events by household type. Section 4 checks our descriptive results using a multivariate approach to the estimation of the outflow rates distinguishing childbearing households from the rest. Section 5 concludes.

2. TWO COMPLEMENTARY FRAMEWORKS FOR ANALYSING DIFFERENCES IN POVERTY OUTFLOW BY HOUSEHOLD TYPE

As Jenkins and Schluter (2003) indicate, it is difficult to compile an exhaustive set of mutually exclusive trigger events expected to affect poverty transitions as a number of these events occur simultaneously. In the descriptive part of the paper we follow Jenkins and Rigg's (2001) proposal that combines two inevitably related selection methods, a classical one that allows us to compare our results with those in previous works for the US, the UK and Germany and one that avoids its debatable assumptions. The first methodology was proposed by Bane and Ellwood (1986) and classifies events into an exhaustive set of mutually-exclusive categories by a hierarchical classification system identifying those associated with the endings of spells and ranking them by their effect on household income changes. The second methodology considers a subset of the most important events allowing for their joint occurrence. The ad hoc list of major nonmutually-exclusive events that we use includes, in practice, most of those examined by Jenkins and Schluter (2003).¹

In order to deepen our understanding of the income dynamics process, we decompose the effectiveness of transitions in the prevalence of events and the impact

of the event on poverty outflow rates once it takes place, a framework of analysis developed by Jenkins and Schluter (2003). This methodology allows us to deepen the understanding of what justifies a certain poverty outflow for some household type by linking it to the lack of occurrence of certain relevant events² or to the limited income increase it implies for them.³ This distinction attempts to isolate the two main reasons for the empirical observation of different outflow rates by population groups.

A factor that complicates the analysis is the fact that poverty transition probabilities not only depend on the size of the income change related to a certain event but also on the distance of the household's equivalent income from the poverty line: the further the household equivalent income is from the poverty line, the less likely an exit from poverty is observed. Jenkins and Schluter (2003) tried to control for this through a basic sensitivity analysis. However, if the correlation of the size of the poverty gap and the presence of children in the household is high and household types significantly differ in other relevant characteristics such as the level of education of household members, type of municipality of residence, etc., it may be useful to compare our main descriptive results against a complementary framework that considers household heterogeneity.

Our data come from the Spanish Household Expenditure Survey (Encuesta Continua de Presupuestos Familiares, ECPF), a quarterly rotating panel survey which includes both household demographic information and individual data on household members' incomes and labour status.⁴ The quarterly interview survey design is an advantage for our study because it provides us with a consistent panel of data on incomes and socio-demographic information at short time intervals. This helps us identify the specific point in time at which events take place and income changes occur. In this sense, the data structure is useful in the study of the association of events and income changes.

However, as noted in Cantó (2003), household fatigue imposed by short household tracing periods results in a short follow-up of households in the panel (a maximum of two years) and a substantive attrition rate (approximately a 45 per cent of households leave the panel between the first and the fifth interview, $t - 1$ and t). Thus, for the descriptive part of the paper we use attrition weights constructed using a *propensity score* method as in Cantó et al. (2006)⁵ while our multivariate approach takes into account the bias arising from unplanned sample attrition by a Heckman endogenous selection model.⁶ More precisely we estimate the poverty outflow using a bivariate probit on all relevant household characteristics and events that considers the endogenous selection bias due to attrition for which we can find adequate and plausible instruments.⁷

Our sample consists of 27,735 households observed between one and eight times (a maximum of two years) between the first quarter of 1985 and the last

quarter of 1995, both inclusive.⁸ Breaking the total population into the two demographic groups of interest the sample divides into two of roughly similar size: 13,383 households with children and 14,352 households without children. A household's poverty status is measured at each quarter and a household is classified as poor if the sum of all household members' post-tax post-transfer income⁹ adjusted for differences in needs is below 60 per cent of the contemporary median equivalent household income (relative poverty). Even if most of our analysis is on relative poverty, as an approximation to absolute poverty we maintain a constant real poverty line at the first quarter of 1985. Needs are adjusted using an equivalence scale according to which each household income is deflated by a household equivalent factor m (where *children* are all household members under 18 years of age):

$$m = [(adults) + 0.7(children)]^{0.75}.$$

This equivalence scale is used by Jenkins and Schluter (2003) and is recommended by the US National Research Council Panel on Poverty and Family Assistance (see Citro and Michael, 1995).¹⁰

In this setting our final sample for the poverty outflow analysis is of 4831 poor households (2515 with children and 2316 without children) that may leave poverty within the following year (between their first and their fifth interview in the panel). As a result of attrition between these two dates, only 2774 households are not censored a year later (1438 with children and 1336 without children).

3. A DESCRIPTIVE ANALYSIS OF THE EFFECTS OF EVENTS ON CHILD POVERTY OUTFLOW

3.1. *The Position of Childbearing Households in Spain: The 1985–1995 Period*

During the eighties and nineties there has been a progressive reduction in the percentage of households with children in the total Spanish household population (from 53.3 to 42.2) and a fall in the average number of children within each childbearing household (from 2 to 1.7) – see Table 1.¹¹ The economic position of households with children is below that of the rest: their average income lies between 82 and 86 per cent of the mean for those without children while their degree of income inequality is significantly larger towards the end of the period. In fact, during all the ten-year period, childbearing households registered a much higher

Table 1. Statistics for Equivalent Households Income Distribution in Spain, 1985–1995

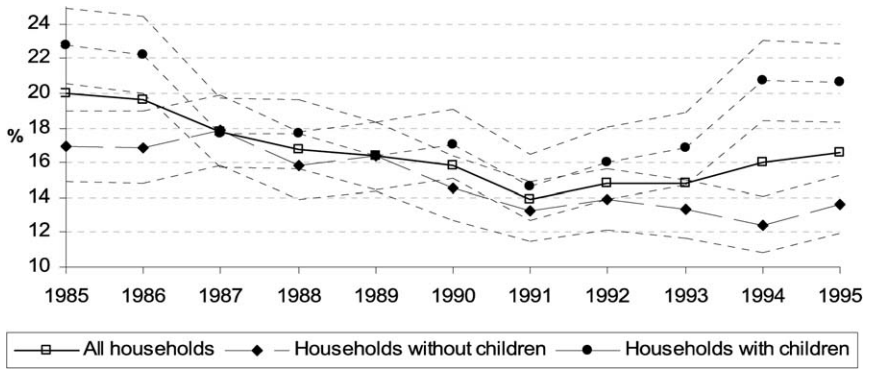
	All			Without children			With children		
	1985	1990	1995	1985	1990	1995	1985	1990	1995
Population (%)	100	100	100	46.7	50.3	57.8	53.3	49.7	42.2
Average number children	1.08	0.92	0.72	–	–	–	2.03	1.85	1.71
Mean (Ptas)	208,037	256,375	274,075	221,210	264,392	287,920	196,479	248,254	255,148
Median (Ptas)	171,213	220,080	237,401	183,804	223,989	243,568	163,352	216,314	223,088
<i>Inequality</i>									
Gini	0.357	0.301	0.301	0.350	0.307	0.296	0.361	0.293	0.306
Ratio 90/10	5.189	3.673	3.876	4.910	3.778	3.582	5.368	3.655	4.386
Ratio 75/25	2.217	1.987	1.979	2.284	2.001	1.946	2.161	1.981	2.019
<i>Relative poverty</i>									
<i>H</i>	20.0	15.8	16.6	16.9	14.6	13.6	22.8	17.1	20.6
<i>I</i>	35.7	24.2	26.6	34.1	23.1	21.9	36.8	25.1	30.8
<i>HI</i>	7.2	3.8	4.4	5.8	3.4	3.0	8.4	4.3	6.4
<i>Absolute poverty</i>									
<i>H</i>	20.0	6.6	6.6	16.9	5.6	3.9	22.8	7.6	10.1
<i>I</i>	35.7	28.9	30.6	34.1	29.3	31.6	36.8	28.6	30.1
<i>HI</i>	7.2	1.9	2.0	5.8	1.6	1.2	8.4	2.2	3.1

Note: A household is poor if its equivalent income is below 60 per cent median household income. *H* is the *Headcount ratio*, *I* is the *Income gap ratio* index which measures the relative mean poverty gap and *HI* equals the product of the *Headcount ratio* and the *Income gap ratio*, often referred to as *Poverty Gap Ratio*.

incidence of poverty than the rest of households (20.6 per cent of households with children versus 13.6 per cent of the rest are poor in 1995).

