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The effect of the crisis on material
deprivation in Italy and Spain

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Abstract

The focus of this paper is on the analysis of the impact of the crisis on material deprivation in two South European countries: Italy and Spain. The countries chosen have been deeply hit by the economic downturn and the use of the available comparable microdata allows us to detect the most vulnerable collective in the crisis taking into account also gender differences. The microdata used are the Italian and Spanish Income and Living Conditions Surveys of 2007 and 2010. Our results confirm the growth of deprivation as a consequence of the economic crisis in both countries and show that women are more likely to face income poverty and deprivation.

KEY WORDS: income poverty, material deprivation, gender, unemployment.

JEL Codes: I32, J16, J65.

Introduction¹

The economic downturn brought about a marked and incessant rise of unemployment affecting income of individuals and simultaneously constraining public budgeting. In addition, the current measures to overcome the crisis have been directed through the strict control of public spending, especially in Southern countries of the European Union. So, a more disadvantaged population could be in risk of poverty if social support policies are dismantled.

Our analysis evaluates the impact of the current economic downturn on income poverty and deprivation and identifies the most vulnerable collectives in Italy and Spain. We consider possible gender differences in order to shed light on the policy decisions of both countries and in countries with similar socioeconomic characteristics in areas such as the labour market, education or the unemployment protection system.

We take into account both income poverty and material deprivation measures in line with the European Commission new targets on social inclusion taken in 2010. The literature on the two measures shows their complementarity and the need to investigate further the factors that are behind the risk of being income poor or materially deprived, since people with identical resources (income) can enjoy different living conditions, depending on personal constraints and abilities (Fusco *et al.*, 2011). This paper follows this direction by highlighting the difference in the factors behind income poverty and material deprivation across countries and time with a specific focus on the impact of the crisis both on the indicators and on the factors affecting the probability of being income poor or in material deprivation.

We select the Italian and Spanish economies for our study since they face similar economic policy challenges as the events in one country influence the other, especially as regards to the evolution of financial markets. Both countries have been very detrimentally affected by the current economic crisis, suffering a persistent unemployment of a longer duration which affects the younger population with great intensity. Furthermore, a high degree of inflexibility in wage determination, rigidity in hiring and firing practices (World Economic Forum, 2010) and a strong duality between fixed-term and open-ended contracts have been common features of the labour markets in both countries. In addition, both countries record very low achievements in terms of female labour-force participation and similar gender gap indicators according to OECD (2012 a). In fact, the gender wage gap is evident in Spain as well as in Italy, although both countries are exceptions to the usual wider wage gap at the top of the earnings distribution. In Italy, the gap is similar throughout the income distribution and in Spain the gap for the top 10 percent wages is smaller reflecting a selection effect (De la Rica *et al.*, 2008; and Olivetti and Petrongolo, 2008). The wage gap in Italy is larger for less

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educated women (Addabbo and Favaro, 2011) and in both countries the gap is also wider for low earners (sticky floor effect, OECD 2012 b).

Nevertheless, OECD (2012 b) highlighted the significant efforts made by Italy and Spain in order to try to close these gender gaps stressing, especially, the advances achieved in the education of younger women which stand out from other OECD countries. This could have affected the impact of the economic crisis on the female labour force since education acts as a protection factor against unemployment above all in the case of Spanish women. So, their exposure to poverty and deprivation could have been reduced compared to that of men. In fact, job destruction has been more intense for men than for women in the current crisis, and the activity rate has decreased for men but increased for women. In addition, there has been an increase in the hours worked by women that was somewhat greater than the reduction in male working hours. This added worker effect of women tends to be persistent according to the evidence from previous crisis (OECD, 2012 b, p.119). Therefore, our analysis takes into account these differences in gender by considering the behavior of men and women separately.

We underline important differences between the two countries. The wide use of temporary contracts when hiring young workers and the deep recession of the Spanish economy has resulted in its unemployment rate to stand at more than twice that of the European Union. Furthermore, despite both countries having employment protection systems corresponding to the Mediterranean model characterized by a rather low coverage of unemployment benefits (Sapir, 2005); the Spanish unemployment benefit system is more generous than the Italian one, according to OECD data. In fact, the net replacement rate during the first year of unemployment in 2007 was 69% in Spain compared to 37% in Italy. Nevertheless, Italy has higher family, housing and lone parent benefits than Spain though still very low when compared to other European countries. Thus, their ability to palliate the socioeconomic consequences of the crisis may differ too, as is underlined in the empirical sections of this paper.

Our research uses the Italian and Spanish Income and Living Conditions Surveys of 2007 and 2010 and it applies the counting approach to measure income poverty and deprivation and then it uses probit methodology to characterize them. The remainder of the paper is organised as follows. The following section reviews the economic literature on the links between labour market situation and poverty and deprivation. The data, methodology and results will be presented in the later sections. The final section will offer conclusions and highlight policy implications.

1. Literature framework

A wide set of economic literature has examined the link between unemployment and poverty (Duncan, 1984; Blank and Blinder, 1986; Atkinson, 1989; Cutler and Kantz, 1991; Blank, 1993, 1996 and 2000; Blank and Card, 1993; Callan and Nolan, 1994; Foerster, 1994; Juárez, 1994; Tobin, 1994; Danziger and Gottschalk, 1995; Sen, 1997; Romer, 2000; Haveman and Schwabish, 2000; Gallie and Paugam, 2001; Hauser and Nolan, 2001; and Freeman, 2003). In line with the above references, OECD (1997) found that employment status is the most important factor in determining relative income and poverty. Moreover, Kolev (2005) links poverty to unemployment and to job quality and OECD (2007, p. 50-1) pointed out the weakness of employment as the main cause of poverty and the exposure to poverty that job insecurity, involving alternating periods of employment and non-employment, implies. Furthermore, Pedraza

Avella (2012), following Atkinson (1998), stressed that the increase of precarious workers leads to new categories of people under deprivation and social exclusion risk.

