

# **Households at risk of severe material deprivation: the cases of Italy and Spain**

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## **Abstract**

This paper documents how the phenomenon of severe material deprivation spread out in Italy and Spain in the recent past. These two European countries have experienced an increasing risk of poverty since the economic crisis (higher than the EU average), when more than 20% of households fell under the poverty line. Moreover, a considerable share of these households are also materially deprived. Stylized facts suggest that, despite pertaining to the same area, even before the onset of the Great Recession, they look different in relative terms, since they show heterogeneous severe material deprivation rates, below and above the EU average. The percentage for Spain is below the average, while the share for Italy is above the average and almost double that for Spain. The analysis reveals which households characteristics are associated to the risk of being severely materially deprived and whether the risk differs across Spain and Italy.

**JEL:** I32, I38, J12, J14

**Keywords:** severe material deprivation, households, Italy, Spain

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## 1. Introduction

Poverty and social exclusion are two important challenges for social and economic policies. It is not only the availability of current monetary resources which determines a household's standard of living. Other individual and societal factors impact on a household's material assets and standard of living.

The at-risk-of-poverty and severe material deprivation rates are two prominent measures of poverty and social exclusion in the European Union.

Severe material deprivation has found a renewed importance with its inclusion into the poverty and social exclusion goal of the Europe 2020 strategy (European Commission, 2012). Together with the indicator for household work intensity, material deprivation is thus the EU's tool for measuring social exclusion, defined as the process of excluding persons from the minimum way of life acceptable in their respective country (European Council, 1985).

Poverty and severe material deprivation measures are very different under many respects: the first is a relative headcount measure based on equivalised income and a national threshold, while the second is based on non-monetary indicators (for the pioneer literature see, for instance, Townsend, 1979, Mack and Lansley, 1985, and Nolan and Whelan, 1996). Severe material deprivation, indeed, relies on a score calculated on a given set of items assessing the ability / inability to afford goods/items considered as essential to reach an adequate standard of living. Income is not directly involved in measurement and the threshold does not depend on the national median income. Typically, the two measures do not identify the same set of households and social groups as poor (Ayala et al., 2011; Hick, 2015; Whelan and Maitre, 2010).

In this paper, we focus on severe material deprivation (SMD). Severe material deprivation is a multidimensional indicator, oriented to capture the actual standard of living more than the simple income measure. It is calculated using a battery of nine survey questions with yes/no answer, each focused on measuring the ability/inability to afford items considered by most people to be desirable or even necessary to get a satisfactory quality of life (see Section 3 for detailed definitions). A deprivation score ranging from zero to nine (total number of items) is calculated counting the number of items a household cannot afford. A person is said to be severely materially deprived if he/she lives in a household with a score greater than or equal to four (items).

With respect to the at-risk-of poverty rate that is based on income of a given year or current income, SMD refers to a set of resources and functioning that are more naturally related to the concept of permanent income (Ayala et al., 2011). Moreover, the threshold does not vary from year to year, and accommodates naturally for differences in the price levels of different parts of a country. However, there are some drawbacks for the use of SMD. Although a theoretical motivation of multidimensional poverty measures is sound, operationalization is difficult: the choice of the items, their validity, the aggregation of the indexes and the reliability of the scale can be critical. The SMD currently adopted

in the EU and that we consider here, suffers from some limitations related to the small number of items considered and to the relevance of some of such items (see European Commission, 2012, and Guio and Marlier, 2013 for a discussion of these issues).

We decided to focus on Italy and Spain, that are two Southern European countries harshly hit by the latest crises. These countries represent an interesting case study since stylized facts suggest that, despite pertaining to the same region, even before the onset of the 2007 crisis, they look different in relative terms, since they show heterogeneous severe material deprivation rates, higher or lower than the European average.

In 2006, for example, Eurostat estimates that 9.9% of the European population is severely materially deprived. At the time, the severe material deprivation share is below the EU average both in Italy (6.4%) and especially in Spain (4.1%). Interestingly, despite having similar at-risk of poverty rates before and after the crisis (20.3% in Italy and 19.3% in Spain in 2006 and 21.6% in Italy and 20.3% in Spain after the crisis, in 2017), they show an important gap in SMD rates (see Figure A1 in the Appendix). This difference even increases well after the crisis. In 2017, the latest year of available data, the EU share is 6.6%. The percentage for Spain is still below the average (5.1%), while the share for Italy is above the average and almost double that for Spain (10.1%).<sup>1</sup> Why two countries that pertain to the same region and share some similarities in their economies and labour market, do show such different SMD rates? What happened in Italy during the last ten years that has not happened in Spain? The aim of this paper is to analyze the household features which are more associated to SMD, stressing the differences between the two countries and sketching the main policy implications.

In the years following the financial crisis, severe material deprivation in Italy, as well as in Europe, has increased and the economic and political debate has focused on how best to respond to the issue. In Italy, in 2017, the Italian Government introduced (Legislative decree no. 147/2017) the Income inclusion programme (REI), that is a national minimum income scheme. REI is a categorical and universal measure, subject to means-testing. The criterion is based both on income and wealth and it is conditional on participation in a job placement scheme. Simulations on its coverage (see, for instance, Casabianca and Giarda, 2018),<sup>2</sup> show that REI would ensure support to 45.8% of absolute poor and severely materially deprived households and 22.5% of households at risk of poverty and severe material deprivation.

In order to reach a larger proportion of the poor and lift them out of poverty, some are in favour of strengthening the measure, while others have put forward alternative schemes. Currently, the most discussed alternative is the implementation of a citizenship income, outlined in a bill submitted by

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<sup>1</sup> Figures available from the Eurostat at <http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>. Figure A1 in the Appendix shows the SMD and at-risk of poverty rates for Italy and Spain for the period 2006-2017.

<sup>2</sup> Simulations are performed on the 2015 Italian module of EU-SILC survey data. For details, see <https://www.prometeia.it/en/atlante/income-inclusion-programme-citizenship-income-italy-differences>.

the Five Star Movement in 2013,<sup>3</sup> which should be universal, unconditional and not subject to means-testing. However, the proposed version of citizenship income is selective, that is targeted at households with an income below the at-risk-of-poverty threshold. It is conditional on participation in a job placement scheme when the benefit is provided to unemployed people. It is means-tested, even though, in contrast to REI, the means-testing criterion is based only on income (and not on wealth).

The amount granted by the citizenship income is higher than that of REI because, unlike REI, it aims to fill the gap with the at-risk-of-poverty threshold, which is relatively high and gradually increases with the number of household components according to the equivalence scale. The most ambitious aims of the citizenship income imply higher costs for its implementation compared to the REI. Estimates of the distribution of expenditure by geographical area suggest that both for REI and citizenship income more than half of the resources are distributed to the South of Italy. The debate on which measure to implement, REI or citizenship income, is still open.<sup>4</sup> In Spain, as for Italy, there is no specific policy to reduce severe material deprivation, but a variety of means-tested benefits that contribute to reduce poverty. This system of non-contributory benefits is quite complex for at least two reasons: 1. there are many different benefits that provide different protection for each category; 2. the general risks of poverty and severe material deprivation are covered through the regional minimum income programs, with a high level of inequality between territories (Ayala et al., 2016).

Right from the start (introduced during the 1980s, increased with the Act of 1990 and also during the Great Recession) the increased number of beneficiary households has not been equally distributed among the Autonomous Regions of Spain (Ayala et al., 2014). The most characteristic aspect of such allowances has been the variety of experiences, depending largely on the available resources and the different rate of the situations of insufficient income and the heterogeneity of the political response to the problem of poverty and severe material deprivation (Ayala et al., 2011).

Another possible issue, more specific to severe material deprivation, is that housing problems, which are important within deprivation indices, have less incidence in Spain than in other countries. It is not so much due to a broad public housing policy, but rather to a very high ownership rate. The cost is that a significant part of the population has a very high level of housing debt for several years (Martínez and Navarro, 2018).

The discussion on the policy interventions to combat SMD, therefore, is still open and debated both in Italy and Spain.

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<sup>3</sup> Bill No. 1148 of 29 October 2013.

<sup>4</sup> For details on the debate on the two measures, see Leonardi, 2018, chapter 4.

We analyze the latest available data for year 2017 from the EU-SILC cross sectional survey. While most literature, as we will see in Section 2, focused on the measurement of SMD, the novelty of this paper is the focus on the country differences to try to find proper policy implications.

The paper proceeds as follows. Section 2 offers a review of the existing literature on SMD. Section 3 describes the microdata and the indicators used in our analysis of SMD in Italy and Spain. Section 4 introduces the econometric model, Section 5 discusses the empirical results. Section 6 gives concluding remarks and some policy recommendation.

## **2. Literature review**

The literature on (severe) material deprivation can be divided into two main strands, one that analyses the relationship between the indicators for material deprivation (lack of resources) and income poverty (i.e. Whelan et al., 2004; Whelan et al., 2002; Fusco et al., 2010; Whelan et al., 2001), the other on the measurement and the determinants of material deprivation (i.e. Whelan and Maître, 2012; Bárcena-Martín et al., 2014), both offering cross-country comparisons.