In terms of the evolution of poverty between 1985 and 1995 for the total population, Table 1 shows a consistent reduction in absolute and relative poverty which is significantly smaller for childbearing households than for the rest of the population.¹² Indeed, from 1991 onwards, as depicted in Fig. 1, an increase in relative poverty using the *Headcount ratio* is observable for households with children (this yields different proportions of poor in those household types that are statistically significant after 1993). In contrast, the poverty rate of households without children continues to decline thus substantially increasing the gap between both demographic groups.

In addition, as *I* and *HI* indexes in Table 1 show, poverty is consistently deeper for households with children than for the rest.



Note: 95% confidence bands for the incidence of poverty in households with and without children were calculated and depicted in dotted lines. These bands are based on the standard error of proportions in a random sample.

Fig. 1. Relative Poverty Incidence for Adjusted Household Income in Spain 1985–1995 (1st Quarter).

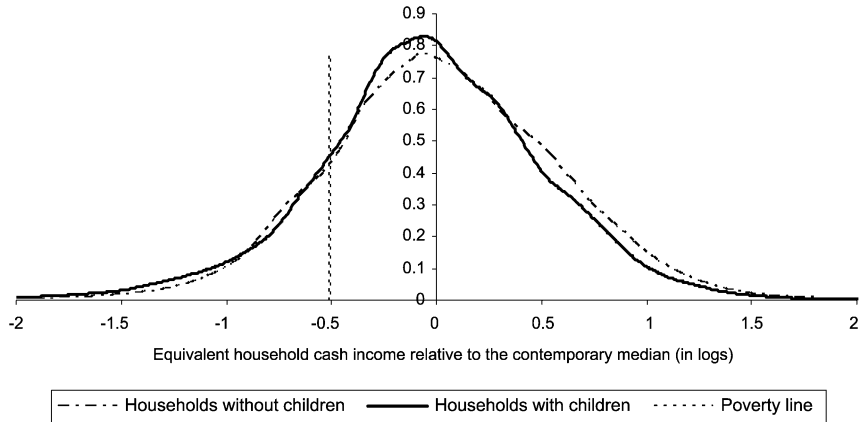


Fig. 2. Kernel Densities for Household Income, Pooled Sample (1985–1995).

Figure 2 shows estimates of separate income densities for both household types using an adaptive non-parametric *kernel* for the logarithm of equivalent income at all households’ first interview (pooled sample). We find that the density for households with children allocates a higher share of population at the bottom tail (until the 45 per cent of the median)¹³ and is characterised by having middle in-

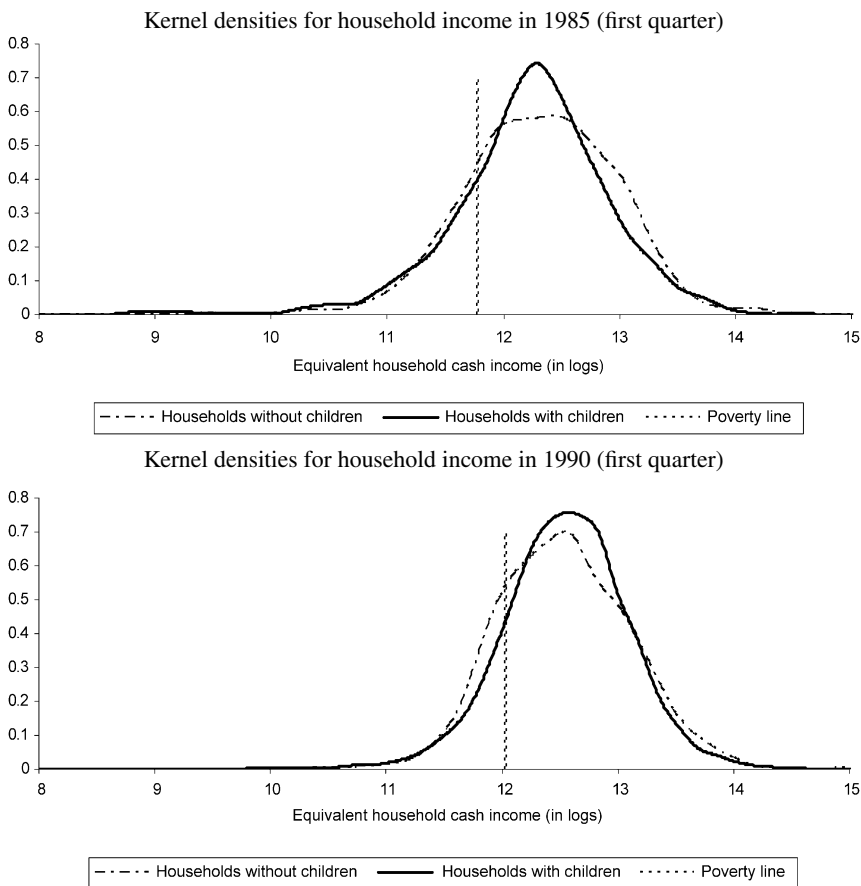


Fig. 3. Adaptive Kernel Densities for Household Income at Different Years (1985–1995).

comes more concentrated around a prominent mode (the share of population is larger between the median and twice the median).¹⁴ These differences, if calculated for a quarter of each year of observation, seem to have diminished during the second half of the eighties and increased back again during the first half of the nineties – see Fig. 3.¹⁵ Furthermore, even if Cantó (2002) finds that it is the size of the income change and not the poverty gap what is a strong determinant of the household’s exit probability, it is still likely that results on poverty outflow

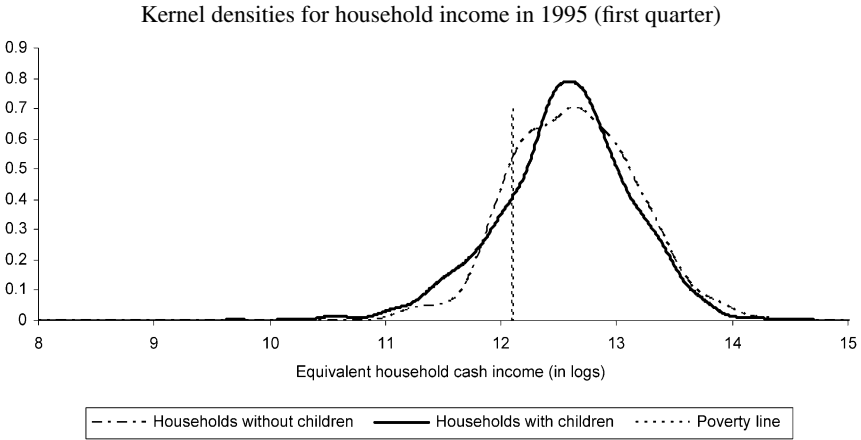


Fig. 3. Continued

for childbearing households will be affected by their greater distance from the poverty line.

3.2. Poverty outflow rates by household type

Regarding the estimation of the child poverty outflow, the existing evidence for Spain is very limited. Some results for the period we study appear in [Bradbury et al. \(2001\)](#) in their analysis of child poverty dynamics in seven industrialised nations. These authors find that almost half of the Spanish children observed poor at moment $t - 1$ (44.8 per cent to be more exact) will exit poverty at t (a year later) and this situates the country within the high child poverty outflow group near Ireland and Germany and relatively far above the UK or the US child poverty outflow rates.

