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# THE RISE OF ECONOMIC INSECURITY IN THE EU: CONCEPTS AND MEASURES

COSTANZO RANCI, ANDREA PARMA, LAURA BERNARDI, JASON BECKFIELD

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## Authors

Ranci, C. (1)

Parma, A. (2)

Bernardi, L. (3)

Beckfield, J. (4)

## Abstract

Economic instability, an array of social changes, and welfare state retrenchment place the question of economic insecurity high on the scholarly and political agenda. We contribute to these debates by drawing conceptual distinctions between inequality and insecurity. Fundamentally, inequality concerns the distribution of resources across individuals, while insecurity concerns exposure to multiple social risks that can deteriorate living conditions. The multiplicity and dynamism of insecurity inform our development of a new measure of economic insecurity, using longitudinal data from the EU-SILC database. Substantively, we then use our new measure to analyze the distribution of insecurity in Europe. Our analysis shows that insecurity is widespread across Europe, affecting countries with different inequality and welfare structures. Second, it is widespread across the income distribution and social classes affecting a relevant part of the middle classes. This result suggests that the European Social Model is increasingly failing to insulate households from economic insecurity.

## Keywords

class | family | inequality | poverty | social structure | welfare state

### Authors' affiliation

(1) Polytechnic Institute of Milan

(2) Polytechnic Institute of Milan

(3) NCCR LIVES, Institute of Social Sciences, University of Lausanne

(4) Harvard University

### Correspondence to

[laura.bernardi@unil.ch](mailto:laura.bernardi@unil.ch)

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## 1. Introduction

In the postwar period, economic growth, welfare states, and social dialogue supported the development of strong and stable middle classes in many European societies. Currently, the weakening of the “European social model” (Bonoli and Natali, 2012), together with deregulation of labour markets and the emergence of new social risks, may be eroding the foundations of the middle class and diffusing economic insecurity from the poorest to the ostensibly more secure middle classes. To use the words of Leisering and Leibfreid (1999), current transformations may have led “not only to a permanent exclusion of the ‘useless’ members of society but also and at the same time to the creation of the fluctuating mass in society, people who experience insecurity rather than exclusion” (p. 251).

This paper contributes new descriptive and analytical evidence to this debate over the potentially changing fortunes of European middle classes. We build on the pioneering work of Gornick and Jaentti (2014) in developing the implications of growing inequality for economic insecurity in European middle classes. Specifically, our main hypothesis is that economic insecurity is experienced not only at the bottom of the income distribution, but also in the middle classes, and across the varieties of capitalism and welfare regimes (Mau *et al.*, 2012). While growing inequality brings threat to the “intermediate” positioning of the middle class in the social structure by increasing the risk of its relative deprivation (due to either its relative impoverishment or upward mobility of lower classes), the rise of insecurity is a challenge to the stability of this “majority class” (Mau, 2015). It makes adverse events more unpredictable on the one hand, and weakens the crystallized system of social guarantees that are traditionally attached to the middle class on the other.

The spread of economic insecurity through the middle classes is somewhat surprising for Europe, which, in contrast to the debate over “middle-class squeeze” in the United States (Pressman, 2007; Hacker, 2008; Scott and Pressman, 2011; Frank, 2013), has tended to debate instead poverty trends and social exclusion (Förster and Vleminckx, 2004; Cantillon and Vanderbroucke, 2014). This may reflect the assumption that the still-strong redistribution capacity of European welfare states insulates the middle class from material deprivation (Dallinger, 2013). As a consequence, in Europe there is still relatively little comparative research on middle-class insecurity specifically (Fouarge and Layte, 2005; Jenkins *et al.*, 2012; Kenworthy, 2014).

To fill this gap, we take a new approach toward economic insecurity. First, we develop new measures to capture the substance of economic insecurity, and to clarify its distinctiveness relative to more traditional measures of poverty and material deprivation. An original principal-components analysis (PCA) gives strong empirical support to our hypothesis. Second, we conduct a longitudinal analysis, to capture the dynamic and transitory character of economic insecurity. Specifically, we use panel data from the EU Statistics of Income and Living Conditions (EU-SILC) to describe the distribution of medium-term (2-4 year) economic insecurity. We find that “insecurity spells” vary in frequency and duration across countries in Europe, but are present across welfare regimes and varieties of capitalism. We then show that insecurity locates well up the class scale and the income distribution.

The paper is structured in the following sections. After this introduction, Section 2 presents a multidimensional, dynamic approach to the study of insecurity. Section 3 elaborates original measures and methods aimed to capture economic insecurity. Section 4 presents our results, starting with the PCA, followed by longitudinal insecurity headcounts that account for insecurity spells, a cross-country analysis of economic insecurity, and an analysis of the income and class distributions of insecurity. Section 5 concludes the paper with a summary and broader discussion of the results, including the limitations of our analysis.

## **2. Background**

By economic insecurity we mean *a high probability of experiencing either a loss of income or a temporary difficult economic situation severe enough to threaten the material independence of individuals/households in the short to medium term*. Two main aspects are inherent to such definition: a) exposure to risks (Beck, 1992) endangering the financial sustainability of households; b) an acute and severe short-term disruption. Both aspects are investigated in this section.

### *2.1 The multiple dimensions of economic insecurity*

Since the onset of the financial crisis there has been increasing attention paid to the high prevalence of households experiencing vulnerability that does not necessarily become severe poverty. Scholars have started to elaborate new measurements to capture the substance

of these situations. Different aspects have been described, leading to the proliferation of various separate measures of economic insecurity.

In the US, great attention has been recently paid to *income volatility*, understood as short-term income fluctuation resulting in year-to-year income drops (Western *et al.*, 2012; Hacker *et al.*, 2014; Osberg, 2015). Income fluctuations, especially when unpredictable, are likely to make it difficult for people to maintain basic expenditures for food, housing, transportation, and loans (Gottschalk and Moffitt, 2009). As a consequence, short-term income variability (measured as variance in the household equivalent income in a time span of 3-4 years) or large year-on-year income losses (by 40-50 per cent of the income level registered in the previous year) have been considered as the main markers of economic insecurity (Osberg, 2015), especially for “vulnerable” households lacking wealth resources (Azpitarte, 2012). Therefore, the combination of income volatility with a skewed wealth distribution exposes households to potentially catastrophic events, and exacerbates the difficulty households face in recovering from such events (Bossert and D'Ambrosio, 2013).

Recent research also emphasizes *over-indebtedness*. The last two decades have witnessed an increase in household debt, both in Western Europe and in the US (Angel and Heitzman, 2015). While household indebtedness was mainly driven by deregulation of the financial sector and proliferation of new financial instruments through 2007, since the onset of the financial crisis indebtedness has been increasingly associated with a worsening in the financial conditions of households (Fligstein and Goldstein, 2015). In recent years, scholarly research has increasingly investigated the role of debt in determining household financial vulnerability, and this interest has also inspired new theoretical advances (Anderloni and Vandone, 2011). In neo-classical economic theory debt is considered as a way of anticipating spending based on expectations of increased future income receipts; within this framework, indebtedness guarantees heightened economic welfare by smoothing consumption over time. However, the growth of household debt, and especially unsecured debt (i.e. consumer credit), in recent years seems less related to consumption smoothing than to prevailing financial difficulties of overly indebted households (Jappelli *et al.*, 2013).