On the relationship between material deprivation and poverty, the evidence for European countries is mixed. Whelan et al. (2004), for instance, use the ECHP dataset to try to understand in what way the determinants' of the two measures of deprivation and poverty differ. The determinants used are education, employment status, social class position, household type, marital status, illness. Italy and Spain are among the nine countries analysed. Their findings suggest that employment precariousness, as well as number of children, marital status (divorced), single parent, female are more important for deprivation persistence, while social class and education are more important for income-poverty persistence. The indicators for poverty and material deprivation, therefore, do not identify the same set of households (individuals) as poor.

Whelan et al. (2002), instead, analyze the extent of persistent poverty across countries and how it relates to different life-style deprivations. They use ECHP panel data and the unit of analysis is the individual. They examine eleven European countries including Italy and Spain. They consider five categories of material deprivation: 'basic life-style deprivation' (lack of resources to buy food and clothing, holiday at least once a year, replacing worn-out furniture, experience of arrays); 'secondary life-style deprivation' (lack of resources to buy a car, a phone, a colour TV, a video recorder, a microwave, a dishwasher); 'housing facilities' (lack of resources to but services as the availability of a bath or shower, an indoor toilet, running water); 'Housing deterioration' (existence of leaking roof, dampness, rot in floors and windows), and 'environmental problems' (noise, pollution, vandalism, crime, inadequate space and light).

They find that, on average, across the countries analysed, the persistently poor have basic deprivation scores that are 0.89 standardized units higher than all other individuals (0.95 in Italy, 0.96 in Spain). They also have secondary deprivation scores that are 0.72 standardized units higher than other

individuals (Italy 0.49, Spain 0.91). The persistently poor are exposed to relatively higher risk of deprivation. It is clear that many factors other than persistent income poverty play a role in determining deprivation and these factors vary across types of deprivation.

Fusco et al. (2010), analyse the relationship between income poverty and material deprivation in 25 European countries, and aims at identifying the most important factors that determine the risk of being income poor and/or materially deprived. The analysis focus on the 2007 cross-sectional EU-SILC data.

National correlations, at the individual level, between the level of equivalised income and the intensity of material deprivation, are all below -0.5 and this is in line with findings obtained in previous research (e.g. Layte et al, 2001 and Ayllón et al, 2007).

These results show that there is definitely a link between income poverty and material deprivation measures but that income alone can fail to identify individuals that may be excluded from 'the minimum acceptable way of life in the Member State to which they belong' (and vice-versa, i.e. that deprivation alone can fail to identify income poor people).

The explanatory variables used to characterize material deprivation and income poverty are factors related to needs and factors related to resources. Factors related to needs are those characteristics, such as household structure or the presence of individuals in bad health in the household, that increase the level of resources necessary for a household to maintain its standard of living. Factors related to resources are those that impact on the level of current income such as the work attachment of household members or the presence of highly educated persons in the household. According to their results, income poverty and material deprivation measures are clearly associated.

Finally, Whelan et al. (2001) find a weak relationship between poverty or income and material deprivation or lack of resources. Material deprivation is measured by five dimensions, that are basic life-style deprivation, comprising items such as food and clothing, a holiday at least once a year, replacing worn-out furniture, and the experience of arrears for scheduled payments, secondary life-style deprivation, comprising items that are less likely to be considered essential such as a car, a phone, a colour television, a video, a microwave, and a dishwasher, housing facilities or housing services such the availability of a bath or shower, an indoor flushing toilet and running water that are likely to be seen as essential, housing deterioration or the existence of problems such as a leaking roof, dampness, or rotting in window frames and floors, and finally environmental problems or problems relating to noise, pollution, vandalism, and inadequate space and light.

In general, the relationship between the two measures is weak because there are problems of definitions and updates of the dimensions of deprivation.

On the measurement and the determinants of material deprivation, Whelan and Maître (2012) stress the importance of non-monetary measures of deprivation, because of the limitations on income and related poverty measures. The authors analyse and pinpoint the importance to examine several

dimensions of material deprivation, that are basic, consumption, household, health, neighborhood environment, and access to public facilities deprivation. They use 2009 EU-SILC cross-sectional data and the analysis is carried out at the household level. They find that basic deprivation, that is enforced deprivation related to relatively basic items (such as meal, clothes, holiday), is the most important dimension of deprivation and it provides to be the most reliable measure available for comparative European analysis. This measure shows the strongest relationship with any of the deprivation indicators to both household income and subjective economic stress. The most important determinants of deprivation are household characteristics and household reference socio-economic factors compared to macro-economic factors relating to average levels of disposable income and income inequality.

Bárcena-Martín et al. (2014) assess to what extent differences in individual characteristics, that are gender, age, housing deprivation, education, employment status of the household components, such as the presence of unemployed and/or inactive people in the household, self-employed, individuals working few hours, type of the household (micro-level perspective), and country-specific factors, such as cultural attitudes and institutions (macro-level perspective) can explain country differences with respect to material deprivation levels. The findings suggest that macro-perspective variables are much more relevant in explaining country differences in material deprivation compared to micro-level ones.

To conclude, the available literature inspired us to explore the determinants of the main categories or dimensions of severe material deprivation (for details see Section 3) and to investigate why two Southern European countries similar in many respects, do differ substantially in their indicators of severe material deprivation. From the first strand of literature, we learn that, despite the relationship between poverty and material deprivation is mixed, material deprivation found a renewed importance as a measure of social exclusion. Moreover, to understand the phenomenon it is important to analyse the several dimensions or categories of severe material deprivation. From the second strand, we get a clear picture of the main determinants of material deprivation, both at the household and at the individual level. Inspired by the literature, in what follows, we analyse which characteristics are associated to the risk of being in specific categories of severe material deprivation and whether the risk differs between Italy and Spain.

### **3. Data and Indicators**

We use data from the EU-SILC survey, that is based on a methodology and definitions that have been standardized across most members of the European Union (see Eurostat, 2010, for further information and technical details about the EU-SILC database). The topics covered by the survey are living conditions, income, social exclusion, housing, work, demographics, and education of

individuals. We select data for Italy and Spain. We use cross-sectional data from each country for the year 2017, corresponding to the income year 2016.

The focus of this paper is on severe material deprivation that is a multidimensional poverty measure calculated by using quantitative non-monetary indicators more oriented to the actual standard of living than to income levels. The Social Protection committee for the Europe 2020 strategy adopted these indicators to quantify the percentage of households that cannot afford some of the following nine items - considered by most people to be desirable or even necessary to reach an adequate standard of living. The items are: 1) avoiding arrears (in mortgage or rent, utility bills or hire purchase instalments); 2) one week's annual holiday away from home; 3) a meal with meat, chicken, fish or vegetarian equivalent every second day; 4) coping with unexpected expenses; 5) a telephone; 6) a washing machine; 7) possessing a color TV; 8) a personal car; 9) keeping the home adequately warm. A deprivation score ranging from 0 to 9 stems from the number of items a household cannot afford. Therefore, a person is severely materially deprived if she/he lives in a household with a score that is greater than or equal to four (items).

As mentioned above, SMD is a non-monetary measure of poverty, relating to a set of resources and functioning that pertain more naturally to the concept of permanent income (Ayala et al., 2011). Moreover, the SMD threshold (4) does not vary from year to year, and accommodates naturally for differences in the price levels of different groups of items in a country. Although theoretical motivations of multidimensional poverty measures are sound, operationalization is difficult: the choice of the items, their volatility, aggregation of the indexes and reliability of the scale can be critical (see e.g., European Commission, 2012; Guio and Marlier, 2013). In order to reduce these potential drawbacks/simplify, we decided to focus on three dimensions of deprivation by aggregating the nine items in three categories (by following the suggestions from the existing literature and the homogeneity of the items) as follows: 1. Basic needs including the items 1), 2), 3), and 9); 2. Secondary needs including items 5), 6), 7), 8), and 3. Financial distress for item 4).

Table 1 shows the weighted estimates of all nine items, as well as of the three categories in Italy and Spain, to offer a measure of their importance within and between countries.

**Table 1: Estimated items and categories for severe material deprivation in Italy and Spain**

Item	EST	ST.ERR.	EST	ST.ERR.
	ITALY	ITALY	SPAIN	SPAIN
Capacity to afford paying one week holiday away from home	0.430	0.009	0.343	0.007
Capacity to afford a meal with chicken, meat, fish (or vegetarian equivalent) every second day	0.134	0.007	0.037	0.003
Ability to keep home adequately warm	0.152	0.007	0.008	0.004
Arrears on mortgage or rent payment	0.026	0.002	0.038	0.003
Arrears on utility bills	0.048	0.003	0.074	0.004
Arrears in hire purchase instalments or other loan payments	0.005	0.001	0.002	0.002

Arrears total	0.061	0.004	0.093	0.005
<i>Basic Needs</i>	0.133	0.007	0.098	0.005
Do you have a telephone?	0.004	0.001	0.002	0.001
Do you have a colour tv?	0.002	0.001	0.001	0.000
Do you have a washing machine?	0.002	0.001	0.002	0.001
Do you have a car?	0.027	0.003	0.047	0.003
<i>Secondary Needs</i>	0.009	0.001	0.013	0.001
Capacity to face unexpected financial expenses	0.383	0.008	0.366	0.007
<i>Financial Distress</i>	0.383	0.008	0.366	0.007
<b>Severely materially deprived household</b>	<b>0.101</b>	<b>0.005</b>	<b>0.051</b>	<b>0.004</b>

Notes: Weighted estimates and standard errors for the items and categories of SMD.  
 Authors' calculations from EU-SILC 2017 data.

