



The dimension, nature and distribution of economic insecurity in European countries: A multidimensional approach



Olga Cantó^{a,*}, Carmelo García-Pérez^b, Marina Romaguera-de-la-Cruz^a

^a Universidad de Alcalá & EQUALITAS, Departamento de Economía, Facultad de CC. Económicas, Empresariales y Turismo, Universidad de Alcalá, Plaza de la Victoria, 2, 28802 Alcalá de Henares, Madrid, Spain

^b Universidad de Alcalá, Departamento de Economía, Facultad de CC. Económicas, Empresariales y Turismo, Universidad de Alcalá, Plaza de la Victoria, 2, 28802 Alcalá de Henares, Madrid, Spain

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ABSTRACT

Economic insecurity is a key well-being outcome because the anticipation of future economic distress reveals itself as a true threat to current well-being. Insecurity has been shown to affect quality of life and to change an individual's consumption, fertility, labor supply and even political support decisions to mitigate risk. This paper provides evidence on the dimension, nature and distribution of economic insecurity for 27 European countries during a whole decade by using a multidimensional individual approach that considers both objective and subjective indicators. The young, the less educated and the unemployed living in households with dependent children have significantly higher levels of economic insecurity everywhere. However, insecurity affects the population in the middle class only in some countries but not in others, and the level of insecurity in liberal regimes is more linked to large income losses than elsewhere. The role of objective versus subjective dimensions is larger in post-transition Eastern European regimes than in long-standing capitalist countries.

1. Introduction

The Great Recession caused an increase in inequality, poverty, and material deprivation in several European countries and highlighted the importance of another dimension of well-being: economic insecurity. Although there is no consensus on a definition of insecurity in the relevant literature, this phenomenon can be generally understood as the anxiety or stress that individuals feel when they anticipate future economic hazards from which it would be difficult to recover (Bossert and D'Ambrosio, 2013, 2016; D'Ambrosio and Rohde, 2014; Hacker et al., 2010; Osberg, 1998; Osberg and Sharpe, 2002, 2005; Rohde et al., 2014, 2015; Rohde and Tang, 2018). Research on economic insecurity has been growing in recent years, as the anticipation of future economic distress reveals itself as a threat to current well-being. This decrease in individuals' quality of life may affect many spheres because their behavior will be modified to mitigate the current risk, for instance, by reducing private spending (Benito, 2006; Bowman, 2013), postponing fertility and altering labor market decisions (Fiori et al., 2013; Mansour, 2018), decreasing investment in children's education (Boarini and Osberg, 2014; Stiglitz et al., 2009), or increasing the political support for right-wing parties (Bossert et al., 2020). Economic insecurity may also lead to a worsening of physical and mental health (Modena et al., 2014; Smith et al., 2009; Staudigel, 2016; Rohde et al., 2016, 2017; Watson, 2018). Thus, the effect of this phenomenon could transcend from the individual to

* Corresponding author.

E-mail addresses: olga.canto@uah.es (O. Cantó), carmelo.garcia@uah.es (C. García-Pérez), marina.romaguera@uah.es (M. Romaguera-de-la-Cruz).

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the macroeconomic level and political sphere.

So far, comparative analyses on economic insecurity are scarce and based either on multidimensional approaches that use aggregate indices on different insecurity dimensions (Berloff and Modena, 2014; Osberg and Sharpe, 2005, 2014) or are essentially unidimensional when considering individuals or households (D'Ambrosio and Rohde, 2014; Nichols and Rehm, 2014; Rohde et al., 2014). Most often, approaches to the measurement of insecurity are based only on subjective measures linked to employment or job insecurity (Probst et al., 2018; Sverke et al., 2006) and do not consider other individual objective risks. Indeed, comparative approaches to individual insecurity usually focus on employment or job security and avoid economic insecurity as a comprehensive phenomenon.

The main basis for the development of strong welfare regimes in many European countries and the United States (US) during the last century was the necessity to reduce both the objective and subjective perceptions of insecurity for post-war populations that frequently suffered from unemployment, low wages, retirement, and other life-cycle or business-cycle episodes. As Ranci et al. (2017) underline, the spread of economic insecurity through the middle class in the US in the last decade (Frank, 2013; Hacker, 2008) is a threat to this post-war consensus on the role of the welfare state. Unfortunately, the evidence on the level, extent, and distribution of economic insecurity in European societies is scarce. Ranci et al. (2017) seem to support the idea that insecurity in Europe is experienced by the poor, middle class, and across diverse welfare regimes. However, these authors base their analysis on a concept nearer to economic strain—financial strain, over-indebtedness, and material deprivation—which is related more to income volatility and chronic poverty than to a broad measure of insecurity including objective and subjective dimensions.

To provide a comprehensive measure of economic insecurity that provides insights into the demographic and socioeconomic characteristics of the most insecure individuals in society, Romaguera-de-la-Cruz (2019) underlines the advantages of using a multidimensional individual economic insecurity index in the European context. She follows Rohde et al.'s (2015) proposal on insecurity dimensions for Australian data and considers both subjective and objective dimensions, and past experiences and predictions. In this vein, she proposes adapting Rohde et al.'s (2015) methodology to measure individual insecurity in Europe in a multidimensional manner, using longitudinal data from the European Union Statistics of Income and Living Conditions (EU-SILC). This approach adapts the counting method to the economic insecurity field, allowing for the study of both incidence and intensity in one indicator and its decomposition by dimensions or subpopulations.

To proxy the objective hazards of individuals, we consider large income drops from one year to another, unemployment risk, and a probability of extreme expenditure distress. Additionally, subjective indicators of economic insecurity are based on a household's inability to face unexpected expenses, a measure of financial dissatisfaction and an indicator of changes in the ability to go on vacation. Subsequently, we aggregate these simple indicators by using a counting approach (Atkinson, 2003; Alkire and Foster, 2011) traditionally used in multidimensional poverty analysis and useful in measuring economic insecurity (Bucks, 2011) and other phenomena, such as multidimensional affluence (Pechl and Pestel, 2013a, 2013b) or labor precariousness (García-Pérez et al., 2017). We consider this method to be comprehensive, and it has a simple implementation with several advantages. First, we can compute a series of aggregate indicators that facilitate the analysis of insecurity in time and compare insecurity levels and their nature between regions, by considering both incidence and intensity in a single measure by using an economic insecurity adjusted rate, M_{EI} . Second, compared with other possible aggregation methods, this method is generally more robust to how we define dimensions and to the presence of outliers.

This multidimensional individual perspective enables us to identify the most insecure subgroups, the major source of insecurity for the population, and the discrepancy between perceptions and objective indicators in each of the welfare-state clusters considered, allowing us to better understand the phenomenon to guide social policy design to ameliorate insecurity in Europe. Furthermore, we analyze the distribution of insecurity by income decile and the relative importance of each dimension according to the individual's position on the income ladder in a welfare-state regime.