The European Commission (2009, p. 16) states that unemployment is a key driver of poverty in Spain and OECD (2009) shows that close to 50% of jobless households in Spain were relatively poor, compared with 37% on average across the OECD. More recent literature on Spanish economy has highlighted that temporary contracts, highly extended in the last decades, increase the poverty and basic deprivation risk in not only the short-term but in the long-term as well (Ayala, 2008 and Martínez López, 2010). Moreover, Ayala *et al.* (2011) and Ayllón (2012) highlighted the educational level and the occupation status in the labour market as determinants of poverty and multidimensional deprivation. In any case, Spanish women have a higher income poverty risk but the basic deprivation shows a younger, more feminine and salaried profile. A worrying fact is the increase of families with children which suffer simultaneously low income and material deprivation (Ayala, 2008)

Along similar lines, there has been a decrease in the power of labour income to protect Italian households against poverty, with an increase in the incidence of poverty amongst households with one or two earners and a decrease in the unemployed headed households (Istat, 2012). Living arrangements including members belonging to different cohorts increased in Italy but their ability to reduce the risk of poverty decreased overtime (Istat, 2012). In terms of income poverty households, according to the Bank of Italy survey on Household Income and Wealth, incidence of poverty in 2010 was higher amongst individuals living in female headed households, households headed by less educated or jobless people or single, one earner, living in the South of Italy (Montella *et al.*, 2012).

This brief review of the literature on the unemployment, poverty and deprivation links clearly shows the significance of the question tackled by our research. It should be pointed out that there is a scarcity of comparative studies on the current situation, above all in the cases of Italy and Spain. As far as we are aware, only Addabbo *et al.* (2012) deals with this issue but without tackling a gender approach. Both circumstances highlight the important contribution of our paper, which measures the short-term socioeconomic effects of the current crisis on poverty and deprivation in the two mentioned countries considering possible gender differences. In addition, we take into account the different incidences of unemployment at regional level in the both selected countries to consider the effect of regional labour market status. The effect of regional labour market status has been analysed amongst others by López-Bazo *et al.*, 2002 and 2005 and Bande *et al.* 2007 and 2008 in Spain and by Algeri and Aquino, 2011; Addabbo, 2000; Di Marco and Donatiello, 2008; Lombardo, 2011; and Quintano *et al.* 2011 in Italy.

2. The data, the variables and the model

The need to compare the two selected countries together with the need to take into account the multidimensionality of the costs connected to joblessness lead us to use the European Union Statistics on Income and Living Conditions (EU SILC) surveys on the socioeconomic conditions of Spain and Italy. The EU SILC microdata referred to 2007 and 2010 will then be used to evaluate the poverty and deprivation status before and during the crisis since they allow us to recover information on income and on different dimensions of social exclusion, as well as data on the sociodemographic characteristics.

The sample is significant at regional level and this allows us to take into account the regional variability in the labour markets within countries. Therefore, we will compare the South of Italy with the rest of the regions of the country; while in the Spanish case we have grouped the autonomous regions in accordance with the mean of the regional unemployment rates reached since 1999. So, our first group of regions is composed by Navarra, Aragon and La Rioja which had maintained their average unemployment rates in the period at lower than 7 per cent; the second group made up by The Balearic Islands, Madrid, Catalonia, Basque Country and Cantabria (with unemployment rates on average between 7 percent and 10 percent), the third one by Castile-La Mancha, Castile-Leon, Valencia, Murcia, Asturias, Galicia and The Canary Islands (with unemployment rates on average between 10 per cent and 14 percent) and the fourth one by Extremadura and Andalusia which had an unemployment rate on average higher than 17 percent.

In our analysis of income poverty, the poverty line is defined as 60% of the median equivalent disposable income calculated using the OECD modified equivalence scale to take into account differences in household size and demographic composition. To study deprivation we have followed the counting approach of Atkinson (2003) which provides a summary of measures of multidimensional poverty (Whelan *et al.*, 2012).

We use the Eurostat definition of material deprivation as in Guio (2005) that defines materially deprivation as a household (or individual) that is not able to afford at least three of the following needs: one week holiday a year; keeping the house warm; handling unforeseen expenses; paying the mortgage, bills, deferred payments; protein intake; washing machine; colour television; car; telephone. That is, the threshold used is set at three enforced losses or inabilities of these capabilities.

So, descriptive statistics on income poverty and deprivation indicators will be analysed in the following section, distinguishing between female and male individuals following Atkinson *et al.* (2002) recommendation. Therefore, the data refer to all individuals aged over 15 in order to take into account the individual employment condition's effect on income poverty and material deprivation.

We will then present the results of multivariate analysis on the likelihood to be income poor or in deprivation. For this purpose we estimate a probit model which allows us to obtain poverty profiles based on the features of individuals such as their level of education, status in the labour market, region of residence, etc. To do this, we have defined the following dummy variable that measures if a person is poor, or not, according to his or her status.

$$p_i = \begin{cases} 1 & \text{if } y_i / z < 1 \\ 0 & \text{otherwise} \end{cases}$$

where y_i is the annual net equivalent income of the individual, i and z is the poverty line which is equal to 60% of median equalized disposable income.

The probability that an individual will be poor or in deprivation is calculated by the Probit model (see Greene, 2002)

$$prob(u_i = 1) = \Phi(X_{i,LFS}\beta)$$

where X_{LFS} is the vector of independent variables that affect this probability and β is the vector of coefficients of the probit model.

3. Income poverty and deprivation: descriptive statistics and multivariate analysis

As table 1 shows, the incidence of income poverty (headcount ratio²) in both countries is larger for female. This relative poverty did not increase for Italy in 2010 with respect to 2007 but it increased in Spain above all for men. Moreover, the average poverty gap (FGT (1) index³) and the poverty severity (FGT (2) index⁴) significantly increased for both men and women in Spain with a higher increase in the male case. Both countries have been affected by an increase in deprivation that in 2010 affects 12% and 15% of men aged over 15 respectively in Spain and in Italy and 13% and 16% of women aged over 15 in Spain and Italy. That is, deprivation levels are higher in Italy despite having lower indicators of income poverty.

