POLITECNICO
MILANO 1863

DIPARTIMENTO DI ARCHITETTURA
E STUDI URBANI

LPS – Laboratorio di Politiche Sociali

The rise of economic insecurity in the EU: concepts and measures

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DAStU
Working Papers
n. 02/2019 (LPS.04)
ISSN 2281-6283

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. Inequality concerns the cross-sectional distribution of resources across individuals, while insecurity concerns the over-time exposure to financial strains that can unsustainable the households' economic 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. 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 levels and welfare structures. Second, it is widespread across income groups and occupational classes, reaching into the middle classes.

Key-words

Class; inequality; poverty; social structure; welfare state; insecurity.

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How to cite this working paper:
Ranci, C., Beckfield, J., Bernardi, L., Parma, A. (2019) *The rise of economic insecurity in the EU: concepts and measures*, in DAStU Working Paper Series, n. 03/2019 (LPS.04).

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 Leisiring 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) and Whelan *et al* (2015b) in examining economic insecurity among European middle classes. Specifically, we test the hypothesis 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 threatens 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). Insecurity makes adverse events more unpredictable and weakens the system of social guarantees traditionally attached to the middle class.

The spread of economic insecurity into 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 high financial risks or poverty (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; cf. Whelan *et al.,* 2015b).

We contribute to this emerging debate in two ways. First, we develop new measures to capture the substance of economic insecurity, and to clarify its distinctiveness from 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 short-term economic insecurity. We find that insecurity varies across countries in Europe, but is present across welfare regimes and varieties of capitalism. We then show that economic 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 headcounts of critical situations experienced by households, 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

The concept of economic insecurity has been recently proposed to capture increasingly widespread situations characterised by significant threats to the financial sustainability of households. If Stiglitz, Sen and Fitoussi (2009) noted that insecurity about the future material conditions "reflects the existence of a variety of risks, in particular associated with unemployment, illness, and old age", in a more recent OECD report economic insecurity was defined as "a significant downside economic risk – i.e. a hazard or danger – looming in the individuals' economic future, which they are unable to adequately insure against or avoid or ignore" (Osberg 2015: 5). Building on these general definitions, various empirical concepts have been proposed to distinguish the objective aspects of economic insecurity from subjective feelings such as a sense of uncertainty or risk adversion (Mau *et al.,* 2012).

The debate has generated several conceptualizations. Some scholars have defined economic insecurity as a high risk/probability of economic losses (Western *et al.*, 2012), adverse shocks (Bossert and D'Ambrosio, 2013) or downside hazards (Osberg and Sharpe, 2014; Osberg 2015). Insecurity have been also associated to the degree of protection against economic losses offered by relevant "buffers" such as private wealth (Bossert and D'Ambrosio, 2009) or state protection (Hacker et al., 2014). One influential line of work stresses instead the difficulty of households in covering standard expenses or to pay their financial commitments (Whelan *et al.*, 2015a).

We contribute to this debate by offering an encompassing, multidimensional, longitudinal conceptualization of economic insecurity that differentiates it from material deprivation. We conceptualize economic insecurity as *an economic strain threatening the financial sustainability of the household*. We underscore two aspects of this conceptualization: a) financial unsustainability that can be captured only by considering a plurality of aspects; b) an economic strain short-term situation, clearly differentiated from permanent, chronic hardship conditions.

2.1 Financial unsustainability

Since the onset of the financial crisis, increasing attention has been paid to the high prevalence of households experiencing economic insecurity without necessarily falling into severe poverty. Scholars have started to elaborate new measurements to capture the specificity of such situations. While low income or poverty conditions were the focus of previous research, attention has recently shifted to sustainability and to the possible means/ends mismatches in households' consumption behavior. The consequence has been on the one hand the proliferation of distinct measures of economic insecurity focusing on different aspects like *over-indebtedness* or *economic strain,* and on the other hand the development of a dynamic assessments of poverty (*transitory poverty*).

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).

