

Understanding youth chronic poverty in South of Europe

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Abstract This paper investigates chronic poverty among the youth in Southern Europe, which is characterized by very high levels of persistent poverty, and welfare systems which are unable to smooth disparities. The main aim is to investigate on how longitudinal poverty differs in socio-demographic and economic characteristics among the Mediterranean youth. The intensity of poverty over time is measured by a new longitudinal poverty index based on the rationale of cumulative hardship. We tested the effects of many covariates on the incidence and intensity of chronic poverty, controlling for main socio-demographic and economic characteristics, using a ZINB model. The peculiar mix between the lack of effective state institutions and a strong presence of families explains why many factors, which usually are strongly related to poverty, do not have an important role here. A strong inertial effect is due to the ranking of the household in the income distribution. Italian youth has the worst performance.

Key words: measuring poverty and inequality, longitudinal poverty index, ZINB model, young adults

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1 Introduction

There is a great turnover in the stock of people living around the poverty line. Indeed many of those who have left poverty return back relatively quickly, while only a minority of people, poor in a certain year, will experience a long lasting poverty. Only around 60 per cent of young Europeans are never poor in seven consecutive years with relevant differences among countries (Mendola et al., 2009). The interest goes therefore to longitudinal patterns of poverty and to the factors which determine the process of impoverishment, and marginalisation.

Nowadays there are few studies about poverty persistence among European youth, and many issues have not been deeply investigated yet. What are the predicting factors associated with the intensity of poverty persistence and what protect individuals from more severe forms of long lasting poverty? What individual and household characteristics influence poverty duration? Do economics and labour market determinants prevail over socio-demographic ones?

This paper focuses on four countries in Southern Europe (Greece, Italy, Portugal, and Spain) where chronic poverty is widely spread and the expenditure on social protection, as percentage of GDP, is lower than in the other European Countries. Indeed, analysing only this group of countries allows for controlling those confounding factors related to the interaction between individual behaviours, family models, labour market characteristics and social protection schemes, which all are features of the Mediterranean welfare typology (Ferrera, 1996). Particularly we intend to model the incidence and intensity of chronic poverty relating a new longitudinal poverty index to traditional covariates associated with poverty, with the intent to measure in what extent initial conditions influence the future individual poverty history.

The paper is structured as follows. In section § 2 we present the data, the Longitudinal Poverty Index and the choices about statistical modelling. Then we discuss the empirical results (§ 3) of the analysis for young people in Southern European countries. The last two sections (§ 4 and 5) sum up the main results of the model and our conclusions.

2 Data and methods

Data come from the European Community Household Panel (ECHP). The selection refers to people aged 16-29 at the first wave; living in Greece, Italy, Portugal, or Spain; with complete information about household income along the seven waves of the panel (balanced panel from 1994 to 2001). The sample is of 6,201 individuals. The poverty status is assessed according to the Eurostat criterion: the poverty line is set at the 60 per cent of the median net equivalized income, for each country and each year; the households are classified as poor or not poor, and all their members accordingly. The equivalence scale is the OECD-modified scale.

In order to assess the causal effects of covariates, we calculate a measure of chronic poverty upon six waves ranging from wave 2 to wave 7 in ECHP; while the supposed predictive factors (covariates) are recorded at the first wave.

Hence, suppose to observe an individual H for six consecutive years and that her status of poverty (0/1) follows this temporal sequence: (1,1,0,0,1,0), where 0 corresponds to one year out of poverty and 1 to one year spent in poverty. The intensity of poverty over the time, measured via the individual Longitudinal Poverty Index (see Mendola and Milito, 2008), has the following mathematical formulation:

$$LPI_H = \frac{\sum_{i,j \in s^*} (i-j)^{-1}}{\sum_{k=1}^{n-1} \frac{k}{n-k}} \quad \text{with } i > j \quad (1)$$

so that i and j are the positions where we can find a 1 in the time ordered sequence of poverty statuses, with i temporally subsequent to j ; s^* is the set of integers corresponding to the positions of the years/waves spent in poverty; n is the number of waves in the observation interval. So, in the above example, $s^*=(1,2,5)$, $n=6$ and the LPI equals 0.18.