Table 1. Poverty measures – all individuals aged over 15

| Italy | 2007 | | | 2010 | | |
|-------------------|---------------|-------|---------|---------------|-------|---------|
| | Males+females | Males | Females | Males+Females | Males | Females |
| Headcount ratio % | 18.93 | 17.07 | 20.67 | 17.20 | 15.67 | 18.61 |
| FGT (1) | 5.90 | 5.49 | 6.28 | 5.55 | 5.05 | 6.01 |
| FGT(2)*100 | 3.37 | 3.39 | 3.35 | 3.18 | 2.94 | 3.40 |
| Deprivation index | 0.12 | 0.11 | 0.12 | 0.16 | 0.15 | 0.16 |
| Spain | | | | | | |
| Headcount ratio % | 19.73 | 18.22 | 21.14 | 20.62 | 20.04 | 21.17 |
| FGT (1) | 6.18 | 5.81 | 6.50 | 8.77 | 9.05 | 8,51 |
| FGT(2)*100 | 3.28 | 3.10 | 3.44 | 9.05 | 8.69 | 7.09 |
| Deprivation index | 0.095 | 0.094 | 0.097 | 0.13 | 0.12 | 0.13 |

Source: Our own elaboration on EU SILC

In Tables 2-5, we show the results of the estimation of probit models on the probability of being income poor (Tables 2 and 3), or in material deprivation (Tables 4 and 5), in the two countries where we consider as the reference group the individuals with primary or lower level of education, living in the Center-North of Italy or in Group 1 region in

² This ratio measures the percentage of people under the poverty line (60 percent of the median of the annual equivalized net income in our study).

³ This index developed by Foster *et al.* (1984) considers the income deficit with respect to the poverty line and the incidence of poverty.

⁴ This index takes into account the income inequality within the poor group (Foster *et al.* 1984).

Spain, and being full-time permanent employed, living as a couple, without children aged less than 18.

Table 2. Probit model on being income poor- Italy

| | 2007 | | | | 2010 | | | |
|---|--------------|------------|--------------|------------|--------------|------------|--------------|------------|
| | Males | | Females | | Males | | Females | |
| | Coeff. | Marg. Eff. |
| Age | 0.0150*** | 0.00309 | 0.00543 | 0.0013 | 0.0215*** | 0.00413 | 0.0173*** | 0.00381 |
| | (0.00574) | | (0.00432) | | (0.00593) | | (0.00443) | |
| Age squared | -1.62e-04*** | -3.34e-05 | -1.34e-04*** | -3.19e-05 | -2.35e-04*** | -4.53e-05 | -2.49e-04*** | -5.50e-05 |
| | (5.79e-05) | | (4.34e-05) | | (6.21e-05) | | (4.62e-05) | |
| Single | 0.461*** | 0.114 | 0.820*** | 0.247 | 0.567*** | 0.138 | 0.935*** | 0.271 |
| | (0.0519) | | (0.0394) | | (0.0499) | | (0.0422) | |
| Household with children | 0.210*** | 0.0443 | 0.128*** | 0.0311 | 0.290*** | 0.0579 | 0.232*** | 0.0528 |
| | (0.0497) | | (0.0465) | | (0.0482) | | (0.0471) | |
| Lone parent | 0.504*** | 0.133 | 0.659*** | 0.204 | 0.522*** | 0.132 | 1.078*** | 0.351 |
| | (0.137) | | (0.0844) | | (0.114) | | (0.0742) | |
| Secondary | -0.345*** | -0.0663 | -0.287*** | -0.0642 | -0.310*** | -0.0563 | -0.247*** | -0.0513 |
| | (0.0450) | | (0.0418) | | (0.0462) | | (0.0434) | |
| High school | -0.679*** | -0.124 | -0.587*** | -0.125 | -0.657*** | -0.115 | -0.506*** | -0.102 |
| | (0.0481) | | (0.0438) | | (0.0481) | | (0.0466) | |
| Tertiary | -1.050*** | -0.132 | -1.107*** | -0.161 | -1.018*** | -0.119 | -0.879*** | -0.132 |
| | (0.0821) | | (0.0696) | | (0.0734) | | (0.0694) | |
| Part time temporary | 1.026*** | 0.323 | 0.881*** | 0.289 | 1.179*** | 0.374 | 0.862*** | 0.271 |
| | (0.141) | | (0.105) | | (0.159) | | (0.123) | |
| Part time permanent | 0.967*** | 0.300 | 0.199** | 0.0519 | 0.820*** | 0.234 | 0.316*** | 0.0806 |
| | (0.175) | | (0.0987) | | (0.151) | | (0.0886) | |
| FT temporary | 0.732*** | 0.207 | 0.483*** | 0.141 | 0.624*** | 0.162 | 0.540*** | 0.152 |
| | (0.0945) | | (0.0997) | | (0.0740) | | (0.0958) | |
| PT Self-employed | 0.957*** | 0.296 | 0.884*** | 0.292 | 0.801*** | 0.227 | 0.734*** | 0.222 |
| | (0.142) | | (0.129) | | (0.155) | | (0.159) | |
| FT Self-employed | 0.522*** | 0.130 | 0.457*** | 0.131 | 0.439*** | 0.101 | 0.388*** | 0.102 |
| | (0.0519) | | (0.0889) | | (0.0506) | | (0.0856) | |
| Unemployed self-empl. with employees before | 1.581*** | 0.541 | 2.418*** | 0.765 | 1.252*** | 0.404 | 0.151 | 0.372 |
| | (0.384) | | (0.628) | | (0.316) | | (0.537) | |
| Unemployed self-empl. without employees before | 1.656*** | 0.567 | 1.425*** | 0.503 | 1.437*** | 0.476 | 1.422*** | 0.492 |
| | (0.185) | | (0.215) | | (0.153) | | (0.168) | |

| | | | | | | | | |
|---|----------------------|-------|----------------------|-------|----------------------|--------|----------------------|-------|
| Unemployed previously employee | 1.133*** (0.0871) | 0.362 | 0.973*** (0.0969) | 0.325 | 1.180*** (0.0713) | 0.366 | 1.119*** (0.0805) | 0.368 |
| Unemployed never employed before | 1.362*** (0.112) | 0.455 | 1.360*** (0.111) | 0.478 | 1.494*** (0.103) | 0.494 | 1.597*** (0.0971) | 0.553 |
| Inactive not retired | 0.727*** (0.0643) | 0.195 | 0.885*** (0.0647) | 0.223 | 0.781*** (0.0629) | 0.202 | 0.913*** (0.0567) | 0.215 |
| Retired | 0.490*** (0.0624) | 0.115 | 0.605*** (0.0723) | 0.171 | 0.373*** (0.0640) | 0.0802 | 0.532*** (0.0670) | 0.139 |