This paper aims to contribute to the literature on comparative analysis of well-being outcomes by welfare-state regimes that has focused only on impacts on income inequality and poverty and has not provided sufficient evidence on the dimension and nature of individual economic insecurity in developed countries with different welfare regimes. Our first hypothesis is that in line with the United States, the incidence of economic insecurity affects European middle classes, as recent papers have shown by using a proxy for economic insecurity that focuses on income volatility and economic strain. We check whether this result is independent of the measure used to proxy economic insecurity and has a more general basis than others while intimately linked to some insecurity's key dimensions. For that purpose, we use a comprehensive measure of insecurity that includes subjective and objective dimensions, past experiences, and risk predictions and is dimension decomposable.

Nevertheless, even if we confirm that economic insecurity affects European middle classes, there are probably significant differences by country that could be essentially linked to the characteristics of the population, to those of the labor market, or to those of the welfare-state regime. Our second hypothesis is that the impact of economic insecurity on middle classes in the last decade is more similar for countries within the same welfare-state regime than for countries in a different welfare-state regime and that the level and contribution of different insecurity dimensions to total insecurity is also diverse by regime.

The empirical novelty of our study is our construction of a comprehensive decomposable measure of economic insecurity for 27 European countries grouped into five welfare-state regime clusters. The decomposability property both in insecurity dimensions and in population subgroups allows us to provide a more general discussion on the extent and distribution of insecurity in different countries and understand in detail the nature of changes in individual levels of insecurity by identifying the role of each dimension. Moreover, we make all our calculations using largely comparable and readily available data for Europe so that further research can be easily compared with ours.

The paper is structured as follows: Section 2 presents a review of the results of comparative research on economic insecurity, and

Section 3 defines the methodology to construct our insecurity dimensions and an insecurity multidimensional index. Section 4 describes the data, presents a brief analysis of the evolution of economic key variables, and discusses our main results. The last section concludes.

2. Background

Using aggregate multidimensional measures of economic insecurity, Osberg and Sharpe (2002, 2005, 2014) have measured the levels of economic security in 14 OECD countries within their well-being index (IEWB, Index of Economic Well-Being). Their results show that Nordic countries (Denmark and Sweden) have the lowest levels of insecurity and that the United States, Spain, and Canada are the most insecure of that group. In addition, these authors find that economic security (linked to security from unemployment, illness, single-parent poverty, and old-age poverty) has had a generally increasing trend from the 1980s until 2005 in most countries, and since the last recession, there are some worrying falling trends. Security levels have decreased in two Nordic countries, Denmark and Sweden; a Central European country, the Netherlands; and two Mediterranean countries, Italy and Spain. Denmark and Sweden have registered high levels of security for decades; thus, these recent reductions continue to preserve their high positions in the general ranking. However, this case is different for Mediterranean countries. Spain, for instance, with a relatively low security level since the 1980s has experienced small but persistent reductions of security until 2000 (3.5% from 1980 until 2000) and then a large reduction from 2007 until 2013 (a 15% decrease). In general, this negative trend is strongly linked to the large decrease in employment security and to some decrease in security from single-parent poverty, cushioned by some increase in the security of old-age poverty.

Unfortunately, an aggregate measure of security for each society has strong limitations when identifying the socioeconomic or demographic characteristics of the most insecure populations and analyzing the contribution of different dimensions to the total security index. To improve this, Nichols and Rehm (2014) undertake a unidimensional individual approach to the study of income risk by using gross and net income as a reference variable and, in line with aggregate multidimensional measures, find that Nordic countries have the lowest levels of economic insecurity and that Italy, Spain, France, and Germany have the highest levels of insecurity when considering gross incomes. As we expected, the United States has the most inefficient tax-benefit system in reducing insecurity, because this country has a lower level of security when considering household's net income. In a similar pattern, Rohde, Tang and Rao (2014) analyze insecurity levels by using downward income instability in Britain, the United States, and Germany and demonstrate that insecurity levels based on pre-government incomes are highest in Britain and lowest in Germany, and results for post-government incomes are highest in the United States. Given that insecurity estimates based upon pre-government incomes are heavily concentrated at the lower end of the distribution, they find that some regimes are more effective at smoothing the income streams of these households. Thus, despite austerity and all the pressures to which European welfare states are exposed, regime differences in economic insecurity remain resilient.

Notably, other unidimensional studies of insecurity have reached different conclusions. For example, D'Ambrosio and Rohde (2014), who use information on changes in household wealth to measure insecurity, that is, by focusing on wealth as a buffer stock, find that US households have a higher level of economic security, on average, compared with Italian households because they own a larger stock of financial assets; consequently, they find that this has also meant that the large decrease in assets' prices during the last economic crisis had a greater impact on US households than on Italian households. That is, low asset prices had a much larger impact on insecurity for individuals in the lowest tail of the US wealth distribution than for those in the lowest tail of the Italian wealth distribution. Clearly, in this analysis, the role of the public contributory pension system in Italy is omitted, which reduces the acquisition of wealth as a buffer stock during the employment years to then cover retirement, and is a key issue.

Consequently, the major conclusions of unidimensional approaches on the level and trend of economic insecurity are highly conditioned to the dimension selected to measure insecurity, which suggests that a multidimensional approach could be advantageous. Indeed, the multidimensional nature of well-being has been widely emphasized by fuzzy sets approaches. These approaches have made valuable contributions to the efficient and stable measurement of poverty and deprivation in a variety of countries. These phenomena have been conceived as a continuous variable, for which individuals in the population have different degrees of, rather than an attribute that is simply present or absent (Betti et al., 2015; Verma et al., 2017). Moreover, comparative analysis of economic insecurity using multidimensional individual indices is scarce, mainly because of the absence of comparable datasets with individualized information on the relevant dimensions that potentially contribute to it. This paper contributes to fill this gap by presenting a comparative study of economic insecurity for 27 European countries clustered in five welfare-state regimes.

Our analysis searches for significant differences in the level, evolution, and distribution of economic insecurity between European welfare regimes during the Great Recession and the subsequent economic recovery that had a critical macroeconomic impact (with large deficits and persistent debt crisis). We classify our 27 countries into five welfare regime clusters to capture the diversity of institutional settings on the basis of the Amable (2003) models of capitalism and by considering the more traditional classification of welfare systems by Esping-Andersen (1990).¹ Our groups are liberal welfare-state regimes (Ireland and the United Kingdom); corporatist regimes (Austria, Belgium, Czech Republic, France, Luxembourg, the Netherlands, Slovakia, and Slovenia); Mediterranean regimes (Greece, Italy, Portugal, and Spain); social-democratic regimes (Denmark, Finland, Iceland, Norway, and Sweden); and Eastern European regimes (Bulgaria, Croatia, Estonia, Hungary, Latvia, Lithuania, Poland, and Romania).