Finally, research has increasingly acknowledged the *economic strain* of households experiencing extremely low consumption levels, strong compression of their living standards, and shortages due to illiquidity or high financial vulnerability (Whelan and Maitre, 2005). A

concept and related measurement have been recently proposed by Whelan *et al.* (2015b) to capture the economic vulnerability of households facing substantial financial difficulties that are excluded from traditional indices of poverty or material deprivation. In building up measures of financial stress, Whelan *et al.* (*ibidem*) include not only objective over-indebtedness, but also items aimed at measuring a broader subjective notion of unsustainable spending behavior.

Based on these three concepts, our analysis is aimed at proposing a new multidimensional measure of economic insecurity that accounts for its diffusion through different social components of the middle class across the European Union. We will show how this measure is clearly distinct from a traditional measure of material deprivation.

## *2.2 A dynamic approach to economic insecurity*

The distinction between *inequality* and *insecurity* (Western *et al.*, 2012) highlights the over-time dynamic of material wellbeing. Inequality describes the distribution of income and other material resources across individuals or households, while insecurity has to do with exposure to risks that can worsen living conditions or cause downward mobility. Changes in inequality produce variation in the distance between social groups, in the diffusion of relative poverty. Changes in insecurity affect the predictability and potential harms of stressful events such as income loss, unemployment, family breakdowns, or financial breaks. Although strongly interweaved, these two concepts capture two distinct aspects of ongoing changes in the social structure of contemporary societies: while the former refers to distance among individuals and social classes, the latter describes the exposure of individuals or social groups to social risks potentially affecting their life chances. We follow Western *et al.* (2012), in conceptualizing inequality as mainly static (though with significant inter-temporal effects), and insecurity as dynamic.

The time dimension is therefore the main aspect to be incorporated into an empirical measure of economic insecurity. While the extent and the characteristics of poverty or material deprivation are usually assessed in a static perspective (i.e. observing individual positions in a certain year), economic insecurity is, by definition, a dynamic concept related to high risk of short-term worsening of people's living conditions. It is characterized by occurrence of stressful events that do not have necessarily permanent effects: a situation of

“permanent fluctuation” between critical and less harmful situations that is increasingly diffuse in contemporary societies (Castel, 2000).

As time is an essential element of insecurity, cross-section analysis has a poor capacity to capture its substance. First, in cross-section analysis chronic situations overlap with temporary situations, and these two aspects cannot be reciprocally detected. Second, a crude distinction between poor and non-poor (or deprived and not deprived) is used, with no attention to intermediate situations affected by transitory hardship or latent poverty (Leisering and Leibfried, 1999). Finally, households affected by contingent problems, or huge volatility of basic resources, cannot be identified and analyzed as such in static analysis. We cannot expect, therefore, that research grounded on static indicators mainly designed to describe permanent poverty or material deprivation conditions (Mood 2015) could properly describe economic insecurity.

Only a longitudinal approach using panel data is able to address these shortcomings, and this is the approach proposed in this paper. We discuss our methodological approach below in Section 3, but here we want to clarify our general perspective and how it differs from the two main approaches of longitudinal research focused on hardship conditions.

The first approach is focused on *measuring income volatility*, considering either short-term income variability or large income losses. Whatever measure has been adopted, this approach considers large income flows (upwards and/or downwards) with no regard to their direct impact on the living conditions of people. It seems implicit that a large drop (for example, by 25% of the total income) produces instability whatever is the previous income level of the household, and regardless of whether these losses have been intentional/planned or unintended/unplanned (Western *et al.*, 2012). Consequentially, the income-volatility approach backgrounds the question of dynamics of household living conditions.

The second, more traditional, approach is aimed at analyzing poverty spells in a long period of time and therefore at distinguishing between permanent and transitory poverty through sequence analysis. The classic research of Bane and Ellwood (1986) showed that income volatility was very high in the US, and that individuals in permanent poverty were a very small minority of the total population. This second approach differs from the first one in two respects. First, it lengthens the time frame. Second, it accords with a “Beveridgean

perspective,” whereby problematic situations are identified by reference to a collectively fixed threshold (e.g., the poverty line). Nevertheless, based on these assumptions, sequence analysis of poverty has been mainly focused on the relatively small proportion of households living in permanent poverty (Vandecasteele, 2010; 2011).

In our study of economic insecurity, we build on both approaches. On the one hand, economic insecurity is related to short-term variations and should be separated from permanent poverty trajectories. On the other hand, economic insecurity is analyzed in this paper as a driver of relevant household difficulties and therefore a Beveridgean perspective is the most useful approach. Economic insecurity integrates these two dimensions as it focuses on income downward fluctuations that are able to push them into poverty.

To sum up, economic insecurity has currently emerged as an important social issue that requires the elaboration of new approaches and measures to overcome the limits of traditional indexes of permanent poverty or material deprivation. We build on newer work that better captures the substance of economic insecurity (Whelan *et al.*, 2015a; 2015b). Specifically, we contribute two novel elements. First, we incorporate the multidimensional aspects of economic insecurity into a new measure. Second, we consider time dynamics to compare our measures with traditional measures of poverty and material deprivation.

### **3. Data and methods**

To develop multidimensional, dynamic measures of economic insecurity we use the EU-SILC panel database, which provides a 4-year based rotational panel for all the EU countries here considered<sup>1</sup>. As our study focuses on temporary flows and short-term occurrence of different forms of hardship, a time span of four years is adequate to study such variations, with some limitations related to the difficulty to capture long-term variability. The study considers data for the years 2007-2012 (just after the onset of the recent recessions). We pool data from three successive rotations (starting in 2007, 2008, and 2009).

We focus on the working-age population: only households whose main earner at the start of the observation period was under 60 years old are included in the analysis.

Finally, we include 8 European countries as representative of different varieties of capitalism and welfare regimes: Denmark and Sweden as Nordic countries; the UK as the

most representative country for the Anglo-Saxon regime; France as a Continental regime and Italy and Spain as components of its Mediterranean version; Hungary and Poland as representative of central-eastern countries.

### *3.1 Data weights and attrition*

Unfortunately, EU-SILC does not provide longitudinal household weights. Therefore, we use the cross-sectional household weights provided in the EU-SILC for the first spell of each rotation to adjust for differences in the probability of a household being sampled according to demographic differences across countries. We adjust by the effective size of each country and we estimate new weights to control the variability of the panel composition over its time span.

The main problem to be addressed here is sample attrition due to loss of initial sample members. In a four-years time span attrition rate is 34% for the overall sample, with countries' samples ranging from 25% (Poland) to 40% (Italy), and only two exceptions: Denmark, where there is no attrition at all (100% of households responding for 4 years), and United Kingdom, with attrition up to 69%. However, the absolute number of households included in the British panel is still high<sup>2</sup>.

We controlled attrition by estimating, for each household included in the first wave, its probability to be in the panel for the whole duration of the rotation. Variables concerning household typology, social class structure, the family income and household's main earner age and education level were included in the regression model run at the country level to calculate such probabilities. Results were used to generate Inverse Probability Treatment Weights (IPTW), which were applied to all households in the panel. IPTWs were then interacted with the original cross section household weights for spell 1 to generate a new weight.