It continues

Table 2. Probit model on being income poor- Italy (continuation)

| | 2007 | | | | 2010 | | | |
|--|----------------------|------------|----------------------|------------|----------------------|------------|----------------------|------------|
| | Males | | Females | | Males | | Females | |
| | Coeff. | Marg. Eff. |
| chronic ill | 0.0105 (0.0397) | 0.00215 | 0.0285 (0.0345) | 0.00686 | -0.0149 (0.0400) | -0.00286 | -0.0450 (0.0357) | -0.00981 |
| At least one child aged less than 6 | 0.318*** (0.0586) | 0.0750 | 0.164*** (0.0536) | 0.0417 | 0.334*** (0.0594) | 0.0751 | 0.179*** (0.0538) | 0.0428 |
| At least one child 6-14 | 0.252*** (0.0475) | 0.0566 | 0.147*** (0.0441) | 0.0369 | 0.259*** (0.0467) | 0.0552 | 0.178*** (0.0433) | 0.0418 |
| At least one child 15-17 | 0.269*** (0.0532) | 0.0620 | 0.180*** (0.0507) | 0.0460 | 0.178*** (0.0528) | 0.0373 | 0.155*** (0.0496) | 0.0367 |
| South | 0.711*** (0.0321) | 0.165 | 0.612*** (0.0281) | 0.160 | 0.640*** (0.0310) | 0.139 | 0.533*** (0.0285) | 0.129 |
| Constant | -1.896*** (0.162) | | -1.618*** (0.139) | | -2.051*** (0.158) | | -2.031*** (0.132) | |
| Observations | 21,208 | | 23,183 | | 19,254 | | 20,920 | |
| Pseudo R-squared | 0.18 | | 0.17 | | 0.18 | | 0.18 | |

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Our own elaboration on EU SILC

Table 3. Probit model on being income poor- Spain

| | 2007 | | | | 2010 | | | |
|---|-----------------------|------------|------------------------|------------|-------------------------|------------|-------------------------|------------|
| | Males | | Females | | Males | | Females | |
| | Coeff. | Marg. Eff. | Coeff. | Marg. Eff. | Coeff. | Marg. Eff. | Coeff. | Marg. Eff. |
| Age | -0.0076 (0.0065) | -0.0014 | -0.0066 (-0.0046) | -0.0013 | -0.000124 (-0.00558) | -2.97E-05 | -0.00147 (0.00443) | -0.000379 |
| Age squared | 0.000122* (0.0001) | 2.20e-05 | 0.0001 (0.00009) | 0.0000 | 2.38E-05 (-5.80E-05) | 5.67E-06 | -1.79E-05 (4.36E-05) | -4.61E-06 |
| Single | 0.219*** (0.0848) | 0.0444 | 0.592*** (-0.0583) | 0.155*** | 0.281*** (-0.0661) | 0.0750 | 0.556*** (0.0503) | 0.171 |
| Household with children | 0.322*** (0.0438) | 0.0587 | 0.203*** (-0.0399) | 0.0407*** | 0.307*** (-0.0389) | 0.0754 | 0.295*** (0.0382) | 0.0781 |
| Lone parent | -0.1510 (0.1880) | -0.0246 | 0.914*** (-0.0797) | 0.274*** | 0.615*** (-0.154) | 0.189 | 0.997*** (0.0899) | 0.347 |
| Secondary | -0.265*** (0.0506) | -0.0439 | -0.140*** (-0.0405) | -0.0269*** | -0.305*** (-0.0437) | -0.0676 | -0.245*** (0.043) | -0.0591 |
| High school | -0.400*** (0.0570) | -0.0623 | -0.348*** (-0.0471) | -0.0624*** | -0.560*** (-0.0511) | -0.113 | -0.386*** (0.0488) | -0.0889 |
| Tertiary | -0.603*** (0.0577) | -0.0891 | -0.538*** (-0.0505) | -0.0918*** | -0.761*** (-0.0533) | -0.149 | -0.769*** (0.0535) | -0.164 |
| Part time temporary | 0.670*** (0.1670) | 0.172 | 0.635*** (-0.0852) | 0.172*** | 0.796*** (-0.176) | 0.257 | 0.757*** (0.106) | 0.252 |
| Part time permanent | | | 0.385*** (-0.0884) | 0.0937*** | 0.616*** (-0.187) | 0.190 | 0.248*** (0.0897) | 0.0707 |
| Full Time temporary | 0.479*** (0.0675) | 0.107 | 0.597*** (-0.0774) | 0.156*** | 0.539*** (-0.0714) | 0.157 | 0.294*** (0.0828) | 0.0849 |
| Part Time Self-employed | 1.532*** (0.2630) | 0.502 | 0.831*** (-0.1500) | 0.245*** | 1.574*** (-0.243) | 0.557 | 1.083*** (0.153) | 0.383 |
| FT Self-employed | 1.064*** (0.0539) | 0.291 | 1.021*** (-0.0828) | 0.311*** | 1.398*** (-0.0568) | 0.471 | 1.041*** (0.0787) | 0.361 |
| Unemployed self-empl. with employees before | 2.425*** (0.5800) | 0.774 | 0.7960 (-0.5070) | 0.2330 | 1.630*** (-0.274) | 0.576 | 1.006** (0.456) | 0.354 |
| Unemployed self-empl. without employees before | 1.350*** (0.3120) | 0.431 | 0.4540 (-0.2860) | 0.1160 | 1.555*** (-0.18) | 0.549 | 1.146*** (0.249) | 0.408 |
| Unemployed previously employee | 0.931*** (0.0769) | 0.258 | 0.827*** (-0.0736) | 0.236*** | 1.006*** (-0.0577) | 0.321 | 0.773*** (0.0624) | 0.249 |
| Unemployed never employed before | 1.396*** (0.1590) | 0.448 | 1.464*** (-0.1400) | 0.492*** | 1.409*** (-0.146) | 0.497 | 1.584*** (0.14) | 0.566 |
| Inactive not retired | 0.894*** (0.0679) | 0.232 | 0.906*** (-0.0608) | 0.202*** | 0.810*** (-0.0686) | 0.249 | 0.747*** (0.0543) | 0.209 |
| Retired | 0.518*** (0.0763) | 0.113 | 0.273*** (-0.0820) | 0.0623*** | 0.437*** (-0.0729) | 0.118 | 0.246*** (0.0718) | 0.0690 |