Economic strain: Research has also 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.
Transient poverty: In the field of income-based studies the focus has shifted also from persistent poverty to *transient poverty*. While in the US context great attention has been 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; Nau and Soener 2017), in Europe income volatility is considered a less relevant issue thank to the role still played by income stabilizers such as the welfare state. Instead, increasing attention has been paid to economic insecurity measures considering the impact of downside risks on individuals' or households' well-being. Moving from a static to a dynamic assessment of poverty, longitudinal measures of poverty have captured the increasing number of households facing transient poverty situations, characterized by ups and downs around the poverty line (Whelan *et al.*, 2003). Sandoval *et al.* (2009) consider the number of spells below the poverty level, and find that in US poverty is becoming more transitory but that the risk of poverty is becoming more widespread. A strong association between poverty risk and low work household intensity (Cantillon and Vandenbrouke, 2014) corroborates the idea that transitory poverty has increased as consequence of higher unemployment, the spread of temporary work and precarious employment in many European countries.

2.2 A dynamic approach

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. 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 financial unsustainability. We follow Western *et al.* (2012), in conceptualizing inequality as mainly static (though with significant inter-temporal effects), and insecurity as dynamic.
As time is an essential element of insecurity, cross-sectional analysis cannot 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 volatility of basic resources, cannot be identified and analyzed as such in static analysis.
We adopt a longitudinal approach using panel data to address these shortcomings. We discuss our methodological approach below in Section 3, but here we want to clarify our general perspective and how it differs from extant longitudinal research focused on hardship conditions. A traditional approach analyzes poverty spells over long periods of time and therefore distinguishes 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. Not only does this approach adopt a very long time frame, but also it is coherent with a "Beveridgean perspective," whereby problematic situations are identified by reference to a collectively fixed threshold (e.g., the poverty line). Based on these assumptions, sequence analyses of poverty have mainly focused on the relatively small proportion of households living in permanent poverty (Vandecasteele, 2010; 2011).

A more recent approach is focused on *income volatility*, considering either short-term income variability or large income losses 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 (Western *et al.,* 2012). Consequentially, the income-volatility approach backgrounds the question of dynamics of household living conditions.

We build on both these approaches in two ways. First, we hypothesize that economic insecurity is mainly related to short-term variations and is therefore separated from permanent poverty or material deprivation trajectories. Second, we adopt a revised version of the "headcount approach" proposed by Alkire and Foster (2011) that allows the simultaneous analysis of multiple variations occurring in a limited number of spells. Economic insecurity integrates these two dimensions as it focuses on downward fluctuations in a multiple set of aspects that are able to push households into financial unsustainability.

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. As our study focuses on temporary flows and short-term occurrence of different forms of insecurity, 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[1] 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

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 the use of register data grants no attrition over the time period (100% of households responding for 4

[1] The French SILC panel follows part of the households for 8 years. We randomly sampled only one rotation for such households.

years), and United Kingdom, with attrition up to 69%. However, the absolute number of households included in the British panel is still high[2].
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 (Latouche and Naud, 2001), which take individuals moving in/out of households into account, to adjust the new weights calculated as explained in the previous paragraph.

3.2 Lack of synchronicity among income data and other information

EU-SILC 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). Thus, 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 Headcount method

Our aim is to calculate the occurrence and fluctuations of economic insecurity. We adopt a revised version of the headcount approach (Alkire and Foster 2011, Alkire *et al.,* 2014), also known as spell, or duration, approach. The classic headcount approach measures multidimensional poverty by aggregating a class of different indices across multiple dimensions and over time. More specifically, it defines a unit (individual or household) as poor if it experiences scarcity of basic resources and if such scarcity is repeatedly experienced over time (number of spells). Researchers exogenously fix the thresholds indicating the multiple dimensions of poverty and time (each "dimensional cut-point" and the "time cut-point").
Inspired by the classic headcount approach, we proceeded as follows:

1. We first run a PCA on multiple items to identify the dimensions of insecurity to be used in the analysis.
2. We calculated an additive index for each dimension of insecurity found in the PCA. Building on Nolan and Whelan (2009), the value of each item has been weighted by country specific prevalence weights[3] to control differences by country in their diffusion.

[2] 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.
[3] 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-(share of households reporting item i / total share of households reporting items included in the index)].

3. We then fixed different dimensional cut-offs for each index based on the number of items included in the index[4].
4. For each dimension, we counted the number of spells in which the households' score is higher than the cut-off point[5]. The process can be summarized as follow:
   $\sum_{t=1}^{4} \mathrm{d} = 1 \text{ if } \mathrm{i} > \mathrm{k}$
   $where\ t = year; i = value\ of\ the\ dimensional\ index; k = dimensional\ cut\ off\ point$
   This way we followed the development over time (4-year period) of the three indexes for each household.
5. Finally, following Bossert *et al.* (2012) we calculated a continuity weight to take into account the aggravating condition of persistence in insecurity and/or deprivation for longer time. We weighted our headcounts twice every time the household was below one of the cut off points consecutively rather than in separated spells. As a result a new variable of "time continuity" (ranging from 0 to 7) was created and used in the following analysis.