The capacity to afford paying one week holiday away from home is the most important item of the Basic needs category, especially in Italy (0.430 compared to 0.343 for Spain). Again for Italy, the capacity to afford a meal and the ability to keep home warm are relatively important, while their relevance is negligible in Spain. As a result, the basic need category is more relevant in Italy compared to Spain, with an estimated 0.133 in Italy compared to 0.098 for Spain. The second category of material deprivation, that is secondary needs is the least relevant in both countries (0.009 in Italy and 0.013 in Spain). The most important category is the financial distress, that is the capacity to afford unexpected expenses, with an estimated 0.383 in Italy and 0.366. The last row of Table 2 reports the total SMD. As we note, the SMD for Italy is almost double than the one for Spain (10.1% for Italy, and 5.1% for Spain). These differences between countries and especially among categories of SMD, and overall SMD, inspired the investigation of their main determinants.

Table 2 reports the descriptive statistics for the variables used in the econometric analysis. The dependent variable of our econometric analysis is a categorical variable for SMD. We divided SMD into three categories, taking non-SMD as base category. We note that 48.1% of our sample is not SMD. For the remaining 51.9% we see a prevalence of the Distress category (34.6%), that is coping with unexpected expenses. Around 11.1% of the sample suffers of Basic SMD, while only 6.2% suffers of Secondary SMD.

Table 2: Descriptive statistics

Variable	Mean	Std. Dev.
Dependent variable for SMD categories	1,273	1,361
Non-Deprived <sup>(a)</sup>	48,09	
Basic SMD	11,11	
Secondary SMD	6,18	
Distress SMD	34,63	
Average age	46,052	22,886
Household size	2,987	1,337
Presence of elderly in the household	0.486	0.752
Number of disabled in the household	0.450	0.721
Female head of the household	0.403	0.491
Head homeowner	0.775	0.418
<i>Household type</i>		
Single	0.135	
2 adults, no dependent children, both adults under 65 years	0.093	0.290
2 adults, no dependent children, at least one adult 65 years or more	0.149	0.356
Other household without dependent children	0.165	0.371
Single parent household, one or more dependent children	0.036	0.186
2 adults, one dependent child	0.117	0.321
2 adults, two dependent children	0.166	0.372
2 adults, three or more dependent children	0.045	0.208
Other households with dependent children	0.095	0.293
Number of employed in the household	1,142	0,922
Number of temporary workers	0.182	0.458
<i>Work Intensity code</i>		
WI = 0	0.071	0,257
0 < WI < 0.5	0.117	0,321
0.5 =< WI < 1	0.226	0,418
WI = 1	0.182	0,386
<i>Educational categories</i>		
Lower Secondary	0.554	0.701
Upper Secondary	0.276	0.447
Tertiary	0.170	0.376
<i>Level of Urbanization</i>		
Densely populated area	0.391	0.483
Intermediate area	0.326	0.469
Thinly populated area	0.282	0.450
<i>Country</i>		
Spain	0.416	0.493
Italy	0.584	0.607
Observations	83,633	

Notes: Authors' calculations from EU-SILC 2017 data. Mean and standard

deviation. (a) Share of the sample pertaining to the deprivation categories analysed.

Inspired by the existing literature (see Section 2), among the covariates we include the average age and some household characteristics, that are the number of household components, the presence of elderly (aged 65 years or more), the number of disabled, gender of the head of the household, her/his educational attainment level, and whether the head of the household is a homeowner.

Considering that the burden of severe material deprivation differ by household type, we also control for nine type of households (see Table 2), for the employment features of the household, that are the number of employed in the household, the number of temporary workers, and the work intensity status of the household.<sup>5</sup> Finally, we consider whether the household lives on a densely populated area.

#### 4. The model

The log-odds of outcome  $m$ , given a set of  $K$  conditional variables, with respect to a base outcome  $b$  can be expressed as in the multinomial logit model (1):

$$(1) \ln \frac{P(y=m|x)}{P(y=b|x)} = \beta_{0,m/b} + \beta_{1,m/b}x_1 + \dots + \beta_{K,m/b}x_K$$

$m \in \{\text{Non SMD, Basic SMD, Secondary SMD, Distress SMD}\}$ , and  $b = \text{base outcome} = \text{Non SMD}$  (not in material deprivation). The coefficient  $\beta_{k,m/b}$  for  $k = 1 \dots K$  measures the change in the log-odds of outcome  $m$  given one unit increase in the explanatory variable  $x_k \forall k$ . The odds of outcome  $m$  is then derived:

$$(2) \frac{P(y=m|x)}{P(y=b|x)} = \exp(x\beta_{m/b})$$

Which gives the relative size of the probability of an outcome  $m$  with respect to  $b$  when  $x$  increases by one unit. The predicted probability from this model of outcome  $m$ , given a set of  $K$  conditional variables, is therefore:

$$(3) P(y = m | x) = \frac{\exp(x\beta_{m/b})}{\sum_{m=1}^M \exp(x\beta_{m/b})}$$

There is another informative statistics called ‘relative risk ratio’ ( $rrr$ ) that can be derived as:

$$rrr_{mk} = \frac{P(y = m | x_k = \omega)}{P(y = b | x_k = \omega)} \bigg/ \frac{P(y = m | x_k = \rho)}{P(y = b | x_k = \rho)}$$

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<sup>5</sup> Work intensity measures the share of worked months over total workable months for each individual. For details on such measure, see Appendix A.

It says by how many times the probability of outcome  $m$  with respect to the probability of outcome  $b$  is higher for those individuals with characteristic  $x_k = \omega$  compared to those individuals with characteristic  $x_k = \rho$ , given fixed all other variables  $x \neq x_k$  (*ceteris paribus*, generally fixed at their means). When  $x$  is a continuous variable then  $\omega = x_k + 1$  and  $\rho = x_k$ . When  $x$  is a discrete variable, the category  $\rho$  is the reference category in the estimations, and the odds ratio (2) coincide with the relative risk ratios  $rrr_{mk}$  for each category  $\omega$  relative to the reference (excluded) category  $\rho$  of  $x_k$ . In the results below, we report and discuss the estimated  $\hat{\beta}_{k,m/b}$ , the odds-ratios (2) and the predicted probabilities (3) for each outcome.

## 5. Discussion of the results

Table 3 below shows the (statistically significant only) estimates of the  $\beta$ -coefficients, standard errors of the estimates and odds-ratios (2) of the mlogit (1) for the determinants of SMD used by following the existing literature. Only significant coefficients at 5% level or less are reported.

Table 3. Estimation results for model (1):  $\beta$  coefficients and odds ratios

	Basic			Secondary			Distress		
	$\beta$	se	exp( $\beta$ )	$\beta$	se	exp( $\beta$ )	$\beta$	se	exp( $\beta$ )
head age	-0.004	0.002	0.931	0.019	0.003	1.350	-0.009	0.001	0.868
household size				-0.447	0.147	0.575	0.159	0.045	1.219
# over 65				0.571	0.092	1.521	-0.233	0.042	0.841
# disabled	0.420	0.029	1.331	0.441	0.035	1.350	0.469	0.022	1.376
female head	0.120	0.043	1.061	0.746	0.046	1.442	0.422	0.030	1.230
homeowner	-0.304	0.052	0.879	-0.593	0.056	0.777	-0.952	0.035	0.667
hh type 6 <sup>(a)</sup>				-1.067	0.051	0.718	-0.509	0.069	0.854
hh type 7	-0.201	0.097	0.927	-1.415	0.177	0.585	-0.815	0.063	0.735
hh type 8				-1.301	0.351	0.659	-0.562	0.119	0.835
hh type 9				-0.539	0.235	0.906	-0.513	0.101	0.911
hh type 10				-0.828	0.319	0.789	-0.626	0.105	0.836
hh type 11	-0.362	0.180	0.899	0.926	0.465	0.761	-0.920	0.142	0.762
hh type 12							-0.959	0.211	0.874
hh type 13				-1.090	0.551	0.794	-0.645	0.176	0.872
Income quintile 2	-0.190	0.065	0.927				-0.427	0.045	0.843
Income quintile 3	-0.484	0.065	0.824	-0.422	0.068	0.845	-0.983	0.046	0.675
Income quintile 4	-0.863	0.069	0.708	-0.842	0.063	0.714	-1.405	0.048	0.570
Income quintile 5	-1.105	0.074	0.643	-1.172	0.079	0.626	-1.827	0.053	0.482
# workers	-0.231	0.049	0.818	-0.237	0.081	0.814	-0.440	0.037	0.683
# temporary	0.409	0.051	1.175	0.605	0.082	1.269	0.424	0.039	1.182
0<WI<0.5	0.221	0.087	1.071						
0.5≤WI<1	0.215	0.091	1.094						
WI = 1							-0.210	0.074	0.911
Out of age WI	-0.301	0.094	0.874				0.298	0.069	1.143
Head secondary education	-0.362	0.047	0.845	-0.525	0.057	0.783	-0.597	0.034	0.758
Head tertiary education	-0.722	0.058	0.740	-0.570	0.065	0.788	-1.191	0.042	0.608
Intermediate				-0.538	0.052	0.778	-0.252	0.034	0.889

Populated area									
Thinly populated area	0.135	0.049	1.063	-0.553	0.053	0.780	-0.203	0.035	0.913
Spain	-0.622	0.045	0.739	0.222	0.046	1.114	-0.356	0.031	0.841
Constant				-0.536	0.243		2.827	0.117	

Note. Only significant estimates at 5% level or less are reported. The base outcome is the 'Non SMD' group. Outcomes of the dependent: Basic SMD = lacking the capacity to afford ends meet, one week holidays, a meal with meat or fish every second day, keeping home adequately warm. Secondary SMD: cannot afford to buy a telephone, color TV, washing machine, a car. Distress SMD: cannot face unexpected financial expenses.