It continues

Table 3. Probit model on being income poor- Spain (continuation)

| | 2007 | | | | 2010 | | | |
|--|-----------------------|------------|------------------------|------------|-----------------------|------------|----------------------|------------|
| | Males | | Females | | Males | | Females | |
| | Coeff. | Marg. Eff. | Coeff. | Marg. Eff. | Coeff. | Marg. Eff. | Coeff. | Marg. Eff. |
| Chronic ill | -0.0194 (0.0413) | -0.0035 | 0.0328 (-0.0338) | 0.0067 | -0.034 (-0.0378) | -0.00806 | 0.016 (0.0338) | 0.00415 |
| At least one child aged less than 6 | 0.0294 (0.1010) | 0.0054 | 0.0264 (-0.0627) | 0.0054 | | | | |
| At least one child 6-14 | 0.179** (0.0706) | 0.0354 | 0.0814* (-0.0466) | 0.0170* | 0.325 (-0.285) | 0.0902 | 0.458 (0.36) | 0.142 |
| At least one child 15-17 | 0.0331 (0.1150) | 0.0061 | 0.0686 (-0.0734) | 0.0143 | 0.615 (-0.431) | 0.19 | 1.070** (0.453) | 0.379 |
| Group 2 | -0.0353 (0.0647) | -0.0063 | -0.0496 (-0.0513) | -0.0099 | 0.154*** (-0.059) | 0.0374 | 0.166*** (0.0563) | 0.0437 |
| Group 3 | 0.194*** (0.0591) | 0.0359 | 0.265*** (-0.0472) | 0.0557*** | 0.372*** (-0.0561) | 0.0930 | 0.414*** (0.0535) | 0.112 |
| Group 4 | 0.417*** (0.0636) | 0.0871 | 0.383*** (-0.0515) | 0.0874*** | 0.634*** (-0.0612) | 0.179 | 0.554*** (0.058) | 0.164 |
| Constant | -1.667*** (0.1760) | | -1.696*** (-0.1380) | | -1.674*** (-0.159) | | -1.515*** (0.141) | |
| Observations | 15,596 | | 18,946 | | 14,552 | | 15,896 | |
| Pseudo R-squared | 0.14 | | 0.12 | | 0.17 | | 0.13 | |

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Our own elaboration on EU SILC

Table 4. Probit model on deprivation index – Italy

| | 2007 | | | | 2010 | | | |
|---|-----------------------|------------|-----------------------|------------|-----------------------|------------|-----------------------|------------|
| | Males | | Females | | Males | | Females | |
| | Coeff. | Marg. Eff. |
| Age | 0.0235*** (3.72) | 0.00357 | 0.0285*** (4.90) | 0.00487 | 0.0151** (2.41) | 0.00307 | 0.0175*** (3.19) | 0.00375 |
| Age squared | 0.000286*** (4.53) | -4.34e-05 | 0.000310*** (5.56) | -0.0000530 | 0.000171*** (2.73) | -0.0000349 | 0.000221*** (4.13) | -0.0000472 |
| Single | -0.228*** (4.27) | -0.0354 | -0.460*** (8.85) | -0.0803 | -0.0798 (1.58) | -0.0163 | -0.342*** (6.76) | -0.0736 |
| Household with children | 0.122 (1.55) | 0.0200 | 0.186*** (2.71) | 0.0354 | 0.324*** (4.61) | 0.0769 | 0.241*** (3.79) | 0.0576 |
| Lone parent | -0.103 (1.05) | -0.0147 | -0.0546 (0.86) | -0.0091 | -0.0323 (0.34) | -0.00645 | -0.0678 (1.06) | -0.0141 |
| Secondary | -0.245*** (4.81) | -0.0351 | -0.288*** (6.45) | -0.0453 | -0.249*** (5.23) | -0.0484 | -0.232*** (5.31) | -0.0469 |
| High school | -0.578*** (10.56) | -0.0784 | -0.596*** (12.14) | -0.0889 | -0.620*** (12.45) | -0.115 | -0.566*** (12.12) | -0.109 |
| Tertiary | -1.122*** (13.23) | -0.0943 | -1.053*** (13.32) | -0.104 | -1.003*** (13.51) | -0.126 | -1.014*** (14.15) | -0.138 |
| Part time temporary | 0.792*** (4.42) | 0.191 | 0.438*** (4.00) | 0.0965 | 0.728*** (4.29) | 0.209 | 0.407*** (3.20) | 0.106 |
| Part time permanent | 0.426*** (2.69) | 0.0848 | 0.280*** (3.27) | 0.0560 | 0.712*** (4.59) | 0.203 | 0.175*** (2.17) | 0.0409 |
| FT temporary | 0.363*** (4.26) | 0.0686 | 0.345*** (3.67) | 0.0720 | 0.554*** (7.91) | 0.146 | 0.295*** (3.56) | 0.0731 |
| PT Self-employed | 0.444*** (2.73) | 0.0894 | 0.227 (1.62) | 0.0446 | 0.454*** (3.06) | 0.117 | -0.190 (1.25) | -0.0366 |
| FT Self-employed | -0.0724 (1.23) | -0.0106 | -0.140 (1.50) | -0.0220 | -0.120** (2.16) | -0.0233 | -0.151* (1.77) | -0.0298 |
| Unemployed self-empl. With employees before | 0.468 (0.97) | 0.0960 | -0.0385 (0.06) | -0.00641 | 0.865** (2.51) | 0.261 | 0.260 (0.48) | 0.0637 |
| Unemployed self-empl. Without employees before | 1.045*** (4.88) | 0.281 | 0.688*** (3.41) | 0.173 | 0.980*** (5.11) | 0.305 | 1.059*** (6.30) | 0.344 |
| Unemployed previously employee | 0.651*** (8.17) | 0.145 | 0.651*** (7.40) | 0.159 | 0.944*** (13.62) | 0.284 | 0.665*** (8.71) | 0.191 |
| Unemployed never employed before | 0.526*** (4.61) | 0.110 | 0.637*** (6.25) | 0.155 | 0.907*** (9.03) | 0.274 | 0.699*** (7.34) | 0.204 |
| Inactive not retired | 0.251*** (4.14) | 0.0432 | 0.247*** (4.66) | 0.0431 | 0.340*** (5.70) | 0.0790 | 0.191*** (3.84) | 0.0414 |
| Retired | 0.167*** (2.69) | 0.0268 | 0.0867 (1.38) | 0.0153 | -0.120* (1.93) | -0.0236 | -0.0380 (0.62) | -0.00803 |