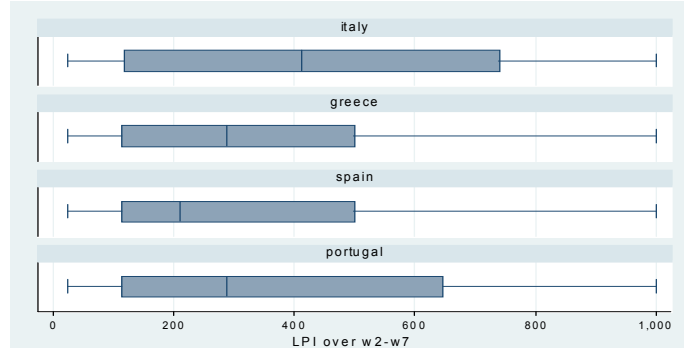
The LPI is a continuous measure in the $[0,1]$ interval, where 0 corresponds to the situation an individual is never poor or is poor only once in the observation interval (named “longitudinally never poor”); 1 corresponds to an individual who is always poor. The more numerous and consecutive the years of poverty, the higher the intensity of poverty in a longitudinal perspective (hypothesis of cumulative hardship). For technical details and properties of the index, please refer to Mendola et al. (2009a and 2009b).

Comparing the situation of chronic poverty in Mediterranean countries it is evident that Italian young people are the most exposed to long lasting poverty (only around 68 per cent of them are never longitudinally poor), while Portuguese young people are the least exposed (Tab. 1). Moreover the intensity of chronic poverty in Italy shows a median which is almost double of the Spanish one.

Table 1: Longitudinal Poverty Index in Southern European countries

	Spain	Italy	Greece	Portugal	Southern Europe
Sample size	1,560	2,291	1,115	1,235	6,201
percentage of the sample	25.15	36.95	17.98	19.92	100.00
Never longitudinally poor ($LPI=0$) %	73.27	68.31	74.80	82.11	78.58
Median LPI (for $LPI>0$)	0.21	0.41	0.29	0.29	0.29
Mean LPI (for $LPI>0$)	0.33	0.46	0.36	0.39	0.40
Standard Deviation (for $LPI>0$)	0.29	0.33	0.29	0.32	0.32

The box-plots (cf. Fig. 1) provide a synthetic display of the LPI distribution (for values greater than zero) across the four Mediterranean countries. Again Italian young people are in the worst situation also in terms of intensity of chronic poverty (highest median, mean and inter-quartile range values); while the best situation is lived by Spanish young adults (see also Tab. 1). Indeed Greece and Spain show quite similar distributions of long lasting poverty (same length of box edges), but the median value of the index is considerably higher among Greek young people.

Figure 1: Box-plots for the distribution of the *LPI* in Mediterranean countries^a

^a The plots include only individuals with $LPI > 0$

Note that in this case study, due to the shortness of the observation period (we evaluate longitudinal poverty over six waves only), the index takes 23 different values only and the distribution is over-dispersed. This feature drives us to consider the *LPI* as a discrete variable, similar to counts, and to think about a negative binomial model.²

Indeed the most common motivation for using a negative binomial model is in terms of unobserved heterogeneity, but in this case we find more appealing the idea of the “contagion model” suggested by Eggenberger and Pólya in 1923, as reported in Long (1997, p.236): “contagion occurs when individuals with a given set of x ’s initially have the same probability of an event occurring, but this probability changes as events occur [...] Thus contagion violates the independence assumption of Poisson distribution”. This seems to fit perfectly the case of individual poverty sequences. In fact transitions from poverty to non-poverty do not have the same probability that the reversed ones, and, in addition, the longer the permanence in poverty the lower the probability to escape. Since, longitudinally never poor people represent nearly 80 per cent of the distribution (see Tab. 1) the use of a zero-inflated negative binomial model (ZINB) seems to be the most appropriate choice.³ This model is based on the assumption that the phenomenon is generated by two different processes: one where individuals always have zero counts, and another where individuals have zero or positive counts. In particular firstly a logit model is estimated for predicting whether or not a young individual is never longitudinally poor along the six waves (zero counts): it shows the effect (on the logit scale) of the covariates (i.e. age, gender, educational level, household structure, employment status, etc.) on being never poor. Secondly, a

² Note that here, the counts are the rounded values of the *LPI*, and the higher the count the higher the intensity of longitudinal poverty. In particular, we multiplied the *LPI* by 1,000 and then rounded to the nearest integer. This transformation allows us to keep 23 different values also in the transformed values. Indeed in presence of a longer panel a more appropriate model would be a zero-inflated model for continuous asymmetric data.

³ In our case part of the inflation of zeroes is due to the fact that the *LPI* is zero also for individuals with a single spell of poverty. Indeed people who are poor only once in the six years of observation are 11.7 per cent of our sample. The likelihood ratio test and the Vuong test confirm the appropriateness of the chosen functional form compared to a standard negative binomial distribution.

negative binomial model is generated for predicting the counts: it shows the magnitude and the direction of covariate effect on the longitudinal poverty intensity. These two models (simultaneously estimated) are then combined.