4. Results

4.1 The dimensions and peculiarity of economic insecurity

To test the hypothesis that economic insecurity is a multidimensional phenomenon clearly distinct from material deprivation or extreme poverty, we conducted an exploratory Principal Components Analysis[6] by considering a large range of multiple qualitative not-income related items. Following Whelan *et al.* (2015a), we consider both subjective and objective items. All available items included in the EU-SILC survey (with a few exceptions)[7] informing on the financial conditions of households were used in this analysis. In the following step we added a longitudinal measure of short term poverty to capture also this dimension of economic insecurity.
In previous research material deprivation has been identified as a multidimensional measure able to capture the households' inability, due to financial constraints, to obtain a wide range of consumptions, facilities, and social conditions "generally regarded as acceptable in the community" (Nolan and Whelan, 1999, 2011). In this analysis qualitative items have been combined together according to different criteria, but always with the aim of defining a unique measure of deprivation, on the assumption that a plurality of dimensions can be combined together in one single index. 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).

[4] We identified three indexes based on PCA results (see section 4 for further details). The cut-off point for "economic strain" (which adds 6 items) was established at 3, for "multiple deprivation" (5 items) at 2, for "over-indebtedness" (which adds 4 items) at 1.
[5] Contrary to Alkire and Foster's approach, we did not define a second multi-dimensional cut-off to create a single insecurity measure as the aim of the article is to analyze the interconnection of different dimensions. For the same reason, we did not set a pre-determined duration cut-off. This allows showing how dimensional transitory and chronic situations are distributed. 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.
[6] 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. Varimax rotation was applied. Factors showing eigenvalue > 1 were retained, producing a 3-factor solution. A standard PCA showed consistent results.
[7] 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.

Our exploratory PCA results (see Table 1), however, support the idea that economic insecurity includes different dimensions that are differentiated from other aspects captured by the deprivation index. Given 14 dummy variables, three statistically independent factors (we used a Varimax rotation) 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 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 situations of high economic pressure and consumption compression, which endanger the capacity of households to cope with financial demands and satisfy their own needs, which vary according to the socio-economic contexts where they live. While income-based measures show the households' deficit in resources flows or stocks, our index of financial strain looks at consumption/expenditure, and shows the stresses faced by many households in keeping an adequate living standard.

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). Following the recommendation of a European group of experts (European Commission 2008) our index combines together a) at least one financial commitment (arrears) and b) one financial commitment perceived as "heavy" (a burden). 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 *et al.*, 2012; Guio and Marlier, 2013), are still regularly included within currently used multiple deprivation indexes (Eurostat, 2016).

A Confirmatory Factor Analysis was carried out to check the robustness of these findings (see Table 1). 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[8].

[8] Country-level statistical results are available on request.

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

	Comp 1	Comp 2	Comp 3	*Unexplained*
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*
Confirmatory Factor – Goodness of Fit Tests				
Root Mean Square Test				0,054
Comparative Fit Index				0,910
Tucker Lewis Index				0,889
Standardized Root Mean Square Residuals				0,036

Source: EU-SILC panel database: pooling of three rotations from 2007/10 to 2009/12, authors' own elaboration.
Note: loadings less than .2 in absolute value are not shown.

Two theoretical assumptions are therefore confirmed by the 14-items PCA and following confirmatory analysis. First, economic insecurity is a distinct dimension in respect of material deprivation, which is more properly related to the lack of basic durable goods. 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).
To take in account transient poverty (see Section 2.1) we integrated these results with a longitudinal income-based measure of poverty, calculated as number of fluctuations of the household equivalent income below the yearly national poverty line (60% of national median income).
Finally, distinct indexes of these dimensions 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 indexes of insecurity and deprivation