¹ We exclude three countries (Cyprus, Malta and Serbia), due to their limited population and their small sample size in EU-SILC. All results included in this paper are also available by country upon request.

The basis of the classification is that liberal regimes are based in a limited state intervention (often relatively low) with means-tested benefits that transfer risk coverage to individuals. These regimes rely on active measures aiming to improve the employability of the unemployed and have weak trade unions and relatively large wage disparities. In general, the redistributive role of liberal regimes is more equilibrated between generations because of the intensive use of non-contributory and means-tested benefits and a more limited use of contributory benefits that favor younger generations with limited employment records and low monthly wages. In turn, corporatist, continental, or Bismarckian welfare-state regimes are designed on the basic principle of covering risks through employment by relying on insurance-based benefits and old-age pensions, and the influence of unions remains relatively strong (Kretsos and Livanos., 2016). Within them, we can distinguish Mediterranean countries, where the protection role is shared by insurance-based benefits and family aid and where social spending concentrates on old-age pensions, and collective bargaining has traditionally maintained a highly compressed wage structure. Flaquer (2000) notes, “these nations’ commonalities relate to the family as an institution. They are characterized both by very strong family-orientated values associated with a low degree of individualization and by the lack of an explicit family policy as evidenced by a very limited number of family-friendly social provisions.” By contrast, social-democratic regimes are characterized by the highest level of social protection with a rather universal welfare provision that transfers risk coverage from the individuals to the state, active policies for the reduction of familial determinants of well-being, and effective institutional cooperation promoting adequate individual employment matches for the unemployed.

3. Methodology

3.1. Individual economic insecurity index

In this paper, economic insecurity is understood as a multidimensional concept, and this allows us to use the counting approach method (Atkinson, 2003; Alkire and Foster, 2011) to produce a composite indicator of insecurity as proposed in Bucks (2011) and Romaguera-de-la-Cruz (2019), in a similar methodology to that in Peichl and Pestel (2013a, 2013b) for the measurement of multidimensional affluence and by García-Pérez et al. (2017) to quantify labor precariousness. Thereby, we consider the joint distribution of a series of dimensions in which we believe insecurity reveals itself, a strand different from the unidimensional analyses of economic insecurity (D’Ambrosio and Rohde, 2014; Nichols and Rehm, 2014; Rohde et al., 2014) or those that focus on the marginal distribution of certain indicators (Ranci et al., 2017). Other options to aggregate dimensions different from the counting approach are latent variables techniques such as PCA. The main reason we use a counting technique is that the results have a direct, simple economic interpretation. The counting approach has other advantages, for example, it is less affected by outliers and the possibility of measuring the incidence and the intensity of the phenomenon separately. To better build our case, we provide a comparable set of results by using PCA (also using percentile ranks as a transformation of dimensions to eliminate outliers) in the Appendix (Table A6 and Figs. A1 and A2).

We compute the economic insecurity index proposed in Romaguera-de-la-Cruz (2019) by using Rohde et al.’s (2015) proposal on key insecurity dimensions. This index adopts a mixed strategy between subjective and objective indicators and includes past experiences and predictions of certain risks. The EU-SILC dataset does not contain individuals’ appreciations regarding their future economic situations; thus, we proxy subjective insecurity by (a) *a household’s incapacity to face unexpected expenses*; (b) *a household’s financial dissatisfaction*, as a measure of discrepancy between disposable income and the lowest annual necessary income, assigning a value 0 to satisfied individuals; and (c) *changes in the ability to go on vacation*, because this is the first expenditure that individuals reduce when anticipating an economic disorder (Deutsch et al., 2014).² This indicator is a dichotomous variable that takes the value 1 if the household is unable to afford one week away from home within one year (t), and they reported to be able to do so the previous year ($t-1$).

The index also includes several objective measures of economic insecurity. First, it considers (d) *income drops* by using Hacker et al. (2010, 2014). That is, insecurity in this dimension means that the individual has experienced a large income drop (equal to or over 25% of household disposable income) and current household income is below a proxy for permanent income (understood as the mean income of all observations in our panel data). As economic insecurity reduces current well-being by anticipating future economic distress, our index includes probabilities of suffering certain hazards, which could compromise an individual’s financial situation. The index considers (e) *unemployment risk* for active individuals in the household through a probit estimation with lagged explanatory variables, accounting for both the risk of not finding a job or losing the current job.³ In addition, to account for difficulties in consumption of basic needs beyond large downward income losses, our economic insecurity index includes a (f) *probability of extreme expenditure distress*, calculated with an ordered probit model at the household level, in which the dependent variable is an indicator from 0 to 3, counting a series of arrears.⁴ This household’s probability of extreme consumption distress is obtained by summing up the probability of experiencing two or three of these overdue payments, and it is imputed to each household member.

After selecting the dimensions of economic insecurity, a specific threshold must be established to consider that an individual lacks

² For further information on the definition of subjective and objective dimensions, see Romaguera-de-la-Cruz (2019).

³ Once this unemployment probability is obtained, a household unemployment risk is imputed to all inactive members. This household unemployment risk is computed as a weighted average between the probabilities of active individuals, giving more weight to those individuals with a higher market income.

⁴ Arrears on mortgage or rental payments, arrears on utility bills and arrears on hire purchase instalments or other loan payments.

security in a dimension when situated below it. Thus, if X_{ij} is the observation of individual i in dimension j with $i = 1, \dots, N$ and $j = 1, \dots, D$ and Z_j is the threshold for dimension j , individual i is insecure in dimension j if $X_{ij} < Z_j$. For the specific case of dichotomous variables, an individual lacks security in a given dimension if the individual fulfills a certain condition (see Table A1 for detailed information on the definition and thresholds of dimensions). Once single indicators for each dimension are available, given w_j as the weights, we can construct an individual indicator EI_i that counts the number of weighted dimensions in which an individual lacks security:

$$EI_i = \sum_{j=1}^D w_j I_{ij} \tag{1}$$

where I_{ij} is a variable that takes the value 1 if the individual i lacks security in the dimension j and 0 otherwise. Each dimension j is weighted by w_j , the relative proportion of the population that does not lack security in that dimension, giving more importance to less frequent dimensions in a reference population. This relative perspective allows us to adapt our economic insecurity index to a given society, because the relevance of each dimension may differ depending on national distributions.

The identification of insecure individuals from a multidimensional perspective requires the establishment of a second threshold (k) so that an individual i is considered multidimensionally insecure if $EI_i \geq k$. In practice, it is possible to use different multidimensional thresholds that go from the union criteria—considering an individual as insecure if he lacks security in at least one dimension ($k \geq \min\{w_1, \dots, w_D\}$)—to the intersection criteria: an individual must lack security in all indicators ($k = D$). In this research, we use an intermediate approach: An individual is economically insecure when he is not secure at least in 50% of the sum of the weighted dimensions (in this case, $k \geq 3$) (Table A2).