[Table 2](#) presents our estimations of poverty outflow rates by household type. The average unrestricted exit rate is 42 per cent: thus more than two fifths of those households who are poor one year are not poor the next. Interestingly, our results seem to show that the estimated poverty exit probability is similar or slightly higher for households with children. However, [Table 2](#) identifies large discrepancies in outflow rates using a more detailed household grouping. These differences do not exactly match the results one would obtain analysing the child poverty stock. Some household types with high poverty incidence show high outflow rates and other show low ones. Similarly, some household types with high outflow rates show low poverty incidence rates while others show high ones. Clearly,

Table 2. Cross-sectional Poverty Risk and Poverty Outflow Rates by Household Type

Household type	Poverty		Outflow rates		
	Risk	Composition (in %)	(1)	(2)	(3)
Single, ≥ 65 years	11.1	3.9	35.3	32.2	27.0
Single, < 65 years	21.6	4.8	30.2	22.1	21.8
Couple, no children, ≥ 65	21.1	15.7	33.9	32.2	21.7
Couple no children, < 65	13.9	16.6	48.3	43.5	36.6
Two or more adults without children	17.1	8.3	47.3	43.8	34.6
All households without children	16.4	49.5	40.7	36.9	29.3
Lone parent	33.4	2.5	46.3	34.0	29.7
Single parent	26.1	3.6	49.6	45.9	34.0
Couple with one child	13.4	13.5	50.7	46.3	38.5
Couple with two children	15.1	15.7	46.2	41.1	30.7
Couple with three or more children	29.3	15.2	33.8	28.9	19.7
All households with children	18.2	50.5	43.9	38.8	29.6
All households	17.3	100	42.3	37.9	29.5

Notes: Lone parent households are households with children (individuals below 18 years of age) and only one adult who is the household head. Single parent households are households with children with an adult head, no spouse and some other adult member. Outflow rate (1) is obtained using an unrestricted definition of exit, (2) restricts the definition of exits to those households that experience a change in income larger than 25%, (3) restricts the definition of an exit to cases in which households jump over 70% of the median equivalent household income.

the dynamic analysis of poverty tells us a very different story of the deprivation phenomenon.

Most precisely, within households without children, young couples or groups of two or more cohabiting adults register a low poverty risk and a particularly high probability of leaving poverty. In addition, we find that non-elderly childless singles and old-age couples present high poverty risks and very low outflow rates. For households with children, couples with three or more children register the lowest chances to leave poverty. In fact, their chances to leave poverty are one of the lowest of the whole population. These households have a particularly high poverty risk and represent a third part of the childbearing households whose incomes are below the poverty line. This result underlines that the accumulation of children in a household not only increases the poverty risk but it significantly increases the chances of experiencing long poverty spells. In contrast, other household types who also share a high poverty incidence such as lone and single parent households, register particularly high outflow rates which are similar to those registered

by couples without children. This result appears to indicate that these household types experience somewhat shorter poverty spells. In sum, given the diversity of outflow rates by household type, some trigger events may be a potential route out of poverty for some household types but not for others.

3.3. The effect of events on poverty outflow by household type

Using Bane and Ellwood's (1986) methodology, our results for Spain in Table 3 confirm those reported in Cantó (2003): few households transiting out of poverty (only 7.9 per cent) experience a demographic event at the time.¹⁶ We find that this is not the case for all household types. As it could be expected, households with children are particularly stable in their demographic structure both in household head changes and in the reduction of *needs*: they seldom change household head and they experience few departures of members. Besides, households without children have a completely different set of relevant income events. The results for childbearing households show large similarities with those of the total sample of households in the UK and the US: almost half of their transitions are related to a head of household labour income change (45 per cent to be exact). This is consistent with the results in Duncan et al. (1993) for list of OECD countries where parents' employment was by far the most frequent cause of child poverty exits.¹⁷

In order to allow for more flexibility in our results, we consider a list of major events that can take place simultaneously. In addition, as indicated in Section 2, in Table 4 we decompose the risk of a transition out of poverty into two dimensions (using non-mutually-exclusive trigger events): the prevalence of trigger events and the chance of transiting out of poverty conditional on experiencing one of them. We find some interesting differences by household type in the reasons for observing divergences in their outflow rates.

Table 4 shows that the gain of a job is particularly common and significantly effective in pulling any household out of poverty in Spain between 1985 and 1995. Also, and as it would be consistent with a situation of high unemployment during this period, poor households experienced some members' job gain much more often than increases in the earnings of those members already employed.¹⁸ In contrast, as expected from the demographic statistics, decreases in household size are rare independent of the presence of children. Also the occurrence of trigger events related to the reception of any state transfers is rather low, even if it is significantly more frequent in poor households without children than in the rest. In contrast, job gains experienced by the head or the spouse occur significantly more

Table 3. Movements out of Poverty by Event Occurred and Type of Household: Bane and Ellwood’s Methodology

<i>Main trigger event (hierarchical classification)</i>	Transitions out of poverty (one year)		
	All households	Households with children	Households without children
Demographic event	7.9	5.4	10.5
Income event	92.1	94.6	89.5
<i>Demographic events</i>			
Head of household changes	5.6	3.9	7.4
Changes in household needs	2.3	1.5	3.1
<i>Income events</i>			
Household head labour earnings change	31.1	45.8	14.9
Household spouse labour earnings change	1.6	2.8	0.3
Other member labour earnings change	19.4	20.5	18.2
Non-labour income change	37.6	22.2	54.4
Non-classifiable*	2.5	3.2	1.6
All	100.0	100.0	100.0
Households in poverty (unweighted)	2774	1438	1336
Households leaving poverty (unweighted)	1160	620	540

Notes: (1) An event occurred in one year is classified as demographic if it supposes a change in the household head between 1st and 5th interview or the change in household needs (equivalence scale) is greater in percentage points than the change in household income. The event is an income event otherwise. Within income events those non-classifiable are those situations in which the income change of some two types is identical.

often in poor households with children and explain the higher poverty outflow rates of childbearing households shown in [Table 2](#).

Indeed, a general result from [Table 4](#) is that the impact of any event on a household’s transition probability is lower for households with children than for the rest: almost all demographic and labour market events considered are more effective if they take place in a household without children than otherwise. This result could be driven by the fact that households with children are often situated at a further distance from the poverty line than households without children but could also be due to some other reasons related to other household characteristics that imply a higher incidence of low wages, a lower increase in the income to needs ratio when individuals leave the household or a higher incidence of public transfers of a low quantity. In any case, we should always bear in mind that the impact of the same increase in household employment income after a member’s job gain will be smaller for childbearing households than for the rest if childbearing households

Table 4. Events and Their Effect on Household Chances to Leave Poverty

Event occurred between $t - 1$ and t	Households with children			Households without children		
	Prob. event (all sample)	P (event poor at t)	P (exit poverty event)	Prob. event (all sample)	P (event poor at t)	P (exit poverty event)
<i>Demographic events</i>						
Child born	3.5	3.1	26.2	2.3	1.4	52.4
Child/ren leaves or dies	1.6	2.5	45.3	–	–	–
Adult leaves or dies	3.5	3.9	42.8	6.1	4.1	60.1
Elderly leaves or dies	1.0	1.0	43.0	1.9	1.9	58.3
<i>Labour market events (wages)</i>						
Labour earnings increased $\geq 20\%$	19.1	23.5	62.7	10.9	8.7	60.4
<i>Labour status events (head)</i>						
More hours work (from $p - t$ to $f - t$ work)	0.7	1.7	41.5	0.4	0.9	43.9
Gain job (enters full time work)	4.7	13.9	57.1	1.9	4.4	77.7
Gain job (enters part time work)	0.3	0.9	20.4	0.4	1.0	19.8
Retirement (full time to retirement)	0.9	0.9	55.7	2.2	1.7	65.3
<i>Labour status events (spouse)</i>						
More hours work (from $p - t$ to $f - t$ work)	1.2	1.3	73.4	0.4	0.2	43.7
Gain job (enters full time work)	3.5	4.0	67.0	0.9	0.8	78.8
Gain job (enters full time work)	2.0	3.5	52.1	0.6	1.3	53.2
Retirement (full time to retirement)	0.1	0.0	–	0.3	0.4	62.3
<i>Labour status events (others)</i>						
Gain job (some start to receive employment income from $f - t$ or $p - t$ work)	8.7	15.8	72.7	7.5	10.8	87.1