It continues

Table 4. Probit model on deprivation index – Italy (continuation)

| | 2007 | | | | 2010 | | | |
|--|-----------|------------|-----------|------------|-----------|------------|-----------|------------|
| | Males | | Females | | Males | | Females | |
| | Coeff. | Marg. Eff. |
| chronic ill | 0.242*** | 0.0408 | 0.257*** | 0.0481 | 0.178*** | 0.0385 | 0.263*** | 0.0607 |
| | (6.03) | | (7.22) | | (4.62) | | (7.54) | |
| At least one child aged less than 6 | 0.116* | 0.0188 | 0.135** | 0.0247 | 0.196*** | 0.0436 | 0.241*** | 0.0573 |
| | (1.86) | | (2.28) | | (3.27) | | (4.23) | |
| At least one child 6-14 | 0.181*** | 0.0298 | 0.164*** | 0.0300 | 0.115*** | 0.0245 | 0.160*** | 0.0364 |
| | (3.93) | | (3.67) | | (2.64) | | (3.81) | |
| At least one child 15-17 | 0.122** | 0.0198 | 0.0411 | 0.00718 | 0.0979* | 0.0208 | 0.158*** | 0.0362 |
| | (2.34) | | (0.76) | | (1.89) | | (3.22) | |
| South | 0.574*** | 0.0989 | 0.578*** | 0.111 | 0.465*** | 0.103 | 0.533*** | 0.125 |
| | (17.16) | | (18.76) | | (14.71) | | (18.01) | |
| Constant | -1.665*** | | -1.710*** | | -1.325*** | | -1.253*** | |
| | (10.34) | | (11.43) | | (8.38) | | (8.94) | |
| Observations | 21208 | | 23183 | | 19254 | | 20920 | |
| Pseudo R-squared | 0.13 | | 0.12 | | 0.13 | | 0.11 | |

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Our own elaboration on EU SILC

Table 5. Probit model on deprivation index- Spain

| | 2007 | | | | 2010 | | | |
|---|-------------------------|------------|-------------------------|-------------|-------------------------|------------|---------------------------|-------------|
| | Males | | Females | | Males | | Females | |
| | Coeff. | Marg. Eff. | Coeff. | Marg. Eff. | Coeff. | Marg. Eff. | Coeff. | Marg. Eff. |
| Age | 0.00300 (0.00717) | 0.000404 | -0.0193*** (0.00544) | -0.00266*** | 0.000294 (0.00678) | 5.08e-05 | 0.000320 (0.00520) | 5.96e-05 |
| Age squared | -0.000107 (8.02e-05) | -1.45e-05 | 9.36e-05* (5.67e-05) | 1.29e-05* | -5.53e-05 (7.37e-05) | -9.56e-06 | -0.000125** (5.33e-05) | -2.33e-05** |
| Single | 0.0547 (0.0899) | 0.00763 | 0.246*** (0.0687) | 0.0394*** | 0.175** (0.0759) | 0.0333** | 0.343*** (0.0618) | 0.0752*** |
| Hosehold with children | -0.0884* (0.0464) | -0.0119* | -0.0432 (0.0471) | -0.00596 | 0.195*** (0.0418) | 0.0345*** | 0.161*** (0.0411) | 0.0307*** |
| Lone parent | 0.387** (0.175) | 0.0680* | 0.767*** (0.0868) | 0.169*** | 0.664*** (0.157) | 0.166*** | 0.637*** (0.0910) | 0.165*** |
| Secondary | -0.265*** (0.0502) | -0.0324*** | -0.276*** (0.0478) | -0.0341*** | -0.234*** (0.0495) | -0.0377*** | -0.333*** (0.0490) | -0.0554*** |
| High school | -0.371*** (0.0567) | -0.0429*** | -0.608*** (0.0549) | -0.0660*** | -0.495*** (0.0556) | -0.0711*** | -0.504*** (0.0565) | -0.0779*** |
| Tertiary | -0.789*** (0.0676) | -0.0806*** | -1.103*** (0.0707) | -0.106*** | -0.813*** (0.0634) | -0.109*** | -0.941*** (0.0658) | -0.133*** |
| Part time temporary | 0.441** (0.174) | 0.0801** | 0.364*** (0.103) | 0.0636*** | 0.595*** (0.166) | 0.144*** | 0.132 (0.103) | 0.0265 |
| Part time permanent | -0.198 (0.312) | -0.0230 | 0.0157 (0.0952) | 0.00219 | 0.435* (0.229) | 0.0972 | -0.0760 (0.0954) | -0.0136 |
| FT temporary | 0.537*** (0.0622) | 0.0964*** | 0.153* (0.0800) | 0.0232* | 0.449*** (0.0706) | 0.0974*** | 0.144 (0.0876) | 0.0290 |
| PT Self-employed | 0.598 (0.372) | 0.120 | 0.0712 (0.177) | 0.0103 | 0.406 (0.289) | 0.0894 | 0.0806 (0.181) | 0.0158 |
| FT Self-employed | -0.254*** (0.0789) | -0.0296*** | -0.0628 (0.104) | -0.00831 | -0.136* (0.0729) | -0.0218** | -0.238** (0.104) | -0.0386*** |
| Unemployed self-empl. with employees before | 0.723** (0.314) | 0.154* | 0.0299 (0.289) | 0.00421 | 0.858*** (0.165) | 0.222*** | 0.825*** (0.212) | 0.225*** |
| Unemployed self-empl. without employees before | 0.852*** (0.278) | 0.191** | 0.556** (0.272) | 0.108 | 0.997*** (0.152) | 0.271*** | 0.841*** (0.199) | 0.228*** |
| Unemployed previously employee | 0.0109 (0.289) | 0.00148 | -0.0711 (0.272) | -0.00937 | -0.104 (0.155) | -0.0171 | -0.324 (0.201) | -0.0514* |
| Unemployed never employed before | 0.0159 (0.329) | 0.00217 | 0.177 (0.298) | 0.0276 | -0.498** (0.208) | -0.0616*** | -0.205 (0.237) | -0.0337 |
| Inactive notretired | 0.206*** (0.0710) | 0.0311*** | -0.0282 (0.0588) | -0.00387 | 0.103 (0.0730) | 0.0186 | -0.0345 (0.0563) | -0.00640 |