Reference category: male head of household, not owning one's home, in household type 5, out of age worker, with low or no education, in densely populated area of Italy. The regressions are conditional to income class of the individuals as well (quintiles of the equivalised-income distribution).

<sup>(a)</sup> For a description of the household type, see Section 5.1.

Table 4 reports the unconditional predicted probabilities of the dependent variable outcomes, as a test for model fitness. Such probabilities show that even if the explanatory variables have significant effects (as the LR-test is significant at 1% level), much variation in SMD outcomes is not explained (pseudo  $R^2 = 0.176$ ). In the following subsections, we offer a discussion by categories of determinants of SMD.

Table 4. Observed and predicted probabilities of outcomes of the dependent variable

	n	Observed %	Predicted probability	Italy	Spain
Non SMD	15926	44.32	0.586	0.558	0.626
Basic	3562	9.91	0.123	0.132	0.104
Secondary	3540	9.85	0.239	0.217	0.269
Distress	12910	35.92	0.474	0.469	0.481
	35938	100			

## 5.1 Households type, size and composition

Different types of households may be exposed to different risk of poverty, and in particular severe material deprivation. We identify types of households in categories such as: 5 = Single individual without dependent children;<sup>6</sup> 6 = 2 adults without dependent children, both under 65 years; 7 = 2 adults without dependent children, at least one adult above 65 years old; 8 = other households without dependent children; 9 = single parent with one or more dependent children; 10 = 2 adults with one dependent child; 11 = 2 adults with 2 dependent children; 12 = 2 adults with 3 or more dependent children; 13 = other households with dependent children. Table 5 reports the frequency of households of such types across Italy and Spain - in the data. There are relatively more 'single' families in Italy than Spain (36.5% versus 23% respectively). On the other hand, families with two adults (or others) and children are slightly more frequent in Spain than Italy.

Table 5. Observed frequency of household type

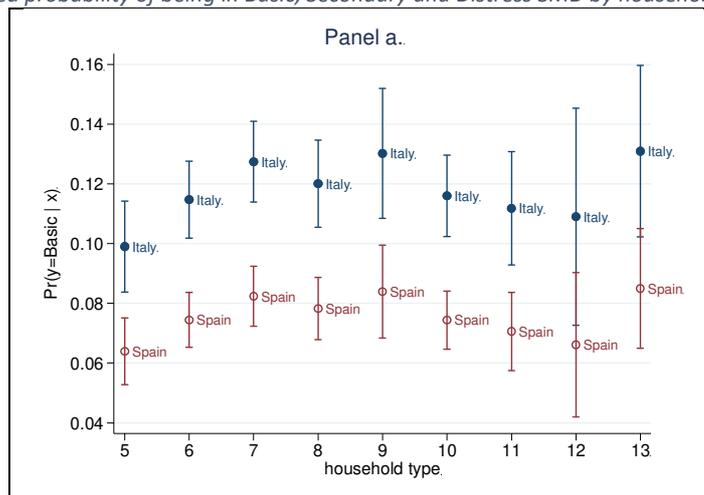
type	label	n - Italy	%	n - Spain	%	n	%
5	Single without children	8117	36.5	3156	23.0	11273	31.4
6	Two adults without children, under 65	2082	9.4	1793	13.1	3875	10.8

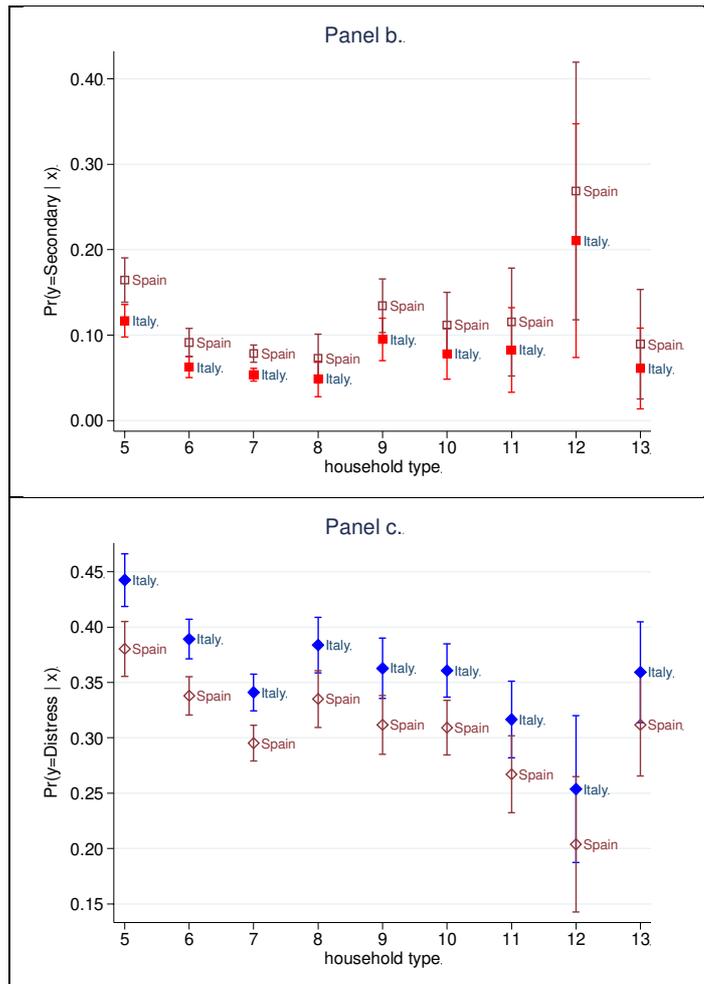
<sup>6</sup> A dependent child is any person aged below 18 as well as aged 18 to 24 years old, living with at least one parent and economically inactive.

7	Two adults without children, at least one above 65	3885	17.5	2340	17.0	6225	17.3
8	Other household without dependent children	2414	10.9	1777	13.0	4191	11.7
9	Single parent with 1 or more dependent children	751	3.4	488	3.6	1239	3.4
10	Two adults with one child	1849	8.3	1402	10.2	3251	9.1
11	Two adults with two children	1869	8.4	1596	11.6	3465	9.6
12	Two adults with 3 or more children	384	1.7	342	2.5	726	2.0
13	Other household with dependent children	874	3.4	819	6.0	1693	4.7
	total	22225	100	13713	100	35938	100

Figure 1 shows that all types of households in Italy suffer from a higher (predicted) probability to be in Basic SMD (Panel a); however, type 9 and type 13 are those with the highest probability (8% and 13% in Italy, respectively), while type 5 in both countries suffers the least (10% in Italy and about 6% in Spain). As far as Secondary SMD, the picture is quite different (Panel b). Spanish households in general have higher probability to be in Secondary SMD, however, test of equal probabilities across countries cannot reject the equality hypothesis for type 9 and above. In Spain, this probability is high for type 5 (Singles, about 15%) and particularly for type 12 (2 adults with 3 or more children, more than 25%). Panel c, finally, shows that the probability of being in Distress is high in both countries for all types of household, and significantly different across countries for type 7 and 9. This condition is quite worrying for Singles (type 5), with an average probability equal to 43% in both countries. This finding is in line with the existing literature (see, for instance, Fusco et al., 2010). For all other types, the probability is higher than 30%, except for type 12, whose probability of being in Distress appears to be lower than 30%.

Figure 1. Predicted probability of being in Basic, Secondary and Distress SMD by household type and country





We test whether the predicted probability of an outcome is equal across types of households, that might be similar in several features: type 6 and type 7 differs only for the age of one or two adults; types 10, 11 and 12 are households differing for the number of children. We report the test of equality in the probability to fall in each outcome in Table 6.

Table 6. Test of equality of predicted probabilities to fall in one outcome for types of households

Household type	Italy			Spain		
	Basic	Secondary	Distress	Basic	Secondary	Distress
6 = 7	1.17	2.46	17.66	1.17	2.79	17.36
<i>p</i> -value	0.191	0.117	<b>0.000</b>	0.279	0.094§	<b>0.000</b>
10 = 11 = 12	0.24	4.64	16.26	0.55	5.59	17.38
<i>p</i> -value	0.885	0.099§	<b>0.000</b>	0.761	0.061§	<b>0.000</b>
10 = 11	0.23	0.02	12.26	0.47	0.00	13.04
<i>p</i> -value	0.634	0.884	<b>0.000</b>	0.494	0.951	<b>0.000</b>
11 = 12	0.02	4.12	3.89	0.08	4.97	4.25
<i>p</i> -value	0.895	<b>0.043</b>	<b>0.049</b>	0.781	<b>0.026</b>	<b>0.039</b>
10 = 12	0.13	3.47	12.14	0.35	4.07	13.31
<i>p</i> -value	0.720	<b>0.062</b>	<b>0.000</b>	0.552	<b>0.044</b>	<b>0.000</b>

Note.  $\chi^2$  – test with 1 df.