(continued on next page)

Table 4. Continued

Event occurred between $t - 1$ and t	Households with children			Households without children		
	Prob. event (all sample)	P (event poor at t)	P (exit poverty event)	Prob. event (all sample)	P (event poor at t)	P (exit poverty event)
<i>Non-labour income change</i>						
Begin pension benefit	3.4	4.9	46.2	6.6	8.7	61.5
Begin unemployment benefit	1.2	1.0	61.1	2.5	2.2	78.0
Begin other regular transfers	2.6	5.1	48.2	2.2	4.0	58.9
Increase pension income > 35%	2.1	3.4	62.3	6.8	11.5	74.7
Increase unemployment income > 35%	0.9	2.0	46.8	0.4	0.9	48.0
Increase regular transfers > 35%	0.1	0.1	100	0.6	1.9	60.3
Samples of households	7503	1438	620	7733	1336	540

Notes: (1) Events refer to changes between moment $t - 1$ and t (a year later). Demographic transitions refer to changes in the number of household members of the type referred while all other number of members is constant. Other reduction (increase) in members includes those cases in which more than one type of members changes (this may mean only that children transit to adults or adults to elderly). Head labour status events are selected on the basis of an estimation of the effect of each possible event (out of 30) on the probability of a household transiting out of poverty. The events presented are those which have a larger effect on this probability, all other events are considered as “stability in the labour market”.

(2) Poverty exits refer to changes in poverty status of the household between $t - 1$ and t . Sample is restricted to households observed at $t - 1$ and t weighted for attrition between these two moments in time. Poverty is defined as household income below 60% median household income each quarter.

(3) When labour earnings increase more than 20% the number of workers in the household remains unchanged.

(4) Increases in pension, unemployment and regular transfer income include increases over 35 per cent between $t - 1$ and t in order to eliminate all short term unimportant income fluctuations.

usually contain more members than households without children. This is simply due to the smaller effect of that increase on total equalised household income.¹⁹

4. A MULTIVARIATE APPROACH TO THE EFFECT OF EVENTS ON EXIT

In order to be able to assess the role of the distance to the poverty line and other household characteristics on our previous results on poverty outflow we need to control for household heterogeneity in a multivariate approach. Various types of models have been used to estimate poverty entry, exit and re-entry rates in the literature. Lillard and Willis (1978) fit a stochastic time-series structure for individual earnings assuming the same income dynamics process for all individuals in a covariance structure model. From then onwards two other types of models have been popular in the analysis of poverty transitions. A first type of models uses and develops event history analysis (Allison, 1982) and estimates hazard regressions for poverty exit and re-entry rates along the different durations of poverty and non-poverty spells including, at each discrete moment, all the previous information. In sum they model transitions as Markov chains of various orders aiming to provide estimates of the transition rate and the time spent in poverty. Examples of these are Stevens (1999) or Devicienti (2001) where single and multiple-spells frameworks are considered and there are controls for unobserved heterogeneity. A second type of models avoid incorporating spell information and centre the problem of the estimation of unbiased poverty transitions rates in modelling the initial poverty status (see Heckman, 1981) and non-random attrition. Thus modelling endogenous non-random selection between $t - 1$ and t . Examples of these are Stewart and Swaffield (1999) who model transitions into and out of low pay using a bivariate probit model with endogenous selection due to initial low pay status. In this line of work, Cappellari and Jenkins (2004) have proposed the use of a trivariate probit which can account for both sources of endogeneity: the individual initial status in $t - 1$ and panel retention between $t - 1$ and t .

All these approaches have advantages and disadvantages. Most precisely, covariance structure models assume that the same income dynamics process applies to all persons, rich and poor, which is implausible (as Stevens, 1999 and Cappellari and Jenkins, 2004 note). Hazard models can easily account for multiple spells and duration dependence but generally avoid the consideration of any endogenous selection bias due to initial conditions or attrition.²⁰ Modelling the initial poverty status and taking attrition into account requires finding adequate variables that serve as exclusion restrictions and which affect the probability of

being within the poor at moment t , but do not affect the transition between period $t - 1$ and t : i.e., explaining the *level* of household equivalent income but not its *change*. Otherwise, one could face identification problems when estimating a bivariate or a trivariate probit.

Our goal is to provide some multivariate results to contrast to our previous descriptive results on the relevance of different events in helping households with children in leaving poverty. Taking all households who are poor at first interview, moment $t - 1$, we estimate the probability that a household moves out of poverty during the following year, i.e. is not poor at moment t (fifth household interview), by estimating a maximum likelihood probit model with sample selection due to attrition. Even if we estimate different specifications, in general terms, the probability of leaving poverty on the household's characteristics and events can be written as:

$$P_{it} = \Phi(\alpha + \beta X_{it-1} + \gamma E_{i;t-1,t} + \eta C_{i,t-1})$$

where P_{it} is the probability of leaving poverty between $t - 1$ and t , Φ is a Normal distribution function, X_{it-1} are household characteristics at the initial moment $t - 1$ while $E_{i;t-1,t}$ are the events taking place between both moments in time and $C_{i,t-1}$ is the quarterly unemployment rate that tries to capture the evolution of the economic cycle. The selection equation (i.e. the probability of not suffering from attrition between $t - 1$ and t) is estimated as the probability of retention in the sample at moment t , R_{it} :

$$R_{it} = \Phi(\alpha + \beta X_{it-1} + \gamma Y_{i,t-1})$$

where $Y_{i,t-1}$ are dummies for the year of household interview that we use as exclusion restrictions due to the special characteristics of the sampling method in the survey.²¹ The peculiarities of the sampling method assure a very high household response to the panel from first interview in 1985 up to the end of 1986. From then onwards, households are allowed to leave the sample at any interview and the attrition rate is high but follows a decreasing trend that should be captured by these dummies.²² Our model is a Heckman selection one and the bivariate estimation is possible assuming that error terms follow Normal distributions (0, 1) but may covariate such that $\text{Cov}(u_1, u_2) = \delta$. In order to contrast the hypothesis of zero covariance between the errors we use a simple Wald test.²³ The inclusion of change variables (events) may raise questions of endogeneity. This may appear because unobservables may simultaneously influence the probability of leaving poverty and the occurrence of events to household members.²⁴ However, we felt, as Justino and Litchfield (2003), that the possibility of checking the important results of the descriptive analysis by including these variables outweighs the possible endogeneity problems.²⁵ Due to these problems,

however, we will also consider specifications of the model where events are not included.

Results appear in [Tables 5, 6a and 6b](#). In [Table 5](#) we present the effects of the presence of children and their number on the household's probability of leaving poverty.²⁶ Results indicate that, whatever the model we choose, the presence of children reduces the household's chances to leave poverty. This is in line with results in [Cantó \(2002\)](#) on the effects of dependents on the probability of leaving poverty²⁷ but contrasts with our descriptive results on poverty outflow rates, putting forward the importance of considering household heterogeneity. Including the household demographic group in more detail in our regressions is also of interest. First, we confirm the relatively low chances to leave poverty of households with three or more children and, second, we discover that, when household characteristics are taken into account, the presence of just two children in the household significantly reduces the outflow rate pushing it below that of similar households without children.