A secondary problem is related to over-time changes in the composition of SILC households (though limited in a short time-span). We addressed this problem using the shared weights method, which take individuals moving in/out of households into account<sup>3</sup>, to adjust the new weights calculated as explained in the previous paragraph.

### 3.2 *Lack of synchronicity among income data and other information*

In EU-SILC data, income questions refer to the year before the year of interview, in all countries analyzed here except the UK. Economic theory on the impact of income variations on household expenditures or financial problems is still inconclusive, ranging from assumptions that short-term income changes do not greatly affect expenditures and consumption smoothing is always possible for households, to “rule-of-the-thumb” theories assuming that household can spend only what they have just earned (Jappelli and Pistaferri, 2006). Less extreme assumptions generally conclude that income short-term changes do not substantially alter either their consumption level or available liquidity (Meghir and Pistaferri, 2011). From the literature, then, we conclude that there is little evidence that present-year income affects economic insecurity more than previous-year income, and so in all analyses we retain all four waves of data.

### 3.3 *Principal Components Analysis of economic insecurity*

In empirical analysis of household hardship, measures of income poverty have been complemented by multiple deprivation indexes considering a large number of non-income items in order to capture more qualitative dimensions of household economic conditions. In these analysis, qualitative items have been combined together according to different criteria, but always with the aim of defining a unique measure of deprivation. The same approach has been adopted by the European Union, which has included a material deprivation indicator in the official set of statistical measures supporting the Europe 2020 strategy (Guio *et al.*, 2009; Eurostat, 2016).

In contrast, we argue that economic insecurity is clearly differentiated from traditional measures of multiple deprivation, which are aimed at capturing situations characterized by lack of basic goods. Furthermore, economic insecurity includes multiple dimensions. Based on our review presented in section 2.1, three main dimensions should be considered: *income fluctuations above/below the poverty thresholds* (see discussion in section 2.2), *over-indebtedness* (the incapacity of households to pay debts), and *economic strain* (financial vulnerability and consumption compression).

To test this hypothesis, we conducted an exploratory Principal Components Analysis<sup>4</sup> by considering multiple qualitative non-income related items traditionally used in material

deprivation analysis<sup>5</sup>. We use household-level data. Following Whelan *et al.* (2015a), we consider both subjective and objective items. A confirmatory analysis was also carried out to test the validity of our results. Finally, we integrated the PCA results with a standard income-based measure of poverty. We calculate a spell-headcount of households whose equivalent income is below the yearly national poverty line (60% of national median income]. The whole set of indicators was finally used to estimate the over time variations and interactions of these different dimensions of hardship.

### *3.4 Headcount method*

Our aim is to calculate the occurrence and fluctuations in the multiple dimensions of economic insecurity. Following Alkire and Foster (2011, 2014), we adopt a revised version of their “headcount approach”, which identifies a class of multidimensional poverty indices that rely on aggregations both across multiple dimensions and time. They define an individual (or a household) as poor based on the number of dimensions in which a person/household is poor and of the number of spells in which such situation occurs over time. The thresholds (the “dimensional cut-point”, the “multidimensional cut-off” and the “time cut-point”) are exogenously fixed by researchers according to empirical and theoretical assumptions. As this approach respects time uniformity, it is also known as a spell, or duration, approach.

We followed the same method and we calculated a multi-dimensional index for each dimension by considering the related items identified in the exploratory PCA and summing them into an additive index. We address cross-country variation in the use of such goods due to different habits and/or different market penetration of such commodities by calculating prevalence weights.<sup>6</sup> Then we fixed different dimensional cut-offs for each index according to the number of items considered. The cut-off point for “economic strain” (which adds 6 items) was established at 3, for “multiple deprivation” (5 items) at 2, while the cut-off for “over-indebtedness” (which adds only 4 items) was established at 1. Finally, in each spell a dummy variable for each dimension was created to identify households that are above/below the relevant cut off point.

Contrary to Alkire and Foster’s approach, we did not define a second multi-dimensional cut-off to create a single hardship measure as the aim of the article is to analyze the interconnection of different hardship dimensions and how it develops over time. For the same reason, we do not set a pre-determined duration cut-off. This allows showing how

dimensional transitory and chronic hardships are distributed. Therefore, longitudinal analysis was then carried out for each dimension by counting the number of spells in which the households' score is higher than the cut-off point.

Critics of the time indifference requirement that is intrinsic to the headcount approach sparked a revision by Bossert *et al.* (2012), who account for the persistence in the state of poverty by assigning a higher weight to situations where poverty is experienced in consecutive rather than separated periods. We adopt this approach and thus weight our final headcounts by the continuity of spells in hardship situations<sup>7</sup>.

Finally, while the original headcount approach introduces adjustments based on the intensity of poverty (Alkire and Foster, 2011), our headcount-continuity method considers intensity as an additional aspect that may be analyzed separately from the duration-continuity analysis.

## 4. Results

### 4.1 Principal Components Analysis (PCA)

The PCA results (shown in Table 1) confirm that economic insecurity is a multidimensional phenomenon and is clearly distinct from material deprivation. Given 14 dummy variables, three statistically independent factors explain 65.6% of the total variance. The PCA identified two latent variables that capture most of the multiplicity of economic insecurity, and reflect the dimensions of insecurity already discussed on a theoretical basis in section 2.1. The third factor describes a more traditional dimension of material deprivation. Below we describe the PCA solution.

**Financial strain** is our label for the first factor, which loads most heavily on items that ask respondents about their household's inability to (1) *afford one week holiday once a year*, (2) *afford a meal with meat, chicken, fish (or vegetarian equivalent) .... every second day*, (3) *keep home adequately warm*, (4) *face unexpected financial expenses*, (5) *make ends meet*, and (6) *[bear the] financial burden of the housing costs*. Through their strong association these items show high economic pressure and consumption compression, which endanger the satisfaction of basic household needs.

**Over-indebtedness** is our label for the second factor, which loads most heavily on items that ask respondents about (1) *arrears [on] loan payments*, (2) *arrears [on] utility bills*, (3) *arrears [on] rent, mortgage*, (4) *heavy financial burden of the repayment of debts from hire purchases or loans*. These items are usually considered as good predictors of over-indebtedness (Angel and Heitzman 2015). While the over-indebted household has been conceptually defined as “one whose existing and foreseeable resources are insufficient to meet its financial commitments without lowering its living standards” (Fondeville *et al.*, 2010, p. 4), more practical measures have been adopted in empirical research. According to previous research, subjective or objective indicators considered separately show strong limitations due to different individual judgment of what “difficulty” means, and huge variability in national legal regulations governing late payment. Therefore, a mixed strategy combining subjective and objective items seems to be preferable (Whelan *et al.*, 2015a).

**Absolute deprivation** is our label for the third factor, which loads most heavily on items that ask respondents whether they (1) *can't afford car*, (2) *can't afford PC*, (3) *can't afford washing machine*, (4) *can't afford color TV*. These items measure the household resource endowment as the ability to afford durable goods. When some of these durable goods are missing due to affordability problems, we have a situation of absolute deprivation. These items, though some of them are now under revision that can affect the headline indicator itself (Guio and Marlier, 2012; 2013), are still regularly included within currently used multiple deprivation indexes (Eurostat, 2016).