Households with two adults and no children do have the same probability to fall into Basic or Secondary outcome, independently from age (test type 6 = type 7). This holds for Italy and Spain as

well. However, there is a statistically significant difference (at 1% level) in the probability to fall into Distress SMD according to age of the adults, in both countries. It appears that both types see a reduced probability of being in Distress, but type 7 (at least one adult above 65 years old) performs better than type 6. We also test whether the probability of an outcome differs in type 10, 11 and 12. These are two-adults households with 1, 2 or 3+ dependent children. The probability of falling into Basic is not statistically different for these three types, in the two countries (only slightly different for Secondary SMD). However, the probability of falling into Distress SMD does change. In particular, stepping from 2 children to 3 or more ( $H_0$ : type 11 = type 12) does make a statistical difference in the probability of falling into Secondary SMD in Italy ( $\chi^2$  –test = 4.12, p-value = 0.04). The same is true for Spain as well ( $\chi^2$  –test = 4.97, p-value = 0.03). There is a statistical difference also for those households with different number of children in the probability of falling into Distress (the former is higher). The  $\chi^2$ -test for Italy and for Spain is always significant.

The analysis of household size then, measured in terms of components, is related to the analysis of household type, as follows. We showed that the presence of children in the household determines a different predicted probability to fall into Secondary or Distress SMD. Indeed, household size is an important characteristic for the risk of falling under the poverty line, more so for severe material deprivation. Table 7 reports the number of individuals belonging to households of different size. Our data indicate that Italian households are mostly 2, 3 or 4 members in size with a maximum of 9 members, while Spanish families are mostly made of 4 or 2 members.

*Table 7. Observed frequency of household size*

<b>Number of members</b>	<b>n - Italy</b>	<b>%</b>	<b>n - Spain</b>	<b>%</b>	<b>n</b>	<b>%</b>
1	8117	16.6	3156	9.1	11273	13.5
2	12884	26.4	8894	25.6	21778	26.0
3	11745	24.1	8550	24.6	20295	24.3
4	11736	24.0	9680	27.8	21416	25.6
5	3140	6.4	3075	8.8	6215	7.4
6	876	1.8	966	2.8	1842	2.2
7	203	0.4	287	0.8	490	0.6
8	80	0.2	104	0.3	184	0.2
9	36	0.1	27	0.1	63	0.1
10	0	0.0	30	0.1	30	0.0
11	0	0.0	22	0.1	22	0.0
12	0	0.0	12	0.0	12	0.0
13	0	0.0	13	0.0	13	0.0
<b>total</b>	<b>48817</b>	<b>100</b>	<b>34816</b>	<b>100</b>	<b>83633</b>	<b>100</b>

In Figure 2 predicted probability by household size are reported. The probability of being in Basic SMD is increasing with size at a low rate (this is due to an irrelevant number of families with more than 6 members in both countries). As already documented, such probability is higher in Italy than Spain (Panel a). On the other hand, the probability to be in Secondary SMD is decreasing with size

(Panel b). Finally, the probability to be in Distress is increasing with size, but there is a statistically significant difference between Italy and Spain for families with up to 3 members.<sup>7</sup>

Among other composition issues, we discuss the change in probabilities when the family contains at least one disabled person, when age of the head changes and whether there is a presence of elderly in the household. The presence of disabled persons has a significant impact on the probability to be in severe material deprivation, in all outcome categories and both countries.<sup>8</sup> It has a stronger impact on the probability of being in Distress than in Secondary or Basic SMD in both countries. However, there is a country difference in such estimated elasticities, where in Spain the problem seems to be somehow higher than in Italy (the opposite for Basic SMD).

The age of the household head varies between 17 and 81 years old. The average age in Secondary SMD is 69 years old in Italy and 67 years old in Spain, about 15 years older than the individuals in other deprivation categories. The m-logit model predicts that there is a slight decrease in the probability to be in Basic SMD with age in both countries, but Italian households are 4 percentage points more at risk of suffering from Basic SMD at all ages than Spanish are (not shown). The predicted probability to fall into Secondary SMD is instead higher for Spain than Italy at all ages, and the difference increases with age from less than 1% at 17 years old to 5% at 77 years old. The predicted probability to fall into financial Distress is the highest among SMD outcomes. Italy suffers from higher Distress than Spain, the phenomenon decreases with age, but it is relevant: from about 46% to 35% in Italy and from 41% to 29% in Spain (at 17 years old the former and at 77 the latter figure).<sup>9</sup> More than one out of three people in these two countries reported to be financially troubled in 2017.

We also tested whether the presence of elderly people in the household (more than 65 years old) has a significant positive impact on the predicted probability of being in Basic or Secondary SMD and a negative significant impact on the probability to be in Distress. It turns out that Italian households with elderly members have significantly higher probability to be in Basic SMD with respect to Spanish households. The presence of elderly in the household have a higher impact on Secondary

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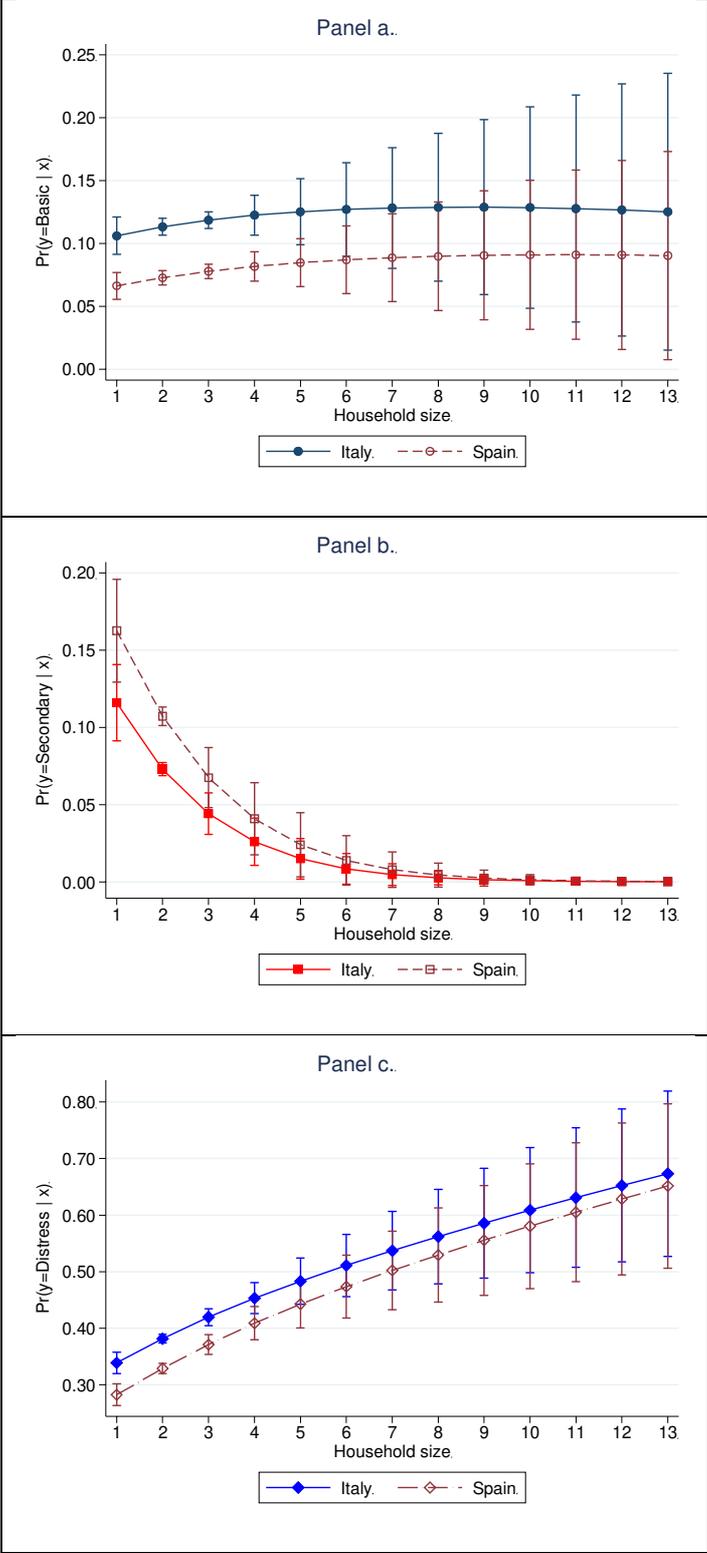
<sup>7</sup> The marginal change of the Probability of being in Basic SMD for an additional household member is 0.007 for Italy (not significant) and 0.006 for Spain. The marginal change in the probability of being in Secondary SMD for an additional household member is -0.030 for Italy (significant at 1% level) and -0.035 for Spain (1% level). The marginal change in the probability of being in Distress for an additional household member is 0.043 for Italy (significant at 1% level) and 0.044 for Spain (at 1% level). Only for Secondary SMD country differences are statistically significant.