Our main interest, however, was to check all previous descriptive results on the effects of events on the probability of leaving poverty when we condition on household demographic and socio-economic characteristics and the poverty gap. Results appear in [Tables 6a and 6b](#) and underline the differential effect of some events on the outflow probability of households with or without children.

Results in [Tables 6a and 6b](#) confirm one of our first descriptive results in [Section 3](#) related to the effectiveness of different events on household chances of leaving poverty. Most events continue to have a smaller impact on households without children than in the rest even if we control for the poverty gap and other household characteristics. However, the regression allows us to realise that this differential impact is particularly high for two particular events: the beginning of pension and unemployment benefits. The reasons for a higher effectiveness of these two non-labour income events on households without children could be linked to the eligibility of members for higher quantities of the benefits or to the accumulation of first-time benefit receivers in these households.

[Tables 6a and 6b](#) also show that the impact on the poverty outflow rate of a member's gain of a job is independent of the member's position in the household, particularly in households with children.²⁸

Finally, the multivariate analysis also allows us to discover that the departure of adult household members is effective in households without children, thus reducing their needs more than their total income, while it does not have any effect on the chances of childbearing households to leave poverty. In contrast, the arrival of a new child reduces childbearing households' chances to exit poverty while it has no significant effect on households without other children.

Table 5. The Effect of Children on the Household’s Poverty Outflow Rate

Estimation strategy: Probit with sample selection	Marginal effects on the probability of leaving poverty			
	Basic model	Basic + poverty gap	Basic + events	Basic + events + poverty gap
Presence of children in hh. (0–17)	–0.075** (0.031)	–0.076** (0.029)	–0.070** (0.036)	–0.065** (0.029)
Number of children in hh. (0–17) (only for households with children)	–0.071** (0.026)	–0.059** (0.026)	–0.051** (0.022)	–0.036** (0.017)
<i>By household type</i>				
<i>Households without children</i>				
Single, ≥ 65 years	ref	ref	ref	ref
Single, < 65 years	–0.068 (0.069)	–0.056 (0.061)	–0.091 (0.076)	ref
Couple no children, ≥ 65	–	–	–	–
Couple no children, < 65	0.055 (0.040)	0.071* (0.038)	–0.008 (0.045)	0.031 (0.036)
Two or more adults without children	0.068 (0.068)	0.065 (0.062)	–0.007 (0.072)	0.021 (0.049)
<i>Households with children</i>				
Lone parent	–0.045 (0.091)	–0.049 (0.076)	–0.111 (0.090)	–0.074 (0.056)
Single parent	–0.050 (0.078)	–0.051 (0.068)	–0.074 (0.090)	–0.031 (0.065)
Couple with one child	–0.003 (0.045)	0.009 (0.042)	–0.065 (0.051)	–0.020 (0.040)
Couple with two children	–0.093** (0.047)	–0.081** (0.041)	–0.130** (0.053)	–0.083** (0.038)
Couple with three or more children	–0.201** (0.060)	–0.173** (0.048)	–0.188** (0.059)	–0.116** (0.042)
Sample size (households)	2774	2774	2774	2774
Sample size (households with children)	1438	1438	1438	1438

Notes: All regressions include control variables such as: age and age squared of the household head, sex of hh. head, presence of a spouse, education level hh. head, number of dependent children, number of dependent adults, size of municipality, labour status of hh. head, quarter of observation and the Spanish unemployment rate at quarter *t* (second moment). Retention equation includes variables such as: age and age squared of the household head, sex of hh. head, presence of a spouse, education level hh. head, number of income receivers, number of children or presence of children or household type, number of dependent adults, housing ownership status, size of municipality, labour status of hh. head, quarter and year of observation. The Wald test of independence of equations shows that retention and poverty exit are independent in all three first specifications but not in the last one where the poverty gap and events are included as explanatory variables. Standard errors in parenthesis.

* Significant at 90% confidence.

** Significant at 95% confidence.

Table 6a. The Effect of Events on the Household's Poverty Outflow Rate:
Probit Sample Selection Model

	Marginal effects on the probability of leaving poverty					
	All households		Households with children		Households without children	
	Basic model + events	Basic + events + pov. gap	Basic model + events	Basic + events + pov. gap	Basic model + events	Basic + events + pov. gap
<i>Demographic events</i>						
Child born	-0.128* (0.069)	-0.064 (0.054)	-0.141* (0.080)	-0.098* (0.062)	-0.006 (0.117)	0.072 (0.090)
Child leaves or dies	0.065 (0.094)	0.051 (0.075)	0.053 (0.083)	0.041 (0.064)	-	-
Adult leaves or dies	0.137** (0.056)	0.124** (0.046)	0.0006 (0.061)	0.023 (0.045)	0.287** (0.096)	0.233** (0.087)
Elderly leaves or dies	0.176** (0.085)	0.187** (0.077)	-0.011 (0.137)	-0.031 (0.114)	0.322** (0.123)	0.268** (0.098)
<i>Labour market events (wages)</i>						
Labour earnings increase $\geq 20\%$	0.351** (0.033)	0.358** (0.042)	0.333** (0.048)	0.324** (0.059)	0.383** (0.059)	0.405** (0.076)
<i>Labour status events (head)</i>						
More hours work ($p - t$ to $f - t$)	0.361** (0.146)	0.297** (0.117)	0.275 (0.188)	0.264* (0.146)	0.472** (0.233)	0.251 (0.180)
Gain job (enters $f - t$ work)	0.378** (0.057)	0.314** (0.053)	0.319** (0.067)	0.256** (0.061)	0.543** (0.113)	0.424** (0.110)
Gain job (enters $p - t$ work)	-0.197* (0.120)	-0.207** (0.100)	-0.092 (0.127)	-0.101 (0.100)	-0.247 (0.209)	-0.271* (0.168)
Retirement ($f - t$ to retirement)	-0.092 (0.093)	-0.051 (0.076)	-0.030 (0.139)	0.013 (0.097)	-0.108 (0.124)	-0.091 (0.108)
<i>Labour status events (spouse)</i>						
More hours work ($p - t$ to $f - t$ work)	0.263** (0.133)	0.189* (0.109)	0.310** (0.141)	0.230** (0.109)	-0.182 (0.331)	-0.242 (0.284)
Gain job (enters $f - t$ work)	0.347** (0.078)	0.301** (0.067)	0.310** (0.081)	0.254** (0.069)	0.360 (0.225)	0.279 (0.177)
Gain job (enters $p - t$ work)	0.147** (0.071)	0.136** (0.057)	0.174** (0.077)	0.144** (0.061)	0.005 (0.131)	0.024 (0.097)
Retirement ($f - t$ to retirement)	0.133 (0.201)	0.091 (0.157)	-	-	-0.004 (0.223)	-0.039 (0.160)
<i>Labour status events (others)</i>						
Gain job (some start to receive employment income from $f - t$ or $p - t$ work)	0.554** (0.058)	0.472** (0.064)	0.452** (0.074)	0.376** (0.075)	0.746** (0.102)	0.619** (0.136)
Sample sizes (num. of hh.)	2774	2774	1438	1438	1336	1336

Table 6b. The Effect of Events on the Household’s Poverty Outflow Rate: Probit Sample Selection Model