Table 1: *Principal Component Analysis (PCA) factor loadings.*

|   | Comp 1 | Comp 2 | Comp 3 | <i>Unexplained</i> |
|---|--------|--------|--------|--------------------|
| Washing Machine   |        | 0,5418 |        | 0,275              |
| Car   |        | 0,415  |        | 0,404              |
| PC  |        | 3417   |        | 0,417              |
| Colour TV   |        | 0,4727 |        | 0,381              |
| Arrears rent  |        |        | 0,5271 | 0,288              |
| Arrears bill  |        |        | 0,4337 | 0,314              |
| Arrears loan  |        |        | 0,5753 | 0,221              |
| Debt burden   | 0,2083 | -0,279 | 0,3479 | 0,370              |
| Unexpected expenses                                       | 0,2742 |        |        | 0,237              |
| Make ends meet  | 0,3874 |        |        | 0,206              |
| Holidays  | 0,3819 |        |        | 0,237              |
| Meat  | 0,3822 |        |        | 0,317              |
| Keep house warm   | 0,4393 |        |        | 0,353              |
| Housing burden  | 0,4591 |        |        | 0,361              |
| <b><i>Confirmatory Factor – Goodness of Fit Tests</i></b> |        |        |        |                    |
| Root Mean Square Test                                     |        |        |        | 0,054              |
| Comparative Fit Index                                     |        |        |        | 0,910              |
| Tucker Lewis Index  |        |        |        | 0,889              |
| Standardized Root Mean Square                             |        |        |        | 0,036              |
| Residuals   |        |        |        |                    |

*Note:* loadings less than .2 in absolute value are not shown.

*Source:* EU-SILC panel database: pooling of three rotations from 2007/10 to 2009/12, authors' own elaboration.

Finally, we carry out a Confirmatory Factor Analysis to check the robustness of these findings. Goodness of Fit tests confirm that the PCA solution is adequate for the whole sample. Tests were run also at the country level with the same positive results<sup>8</sup>.

Two theoretical assumptions are therefore confirmed by the 14-items PCA and following confirmatory analysis. First, economic insecurity is a distinct, totally independent dimension in respect of material deprivation. Then, two main independent not-income based dimensions of economic insecurity have been identified: financial strain (showing the economic insecurity and consumption compression of households), and over-indebtedness (i.e. difficulty of households to pay their financial commitments). As discussed above, we add to the three factors identified by the PCA a fourth dimension of hardship, income fluctuations under/over the poverty line. Finally, four distinct indexes of hardship are calculated by using the longitudinal headcount methodology described in section 3. Table 2 reports the main statistical results of such analysis.

Table 2: *Longitudinal headcounts of multidimensional indexes of hardship.*

|   | Financial strain | Over indebtedness | Poverty | Deprivation |
|---|------------------|-------------------|---------|-------------|
| Perc. total headcount (at least once)   | 30,9             | 17,4              | 28,9    | 1,0         |
| Average duration (number of spells)     | 2,2              | 1,8               | 2,2     | 1,4         |
| % average duration (over max. duration) | 55,0             | 45,0              | 55,0    | 35,0        |
| Average continuity                      | 3,2              | 2,5               | 3,2     | 1,7         |

*Source:* EU-SILC panel database: pooling of three rotations from 2007/10 to 2009/12, authors' own elaboration.

Building on the descriptive and inductive PCA results, we develop the analysis in three steps. First, we analyze the time dynamic of the various hardship indicators previously identified and we look at the intersections among them. This allows us to build up a new typology of hardship forms in which several dimensions of economic insecurity are found. Second, we observe the cross-country differentiation of this typology to investigate whether and to what extent differentiated national contexts (with peculiar welfare structures) may differently affect economic insecurity. Third, we consider how households affected by different aspects of economic insecurity are distributed across diverse middle class groups.

#### *4.2 The dynamic of economic insecurity*

Previous longitudinal research on poverty mainly focused on the long-term impact of chronicity on the poor. Limited to short- and medium-term data from the EU-SILC, our analysis is restricted to shorter time frames and is less able to evaluate chronicity. Figure 1 gives a sensitive representation of the relevance and characteristics of temporary hardship as opposed to more chronic (maximum four years) situations. Households experiencing at least one spell in hardship (whatever dimension of hardship is considered) are concentrated in two big groups: those with one spell mostly involving one single dimension of hardship, and those facing many spells of hardship and multiple hardship conditions at the same time. While chronicity very often involves a progressive accumulation of disadvantages, many households experience only a very temporary (mostly only one year) critical situation affecting only one hardship dimension.

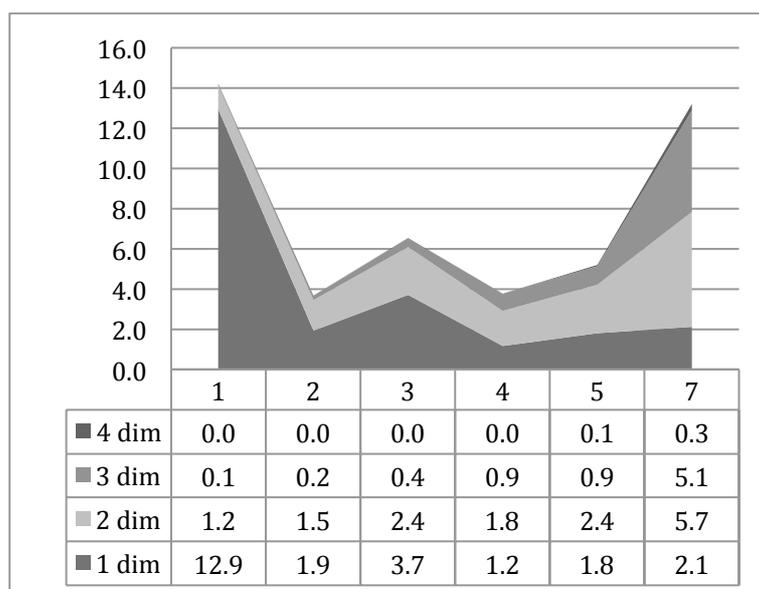


Figure 1: *Share of households in hardship by time continuity in hardship and number of hardship dimensions experienced (total=households with at least one spell in hardship).*

Source: EU-SILC panel database: pooling of three rotations from 2007/10 to 2009/12, authors' own elaboration.

From these results, we elaborate a typology, shown in table 3 where different situations of hardship (from short-term one-dimensional situations to long-term multiple situations) are dynamically described.

In the first group, we have many households experiencing economic insecurity but not absolute deprivation or permanent poverty: 9.6% experience *financial strain* (see column I), 3.5% face *over-indebtedness* (see col. II). For most of these households such situations occur only temporary. Many other households (10.5%) experience income fluctuations sufficient to temporary bring them under the poverty threshold, but fewer signs of financial stress (see households characterized by “transitory poverty” in col. III). For such households' low income apparently coincides with no significant financial or consumption pressure: a situation described as “integrated poverty” (Paugam, 1996; Böncke, 2008). In sum, we observe that 23.6% of households have been affected by a short-term, one-dimensional form of economic insecurity.