<sup>8</sup> The marginal change of the probability of being in Basic SMD to an additional disabled person is 0.021 in Italy and 0.017 in Spain. The marginal change of the probability of being in Secondary SMD is 0.011 in Italy and 0.016 in Spain. The marginal change of the probability to be in Distress is 0.079 in Italy and 0.081 in Spain. All these estimates are significant at 1% level. The three tests of equality of these elasticities across countries is rejected at 1% level.

<sup>9</sup> The elasticity of the predicted probability with respect to age of the head (all other things equal) is positive and significant at 1% level for Secondary and negative and significant for Distress SMD. The test of hypothesis that such age has an equal impact on the probability of being in Basic SMD in Italy and Spain is not rejected: chi-square=0.01, p-value=0.94, it is rejected for Secondary at 1% level (chi-square=9.1, p-value=0.003) and it is not rejected for Distress (chi-square=0.07, p-value=0.797).

SMD for Spanish than Italian households (chi-square=10.7, p-value=0.001) but a lower impact on reducing Distress (chi-square=4.8, p-value=0.028).

Figure 2. Predicted probability of being in Basic, Secondary and Distress SMD by household size



## 5.2 Gender and education

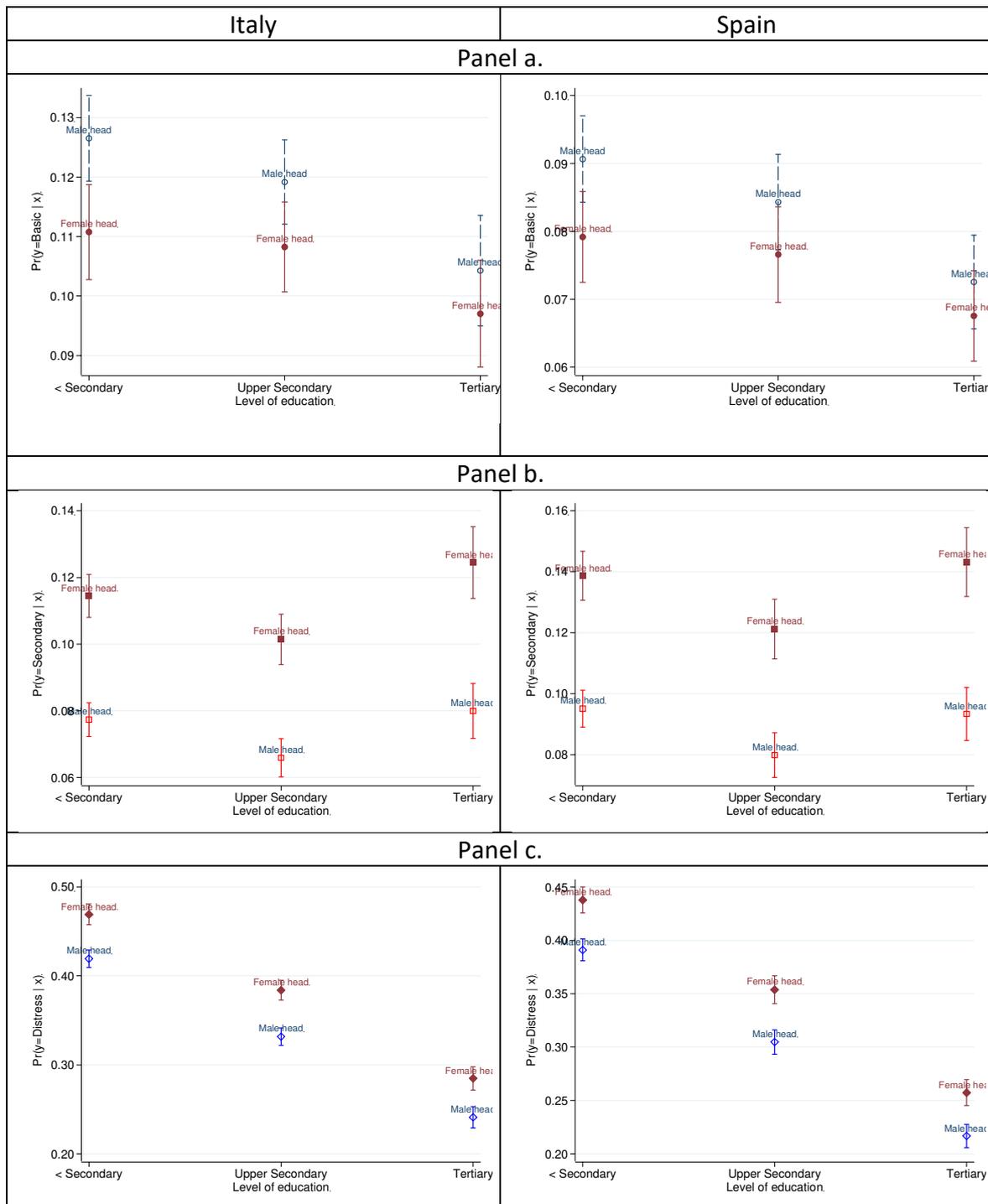
Table 8 reports the gender composition of our sample, for total individuals and for head of households only. Although 52% of the sample in both countries is female, only 40.3% of the families have a female head. There exists a duality in the distribution of head of households with upper secondary and tertiary education. While 36.6% of female head of household (out of total female heads) has upper secondary education in Italy, only 18.4% of such heads has this level of education in Spain. On the other hand, only 17.7% of female heads in Italy has tertiary education compared to 34.6% of female heads in Spain. The same reversal distribution exists for male heads too. 41.3% of male heads in Italy has upper secondary education compared to 19.5% in Spain; 16.3% of male heads has tertiary education, while male heads of household with tertiary education in Spain are 29.6% of total male heads.

Table 8. Distribution of households by gender and education of the household head

	Italy				Spain					
	n	%		%	n	%		%	n	%
Female head	8953	40.3			5535	40.4			14488	40.3
No or low education			4093	45.7			2600	47.0		
Secondary education			3276	36.6			1016	18.4		
Tertiary education			1584	17.7			1919	34.6		
Male head	13272	59.7			8178	59.6			21450	59.7
No or low education			5627	42.4			4165	50.9		
Secondary education			5487	41.3			1597	19.5		
Tertiary education			2158	16.3			2416	29.6		
Total head	22225	100			13713	100			35938	100

The probability of each outcome by gender and education of the head of household is illustrated in Figure 3. The left column reports the graphs for Italy only and the right column reports the results for Spain. The probability to fall in Basic SMD is lower for female head of household in both countries, especially for those individuals with a low level of education. Test of equality of marginal changes in the probability of each outcome from ‘male head’ to ‘female head of household’ rejects the hypothesis of country equivalence (for example, the probability of being in Basic SMD is higher in Italy than in Spain for female heads). Notice that in the two countries we perform the test of equality for marginal changes between male and female head, within the three levels of education. The tests reject the equality hypothesis apart from the probability to be in Basic or Distressed for tertiary education (i.e. there is no difference in such probabilities for male and female head in each country).

Figure 3. Predicted probability of being in Basic, Secondary and Distress SMD by education of the household head



### 5.3 Employment and economic features of the households

It is interesting to notice that in the two countries there is some discrepancy about the labor market features of households. Table 9(A) shows for example that a household with only 1 worker is more diffused in Italy than in Spain (38% versus 31.7% households, respectively). On the other hand,

Spanish households with two workers (either employees or self-employed) are more common than in Italy (25.7% in Spain versus 19.4% in Italy). To find three working members, the frequency is 3.3% in Spain and 2.2% in Italy - of all households. The percentage of households with 4 or more working members is negligible. Table 9(B) shows that 14.3% of Spanish households include one temporary employee, versus 8.6% of Italian households. Moreover, 2.2% of Spanish households include 2 temporary employees, versus 0.7% of Italians (if we take the individual level, temporary work is about twice in Spain (21.3%) as much as in Italy (11.6%)).

Table 9. Number of household with (A) 0-6 employees or self-employed and (B) 0-6 temporary workers