3.2. Aggregate subgroup-decomposable economic insecurity indices

From an aggregate perspective, we summarize the information on economic insecurity in a country or welfare regime by one scalar by using a subgroup-decomposable index. First, we measure the *incidence* of insecurity in a given population by using the multidimensional insecurity rate (H_{EI}), calculated as the number of people classified as economically insecure (q_{EI}), and thus above the threshold k , divided by the total population (N). Second, we report on the *intensity* of economic insecurity by using $\mu_{EI}^{q_{EI}}$, namely, the mean value of the variable EI_i among the economically insecure, and its standardized mean A ($\mu_{EI}^{q_{EI}}$ divided by the number of dimensions). Moreover, we calculate the *economic insecurity adjusted rate* (M_{EI}), an adequate social measure of economic insecurity that considers both the incidence and the intensity of the phenomenon:

$$M_{EI} = \frac{q_{EI}}{N} \frac{\mu_{EI}^{q_{EI}}}{D} = H_{EI}A \tag{2}$$

A relevant characteristic of M_{EI} is that it is decomposable by dimensions and by subgroups of a population.⁵ The decomposition into dimensions allows us to express the adjusted multidimensional insecurity rate as

$$M_{EI} = \sum_{j=1}^D \frac{w_j P_j}{D} \tag{3}$$

where P_j is the proportion of multidimensional insecure people that lack security in dimension j within the total population and D is the total number of dimensions ($D = 6$). We consider the country distribution of insecurity dimensions; thus, we use inverse frequency weights w_j to construct aggregate indicators of economic insecurity.

Additionally, given T subpopulations, we express M_{EI} as a weighted sum of the adjusted multidimensional insecurity rates of each subgroup M_{EIh} :

$$M_{EI} = \sum_{h=1}^T \frac{n_h}{n} M_{EIh} \tag{4}$$

where n_h is the size of subpopulation h and M_{EIh} is the adjusted multidimensional insecurity rate of the corresponding subpopulation h . In this case, a large contribution to the overall insecurity of a certain subgroup can be driven by its huge size and not necessarily by a relevant level of insecurity. Thus, only those individuals in subgroups with a contribution to total insecurity above their population weight will have substantial economic insecurity that policymakers should attempt to mitigate. Therefore, we calculate a differential contribution as the rate between the adjusted multidimensional insecurity rate of subpopulation h and overall insecurity (or relative contribution of subgroup h with respect to its frequency in the population):

$$DC_{EI} = \frac{M_{EIh}}{M_{EI}} \tag{5}$$

In this paper, we first calculate aggregate indicators and relative contributions of each dimension and subgroup by country. Then, results for each welfare regime are calculated as a population-weighted average of country indicators, giving more importance to those countries with larger size (Bambra, 2006; Ebbinghaus, 2012; Isakjee, 2017).

Finally, estimating the individual-level probability of being insecure allows us to integrate all previous results into a more

⁵ For more details, see Alkire and Foster (2011).

comprehensive picture and helps us identify the competing drivers of individual insecurity levels. The probability P_{it} that an individual i is insecure at moment t can be expressed as

$$P_{it} = P(y_{it} = 1 | X_{it}, \alpha_C, \gamma_W, \delta_t) = G(\beta X_{it} + \alpha_C + \gamma_W + \delta_t) \quad (6)$$

where y_{it} is a dichotomous variable identifying the economically insecure with a 1 and the secure with a 0, X_{it} are individual socioeconomic and demographic characteristics, α_C and γ_W are country or welfare-state regime fixed effects, and δ_t are time dummies. We estimate the individual-level probability of being insecure by using a logistic regression model.

4. Results

We use information from the longitudinal data of EU-SILC, a standardized survey on income and other demographic and socioeconomic variables at a household and individual level. Because our main purpose is to undertake a comparative analysis of economic insecurity in the European context, we found this dataset to be the most adequate because it gathers homogeneous variables for all countries, enabling sound comparisons between diverse social contexts. To manage attrition bias, the longitudinal EU-SILC survey is designed as a four-year rotational panel, with few exceptions.⁶ We use all available waves in EU-SILC containing information from 27 countries from 2008 to 2016.⁷

Our income variable is real household equivalized disposable income, deflated by the Harmonized Consumer Price Index at constant 2015 prices and adjusted for household size and composition by using the OECD modified scale. We trim the data by eliminating the 1% tails of this income distribution (Cowell and Victoria-Feser, 2006) and discard those individuals remaining in the survey only for a single wave (as we need dynamic indicators). Our final pool of data comprises 2,113,914 individual observations, and all our results are estimated by using sample representativity weights.⁸

Table 1 displays our aggregate indicators of economic insecurity by welfare-state regime for the whole period of analysis. Economic insecurity is most frequent in Mediterranean and Eastern European welfare regimes: 12.5% of the population in the Mediterranean region and 10.5% of those in Eastern Europe suffer from insecurity, whereas this occurs to only half (6.6%) of those living in corporatist countries and to one third (3.4%) of those living in social-democratic countries. Nevertheless, that only a small percentage of the population suffers from economic insecurity does not imply a lower intensity among those who are insecure. Intensity is actually very similar in all regimes —on average, individuals suffer from approximately 3.6 insecurity dimensions—except for Eastern countries, where this intensity is slightly lower. Thus, if we focus on the economic insecurity adjusted rate (M_{EI}) that combines incidence and intensity when comparing the phenomena across welfare-state regimes, the results are almost identical to those when analyzing incidence.⁹

The evolution of insecurity over time also differs by welfare-state regime (Fig. 1). In all corporatist, liberal, and Mediterranean regimes, the Great Recession was associated with an increase in economic insecurity, although the rise was relatively larger among the Mediterranean countries. In this region, individuals suffered from relevant household income losses, and there was a large increase in unemployment rates. These two objective dimensions, along with the implementation of large austerity measures in this region and the relatively small size and low efficacy of the tax-benefit systems in improving disposable incomes, has led to a boost in individual anxiety about future economic distress during the crisis. Nevertheless, economic recovery has pushed these countries' insecurity downward, even if they have not returned to their pre-crisis insecurity levels. By contrast, Eastern European regimes have displayed a steady downward trend in insecurity since 2010, which is probably because of positive GDP growth rates and a consistent drop in unemployment rates; thus, large macroeconomic improvements in the region have helped improve objective insecurity dimensions. Social-democratic countries are the regions that have had low and very stable levels of economic insecurity since 2009, which suggests that this phenomenon is more of a structural issue in this region and is less subject to changes in the business cycle

⁶ For France, the dataset has a nine-year rotating strategy; by contrast, Norway has an eight-year rotating panel. Luxembourg offers a pure panel with no rotation design. However, because we construct dynamic indicators from $t-1$ to t , a different panel design for a country does not significantly affect our analysis.