In an intermediate position there is a smaller group (4.6%) of households that cumulate *financial strain and over-indebtedness*, but not poverty spells: these are households in strong financial difficulty due to costs that they are unable to meet even though income has no

significant fluctuations in the observed time span. Furthermore, very often such financial difficulty occurs on a temporary basis, with significant long-term consequences only in a few cases (col. IV).

In the second group, a large share of households (17.5%) experiences a prolonged trajectory of multiple hardship, involving fluctuations under the poverty line combined with financial strain or over-indebtedness (col. V). These multiple critical situations do not often occur synchronically (in the same year), but, more frequently, households shift from income poverty to illiquidity problems or over-indebtedness in a vicious circle made of income shortage and consequent strong consumption compression and high financial vulnerability. Chronicization and multi-dimensionality describe these households, which are defined as falling in a “*multiple poverty-based hardship*”. Finally, a small amount (1%) of households is affected by *absolute deprivation* that almost always intersects other hardship dimensions (col. VI): households here are characterized by multiple hardship situations, where deprivation is persistently associated with poverty, financial strain and/or over-indebtedness. This is an extreme and cumulative hardship situation which is very rare through Europe.

Table 3 shows also the over time distribution of the various categories of hardship. As expected, *mono-dimensional financial strain, over-indebtedness* or *poverty* are mainly temporary conditions affecting households for only one year or two separate years. On the contrary, households experiencing multiple forms of hardship or absolute deprivation are more likely to be affected for three or four spells.

Table 3: *Headcount statistics for different hardship situations.*

|                         | <i>Short-term one-dimensional economic insecurity</i>            |                                 |                                   | <i>Long-term multiple hardship</i>                 |  |                                    | <i>Total</i> |
|-------------------------|--|---------------------------------|-----------------------------------|--|--|------------------------------------|--------------|
|                         | <i>I<br/>Financial strain</i>                                    | <i>II<br/>Over-indebtedness</i> | <i>III<br/>Transitory Poverty</i> | <i>IV<br/>Financial strain + over-indebtedness</i> | <i>V<br/>Multiple Poverty-based Hardship</i> | <i>VI<br/>Absolute deprivation</i> |              |
| Headcount ratio         | 9,6  | 3,5                             | 10,5                              | 4,6  | 17,5   | 1,0                                | 46,6         |
| <i>Continuity index</i> | <i>Column per cent over the number of households in hardship</i> |                                 |                                   |  |  |                                    |              |
| 1                       | 52,8   | 70,8                            | 51,1                              | 11,4   | 4,3  | 6,7                                | 30,5         |
| 2                       | 9,5  | 5,2                             | 8,0                               | 12,0   | 6,7  | 4,8                                | 7,9          |
| 3                       | 15,7   | 13,9                            | 16,2                              | 17,3   | 11,2   | 7,7                                | 14,0         |
| 4                       | 5,2  | 2,9                             | 5,4                               | 13,8   | 11,0   | 6,7                                | 8,1          |
| 5                       | 6,8  | 5,8                             | 8,9                               | 15,1   | 15,0   | 8,7                                | 11,1         |
| 7                       | 10,0   | 1,4                             | 10,4                              | 30,4   | 51,8   | 65,4                               | 28,3         |
| TOTAL                   | 100.0  | 100.0                           | 100.0                             | 100.0  | 100.0  | 100.0                              | 100.0        |
| <i>Continuity index</i> | <i>Column per cent over the total number of hardship spells</i>  |                                 |                                   |  |  |                                    |              |
| 1                       | 21,6   | 40,8                            | 20,1                              | 2,6  | 0,8  | 1,2                                | 8,1          |
| 2                       | 7,8  | 6,0                             | 6,3                               | 5,6  | 2,5  | 1,7                                | 4,2          |
| 3                       | 19,3   | 24,0                            | 19,1                              | 12,0   | 6,3  | 4,1                                | 11,2         |
| 4                       | 8,6  | 6,7                             | 8,5                               | 12,8   | 8,3  | 4,7                                | 8,6          |
| 5                       | 13,9   | 16,7                            | 17,5                              | 17,5   | 14,0   | 7,6                                | 14,8         |
| 7                       | 28,8   | 5,8                             | 28,5                              | 49,4   | 68,1   | 80,7                               | 52,9         |
| TOTAL                   | 100.0  | 100.0                           | 100.0                             | 100.0  | 100.0  | 100.0                              | 100.0        |

*Source:* EU-SILC panel database: pooling of three rotations from 2007/10 to 2009/12, authors' own elaboration.

If the headcount is calculated by hardship years rather than by number of households (see table 3), the weight of chronically insecure households becomes higher, consistent with previous results by Bane and Ellwood (1986). Table 3 shows that trajectories characterized by permanent hardship count for 52.9% of total hardship years even though they involve only 28.3% of households. On the other hand, 30.5% of households experiencing a transitory (only one spell) hardship accounts for just 8.1% of total hardship years. We have therefore a high concentration of hardship years in a relatively limited number of households on the one hand,

and a low diffusion of hardship years in a large number of households on the other. This second group is not affected by high risk of social exclusion (Mood, 2015), but experiences a form of economic insecurity characterized by hardship for a very limited amount of time, over the four-year period examined here.

To sum up, the number of households dealing with economic insecurity captured through this approach is very high. Over 46% of households in our eight countries underwent a period of hardship within a four-year time span (see table 3). Many suffered only temporary insecurity, which mainly affected only one dimension of their living conditions. These insecure households do not constitute a large percentage of the socially insecure in any one year, given that they are permanently insecure. But these insecure households do constitute a very large share of the population, representing around 24% of the total households in our eight countries.

#### *4.3 Cross-country comparison*

The distribution of our hardship categories across countries shows that households are differently affected by these problems across Europe (see Table 4 and Figure 2). Households in Central and Eastern European (CEE) countries are more likely to be in hardship than households in the western part of Europe. In Hungary and Poland hardship is remarkably concentrated in *multiple poverty-based hardship*: a clear sign that low income, constrained consumption and financial strain are often interweaved problems in these countries, and that these situations accumulate in a great number of households. On the other hand, the share of households affected by *transitory poverty* in CEE countries is remarkably lower than in the Western European countries included here.

In Western European countries, the prevalence of multiple hardship is very low, and lowest in Sweden and Denmark. Mediterranean countries show higher levels of multiple poverty-based hardship (our data refer to 2007-2012, when Italy and Spain were strongly affected by economic crisis). Finally, one-dimensional *transitory poverty* predominates in the UK and Spain, but it is comparatively very high both in Sweden and Denmark. This fact may confirm the idea that income volatility and risk of transitory income poverty are higher in countries with lower inequality and higher welfare protection. On the other hand, *financial strain* is higher in Mediterranean countries, France and the UK.

To sum up, transitory economic insecurity is a widespread phenomenon in Europe, although its prevalence varies systematically across countries. These cross-national differences, detailed in Table 4, are summarized as area plots in Figure 2.