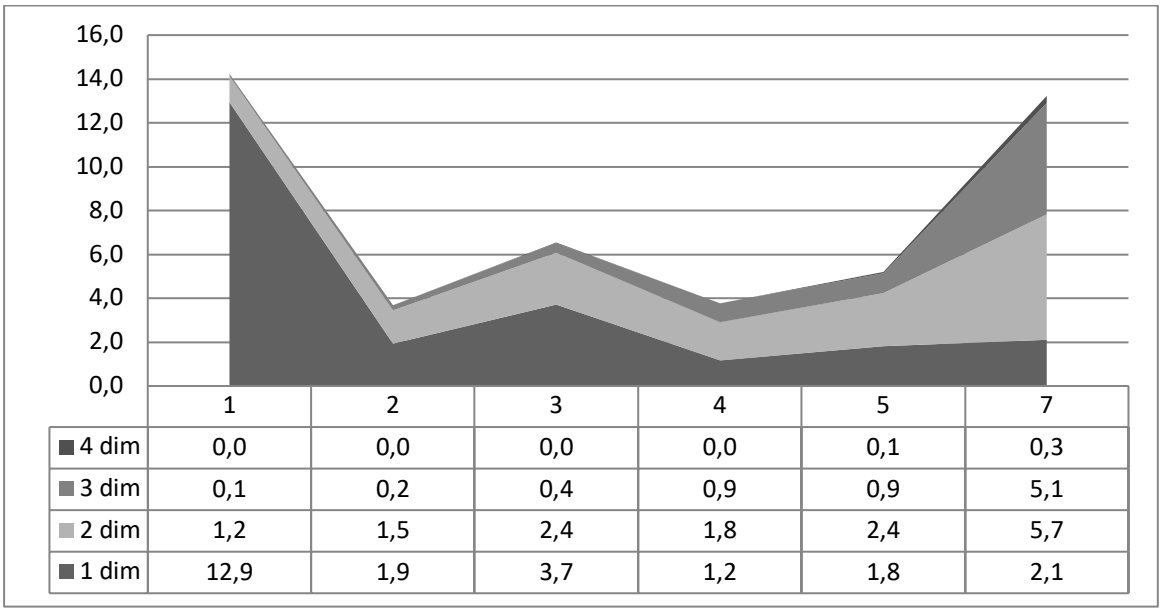
	Financial strain	Over indebtedness	Income poverty	Absolute Deprivation
Perc. total headcount (at least once)	30,9	17,4	28,9	1,0
Average duration (number of spells)	2,2	1,8	2,2	1,4
% average duration (over max. duration)	55,0	45,0	55,0	35,0
Average continuity	3,2	2,5	3,2	1,7

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

Building on these results, we develop the next analysis in three steps. First, we analyze the time dynamic of our indicators and we look at the intersections among them. This allows us to build up a new typology of economic insecurity, which is composed by several dimensions and is clearly distinguished from absolute deprivation or permanent poverty situations. Second, we observe the cross-country differentiation of this typology to investigate whether and to what extent differentiated social and welfare regime contexts may differently affect economic insecurity. Third, we consider how households affected by economic insecurity are distributed across diverse class groups.

4.2 The dynamic of economic insecurity

Figure 1 gives a sensitive representation of the relevance and characteristics of temporary difficulties as opposed to more chronic (maximum four years) situations. Households experiencing at least one critical spell (whatever dimension is considered) are concentrated in two big groups: those only with one spell mostly involving one single dimension, and those facing many spells and multiple difficult 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 dimension.



	1	2	3	4	5	7
4 dim	0,0	0,0	0,0	0,0	0,1	0,3
3 dim	0,1	0,2	0,4	0,9	0,9	5,1
2 dim	1,2	1,5	2,4	1,8	2,4	5,7
1 dim	12,9	1,9	3,7	1,2	1,8	2,1