⁷ All our income variables refer to the previous calendar year, and other information is related to the year of the interview. We pool all waves from the longitudinal EU-SILC dataset containing information from 2008 to 2016 and discard duplicated observations. An individual can only be observed for a maximum of four consecutive waves because of the rotational design of the panel (except for France, Luxembourg, and Norway). Our eight-year window sample comprises a cumulation of waves from various years constructed with the four-wave panel of different individuals corresponding to different interview years.

⁸ Most of our aggregate indicators analyse economic insecurity in an eight-year time window and not in a specific year. Standard errors for countries' results have been computed accordingly by using the personal base weight (RB060) provided by Eurostat and with the Stata command *mpi*. These are calibrated design weights for the first wave and are subsequently adjusted for the inverse probability of response in subsequent waves, thereby taking attrition into account. Our sample is comprehensive and includes all ages of individuals in the population. See Romaguera-de-la-Cruz (2019) for details on how we have used the household as the unit of measurement even if the unit of analysis of interest is the individual. Most of the economic insecurity dimensions are based on household information because we consider that all members have the same living conditions.

⁹ This result may be influenced by the selection of our multidimensional threshold: To be classified as insecure, an individual must lack security at least in 3 of 6 dimensions. Thus, normalized intensity of economic insecurity in this setting must be always above 0.5. To check its robustness, we have calculated the variability of intensity when the multidimensional threshold is smaller (see Appendix Tables A3 and A4). The results show that when the threshold reduces either to 2 or to 1, there is more variability among countries' intensity. However, our main result continues to hold: Incidence is the most relevant difference in economic insecurity among countries.

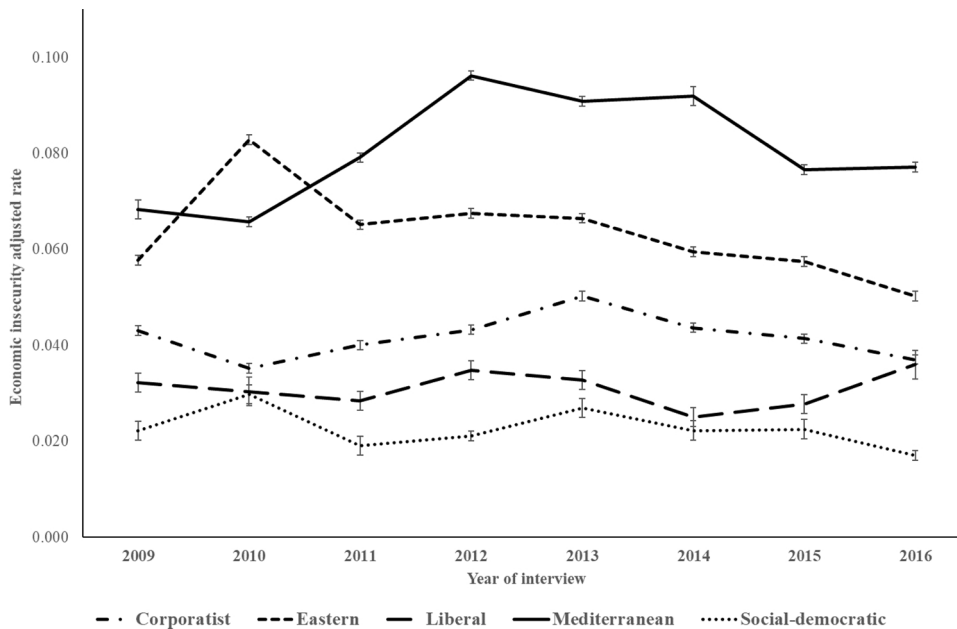
Table 1

Aggregate indicators of economic insecurity.

Source: Authors' calculations based on the longitudinal EU-SILC dataset.

	Corporatist	Eastern Europe	Liberal	Mediterranean	Social-democratic
Incidence (H_{EI})	0.066 (0.001)	0.105 (0.001)	0.048 (0.001)	0.125 (0.001)	0.034 (0.001)
Intensity (A)	0.641 (0.001)	0.612 (0.001)	0.638 (0.002)	0.647 (0.001)	0.650 (0.002)
Economic insecurity adjusted rate (M_{EI})	0.042 (0.001)	0.064 (0.001)	0.031 (0.001)	0.081 (0.001)	0.022 (0.001)

Notes: (1) Results correspond to the eight-year period and should be interpreted as a mean for the whole time window. (2) Standard errors are shown in brackets.

**Fig. 1.** Evolution of economic insecurity adjusted rate (M_{EI}). 2009–2016.

Note: Confidence intervals are presented in vertical lines.

Source: Authors' calculations based on the longitudinal EU-SILC dataset.

than in other country groups.

All these results are largely consistent when using a PCA approach to the aggregation of dimensions instead of a counting approach, as reported in Table A6 and Figs. A1 and A2 in the Appendix. Using the first principal component of dimensions, Eastern Europe is the most insecure region, followed by the Mediterranean, and countries in social-democratic regimes show the highest security. These positions in the ranking are maintained when computing EI_i by using equal weights (Table A6 in the Appendix). By contrast, Mediterranean countries become the most insecure when weighting dimensions by the proportion of the population who do not lack security in a specific indicator (inverse frequency weights), although the difference with Eastern Europe is small. The use of these inverse frequency weights allows us to obtain a relative perspective of economic insecurity, because we allocate greater importance to those dimensions in which a smaller share of the population lacks security, thus introducing objective indicators of subjective feelings of insecurity because people feel worse if a huge proportion of the population has security when they are among those who are insecure (Desai and Shah, 1988; Romaguera-de-la-Cruz, 2019). Therefore, the small differences we find in the rank of regions are not because of the aggregation technique used to calculate our synthetic economic insecurity index but because of the conception of insecurity as a more relative phenomenon.