The higher concentration of transitory economic insecurity in Continental countries may reflect a marked dualisation in the labor market, the spread of unstable employment positions in this area, and higher exposure of households to risks related to financialisation. On the other hand, the geographical distribution of *multiple poverty-based hardship* (close to chronicity) is much more differentiated, with higher concentration in CEE and Mediterranean countries. In the figure, we observe a clear U shaped distribution in CEE and Mediterranean countries, to show that both long-term poverty and short-term insecurity predominate. Nordic countries can be characterized by a J-shaped curve, where only transitory problems predominate. France and the UK are in a mixed position.

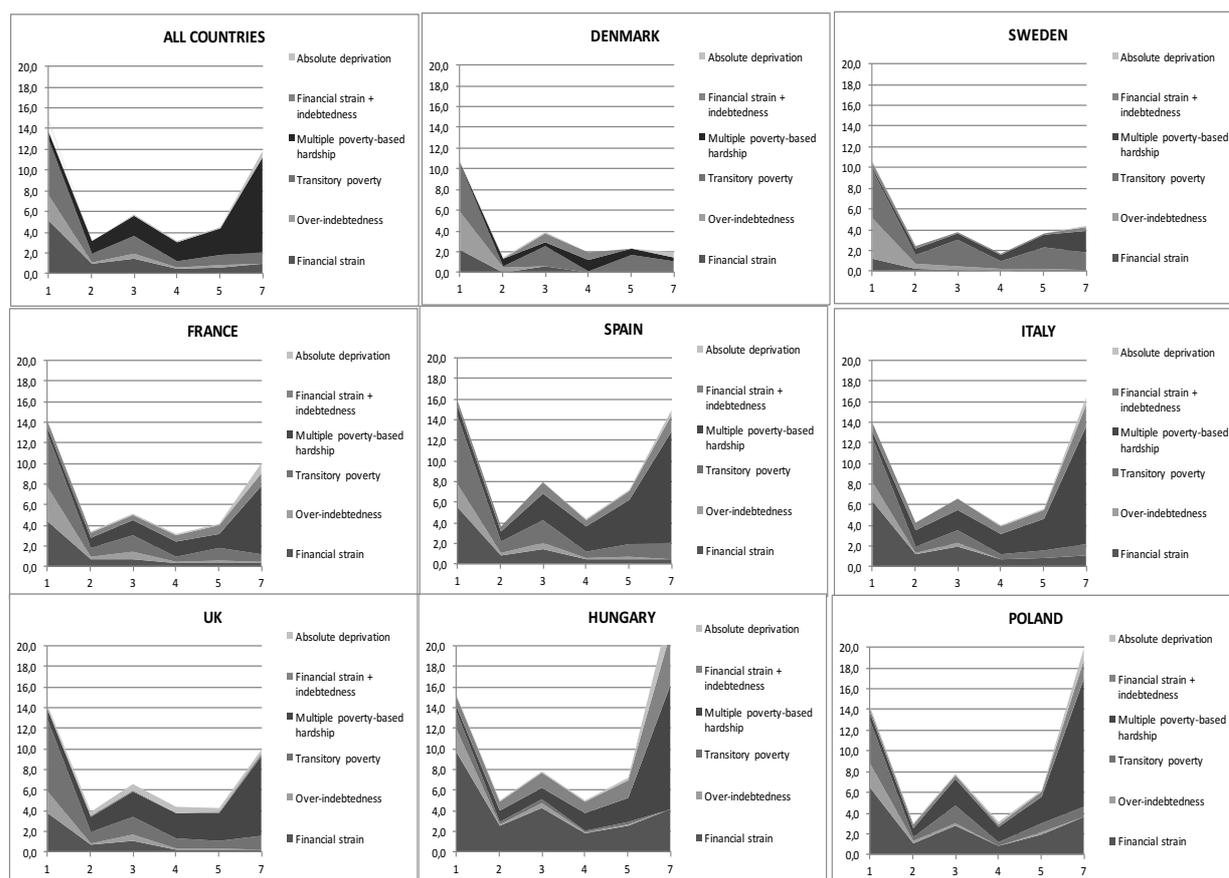


Figure 2: Area plots of insecurity headcounts, by country.

Source: EU-SILC panel database: pooling of three rotations from 2007/10 to 2009/12, authors' own elaboration.

Table 4: *Headcounts of insecurity types, by country.*

|                | <i>Short-term one-dimensional economic insecurity</i> |                                     |                                       |   | <i>Long-term multiple hardship</i>                       |  |  | <i>Total</i> |
|----------------|---|-------------------------------------|---------------------------------------|---|--|--|--|--------------|
|                | <i>0</i><br><i>Well-being</i>                         | <i>I</i><br><i>Financial strain</i> | <i>II</i><br><i>Over-indebtedness</i> | <i>III</i><br><i>Transitory Poverty</i> | <i>IV</i><br><i>Financial strain + over-indebtedness</i> | <i>V</i><br><i>Multiple Poverty-based Hardship</i> | <i>VI</i><br><i>Absolute deprivation</i> |              |
| <i>Denmark</i> | 77,7  | 2,8                                 | 4,1                                   | 9,5                                     | 1,7  | 3,5  | 0,7                                      | 100          |
| <i>Sweden</i>  | 73,4  | 1,7                                 | 5,3                                   | 12,5                                    | 1,3  | 5,5  | 0,4                                      | 100          |
| <i>Spain</i>   | 46,0  | 9,2                                 | 3,5                                   | 13,3                                    | 5,1  | 22,1   | 0,8                                      | 100          |
| <i>France</i>  | 60,1  | 6,9                                 | 4,7                                   | 10,1                                    | 4,3  | 12,6   | 1,3                                      | 100          |
| <i>Italy</i>   | 49,2  | 12,1                                | 2,5                                   | 8,5                                     | 6,2  | 20,6   | 0,9                                      | 100          |
| <i>Hungary</i> | 36,2  | 24,9                                | 3,2                                   | 2,8                                     | 11,4   | 18,5   | 3,1                                      | 100          |
| <i>Poland</i>  | 45,9  | 16,8                                | 3,0                                   | 8,5                                     | 4,0  | 20,3   | 1,6                                      | 100          |
| <i>UK</i>      | 56,6  | 6,2                                 | 3,1                                   | 13,0                                    | 3,0  | 17,7   | 0,6                                      | 100          |
| <i>Total</i>   | 53,4  | 9,6                                 | 3,5                                   | 10,5                                    | 4,6  | 17,5   | 1,0                                      | 100          |

*Source:* EU-SILC panel database: pooling of three rotations from 2007/10 to 2009/12, authors' own elaboration.

#### *4.4 Economic insecurity and the middle class*

Figure 3 shows the distribution of economic insecurity across income deciles<sup>9</sup>. While *multiple poverty-based hardship*, *absolute deprivation*, and obviously also *transitory poverty* (an income-based measure) are concentrated in the lowest three deciles and drop significantly in the fourth, our indexes of *transitory financial strain* and *over-indebtedness* are more broadly distributed across income deciles, with significant drops (below 10% of households within the decile) only at the eighth decile. This is clear evidence that economic insecurity mainly related to difficult consumption and high risk of indebtedness spreads to the middle classes, while the poorest households are mostly affected by transitory poverty.