3 Chronic poverty among youth in Southern European countries

As mentioned above, we focus our attention on Southern European youth poverty; this is not only because these countries present the highest scores of chronic poverty in Europe (Iacovou et al., 2007) but mainly because they represent an interesting object of study giving that they share many common features, not only in the indicators of social protection, but more broadly in the interplay of state institutions and families which generates a peculiar welfare mix (see Ferreira, 2008). Indeed, as highlighted in Matsaganis et al. (2003, p.639), all these countries are characterized by “the marginal role of social assistance and the absence of minimum income programmes [...] It is argued that the “patchiness” of safety nets in southern Europe is due to a unique set of constraints, the most relevant of which are the role of families and the “softness” of state institutions”. In addition note that young people in these countries are very similar in terms of patterns of transition to adulthood: they tend to postpone leaving of parental home, take a longer time to complete education, entry late into the labour market, postpone the setting of a new family, and the choice to have children. In the first wave of our sample, 77 per cent of young people lives with their parents; less than 25 per cent is married or lives with a partner; only 15 per cent has a child. The reasons for this delayed transition to adulthood are quite controversial and actually broadly studied (Billari, 2004; Billari and Rosina, 2004). All this helps to understand why, as we will see in the following, most of the demographic characteristics which usually explain poverty do not play an important role in explaining chronic poverty among Southern European youth, while economic characteristics still reveal their importance.

Let us now introduce main results from the ZINB model for Southern European countries (see Tab. 2).⁴

Both having a higher education and being employed do not give any advantage in reducing the intensity of long lasting poverty, while they have some effects on the probability to never experience longitudinal poverty. In particular the coefficients estimated for education levels attained at the first wave in the binary model show that (compared to who completed the tertiary school) the predicted probability to be never poor is significantly reduced by having an education below the upper secondary school (-0.91). Being unemployed or out of the labour force (vs. being employed, working at least 15 hours a week), again recorded at the first wave, acts in the same direction with

⁴ Note that count and binary model show opposite signs for the same covariates. In the count model the estimated coefficients with a positive sign indicate the amount of increase in longitudinal poverty index value that would be due to an increase (or to a change in state) in the explanatory variables, while the negative sign shows the opposite. On the other side, in the logit model the estimated coefficients with a positive sign indicate the amount of increase in the predicted probability to be never poor during the following six years (on the logit scale). The higher the coefficient the higher the predictive (and protective) effect of the covariate at the first wave.

a reduction of 0.42 of the chance to be never poor (on the logit scale). The lack of significance of these key variables in the count model could be explained considering the peculiarities of Mediterranean welfare state and labour market. Indeed in Southern European countries there is a very low economic return to education (Reyneri, 2005), increasing difficulties in entering the labour market, and a large diffusion of underpaid and precarious employment for young adults (Quintini and Martin, 2006). So not having a job or being low educated can have effects in predicting one slips into poverty but does not make the difference in the intensity of poverty experience. Moreover, being a student has no significant impact both on the magnitude of the longitudinal poverty index and on the slipping into poverty. This is most likely explained by the fact that in the Mediterranean countries young people usually live in their parental home whilst undertaking higher education and/or are strongly economically supported by parents during the educational time.

It is a well-known fact that the median age of leaving home in Mediterranean countries is much higher than in any other one in Europe. Recent studies (Aassve et al., 2006; Mendola et al., 2009) suggest that delaying the transition out of the parental home can be a strategy for young individuals to reduce their risk of entering poverty. In this context living with parents, as well as with a partner/spouse (with or without children), show no significant effect on longitudinal poverty index values, and neither differences.

Table 2: ZINB model estimates for Southern European countries

	Count model		Binary model	
	<i>Coef.</i>	<i>Std. Err.</i>	<i>Coef.</i>	<i>Std. Err.</i>
<i>Personal characteristics</i>				
Woman	n.s.	-	n.s.	-
Age at first wave	n.s.	-	n.s.	-
Squared age at first wave	n.s.	-	n.s.	-
<i>Socio-economic characteristics</i>				
Higher Secondary School (ref. Tertiary School)	n.s.	-	n.s.	-
Below the Upper Secondary School	n.s.	-	-0.91	0.17
Student (ref. worker >15 hours)	n.s.	-	n.s.	-
Unemployed or non labour forces	n.s.	-	-0.42	0.11
<i>Living arrangement characteristics</i>				
Couple without kids (ref. live with parents)	n.s.	-	n.s.	-
Couple with kids	n.s.	-	n.s.	-
Number of kids in the household	0.12	0.04	-0.50	0.10
<i>Economic characteristics</i>				
Earning ability	-0.13	0.06	0.24	0.10
Saving habits	-0.28	0.08	0.65	0.12
Difficulties with housing expenses	n.s.	n.s.	-0.30	0.11
Belonging to 10 % of the poorest	0.41	0.05	-2.13	0.12
Belonging to 25 % of the richest	-0.27	0.10	1.51	0.14
<i>Country's effects</i>				
Portugal (ref. Italy)	-0.26	0.07	1.12	0.12
Greece	-0.41	0.07	0.59	0.12
Spain	-0.36	0.06	0.28	0.09
Constant	5.51	0.97	n.s.	-
Vuong test $z=16.95$, P-value 0.0000				
n.s. = not statistically significant at 5%				