For an effective public policy design, discovering the major source of insecurity is key. For this purpose, we calculate the relative contribution of each dimension to the overall insecurity adjusted rate for each of our country groups (Table 2).¹⁰ Even if we cannot

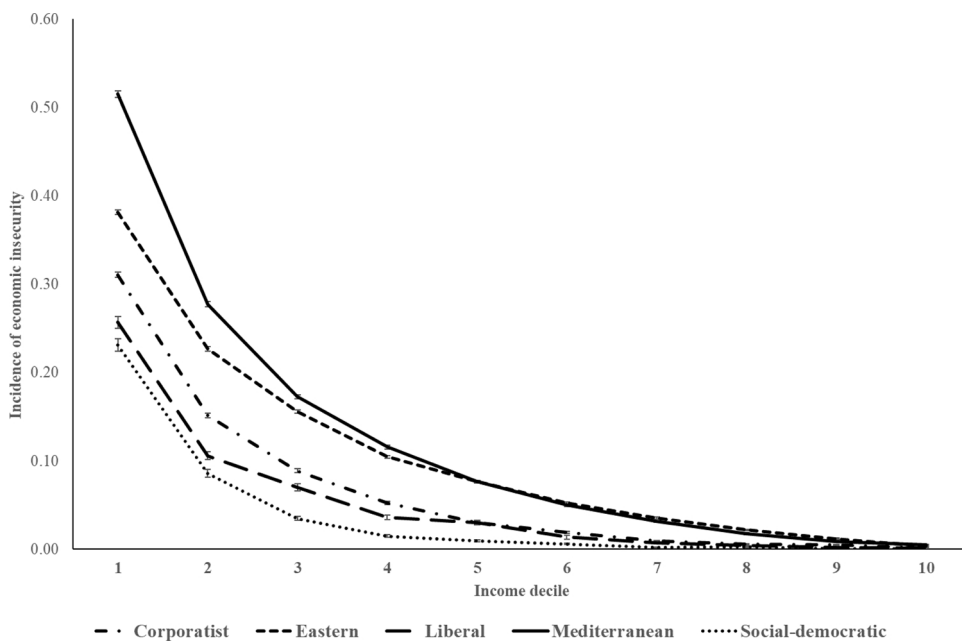
¹⁰ In Table A5 in the Appendix, we report the average correlation matrices of insecurity dimensions by country group. Our six selected indicators seem to capture diverse aspects of economic insecurity, because all correlations are below 0.5. In general, the highest correlation is between the inability to face unexpected expenses (which is a subjective indicator) and the probability of extreme expenditure distress (objective dimension). This relation is strongest i

Table 2Contributions to the economic insecurity adjusted rate (M_{EI}) by dimensions.

Source: Authors' calculations based on the longitudinal EU-SILC dataset.

	Corporatist	Eastern Europe	Liberal	Mediterranean	Social-democratic
Incapacity to face unexpected expenses	0.193 (0.001)	0.158 (0.001)	0.160 (0.002)	0.188 (0.001)	0.201 (0.002)
Financial dissatisfaction	0.201 (0.001)	0.177 (0.000)	0.174 (0.003)	0.182 (0.001)	0.190 (0.003)
Changes in ability to go on vacation	0.102 (0.001)	0.071 (0.001)	0.144 (0.003)	0.101 (0.001)	0.116 (0.004)
Income drops	0.113 (0.001)	0.167 (0.001)	0.171 (0.003)	0.149 (0.001)	0.140 (0.004)
Unemployment risk	0.196 (0.001)	0.217 (0.001)	0.166 (0.003)	0.189 (0.001)	0.185 (0.003)
Probability of extreme expenditure distress	0.195 (0.001)	0.211 (0.001)	0.185 (0.002)	0.192 (0.001)	0.168 (0.002)

Notes: (1) Results correspond to the eight-year period and should be interpreted as a mean for the whole time window. (2) Standard errors are shown in brackets.

**Fig. 2.** Incidence of economic insecurity (H_{EI}) by income decile.

Notes: (1) Results correspond to the eight-year period and should be interpreted as a mean for the whole time window. (2) Confidence intervals are presented in vertical lines.

Source: Authors' calculations based on the longitudinal EU-SILC dataset.

identify one dimension that strongly contributes to insecurity in all regions, some patterns are clear. In general, the relative contribution of subjective versus objective dimensions is well-balanced in all regimes, except for Eastern European countries, where objective dimensions seem to be more relevant by contributing 62.1% to overall insecurity. Particularly, unemployment risk and the probability of extreme expenditure distress have a larger role in Eastern regimes and account for almost half of their overall economic insecurity adjusted rate. In turn, these low well-being levels seem to have undermined an individual's appreciation of insecurity, because subjective indicators show a higher incidence in these societies: 53% of the Eastern European population declare an incapacity to face unexpected expenses, and 45.3% are financially dissatisfied. Therefore, although approximately half the population suffers from these two subjective dimensions, they contribute less to global insecurity, because we consider it more relevant to lack security in those indicators in which most of the population is secure.

Even if Mediterranean and Eastern European countries are the most insecure regions, the pattern of relative contributions to insecurity by dimensions differs. In Mediterranean regimes, four indicators have a similar contribution, and income drops and changes in the ability to go on vacation are less relevant. In this case, insurance-based benefits helping cover short-term income drops are better than in liberal regimes but the lack of low means-tested benefits and active employment measures, may increase the role of unemployment risk and extreme expenditure distress in overall insecurity, also influencing subjective indicators.