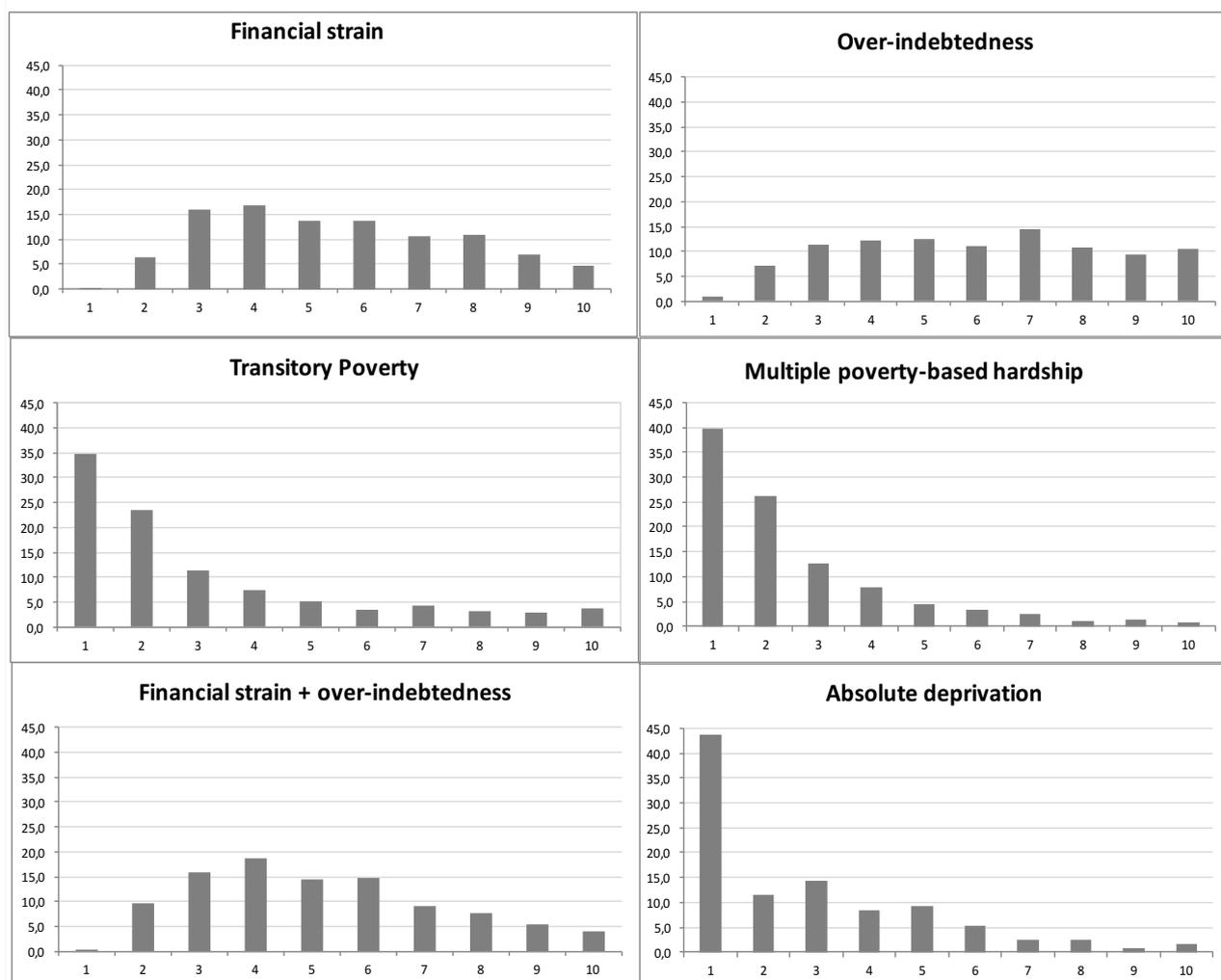


Figure 3: *Distribution of economic insecurity by income deciles.*

Source: EU-SILC panel database: pooling of three rotations from 2007/10 to 2009/12, authors' own elaboration.

Of course, the analysis above has limited utility for sociological class analysis, since it is based on the income distribution rather than class categories. To address this limitation, we also used a simplified version of the European Socio-economic Classification (ESeC)<sup>10</sup> to analyze the distribution of different types of insecurity by social class.

Figure 4 shows that households affected by durable *multiple poverty-based hardship* are more concentrated not only in the working class (categories 1-2) but also in the lower middle class and intermediate group (categories 3-4). Such deprivation is hardly experienced by households in the upper social classes. Other types of economic insecurity, however, do not line up so neatly with social class. For example, *transitory poverty* was significant among

the lower middle class in 2007-2012, probably owing to the economic recession<sup>11</sup>. The *financial strain* type cuts most strongly across classes, and only drops significantly for the two highest classes. The intermediate class, which combines technicians and public employees with medium to high qualification, experiences substantial *financial strain* and *over-indebtedness*.