	Marginal effects on the probability of leaving poverty					
	All households		Households with children		Households without children	
	Basic model + events	Basic + events + pov. gap	Basic model + events	Basic + events + pov. gap	Basic model + events	Basic + events + pov. gap
<i>Non-labour income change</i>						
Begin pension benefit	0.390** (0.060)	0.323** (0.057)	0.170** (0.078)	0.133** (0.061)	0.575** (0.089)	0.478** (0.109)
Begin unemployment benefit	0.455** (0.099)	0.403** (0.091)	0.233* (0.130)	0.154 (0.107)	0.701** (0.140)	0.654** (0.159)
Begin other regular transfers	0.249** (0.055)	0.211** (0.046)	0.205** (0.068)	0.164** (0.053)	0.335** (0.093)	0.268** (0.081)
Increase pension income > 35%	0.471** (0.062)	0.413** (0.061)	0.263** (0.088)	0.234** (0.077)	0.603** (0.088)	0.519** (0.115)
Increase unemp. income > 35%	0.235** (0.083)	0.215** (0.068)	0.246** (0.099)	0.217** (0.080)	0.176 (0.152)	0.159 (0.124)
Increase regular transfers > 35%	0.329** (0.111)	0.286** (0.087)	–	–	0.424** (0.123)	0.375** (0.108)
<i>Poverty gap</i>						
Income 50–60% median		ref		ref		ref
Income 40–50% median		–0.103** (0.019)		–0.095** (0.023)		–0.121** (0.033)
Income 30–40% median		–0.137** (0.023)		–0.080** (0.025)		–0.194** (0.049)
Income 20–30% median		–0.161** (0.026)		–0.144** (0.029)		–0.156** (0.044)
Income < 20% median (not zero)		–0.297** (0.039)		–0.245** (0.049)		–0.342** (0.063)
Sample sizes (num. of hh.)	2774	2774	1438	1438	1336	1336

Notes: All regressions include control variables such as: age and age squared of the household head, sex of hh. head, presence of a spouse, education level hh. head, number of dependent children, number of dependent adults, size of municipality, labour status of hh. head, quarter of observation and the Spanish unemployment rate at quarter *t* (second moment). Retention equation includes variables such as: age and age squared of the household head, sex of hh. head, presence of a spouse, education level hh. head, number of children or presence of children or household type, number of dependent adults, housing ownership status, size of municipality, labour status of hh. head, quarter and year of observation. The reference household is male headed employed full-time with primary school education employed in a non-qualified job, whose spouse is not employed, lives in a township over 500,000 inhabitants and total household income is just below the poverty line (50–60 per cent if the median household income). Standard errors appear in parenthesis.

* Significant at 90% confidence.

** Significant at 95% confidence.

5. CONCLUSIONS

In this paper we offer some insights on the dynamics of poverty for households with children in Spain and provide evidence on the effects of considering multivariate approaches to the estimation of outflow rates that include events as explanatory variables.

An interesting result is that a multivariate approach to the estimation of outflow rates allows us to discover that the higher poverty outflow rate of households with children compared to the rest in the case of Spain is due to the particular demographic and socio-economic characteristics of this group. Once we control for these, all specifications estimate a lower transition rate for households with children than for the rest.

Poverty transitions in the case of households with children are most strongly linked to the economic cycle in an economy, like the Spanish, with high rates of unemployment and temporary jobs relative to the rest of EU countries. In contrast, in the rest of households, non-labour income changes appear as more important in determining a potential transition out of poverty, implying that their transitions are more linked to the social protection system. This does not come as a surprise, given that in these households heads are older, and the Social Protection System in Spain is more designed to combat poverty in this demographic group than in younger households with children. Given the demographic structure in Spain and its trend, our results show that the possibility of households with children of escaping poverty through events of this kind is even lower than in other countries.

In sum, it appears that labour market events occurring to household members are the usual reason for escaping poverty for Spanish households with children. We suspect that stagnation of poverty among children, especially during periods characterised by increasing unemployment, may be the direct result of the precariousness and other structural deficiencies of the Spanish labour market. This contrasts with the situation in most EU countries where we find a strong safety net for households with children, mainly working through universal cash transfers that are effective in preventing poverty risk and in reducing child poverty persistence. As we have already emphasised, benefits addressed to households with children in Spain (through direct cash payments or through tax concessions) are clearly ineffective in alleviating poverty. They have failed in helping children step out of poverty and we can presume that they have probably also failed in preventing them from a fall into deprivation.

NOTES

1. Bane and Ellwood's approach is too rigid in order to undertake a deep analysis of the varied routes out of poverty in Spain. First, it avoids the consideration of joint events in providing a plausible route out of poverty and it classifies all headship changes as demographic. Second, it assumes that there is no correlation whatsoever between demographic and labour market events, and it does not consider the fact that a change in one member labour status may depend on household fertility decisions or changes in other members earnings.

2. In addition to unequal chances of employment for adult individuals or to the bias of the poverty alleviating public transfers towards some particular individuals in the population, the observation of different rates of occurrence of certain events for a household type will reflect, at the household level, a variety of fertility and cohabitation decisions undertaken by individuals.

3. This second reason is related to the differential *distribution of wages* (more likely to receive low pay or to work fewer hours, etc.) by household types, *stability of the needs/income ratio* when arrival or departure of members occurs (fewer needs but also fewer incomes) or the *quantities* of existing poverty alleviating public transfers (they mostly have access to low pensions, low unemployment benefits, low child benefits, etc.).

4. The ECPF is a rotating panel survey which interviews 3200 households every quarter and substitutes 1/8 of its sample at each wave. Households are kept in the panel for a maximum of two years. The structure of the panel is similar to that of the American *Consumer Expenditure Survey* (CES). All our calculations are based in the comparison of the household situation at first interview (moment $t - 1$) and the household situation a year later, at fifth interview (moment t).

5. The procedure to obtain the relevant attrition weights is explained in detail in one of the papers refereed in this publication.

6. No doubt, however, that it would be interesting to contrast if our results change due to the endogenous selection at first interview that classifies a household as poor or not poor. To our knowledge there are no data sources available for Spain for which we could estimate a trivariate probit that would consider the two sources of sample selection: that due to initial conditions (i.e. being poor at t) and that due to attrition as Cappellari and Jenkins (2004) propose and estimate using UK data.

7. In these models estimation problems can arise if some regressors are contemporaneously correlated with the error term. This would happen if there are unobservables that explain the outflow rate and which are important determinants of some explanatory variables (e.g. the poverty gap). If this is the case, our estimations would suffer from endogeneity and OLS estimators would be asymptotically biased.

8. See Cantó (1998) for a thorough description of the ECPF and discussion of its advantages and drawbacks in the study of poverty dynamics. Note also that we would like to extend our analysis to the late nineties and after 2000 but the new version of the ECPF survey from 1997 onwards does not allow us to do so because of the incomplete information on household incomes due to changes in the questionnaire.

9. Income is the sum across all household members of cash income from all sources minus direct taxes in the previous three months.

10. We have also calculated our results using the [Buhman et al. \(1988\)](#) equivalence scale where $s = 0.5$ and using the OECD scale which weights by 1 the first adult in the household, by 0.7 the second and subsequent adults and children by 0.5. Our main results did not change using these other scales. See [Citro and Michael \(1995\)](#) for further discussion on the effects of the use of different equivalence scales and [Cantó and Mercader-Prats \(1998\)](#) for the effects of this choice on poverty measurement in Spain.

11. For households characteristics by type see [Table A.1](#) in the appendix.

12. This is consistent with results elsewhere on the evolution of poverty in Spain in this ten-year period. The distribution of incomes experienced a substantial improvement towards equalisation during the second half of the seventies and the eighties with some stabilisation during the nineties (see [Oliver et al., 2001](#)). As a result, as [Del Río and Ruiz-Castillo \(2001\)](#) indicate, the number of relative poor households in Spain between 1980 and 1990 fell under all methodological choices. Our results, using the ECPF, are largely consistent with this description and show a large decrease in inequality and poverty between 1980 and 1990 for the total household population. Note that this decrease is particularly sharp when we consider an absolute poverty measure that fixes the poverty line in real terms in 1985. From then onwards, however, both inequality and poverty remain stable while decile ratios suggest that the incomes of those in the highest and the lowest part of the income distribution are slightly more distant in 1995 than they were in 1990. In fact, [Cantó et al. \(2001\)](#) find some slight increase in the population poverty rate during the first part of the nineties.