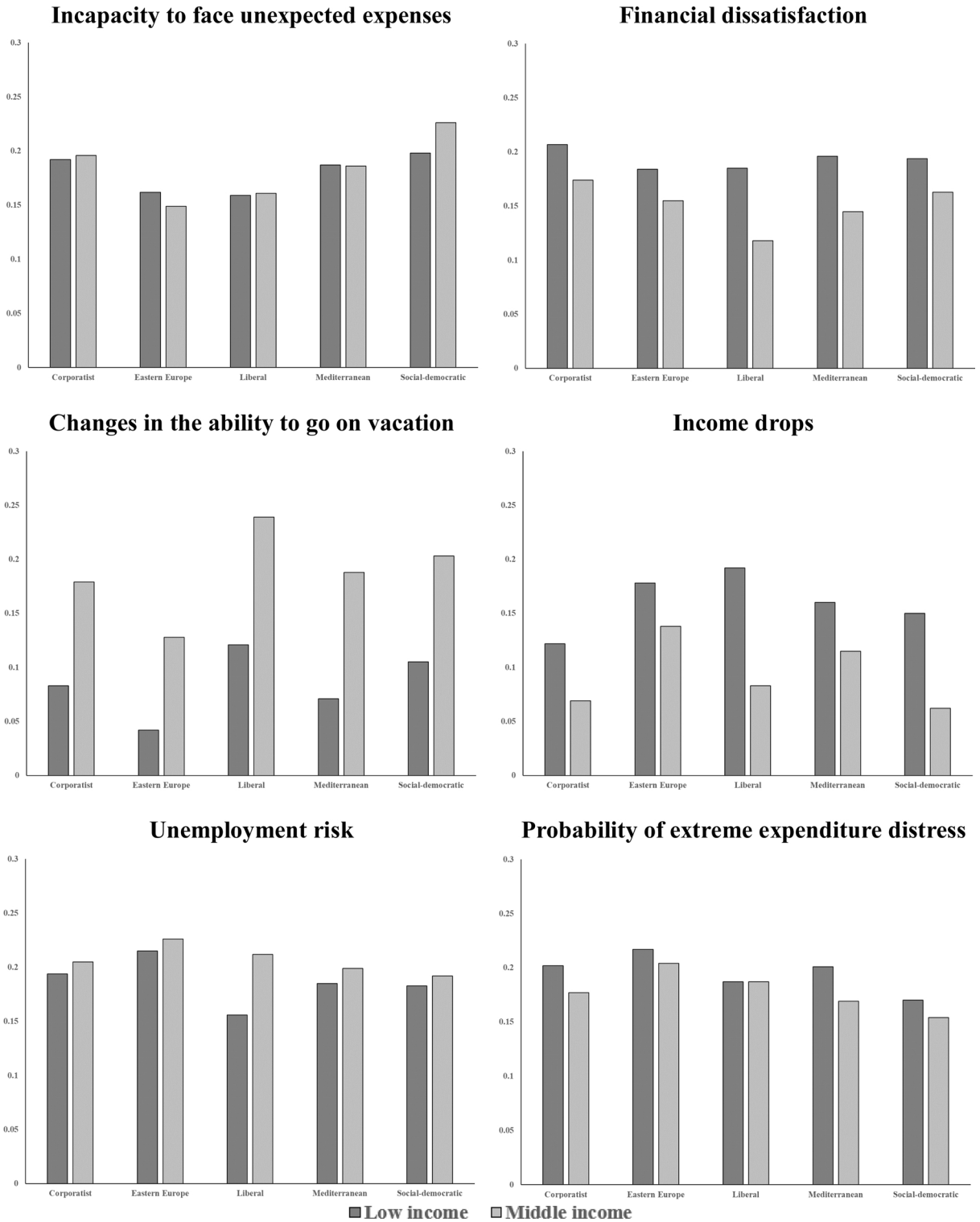


Fig. 3. Contribution of dimensions to the economic insecurity adjusted rate (M_{EI}) by income groups.
 Notes: (1) Results correspond to the eight-year period and should be interpreted as a mean for the whole time window. (2) Standard errors are shown in brackets.
 Source: Authors' calculations based on the longitudinal EU-SILC dataset.

Table 3Differential contribution (DC_{EI}) by socioeconomic characteristics.

Source: Authors' calculations based on the longitudinal EU-SILC dataset.

	Corporatist	Eastern Europe	Liberal	Mediterranean	Social-democratic
Gender					
Female	1.064	1.000	1.039	1.025	1.029
Male	0.935	1.000	0.961	0.975	0.973
Age					
< 16	1.138	1.368	1.240	1.155	0.660
16–25	1.379	1.429	1.665	1.370	1.897
26–35	1.465	1.167	1.151	1.261	1.735
36–45	0.978	1.007	0.963	1.069	0.919
46–60	0.762	0.744	0.667	0.827	0.777
> 60	0.425	0.437	0.358	0.465	0.448
Level of education					
Primary	1.685	1.558	7.231	1.218	0.991
Secondary	1.210	1.151	1.296	1.177	1.243
Tertiary	0.452	0.412	0.607	0.450	0.618
Basic activity status					
Inactive	0.978	0.900	1.018	0.871	1.227
Employed	0.809	0.836	0.791	0.708	0.705
Unemployed	4.502	4.139	4.324	3.303	5.865
Type of household (HH)					
One adult without children	1.541	0.738	1.203	1.063	2.349
Two adults without children	0.672	0.571	0.512	0.692	0.630
Other HH without children	0.632	0.728	0.675	0.806	0.667
One adult with children	2.505	2.031	2.209	1.860	2.096
Two adults with children	0.967	1.269	1.060	1.066	0.578
Other HH with children	1.124	1.346	1.530	1.441	0.600
Property					
Tenant	2.315	2.018	2.285	1.986	2.874
Owner	0.416	0.871	0.383	0.707	0.381

Note: Results correspond to the eight-year period and should be interpreted as a mean for the whole time window.

Large income losses have a relatively higher role for individuals in liberal countries than the unemployment risk contribution does. Individuals in this region suffer more from short-term income losses not well-covered by their welfare system, which focuses on active measures to prevent unemployment. In general, except for liberal regimes, the dimension contributing the least is changes in the ability to go on vacation. This result underlines that this dimension is also related to diverse household consumption lifestyles probably conditioned by the different levels of income per capita between regions and, as it could be expected, affects households at diverse points of the income and wealth distribution in a different manner.

Fig. 2 displays the incidence of economic insecurity by income decile, which allows us to examine the significant differences between regions related to the diverse welfare systems in place. As expected, insecurity decreases as the level of income increases, regardless of the region analyzed. In social-democratic countries, insecurity is relevant for the first and the second income decile and becomes negligible from the fourth decile onward. In this region, economic insecurity appears to have a stronger correlation with poverty, which is related to a larger universality and effectiveness of welfare provision than in other regimes. For corporatist and liberal regimes, insecurity is a critical phenomenon only for those individuals with low and low-middle incomes. Notably, although the configurations of those welfare systems differ, these countries are succeeding in preventing economic insecurity beyond the third decile. Conversely, we observe that in Eastern Europe and Mediterranean regimes, economic insecurity is present in low-income deciles and in middle-income deciles. Compared with other regions, both regions show a higher incidence of economic insecurity until the fourth decile; we must also highlight a relevant group of insecure individuals situated in the middle-income deciles because insecurity is noteworthy until the sixth decile. Moreover, this figure suggests that in Mediterranean and Eastern European countries, even relatively rich individuals are significantly more insecure than other poorer individuals in social-democratic regimes. This result suggests that for several European countries, focusing only on poor income groups when studying low well-being in their societies is insufficient.

The role of dimensions may also differ for individuals in diverse positions of the income distribution. Fig. 3 shows the contribution of dimensions to the economic insecurity adjusted rate of two groups: low-income individuals (including those situated up to the third decile) and middle-income individuals (from the fourth to the sixth decile). The contribution of the incapacity to face unexpected expenses is similar for both income groups, compared with the contribution of financial dissatisfaction, which is more relevant for the insecurity of low-income individuals. These results suggest that the first indicator captures difficulties in managing expenditure emergencies, which can be understood as transitory distress regarding the individual's position in the income distribution. Nevertheless, financial dissatisfaction captures difficulties in obtaining basic needs, a structural problem that affects those with less monetary resources. Additionally, among the subjective dimensions, and as we expected, changes in the ability to go on vacation are more relevant for the middle-income deciles than for the lower deciles. Poor individuals do not cut this expense because probably, they can never afford a vacation. Income drops are more important in the lower tail of the income distribution, although the

Table 4

Estimation of the probability of being insecure: Odds ratios.

Source: Authors' calculations from the longitudinal EU-SILC dataset.