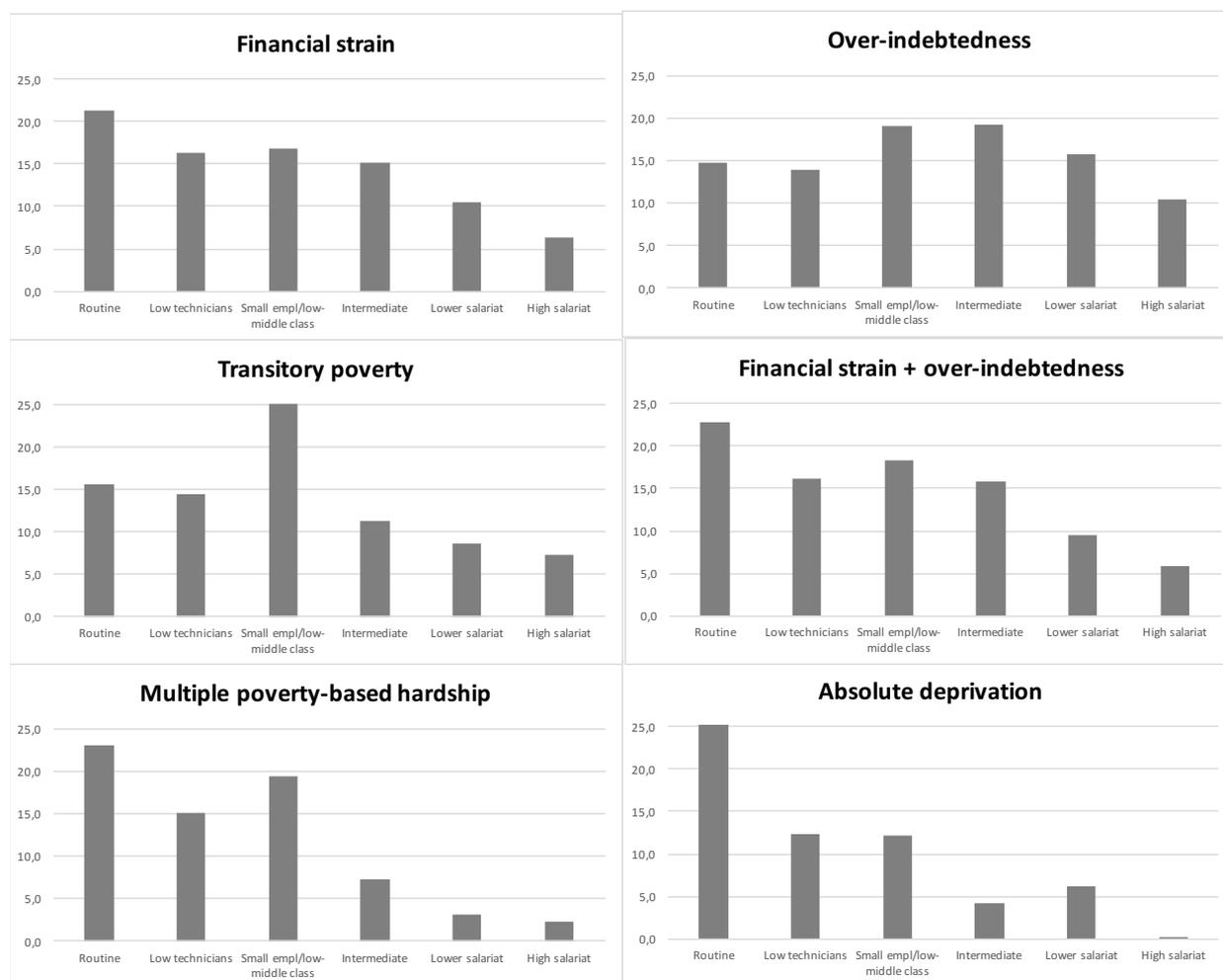


Figure 4: *Distribution of different trajectories of hardship by social class (ESEC classification).*

Source: EU-SILC panel database: pooling of three rotations from 2007/10 to 2009/12, authors' own elaboration.

## 5. Discussion

This paper sheds new light on economic insecurity in Europe by incorporating multiple dimensions of disadvantage simultaneously, and by incorporating a dynamic perspective that reveals significant cross-country differences. Building on the work of Gornick and Jaentti (2014), Western *et al.* (2012), and Whelan *et al.* (2015a), among others, we develop a synthetic approach to insecurity that incorporates multiple dimensions of material hardship, and a dynamic perspective that allows us to identify hardship spells. To demonstrate the utility of this approach, we analyse four waves of data from the European Union Survey of Income and Living Conditions (EU-SILC), referring to the years 2007-2012. A principal components analysis yields evidence supporting our hypothesis that there are three distinct types of hardship; to these three types we add a fourth, income fluctuations over/under the poverty threshold. Using this categorization, we calculate dynamic headcounts of socially insecure households, and show how these counts vary across European countries. Finally, we show that economic insecurity is broadly distributed across European households, reaching high up the income and class scales.

The primary overarching finding is the peculiar social profile of economic insecurity. First, it crisscrosses a wide range of social class positions. Secondly, it affects not only lower class households but also white-collar intermediate workers and households whose income is in middle deciles. It confirms that economic insecurity affects not only the working class and lower income households, but also a substantial part of the middle and even upper-middle class. Future EU-SILC data will need to be analyzed to determine whether this widespread vulnerability is structural, or confined to the recent economic crisis. But whether it endures or dissipates, this widespread vulnerability demonstrates the limited capacity of contemporary European welfare states to secure households from market volatility (Huber and Stephens, 2014).

The evidence that economic insecurity is widely distributed across the class hierarchy in Europe suggests that many households experience market volatility on a day-to-day basis that shapes their standard of living. We emphasize that this insecurity concerns not only the absolute amount of available resources, but also the stability of resource flows (as shown by our results concerning fluctuations under/over the poverty threshold) and the relation of income to consumption (as our indicators about financial strain and over-indebtedness clearly

show). Economic insecurity not only increases the risk of poverty or material deprivation. Rather, it is a diffuse condition for many households. It is this condition of being in a turbulent, unstable condition that is understood here as “economic insecurity”. In other words, economic insecurity not only causes problems for households, but may be a social problem in and of itself.

Many aspects of this widespread insecurity still need to be investigated. Although this paper describes the distribution of economic insecurity across European nations and households, we have left the explanation of these patterns to future work. Our results point to the necessity of new research on, for instance, the relationship between trigger events and specific insecurity situations. Furthermore, structural conditions potentially responsible for the distribution of economic insecurity need still to be properly assessed. We also need to analyse the consequences of insecurity, in terms of social behaviour, investments in the future, and political orientation. Finally, we call for new research to understand what role may be played by broad welfare regimes and specific social policies in protecting people from insecurity and its potential consequences.

## 6. Notes

<sup>1</sup> The French SILC panel follows part of the households for 8 years. We randomly sampled

<sup>2</sup> Number of Households remaining in the panel after 4 spells: Denmark 1859, Spain 5352, France 5490, Hungary 3872, Italy 6742, Poland 5721, Sweden 2603, United Kingdom 2368.

<sup>3</sup> For more information on Weight Share methods see: [http://forscenter.ch/wp-content/uploads/2013/12/Weight\\_SHP\\_W2\\_detail\\_E.pdf](http://forscenter.ch/wp-content/uploads/2013/12/Weight_SHP_W2_detail_E.pdf)

<sup>4</sup> The PCA was run on spell 1 by considering the full sample. We used a tetrachoric correlation, which is a proper technique for estimating correlation between dichotomous variables. Tetrachoric correlation assumes the presence of a continuous latent variable underneath ordinal variables. Varimax rotation was applied. Factors showing eigenvalue > 1 were retained, producing a 3-factor solution. A standard PCA showed consistent results.

<sup>5</sup> We used 14 items included in the EU-SILC panel database which refers to lack of resources affecting the living conditions of households. We included all the available items with the

only exclusion of those related to the housing conditions of households (not frequently considered in such analysis) and a specific item (telephone not affordable) that does not appear in some of the countries here analyzed.

<sup>6</sup> Prevalence weights were calculated to control by the variability of the distribution of items within each country, so that items less prevalent in each country contribute less to the total counting. The formula used is:  $[1 - (\text{share of households reporting item } i / \text{total share of households reporting items included in the index})]$ .

<sup>7</sup> Following Bossert *et al.* (2012) we calculated a continuity weight. Spells with a hardship situation directly following another spell of hardship were counted twice. A final continuity variable for each index ranges from 0 to 7 as result of the weighted sum of the year-spells in which households have scored over cut-offs.

<sup>8</sup> Country-level statistical results are available on request.

<sup>9</sup> Income deciles are calculated for the first wave of our panel. The graph therefore shows how different types of hardship have developed over time starting from a specific preliminary income situation.

<sup>10</sup> ESEC classification has been developed following Rose and Harrison (2007)'s simplified procedure. In the 2009-2012 rotation, as only the ISCO-08 classification was provided, re-allocation to ISCO-88 categories has been done using the ISCO correspondence matrix. Where an ISCO-08 sub major group was divided between two ISCO-88 classes, cases were allocated according to their modal value. The standard 9 classes ESEC were synthesized in six classes grouping together “Small employer and self employed occupations”, “Self employed occupations”, “Lower supervisory and lower technician occupations” and “Lower services, sales and clerical occupations” into a “Small employers, lower middle class” group.

<sup>11</sup> The high value of poverty for the small employers/ lower technical class may also reflect a difficulty of EU-SILC to control the income data of small employers, who show high level of underreporting in survey in a number of countries.

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