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

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 critical situations are dynamically described.
In the first group, we have many households experiencing short-term, one-dimensional economic insecurity, but not absolute deprivation or permanent poverty: 9.6% experience *financial strain*, 3.5% face *over-indebtedness*. 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 "transient poverty"). For such households low income apparently coincides with no significant financial or consumption pressure: a situation described as "integrated poverty" (Paugam, 1996; Böhncke, 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 downward 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.
In the second group, a large share of households (17.5%) experiences a prolonged trajectory of multiple hardship, involving frequent fluctuations under the poverty line combined with cumulated financial strain or over-indebtedness. 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 (1.0%) of households is affected by *absolute deprivation* that almost always intersects other hardship dimensions: households here are characterized by multiple difficult situations, where deprivation (considered here as lack of durable goods) is persistently associated with long-standing 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. As expected, *one-dimensional financial strain, over-indebtedness* or *temporary poverty* are mainly 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.
If the headcount is calculated by years in critical situations rather than by number of households (see table 3), the weight of chronically poor/deprived households becomes higher, consistent with previous results by Bane and Ellwood (1986).
Table 3 shows that trajectories characterized by long-term multiple hardship count for 52.9% of total years even though they involve only 28.3% of households. On the other hand, 30.5% of households experiencing a transitory (only one spell) economic insecurity accounts for just 8.1% of total years. We have therefore a high concentration of difficult spells in a relatively limited number of households on the one hand, and a low diffusion of difficult spells 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 difficult situations for a very limited amount of time, over the four-year period examined here.

Table 3. Headcount statistics for different critical situations.

	Short-term one-dimensional economic insecurity			*IV Financial strain + over-indebtedness*	*Long-term multiple hardship*		***Total***
	I Financial strain	*II Over-indebtedness*	*III Transient poverty*		*V Multiple poverty-based hardship*	*VI Absolute deprivation*	
Headcount ratio	9,6	3,5	10,5	4,6	17,5	1,0	46,6
Continuity index	*Column per cent over the number of households in critical situation*						
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
Continuity index	*Column per cent over the total number of critical spells*						
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.

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 difficulty 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 not 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 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 difficult situations than households in the

western part of Europe. In Hungary and Poland critical situations are 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 share of multiple long-term 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 risk of transitory income poverty is higher in countries with lower inequality and higher welfare protection. In these countries, indeed, while shorter average distance from the poverty line increases the likelihood of poverty spells, the high diffusion of minimum income programs enables the temporary poor to quickly recover from their situation. Finally, *financial strain* is higher in Mediterranean countries, France and the UK.

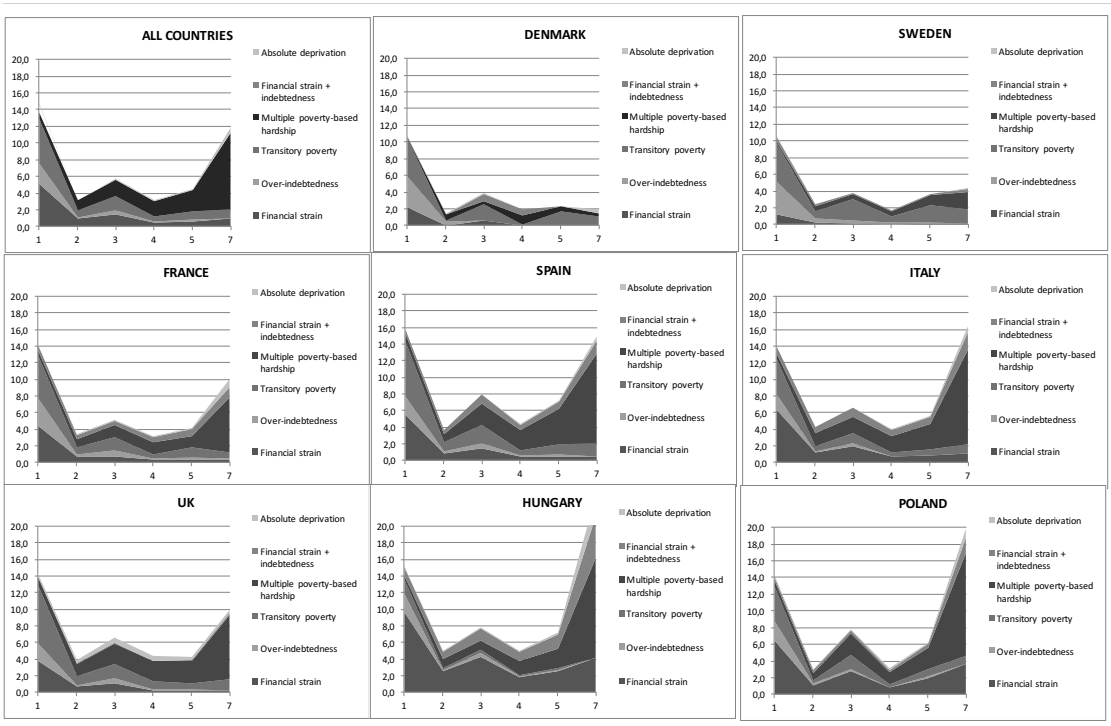


Figure 2. Area plots of headcounts of households in critical situation, by country. Horizontal axis: final headcount weighted by continuity; vertical axis: share of households
Source: EU-SILC panel database: pooling of three rotations from 2007/10 to 2009/12, authors' own elaboration.