It continues

Table 5. Probit model on deprivation index- Spain (continuation)

| | 2007 | | | | 2010 | | | |
|--|----------------------|------------|----------------------|------------|----------------------|------------|----------------------|------------|
| | Males | | Females | | Males | | Females | |
| | Coeff. | Marg. Eff. |
| Retired | 0.132 (0.0922) | 0.0189 | -0.107 (0.0866) | -0.0139 | -0.0202 (0.0896) | -0.00346 | -0.0301 (0.0873) | -0.00554 |
| Chronic ill | 0.333*** (0.0428) | 0.0512*** | 0.352*** (0.0380) | 0.0555*** | 0.177*** (0.0431) | 0.0322*** | 0.255*** (0.0396) | 0.0504*** |
| At least one child aged less than 6 | 0.0734 (0.102) | 0.0104 | -0.109 (0.0755) | -0.0141 | | | | |
| At least one child 6-14 | 0.162** (0.0762) | 0.0243* | -0.113* (0.0592) | -0.0146** | -0.588 (0.489) | -0.0680** | -0.602* (0.347) | -0.0756*** |
| At least one child 15-17 | 0.00971 (0.102) | 0.00132 | -0.151 (0.0920) | -0.0187* | | | -1.015** (0.429) | -0.0966*** |
| Group 2 | 0.221*** (0.0629) | 0.0310*** | 0.239*** (0.0575) | 0.0345*** | 0.289*** (0.0703) | 0.0524*** | 0.342*** (0.0657) | 0.0671*** |
| Group 3 | 0.373*** (0.0574) | 0.0543*** | 0.335*** (0.0538) | 0.0496*** | 0.345*** (0.0678) | 0.0632*** | 0.404*** (0.0638) | 0.0805*** |
| Group 4 | 0.541*** (0.0636) | 0.0921*** | 0.548*** (0.0584) | 0.0954*** | 0.518*** (0.0720) | 0.108*** | 0.569*** (0.0675) | 0.129*** |
| Constant | -1.540*** (0.179) | | -0.767*** (0.155) | | -1.436*** (0.181) | | -1.125*** (0.157) | |
| Observations | 15685 | | 18946 | | 14547 | | 15896 | |
| Pseudo R-squared | 0.12 | | 0.11 | | 0.12 | | 0.09 | |

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Our own elaboration on EU SILC

A first important difference in the factors affecting poverty for the two countries concerns age. Ageing significantly increases the probability of being income poor in Italy and the effect is larger in 2010, whereas it does not significantly affect income poverty in Spain. This can be connected to the larger risk faced by younger individuals in Spain to be without a job or in worse job status and to the different protection of the retirement system. Italy has enacted several reforms of its public retirement program since 1980 in order to reduce its cost and increase contribution rates. So, the calculation of benefits has been changed to a 'contribution base'. By contrast, Spain, despite the demographic and economic pressures it suffers, has not adopted a so deep reform of its retirement system and, from 2004, has increased the minimum pensions above the price index in a range between 34.4% and 27.0% depending on the type of pension. Moreover, the net replacement rate of the Spanish pension system is of 84.5%, whilst the Italian one is of 76.2% (OECD, 2011).

In 2007, with respect to living as a couple, the living arrangement that lead to an increase in income poverty in Spain was living in a single parent household for women and being single for men. The reverse was true in Italy. In the crisis, the situation changed for Spain where, amongst men, the most likely living arrangement leading to poverty was living in a single parent household. This living arrangement was increasing income poverty risk for women too and more so than before the crisis. In Italy, the increase in the effect of living in a single parent household for women was so serious that this living arrangement was the one more linked to income poverty for females. Now, being single and living in a single parent household show a similar effect on Italian men.

A higher education level significantly protects against income poverty for both men and women living in both countries. However, this protecting effect increases in the crisis only for Spain. In this country the job destruction caused by the crisis has affected more intensively the labour-force clusters with lowest level of education and skill. It should be taken into account that almost 45 per cent of the Spanish labour-force has only completed the compulsory level of studies and that, despite the advances made in this field, female labour-force remains with much lesser skill than the male one⁵. Therefore, a great effort should be made to reinforce the Spanish education system and to adapt it to labour market demands and reduce the gender gap.

Turning to the employment condition, working part-time increases the likelihood of being poor in both countries although the effect is similar by gender for temporary part-timers in Spain. The effect is greater for men than for women in Italy with a widening of the difference in the impact for temporary part-timers in 2010.