13. Note that this result is statistically significant between 7 and 32 per cent of the median (we here construct variability bands of twice the standard error above and below the estimate of the kernel density).

14. However, this difference is not statistically significant due to the high variability of the kernel density estimation. In any case, we find that there is a statistically significant larger share of households without children at the upper tail of the income distribution (precisely from 2.4 to 3.2 times the median).

15. This is in line with [D'Ambrosio and Gradín \(2000\)](#) and [Cantó and Mercader-Prats \(2002\)](#) results on the increasing social distance between children and the rest of age groups in contrast with the social position improvements of the elderly. Moreover, according to [Cantó and Mercader-Prats \(1998\)](#), even if the Spanish society experienced a major socio-economic and political transformation during the seventies and eighties, no significant improvements occurred in the extent of child economic poverty.

16. In [Cantó \(2003\)](#) the author compares her results for Spain with those for the US in [Bane and Ellwood \(1986\)](#) and the UK in [Jenkins and Rigg \(2001\)](#). The former found that 13 per cent of spell endings in the US took place with a demographic event while the latter obtained a somewhat higher impact of demographic events on poverty transitions: 18 per cent. In sum, demographic events do not seem to be determinant in providing a way to step out of poverty and in a country like Spain, with low fertility rates and low youth departure from the parental home, this is even less so. However note that some differences are observable here due to the use of different poverty lines and equivalence scales.

17. Deepening the investigation of the different routes out of poverty within childbearing households we can detect that lone and single parent households experience more demographic events than other households and have a more varied list of trigger events related to the labour market than couples with children. Namely, up to 41 per cent of the events associated with their exits out of poverty are related to changes in the labour earnings of *other members* different from the head or spouse while only 17 per cent of exits of couples with children are of this kind.

18. This result contrasts with that offered by [Jenkins and Schluter \(2001\)](#) where the relevance of this event in the UK and Germany is clearly below that of a labour earnings increase. However, the income change implications of these events differ in the UK and Germany. Germany shows similar effects of both events (slightly higher for the gain in a full-time worker in lone parent households) while the UK households register a significantly lower income change when labour earnings increase. Spain shows high income changes in both but slightly higher when gaining a worker.

19. Other reasons could be linked to the larger number of possibilities that households with more members have of experiencing some other events that, in contrast, imply a reduction of total household income between both interviews under analysis.

20. An exception to this is [Devicienti \(2001\)](#) who considers the potential initial condition problem.

21. Note that the dummies that serve as exclusion restrictions in the retention equation (household ownership situation and year of observation) have significant and plausible coefficients.

22. [Cantó \(1998\)](#) details the ECPF sampling method. In essence, households were permanently kept in the panel unless they left it voluntarily and the substitution process only began in the first quarter of 1986. Non-response is minimum when no rotation is taking place and households have already answered a first interview. As waves evolve, households' non-response decreases until it reaches the value of 10% of the theoretical sample in 1995.

23. The errors of both equations covariate significantly for the regressions undertaken with the sub-sample of households with children while δ is not significantly different from zero for regressions undertaken with the sub-sample of households without children.

24. Furthermore note that event variables could be a consequence rather than a reason to leave poverty when both transitions occur simultaneously.

25. Note also that in a basic model that does not include potentially endogenous variables, such as events or poverty gap dummies, these will end up in the error term. As a consequence, the coefficients of interest would be biased if there is correlation between omitted endogenous variables and any other independent variable in the model.

26. We here run three different regressions. The first one includes all household characteristics and a dummy for presence of children. The second one uses the sub-sample of households with children and includes a variable indicating the number of children in the household. Finally, the third regression is run on the total sample and substitutes the dummy for the presence of children by a variable that indicates the household type.

27. This is slightly over the average exit rate reported by [Jenkins and Rigg \(2001\)](#) for individuals (not households) in the UK (37 per cent).

28. Note here that the definition of “gaining a job” for “other household members” is much more correlated with the exit from poverty than that of the spouse or the head by construction. The information used to define it comes from the number of other household members receiving employment incomes that quarter while that of the spouse and head comes from the answer to a question related to labour status in the last week before interview.

ACKNOWLEDGEMENTS

We would like to thank attendees to the presentation of the paper at the ECINEQ Conference 2005 in Palma de Mallorca for their comments and Jorge Paz for making a very helpful discussion of the paper at the Cuartas Jornadas sobre Mercado de Trabajo y Equidad in Buenos Aires (Argentina) in December 2005.

REFERENCES

- Allison, P.D. (1982). Discrete-time methods for the analysis of event histories. In: Leinhardt, S. (Ed.), *Sociological methodology 1982*. San Francisco, Jossey-Bass Publishers, pp. 61–97.
- Bane, M.J. & Ellwood, D.T. (1986). Slipping into and out of poverty: The dynamics of spells. *Journal of Human Resources*, 21 (1), 1–23.
- Bradbury, B., Jenkins, S.P. & Micklewright, J. (2001). Conceptual and measurement issues. In: Bradbury, B., Jenkins, S.P. & Micklewright, J. (Eds.), *The dynamics of child poverty in industrialised countries*. UNICEF, Cambridge Univ. Press, pp. 27–61.
- Buhman, B., Rainwater, L., Schmaus, G. & Smeeding, T.M. (1988). Equivalence scales, well-being, inequality, and poverty: Sensitivity estimates across ten countries using the Luxembourg Income Study (LIS) database. *The Review of Income and Wealth*, 34 (2), 115–142.
- Burgess, S.M. & Propper, C. (1998). An Economic model of household income dynamics, with an application to poverty dynamics among American women. CASE paper number 9, July.
- Cantó, O. (1998). *The dynamics of poverty in Spain: The permanent and transitory poor*. Unpublished PhD dissertation, European University Institute, Florence.
- Cantó, O. (2002). Climbing out of poverty, Falling back in: Low incomes’ stability in Spain. *Applied Economics*, 34, 1903–1916.
- Cantó, O. (2003). Finding out the routes to escape poverty: The relevance of demographic vs. labor market events in Spain. *Review of Income and Wealth*, 49 (4), 569–589.
- Cantó, O. & Mercader-Prats, M. (1998). Child poverty in Spain: What can be said?, Innocenti Occasional Papers, Economic and Social Policy Series 66, UNICEF International Child Development Centre, Florence.
- Cantó, O. & Mercader-Prats, M. (2002). Child Poverty in Spain from the 70s to the 90s: A static and dynamic approach. *Journal of Applied Social Sciences Studies (Schmollers Jahrbuch)*, 121 (4/2002), 543–578.
- Cantó, O., Del Río & Gradín, C. (2001). La evolución de la pobreza estática y dinámica en España en el periodo 1985–1995. *Hacienda Pública Española / Revista de Economía Pública*, 167 (4/2003), 87–119.
- Cantó, O., Del Río, C. & Gradín, C. (2006). Poverty statics and dynamics: Does the accounting period matter? *International Journal of Social Welfare*, 15 (3), 209–218.