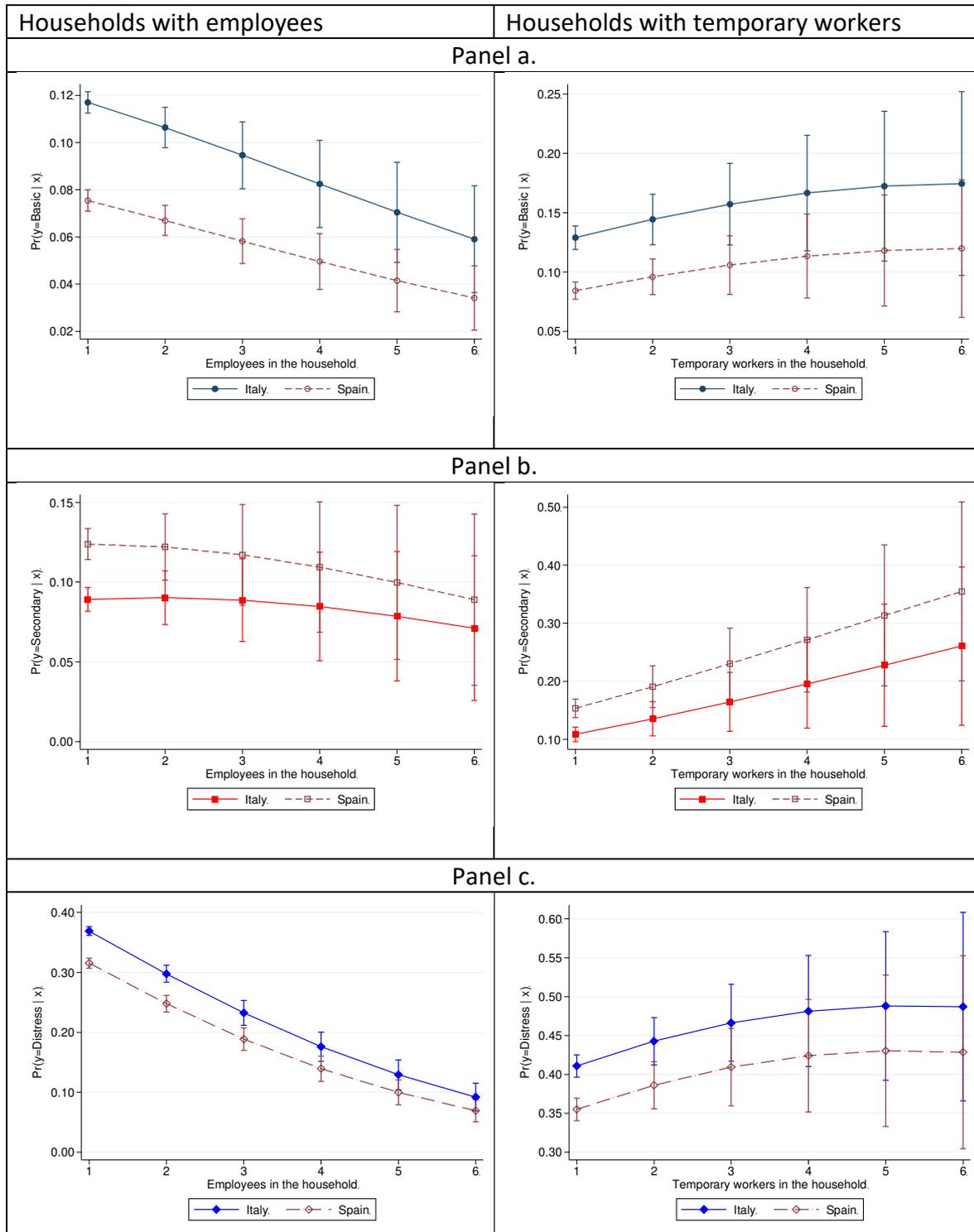
<b>A</b>	<b>n - Italy</b>	<b>%</b>	<b>n - Spain</b>	<b>%</b>	<b>B</b>	<b>n - Italy</b>	<b>%</b>	<b>n - Spain</b>	<b>%</b>
0	8883	40.0	5315	38.8	0	20150	90.6	11405	83.2
1	8445	38.0	4352	31.7	1	1908	8.6	1963	14.3
2	4304	19.4	3517	25.7	2	150	0.7	307	2.2
3	500	2.2	449	3.3	3	14	0.1	35	0.3
4	85	0.4	75	0.5	4	1	0.0	3	0.0
5	7	0.0	5	0.0	5	1	0.0	0	0.0
6	2	0.0	0	0.0	6	1	0.0	0	0.0
total	22225	100	13713	100	total	22225	100	13713	100

Test of hypothesis of equal probability of being in Basic SMD between Italy and Spain of a marginal worker cannot reject the hypothesis ( $\chi^2$ -test(1) = 0.98, p-value = 0.322); test of equal probability of being in Secondary SMD rejects at 5% level ( $\chi^2$ -test = 5.9, p-value = 0.015); the test of equal probability of being in Distress cannot reject ( $\chi^2$ -test = 0.86, p-value = 0.353).

Figure 4 shows that while the increasing number of employees in the household decreases the probability to be in Basic SMD for both countries, the increasing number of temporary workers make this probability higher on average and increasing. This is in line with the existing literature. Whelan et al., 2001, 2004, for instance, find that temporary workers, unemployed, inactive people have a high likelihood of deprivation.

Moreover, in Italy this probability is higher than in Spain. On the other hand, as suggested by the literature (e.g., Eurostat, 2012; Berthoud and Bryan, 2011), the probability of being in Secondary SMD is somewhat higher in Spain than Italy, and decreases after the third worker in the household. The same probability is always increasing when workers are temporary. Finally, the probability of being in Distress is higher for Italy than Spain; it is decreasing with the number of workers and increasing with the number of temporary workers, ceteris paribus.

Figure 4. Predicted probability of being in Basic, Secondary and Distress SMD by number of workers in the household



About 60% of the sample individuals (more than 70% of households) in both countries includes working-age individuals. For those, we are able to calculate their ‘work intensity’ in the period of reference (Table 10). In Italy, 6.7% of working-age individuals declared not to work in the observed period. The analog is 7.7% for Spain; 11.2% of Italian sample declared to work less than 50% of

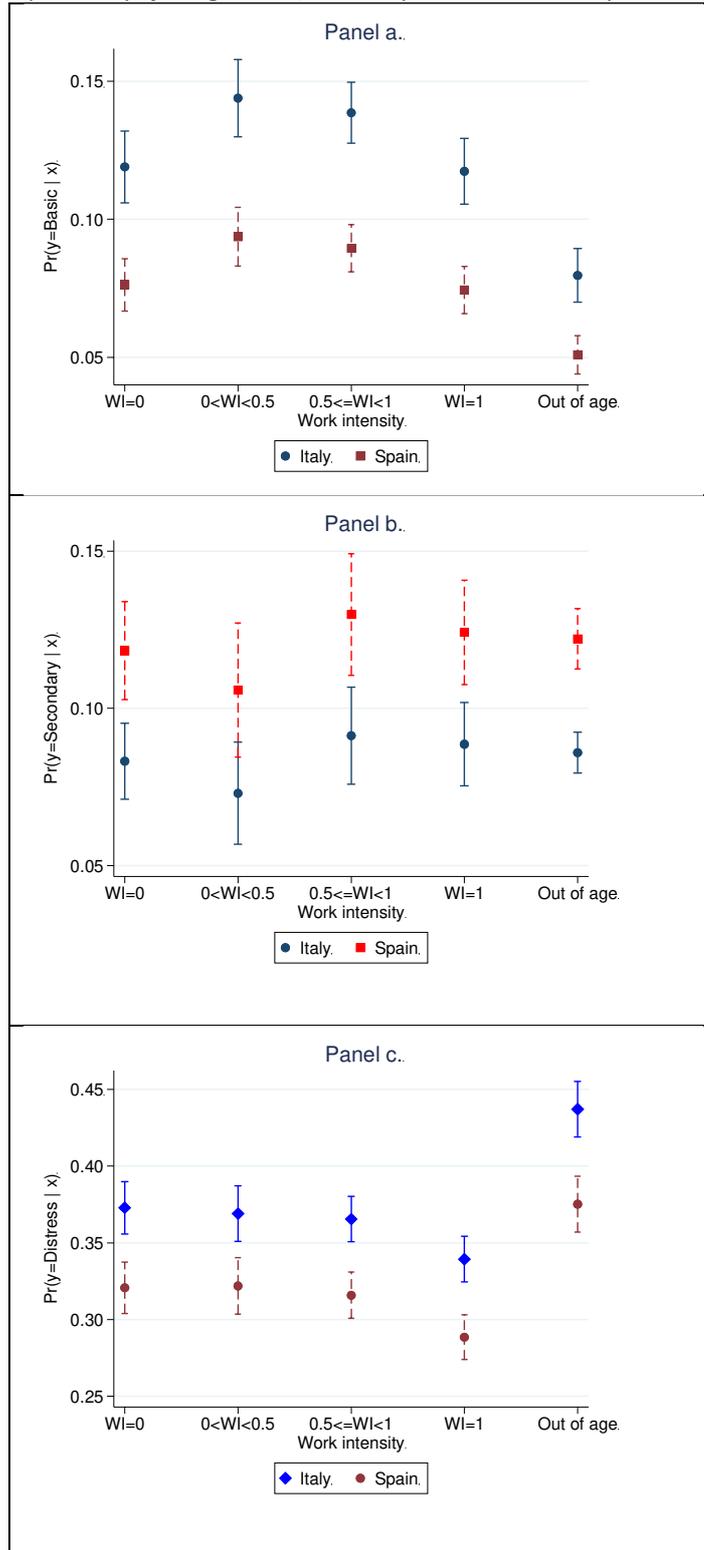
potential, versus 12.3% of Spanish individuals; 22.1% of Italians declared to work more than 50% of potential, versus 23.3% in Spain; finally, 18.9% of Italian individuals work all potential time, versus 17.1% of Spanish individuals. Although work intensity depends on multiple causes such as sickness or maternity leave, it is an important deterrent from falling below the poverty line (Fusco et al., 2010).