In sum, 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.

Table 4. Headcounts of households in critical situation by country.

		Short-term one-dimensional economic insecurity			*IV Financial strain + over-indebtedness*	*Long-term multiple hardship*		
	0 Well-being	*I Financial strain*	*II Over-indebtedness*	*III Transient poverty*		*V Multiple poverty-based hardship*	*VI Absolute deprivation*	*Tot.*
Denmark	77,7	2,8	4,1	9,5	1,7	3,5	0,7	100
Sweden	73,4	1,7	5,3	12,5	1,3	5,5	0,4	100
Spain	46,0	9,2	3,5	13,3	5,1	22,1	0,8	100
France	60,1	6,9	4,7	10,1	4,3	12,6	1,3	100
Italy	49,2	12,1	2,5	8,5	6,2	20,6	0,9	100
Hungary	36,2	24,9	3,2	2,8	11,4	18,5	3,1	100
Poland	45,9	16,8	3,0	8,5	4,0	20,3	1,6	100
UK	56,6	6,2	3,1	13,0	3,0	17,7	0,6	100
Total	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 households in critical situation across income deciles[9]. While *multiple poverty-based hardship, absolute deprivation*, and obviously also *transient poverty* 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 ninth decile. This is clear evidence that economic insecurity mainly related to difficult consumption and high risk of indebtedness spreads to the middle-income groups, while the poorest households are mostly affected by transitory or permanent poverty[10]. Moreover, such result shows that economic insecurity and poverty do not overlap for the same income groups. While poverty is obviously concentrated in the poorest deciles, it is less obvious that lower-middle income groups (between the third and fifth decile of the income distribution) are more likely to face difficulties in their financial sustainability than low–income groups. For these groups, it is not the scarcity of income in itself to be problematic, but expense or debt levels that result to be disproportionate to their disposable income, especially since they are traditionally prone to high consumption and consumption smoothing behaviour.

[9] Income deciles are calculated for the first wave of our panel. The graph therefore shows how different types of households in critical situation have developed over time starting from a specific preliminary income situation.
[10] Country-based analysis (not shown in the paper but available on request) confirmed the same results for all the national contexts here considered with only minor exceptions.