- Cappellari, L. & Jenkins, S.P. (2002). Who stays poor? Who becomes poor? Evidence from the British household panel survey. *Economic Journal*, 112, March.
- Cappellari, L. & Jenkins, S.P. (2004). Modelling low income transitions. *Journal of Applied Econometrics*, 19, 593–610.
- Citro, C.F. & Michael, R.T. (Eds.) (1995). *Measuring poverty: A new approach*. Washington, DC, National Academy Press.
- D'Ambrosio, C. & Gradín, C. (2000). Are children in growing danger of social exclusion? Evidence from Italy and Spain. Luxembourg Income Study: Working Paper Series, 262, CEPS/INSTEAD, Luxembourg.
- Devicienti, F. (2001). Poverty persistence in Britain: A multivariate analysis using the BHPS, 1991–1997. *Journal of Economics, Supplement*, 9, 1–34.
- Del Río, C. & Ruiz-Castillo, J. (2001). TIPs for poverty analysis. The case of Spain, 1980–81 to 1990–91. *Investigaciones Económicas*, XXV (1), 63–91.
- Duncan, G.J., Gustafsson, B., Hauser, R., Schmaus, G., Messinger, H., Muffels, R., Nolan, B. & Ray, J.C. (1993). Poverty dynamics in eight countries. *Journal of Population Economics*, 6, 215–234.
- Esping-Andersen, G. (1990). *The three worlds of welfare capitalism*. Cambridge: Policy Press.
- Eurostat (2005). Base de datos Newcronos. Luxembourg.
- Heckman, J. (1981). The incidental parameters problem and the problem of initial conditions in estimating a discrete time-discrete data stochastic process. In: Manski, C. & Mc Fadden, D. (Eds.), *Structural analysis of discrete data with econometric applications*. Cambridge, The MIT Press, pp. 179–195.
- Iacovou, M. & Berthoud, R. (2001). *Young people's lives: A map of Europe*. Colchester: University of Essex, Institute for Social and Economic Research.
- INE (2004a). *España en cifras*. Madrid.
- INE (2004b). *Indicadores Sociales de España 2004*. Edición 2004, Madrid.
- Immervoll, H., Sutherland, H. & de Vos, K. (2000). *Child poverty and child benefits in the European Union*. EUROMOD: Working Papers, February.
- Jenkins, S.P. (2000). Modelling household income dynamics. *Journal of Population Economics*, 13, 529–567.
- Jenkins, S.P. & Rigg, J. (2001). *The dynamics of poverty in Britain*. Department for Work and Pensions: Research Report No 157.
- Jenkins, S.P. & Schluter, C. (2001). Why are child poverty rates higher in Britain than in Germany? A longitudinal perspective. ESRC Research Centre on Micro-Social Change: Working Paper 2001-16, ISER – Institute for Social and Economic Research, University of Essex, Colchester.
- Jenkins, S.P. & Schluter, C. (2003). Why are child poverty rates higher in Britain than in Germany? A longitudinal perspective. *Journal of Human Resources*, XXXVIII (2), 441–465.
- Justino, P. & Litchfield, J. (2003). Poverty dynamics in rural Vietnam: Winners and losers during the reform. *PRUS Working Paper* No.10, Department of Economics, University of Sussex, UK.
- Layte, R. & Whelan, C. (2002). Moving in and out of poverty: The impact of welfare regimes on poverty dynamics in the EU, EPAG Working Paper 2002-30, Colchester: University of Essex.
- Lillard, L.A. & Willis, R.J. (1978). Dynamic aspects of earnings mobility. *Econometrica*, 46, 985–1012.
- Matgasanis, M., Levy, H., Mercader-Prats, M., Toso, S., O'Donoghue, C., Coromaldi, M., Farinha, C. & Tsagelokou, P. (2005). *Child poverty and family transfers in Southern Europe*. IZA: Discussion Paper No. 1509.
- Machin, S. (1998). Childhood disadvantage and intergenerational transmissions of economic status. Chapter 4 in: Atkinson, A. & Hill, M. (Eds.), *Exclusion, employment and opportunity*. London

- School of Economics, Suntory and Toyota International Centers For Economics and Related Disciplines. CASE paper, No. 4. London.
- Micklewright, J. & Stewart, K. (1999). Is the well-being of children converging in the European Union? *The Economic Journal*, 109, 692–714 (November).
- Muffels, R.J.A. (2000). Dynamics of poverty and determinants of poverty transitions. Results from the Dutch socio-economic panel. In: Rose, D. (Ed.), *Researching social and economic change. The uses of household panel studies*. London, Routledge, pp. 165–187.
- Nolan, B. & Maitre, B. (2001). An overview of economic and social opportunities and disadvantage in European households. Paper for Jacobs Foundation Conference on Well-being and Dysfunction across the Generations: Change and Continuity, ESRI, Dublin.
- Oliver, J., Ramos, X. & Raymond, J.L. (2001). Anatomía de la distribución de la renta en España, 1985–1996: La continuidad de la mejora. *Papeles de Economía Española*, 88, 67–88.
- Ravallion, M. (1996). Issues in measuring and modelling poverty. *The Economic Journal*, 106, 1328–1343.
- Stevens, A.H. (1999). Climbing out of poverty, falling back in. (Measuring the persistence of poverty over multiple spell.) *Journal of Human Resources*, 34, 557–588.
- Stewart, M.B. & Swaffield, J.K. (1999). Low pay dynamics and transition probabilities. *Economica*, 66, 23–42.
- UNICEF (2005). Pobreza infantil en países ricos 2005. Innocenti Report card. No 6, Centro de Investigaciones Innocenti de UNICEF, Florencia.

APPENDIX A.

Table A.1. Poor Households Demographic and Labour Status Characteristics by Demographic Groups (1st Interview)

	All households	Households with children	Households without children
<i>Sample:</i>	4831	2515	2316
age of household head	53.6	44.5	63.5
<i>Sex of household head</i>			
female head	80.2	87.2	72.6
<i>Education household head</i>			
illiterate	8.2	6.1	10.5
no studies	35.3	29.0	42.1
primary school	44.1	48.6	39.2
secondary (1st cycle)	7.4	11.3	3.3
secondary (2nd cycle)	3.4	4.0	2.8
university (3 years)	0.9	0.5	1.4
university (5 years)	0.6	0.4	0.7
<i>Household dependents, number and age</i>			
number of children (no incomes)	1.13	2.17	0
number of income receivers	0.84	0.94	0.73
number of dependent adults	2.80	3.88	1.62

(continued on next page)

Table A.1. Continued

<i>Sample:</i>	All households <i>4831</i>	Households with children <i>2515</i>	Households without children <i>2316</i>
<i>Size of municipality of residence</i>			
< 5000 inh.	24.2	20.0	28.8
5000–10,000 inh.	12.7	13.8	11.5
10,000–20,000 inh.	12.1	13.6	10.4
20,000–50,000 inh.	12.0	13.7	10.1
50,000–100,000 inh.	10.7	11.9	9.5
100,000–500,000 inh.	18.4	18.0	18.9
> 500,000 inh.	9.8	9.0	10.7
<i>Type of housing</i>			
owner-occupied	73.8	69.2	78.9
subsidised	1.1	1.6	0.6
rented	17.3	19.4	15.0
rent-free	7.7	9.7	5.4
<i>Head labour market status</i>			
employed: $f - t$, qualified	9.5	16.6	1.9
employed: $f - t$, non-qual., agric.	3.7	5.5	1.7
employed: $f - t$, other non-qualified	7.2	11.9	2.1
employed: self-employment	15.6	19.4	11.6
employed: less than 13 hrs	2.6	3.0	2.0
unemployed – some UI or IS	0.2	0.2	0.2
unemployed – no UI or IS	16.4	23.3	8.8
retired – some pension benefit	38.7	16.9	62.4
retired – no pension benefit	2.3	1.3	3.4
working at home	1.6	1.1	2.1
other status	2.0	0.6	3.6
<i>Spouse labour market status</i>			
no spouse	22.6	12.3	33.8
spouse employed	7.8	10.9	4.4
spouse not employed	69.6	76.8	61.7
<i>Poverty gap</i>			
income 50–60% median	21.7	20.8	22.6
income 40–50% median	15.9	14.8	17.2
income 30–40% median	9.5	9.9	9.0
income 20–30% median	5.0	5.8	4.1
income < 20% median (not zero)	45.3	46.4	44.0
income = 0	2.6	2.3	3.0

Note: UI is unemployment insurance and IS is income support.