*Table 10. Observed frequency of work intensity in the household (individuals and households)*

	<b>n - Italy</b>	<b>%</b>	<b>hh</b>	<b>n - Spain</b>	<b>%</b>	<b>hh</b>
Out of age	20068	41.1	6646	13776	39.6	3336
WI=0	3245	6.7	2338	2700	7.7	1728
0<WI<0.5	5476	11.2	2177	4286	12.3	1722
0.5≤WI<1	10778	22.1	4715	8101	23.3	3480
WI=1	9250	18.9	6349	5953	17.1	3447
total	48817	100	22225	34816	100	13713

Figure 5 illustrates the predicted probability of being in Basic, Secondary and Distress SMD by work intensity and country. The highest probability of being in Basic SMD belongs to the 0<WI<0.5 category for both countries, i.e. those individuals working less than 50% of workable months in the reference period (14% in Italy and 9% in Spain). The risk of being in Secondary SMD is higher for Spanish workers than Italian workers, even for those who are not working (WI=0) or out of working age. From Panel c we learn that on average Italy performs worse than Spain. There is no difference in such probability for workers working less than potential and those not working at all. This finding might be partly due to the fact that SMD is related to permanent income that is cumulated during the working life and through other sources, like elderly pensions. The sample considered for the calculation of the WI is relatively young (from 18 to 64 years of age) and therefore might not have cumulated (a sufficient level of) permanent income (Whelan and Maitre, 2010). Moreover, the spread of precarious contracts, low-paid jobs and underemployment in most countries especially during the crisis implies that the labour market has stopped being a stable source of prosperity for many people and their families. Specifically on Italy and Spain, as confirmed by data and the existing literature (see, for instance Eurofound, 2010; Horemans et al., 2016), there was an important increase of temporary jobs and involuntary part-time jobs, which are notably countercyclical.

Figure 5. Predicted probability of being in Basic, Secondary and Distress SMD by work intensity and country



Among the economic features of households, one of the most relevant is home property. Homeowners are at relatively lower risk of falling into material deprivation in both countries.<sup>10</sup> As

<sup>10</sup> When regressing the mlogit model on the entire sample of Italy and Spain, it imposes a constraint on the coefficients for homeowner, when estimating the odds of being in Basic SMD for homeowners in the two

suggested by the literature, homeowners are less likely to report material deprivation than renters (Berthoud and Bryan, 2011; Figari, 2012).

Finally, among the controls, we include the degree of urbanization of the place of residence of each individuals. Thinly populated areas and intermediate populated areas seem to be associated with a decrease in the probability of falling into Secondary or Distress SMD in both countries. This result may capture, among others, the social ties which spread out more in less densely, rural or mountainous regions of these countries, relative to big cities.

## 6. Conclusions

The at-risk-of-poverty and severe material deprivation rates are two prominent measures of poverty and social exclusion in the European Union. The former is based on current household income and the latter on a concept similar to permanent income. Severe material deprivation is a multidimensional indicator, oriented to capture the actual standard of living more than the simple income measure. We define three categories of severe material deprivation: basic (not able to follow a complete diet, to go on holidays or to pay for arrears), secondary (not able to buy goods such as a TV or a telephone), distress (not able to save for unexpected expenditures). We analyze the cases of Italy and Spain, that are two Southern European countries harshly hit by the latest crises. Stylized facts suggest that, despite pertaining to the same area, even before the onset of the 2007 crisis, they look different in relative terms, since they show heterogeneous severe material deprivation rates, higher or lower than the European average. In 2006, for example, Eurostat estimates that 9.9% of the European population is severely materially deprived. At the time, the severe material deprivation share is below the EU average both in Italy (6.4%) and especially in Spain (4.1%). About ten years later, the EU share is 6.6%, the percentage for Spain is still below the average (5.1%), while the share for Italy goes above the average and almost double that for Spain (10.1%).

When analyzing the types of households suffering from these problems, Italian households have a higher (predicted) probability to be in basic SMD, while Spanish households in general have higher probability to be in secondary SMD, especially for singles or big families. The probability of being in distress is high in both countries for all types of household, and significantly different across countries. This condition is quite worrying for singles, with an average probability equal to 43% in both countries. This finding is in line with the existing literature. For all other types, the probability is higher than 30%. Gender of the head of household and her/his education has also a different association with SMD: female heads of households tend to have lower risk of being in basic SMD in both countries, but they seem to be at higher risk of secondary and distress in both countries,

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countries. Therefore, the estimated relative risk ratio of being in Basic SMD for non homeowners (from Table 3) is 1.4542 in both countries.

especially when they have low education. Employment status is an important factor too. The highest probability of being in basic SMD belongs to those individuals working less than 50% of workable months in the reference period (15% in Italy and 10% in Spain). The risk of being in secondary SMD is higher for Spanish workers than Italian workers, while it is exactly equal for those who are not working or out of working age. We learn that there is not statistically significant difference for the probability of being in distress at all levels of work intensity between the two countries, although on average Italy performs worse than Spain. The category at highest risk is that of individuals working more than 50% but less than 100% of potential. This finding might be partly due to the fact that SMD is related to permanent income that is cumulated during the working life and through other sources, like elderly pensions. The sample considered for the calculation of work intensity is relatively young (from 18 to 64 years of age) and therefore might not have cumulated (a sufficient level of) permanent income. Italian households falling into basic SMD therefore appear to weight more than others in the composition of total severe material deprivation rate. Nonetheless, the highest share of the deprived population reports to be in financial distress in both countries.

The debate on the policy interventions aimed to reduce the importance of SMD, as explained above, is still open, both in Italy and Spain. In Italy, there is a discussion on the most appropriate measure to implement either the REI or the citizenship income. However, there are some issues to solve. Both measures are means-tested, and their implementation would imply a perfect coordination among regions of Italy. Moreover, the costs of implementation, especially for the citizenship income, which has the ambition of being universal, are very high. In Spain, there is no a specific policy to reduce severe material deprivation, but a variety of means-tested benefits that contribute to both reduce poverty and severe material deprivation. The system of non-contributory benefits is quite complex, because there are many different benefits that provide different protection for each category, and the general risks of poverty and severe material deprivation are covered through the regional minimum income programs, with a high level of inequality between territories.

In both countries, there is the need of more coordination among regions to increase the efficacy of the measures introduced and to reduce the geographical inequality gaps. Moreover, the measures might be not only means-tested but take into account the relevance specific items and dimensions of severe material deprivation, like financial distress, that is an important category of the phenomenon both in Italy and in Spain.

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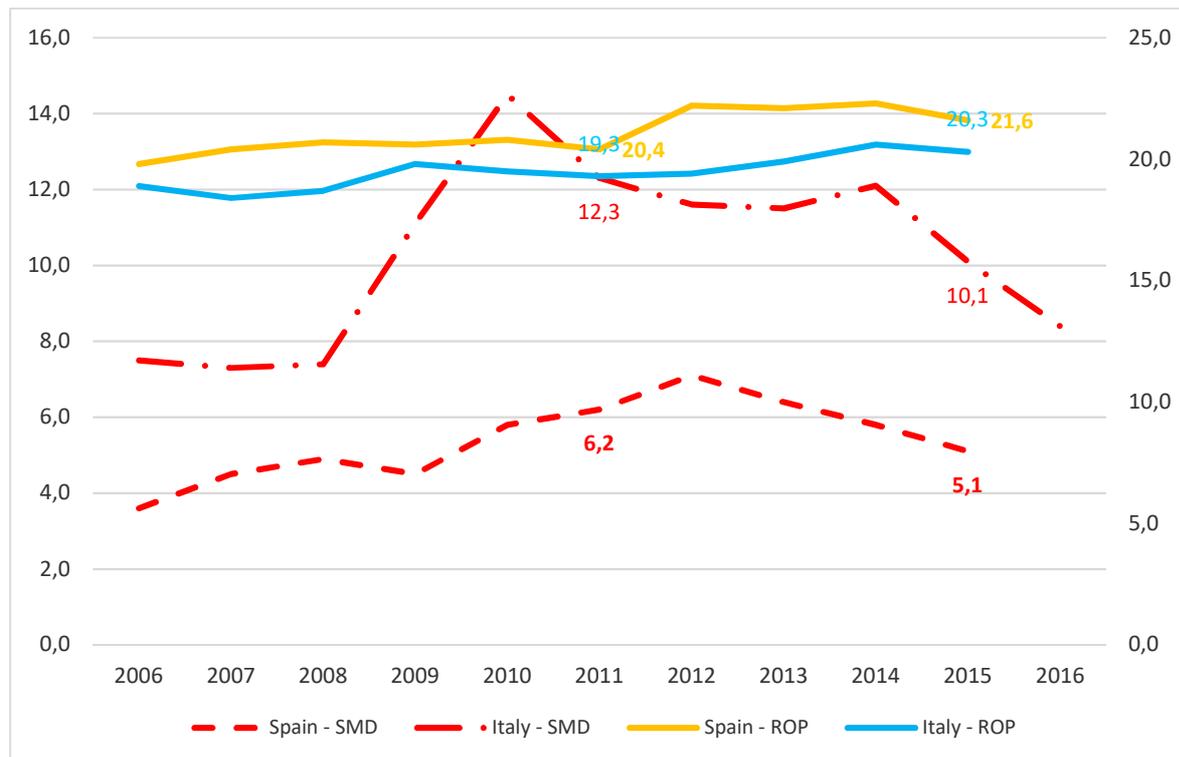
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## Appendix

Figure A1. SMD and at-risk of poverty in Italy and Spain, 2006/2017



Notes: SMD, left scale. Risk of poverty, right scale