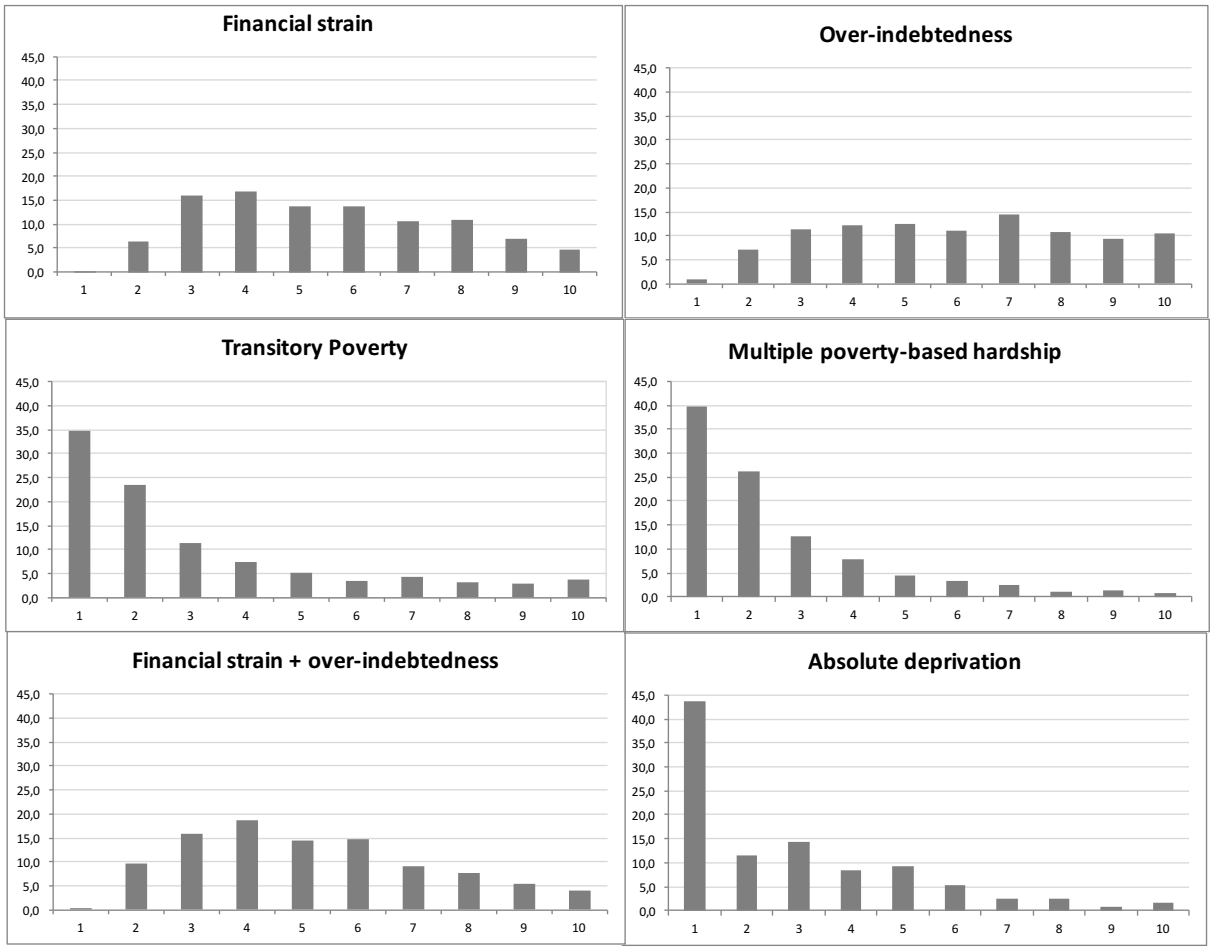


Figure 3. Distribution of households in critical situation by income deciles.
Source: EU-SILC panel database: pooling of three rotations from 2007/10 to 2009/12, authors' own elaboration.

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)[11] to analyze the distribution of different types of critical situations by social class.
Figure 4 shows that households affected by *absolute deprivation* or durable *multiple poverty-based hardship* are more concentrated not only in the working class (categories 1-2) but also in the lower middle class (category 3). Such deprivation is hardly experienced by households in the middle-upper and upper social classes. Dimensions 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[12]. The *financial strain* type cuts

[11] 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 synthetized 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.
[12] 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.

most strongly across classes, and only drops significantly for the highest class. The intermediate class, which combines technicians and public employees with medium to high qualification, experiences substantial *financial strain* and *over-indebtedness*.