This is probably due to the fact that in all Southern European countries young adults tend to stay at home until they reach an economic independence and/or find a stable employment. But, as highlighted in Quintini and Martin (2006, p.9) “transitions to stable employment can be long. In European countries, it takes, on average, almost two years to find a first job after leaving school”, and it takes even more in the South. Moreover, in most of the cases, young adults remain in their parental home until the completion of their studies (nearly 80% of the individuals in our sample live with their parents at the first wave and only about one out three leaves and remains out the parental home along the observed period). This concurs to explain the absence of a gender effect.

As expected an important influence can be attributed to the number of kids (aged less than 16 years) living in the household: the higher the number of kids the higher the probability to experience more severe forms of longitudinal poverty and, similarly, the lower the probability to be never poor (betas respectively equals to 0.12 and -0.50 for the count and the binary model).

Neat and expected is also the effect of the economic covariates in explaining chronic poverty, even though with different degrees. The model shows that in the Mediterranean countries the earning ability of young people (measured as having an earning in the form of wage/self-employment/private income - in contrast with being dependent upon state or households' support) decreases the intensity of chronic poverty (-0.13) and increases the probability to be never poor (+0.24 on the logit scale). At the same time having had difficulties in paying dwelling, rent or bills in the previous twelve months is not a significant predictor of the magnitude of chronic poverty in the following six years while it has an influence in reducing the probability to be never poor (-0.30). Moreover, the model shows that both the magnitude of longitudinal poverty and the probability to not experience poverty depend significantly on the individual ability to save up for the future.

Considering that in Euromediterranean countries income and social mobility are quite negligible, we included in the model two dummies controlling, at the first wave, for household membership into the 25 per cent of the richest and into the 10 per cent of the poorest. Belonging to the upper 25 per cent of the distribution of household equivalized income have a strong effect on the logit of the probability to be never poor (1.51) and a lower but significant effect on the severity of poverty experience. Being deeply poor (having a household income belonging to the first decile of equivalized household income distribution) has the strongest effect on the binary process (-2.13) differentiating sharply potentially never poor from longitudinal poor people. Comparing the magnitude (ignoring signs) gives evidence that the welfare system is unable to help very poor people, so that being extremely poor at the first wave has a strong inertial negative effect. Similarly the high value of the coefficient related to the dummy of the richest people provides evidence of very low number of transition across the poverty line (if any).

In addition, the model takes into account the existence of country peculiarities among the Mediterranean ones, including a dummy variable for each country (Greece, Portugal and Spain, assuming Italy as reference category). These dummies act as a sort of control for residual unobserved heterogeneity (in terms of legislation, labour market regulation, and demographic behaviour not captured elsewhere). The beta estimates are all statistically significant both in the count and the binary model and show that Italian welfare system is the least able to smooth inequalities in terms of long lasting poverty.

4 Conclusion

The familistic welfare in the Mediterranean countries mainly protects families, workers and old aged people, while it shows a substantial disregard towards young adults. Therefore families are called upon to play an important economic function to smooth the negative effects of the delayed transition into adulthood. Analyses reveal the habit of young Mediterranean individuals of staying in parental home until adult age, and this concurs to explain the non-relevance of different living arrangements which usually are associated to poverty. On the other side, economic characteristics are crucial in explaining the highest levels of chronic poverty, and in particular being at the bottom or at the top of the income distribution is a strong predictive factor for the intensity of chronic poverty. This is coherent with the low mobility in the income distribution and with the structural difficulties in entering the labour market for young adults.

As far as countries' differences, Italy is the least able to smooth inequalities in terms of incidence and duration of long lasting poverty. As a consequence Italian young adults suffer more severe forms of longitudinal poverty. The wider difference among the four countries is between Italy and Portugal: the odds to be never poor for Portuguese young adults is three time greater than the odds for Italian people.

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