Temporary workers working full-time show a higher probability to be income poor with a larger effect in Spain for women in 2007 and for men in 2010. The effect is now

⁵ Data from Spanish Labour Force Survey (available at <http://www.ine.es>)

similar for men and women working full time on a temporary contract in Italy but it was significantly higher in 2007 for men. So, the economic crisis has affected the existing gender differences owing to the different intensity of its impact on male and female employment in the selected countries.

As compared to full-time employed on a permanent contract, the labour market condition that is more exposed to the risk of being income poor in both countries is being unemployed. In Italy in both years, although all the unemployed are more exposed to the risk of being income poor, the least exposed to this risk are those who were employees before. This can be related to the structure of unemployment benefit in Italy that has a higher coverage for employees leading to a different risk of income poverty when unemployment occurs depending on previous employment conditions.

Moreover, amongst Italian and Spanish individuals, the risk of income poverty significantly increased (especially for women) for those who were unemployed and were never employed before. In 2010, the likelihood of being income poor increases by 55% for women in this unemployment status and by 49% for men in Italy and by 50% and 57% for men and women, respectively, in Spain. This can be related to the higher likelihood that they experienced an increase in the length of unemployment, and to the higher likelihood that they will not be covered by the system of unemployment benefit. In the Spanish case, the increase in poverty occurred also for the unemployed who were previously employees or self employed. It should be taken into account that the Spanish unemployment protection system, almost entirely focused on passive measures, did not cover the self employed during the analyzed period, and that its coverage for employees depended on the contribution made to the system in accordance with the previous employment status leaving those workers with a worse job status more exposed to unemployment.

Retirement increases the risk of being income poor in both countries although the effect is greater for males than for females in Spain and in Italy the effect is greater for women than men. The higher effect of retirement condition on women's income poverty is in line with the analysis on gender inequalities in retirement income (Mundo, 2007; Leombruni and Mosca, 2012). Others inactivity statuses (excluding retirement) have a higher effect on increasing income poverty. Nonetheless, this effect did not increase with the crisis despite people in this status have lower social protection.

Living in the South of Italy, or in the Group 4 of Spanish regions, increases income poverty. However, this effect was lower in 2010 for southern Italy but higher in the Spanish case. So, territorial fractures have been widened by the onset of the economic recession despite the decentralization of social policies applied above all in the case of Spain.

Let us turn now to the analysis of the factors affecting deprivation as distinct from income poverty. In Italy, the living arrangement that is more likely to increase deprivation is living in a household with children, a living arrangement whose effect increased in 2010 and is greater when there are children of pre-school age. In Spain, the

deprivation risk of households with children has also grown with the crisis; but the single parent was the living arrangement more likely to raise deprivation in 2010, especially for men. It should be highlighted that the social protection in Spain is graduated according to the number of children in the household but it establishes a maximum benefit bound.

Unemployment is found to increase material deprivation in Italy and Spain especially if the unemployed individual was previously self-employed without employees. This is a condition that is more likely to occur for non standard employed (with parasubordinate types of contract). In 2010, the likelihood of being in material deprivation increased for all the unemployed in Italy although the effect was still greater for those who were previously self-employed without any employees. This last result repeats in Spain and it is consistent with the literature showing higher probability of social exclusion for non standard workers including parasubordinate type of workers that can be included in this group of workers (Berton *et al.* 2012).

Apart from income poverty, being chronically ill increases material deprivation in Italy and Spain. In addition, regional inequalities occur also with regards to material deprivation in both countries. Living in the South of Italy increases the risk of material deprivation in both years leading to an increase by 10% for men and by 13% for women of being in material deprivation in 2010. Nevertheless, in Spain this probability has risen by 3.83% for women and it has been slightly reduced for men.

4. Conclusions and policy implications

This paper deals with poverty and material deprivation in two Southern European countries that have been deeply hit by the crisis. We compare the risk of income poverty and material deprivation for individuals aged over 15 in the two countries by gender and highlight the impact of different factors by multivariate analysis.

Our findings show the increase of incidence and severity of poverty and the widening of poverty gap in Spain, as well as the growth of deprivation as a consequence of the economic crisis in both countries. Furthermore, the higher exposure of females to income poverty and deprivation is also verified in both selected countries.

With special regards to the employment status, we show how unemployment significantly increases the risk of being income poor or materially deprived in the two countries with a larger effect on income poverty for those who found themselves unemployed and not having been employed before. The latter is related to the system of unemployment benefit in the two countries that leads to inequalities in terms of sustainability of unemployment amongst different types of unemployed. So, major reforms of them are necessary to avoid a widening of these clear social fractures in crisis time. Thus, special attention should also be paid to the reinforcement of active policies of employment, which are clearly relegated to a low priority in these Mediterranean social protection models.

Non-standard work is found to increase income poverty and material deprivation in both countries. The effect on income poverty is larger in Italy for part-timers and full-time temporary and for self-employed in Spain. Therefore, additional measures should be adopted to turn these job options into real alternatives to unemployment, as it is wished by Spanish policymakers.

Both countries show heterogeneity in the risk of poverty and income deprivation across regions with a higher probability of income poverty and material deprivation in Andalusia and Extremadura in Spain and in the South of Italy. The inadequacies of social policy decentralization to close or at least prevent the widening of territorial fractures especially in Spain are clearly showed, so they should be reconsidered in order to avoid a higher risk of poverty or deprivation and to avoid an increase in inequalities across regions.

In addition, our results stress that the demographic and economic challenges faced by the retirement system should take into account the need of preventing the risk of income poverty among the eldest individuals. Moreover, the impact of public budget cuts in the areas related with this age cluster should be considered.

Furthermore, social support to lone parent families and families with children should be improved in both countries to reduce the risk of income poverty and material deprivation of these groups of the population. Moreover, with regards to Spain, the education system should be improved to raise the qualification level of the labour-force, with the aim of reducing the gender gap, since less skilled workers are more affected by job destruction and, therefore, are more exposed to poverty and deprivation.

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