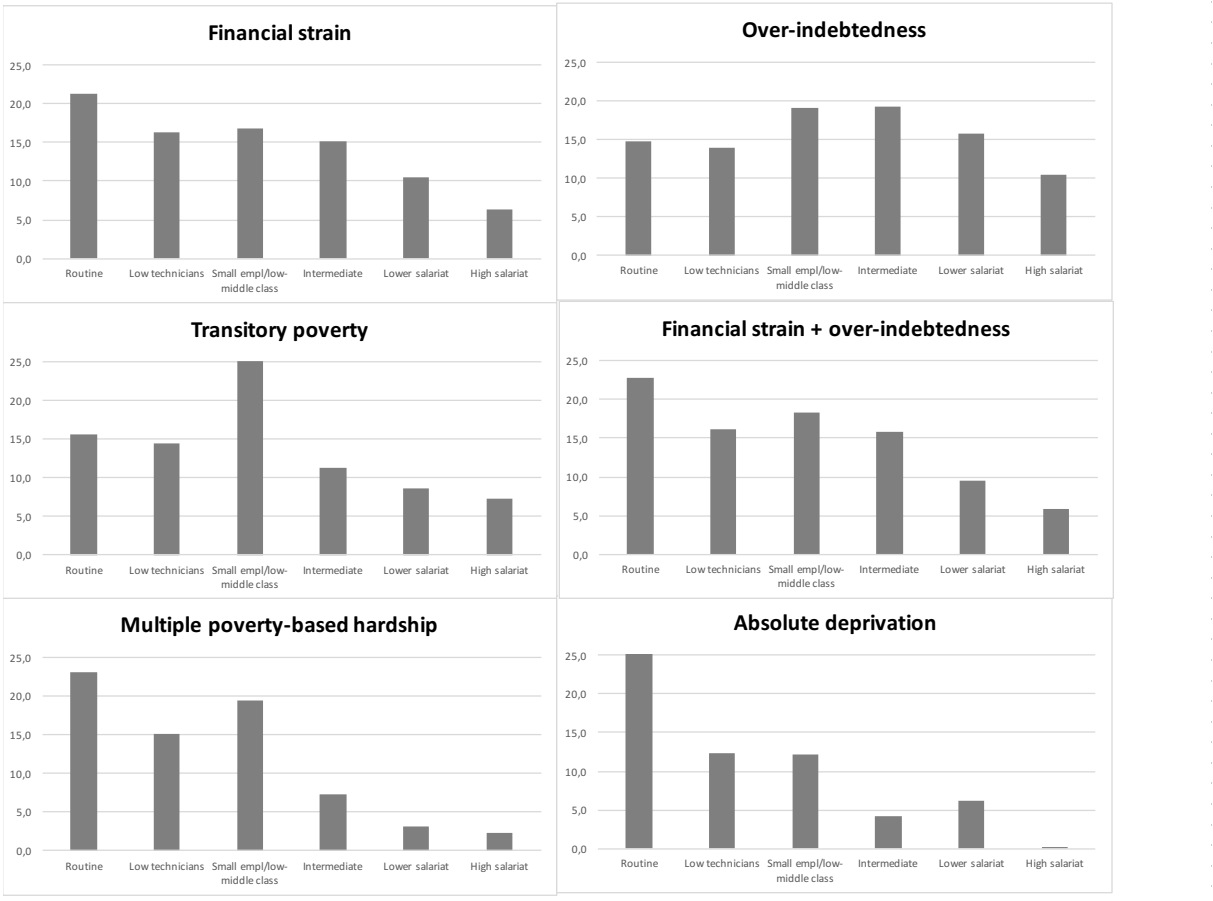


Figure 4. Distribution of households in critical situations by social class (ESEC classification).
Source: EU-SILC panel database: pooling of three rotations from 2007/10 to 2009/12, authors' own elaboration.

Looking in detail at middle class groups (categories 3-4-5), temporary *financial strain* and *over-indebtedness* are the highest and most encompassing aspects of economic insecurity. The high concentration of such indexes in all the middle-class groups gives an idea of to what extent, in current European societies, consumption compression and inability to pay debts endanger the financial sustainability of a relevant part of the middle class, including high-skilled professionals and managers that are part of the "Lower salariat" category. For middle-upper class people with higher qualifications, sustainability problems mean a large discrepancy between high consumption associated to their life-style and their social reputation on the one hand, and the relative scarcity or instability of material resources that are necessary to sustain that social status. For them, economic insecurity basically means a risk of "relative deprivation" (Frank, 2007), a significant lack of resources to sustain a life-style in accordance with their social identity.
In the lower-middle class group, instead, critical financial sustainability does come together with higher level of transitory poverty. This is the situation characteristic of the "petty bourgeoisie" mostly represented in the "Small employer/low middle class" class. This social group (composed by shop-owners, small entrepreneurs, self-employed technicians, craft workers, etc.) is traditionally characterized by relatively low education and consumption levels, and relatively high income. The self-employed, however, has been one of the social categories mostly hit in

recent years due to the huge crisis of small-size enterprises. In this case, there is therefore a clear functional link between high poverty risks and financial difficulties compressing consumption and exposing to over-indebtedness.

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 Jantti (2013), Western *et al*. (2012), and Whelan *et al*. (2015a), among others, we develop a synthetic approach to economic insecurity that incorporates multiple dimensions of short-term vulnerability and a dynamic perspective. 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 distinct types of insecurity, and that these aspects are clearly separate from a measure of absolute deprivation. Using this categorization, we calculate dynamic headcounts of households in critical situation, 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 insecurity 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 patters 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. Short-term insecurity may have different impacts on people depending on the role played by collective as well individual buffers: for some groups it could be a transitory experience with no long-term consequences, while more fragile groups could end up entrapped in a sort of permanent, recurrent fluctuation. In this sense, 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.

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