	Total	Total	Corporatist	Eastern Europe	Liberal	Mediterranean	Social-democratic
Gender (male)	0.923*** (0.012)	0.925*** (0.012)	0.867*** (0.026)	0.945*** (0.014)	0.885** (0.044)	0.997 (0.016)	0.899* (0.053)
Age							
< 16	0.914*** (0.021)	0.914*** (0.021)	0.925 (0.050)	0.942** (0.026)	0.934 (0.080)	0.896*** (0.028)	0.571*** (0.054)
16–25	0.858*** (0.021)	0.857*** (0.021)	0.846*** (0.051)	0.964 (0.029)	1.341*** (0.135)	0.828*** (0.025)	1.345*** (0.138)
36–45	0.863*** (0.019)	0.865*** (0.019)	0.769*** (0.041)	0.885*** (0.023)	1.067 (0.094)	0.923*** (0.026)	0.669*** (0.067)
46–60	0.792*** (0.017)	0.790*** (0.017)	0.740*** (0.038)	0.755*** (0.019)	0.989 (0.088)	0.826*** (0.023)	0.598*** (0.055)
> 60	0.463*** (0.013)	0.464*** (0.013)	0.493*** (0.040)	0.427*** (0.015)	0.736** (0.092)	0.457*** (0.017)	0.372*** (0.056)
Level of education							
Secondary	0.682*** (0.014)	0.694*** (0.014)	0.612*** (0.033)	0.769*** (0.022)	0.760* (0.126)	0.720*** (0.017)	0.628* (0.149)
Tertiary	0.284*** (0.008)	0.292*** (0.008)	0.233*** (0.016)	0.319*** (0.011)	0.537*** (0.090)	0.289*** (0.009)	0.351*** (0.085)
Labor activity status							
Inactive	0.909*** (0.019)	0.933*** (0.019)	0.756*** (0.039)	1.076*** (0.028)	0.948 (0.071)	0.971 (0.028)	1.482*** (0.150)
Unemployed	3.822*** (0.076)	3.979*** (0.078)	2.946*** (0.151)	5.509*** (0.154)	3.053*** (0.258)	3.992*** (0.100)	4.494*** (0.507)
Married	0.736*** (0.011)	0.721*** (0.011)	0.666*** (0.024)	0.770*** (0.014)	0.716*** (0.043)	0.823*** (0.016)	0.416*** (0.032)
Bad health status	1.523*** (0.035)	1.494*** (0.034)	1.779*** (0.095)	1.622*** (0.041)	0.930 (0.093)	1.382*** (0.043)	1.677*** (0.206)
Status in employment							
Never worked	1.820*** (0.041)	1.730*** (0.038)	1.785*** (0.111)	1.432*** (0.040)	0.965 (0.084)	2.260*** (0.070)	1.485*** (0.179)
Temporary or no contract	3.575*** (0.067)	3.400*** (0.061)	3.817*** (0.150)	3.591*** (0.080)	1.470*** (0.130)	3.764*** (0.088)	2.347*** (0.193)
Employer	0.955 (0.037)	0.926** (0.035)	0.663*** (0.093)	0.944 (0.054)	1.495* (0.326)	1.027 (0.051)	1.806*** (0.360)
Independent worker	1.673*** (0.034)	1.625*** (0.032)	1.629*** (0.096)	1.881*** (0.049)	1.341*** (0.105)	1.652*** (0.045)	2.452*** (0.325)
Homeowner	0.323*** (0.004)	0.339*** (0.004)	0.237*** (0.008)	0.480*** (0.010)	0.229*** (0.013)	0.376*** (0.006)	0.308*** (0.022)
Number of HH members	1.024*** (0.006)	1.025*** (0.006)	1.011 (0.017)	1.040*** (0.007)	1.060** (0.031)	1.015* (0.008)	0.742*** (0.038)
Number of dependent children	1.229*** (0.011)	1.231*** (0.010)	1.205*** (0.027)	1.294*** (0.013)	1.145*** (0.040)	1.270*** (0.015)	1.598*** (0.095)
Group of country							
Eastern Europe			1.926*** (0.032)				
Liberal			0.676*** (0.020)				
Mediterranean			1.847*** (0.031)				
Social-democratic			0.581*** (0.019)				
Country dummies	Yes	No	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1663711	1663711	491431	562468	85972	404117	119723

Notes: (1) We present odds ratios for logit estimations in which the dependent variable takes the value 1 if the individual is economically insecure and 0 otherwise, computed by the counting approach method with an intermediate threshold. (2) Results correspond to the eight-year period and should be interpreted as a mean for the whole time window. (3) Standard errors are clustered by individual. (4) References to categorical variables are as follows: between 26 and 35 years (age), primary (education), working (basic labor status), not married (marital status), good health (bad health), permanent employee (employment status), and corporatist (country group).

difference between groups is smaller for Mediterranean and Eastern European regimes, which can be related to the lack of significant means-tested policies in their welfare systems. Not much divergence is observed between groups in the relative contribution of unemployment risk and the probability of extreme expenditure distress, although we do observe that the former is more relevant for individuals in the middle class, whereas the latter contributes more to the insecurity of the low-income group.

In countries classified as Mediterranean and Eastern European welfare regimes, the level of protection from insecurity is significantly lower than in countries classified within social-democratic, liberal, and corporatist regimes, in this order. However, this level of protection also depends on individual characteristics such as gender, age, education, labor market status or household structure. [Table 3](#) and [Table 4](#) show that in all welfare regimes, women are more likely to be more insecure than men, except in Mediterranean and to some extent Eastern countries, where the gender differences are small. In general, as it would be expected, insecurity decreases with age, and individuals above 60 are the most secure in all regions. By contrast, the level of insecurity of young individuals aged between 16 and 35 years is the highest, although it is relatively lower in Mediterranean and Eastern European regions. Clearly, the role of family aid in these welfare regimes is relevant: Young individuals who anticipate future economic losses continue cohabiting with their parents or relatives to cope with these expectations. This case differs from social-democratic regimes, where emancipation occurs despite future financial distress.

Our results also underline that countries within a social-democratic regime are likely to prevent child insecurity more effectively than countries in any other welfare-state regime. In general, insecurity for households with children is larger than overall insecurity, especially for single-parent households, although this result is smaller in Mediterranean regimes, highlighting the important role of family aid. For corporatist and social-democratic regimes, where early emancipation is more frequent, adults living alone suffer from more insecurity with respect to the total population than in other regions. The lack of family support and the incapacity to benefit from economies of scale that provide bigger household structures may be a driver of this result. Homeownership also affects economic insecurity: The differential contribution for tenants is above one in all regimes, but it is smaller in those regions where property status is more extended (Mediterranean and Eastern European countries).

Education has a critical role in preventing economic insecurity in all European regions. Although the differential contribution for those individuals with secondary education is low: Only those who reach tertiary education have a lower level of economic insecurity with respect to the whole population. Notably, this is significantly less often the case in liberal regimes, where tertiary education prevents insecurity to a more limited degree than in other regimes.

Unsurprisingly, unemployed individuals show the highest economic insecurity adjusted rate in all regions. Although insecurity among unemployed individuals in Mediterranean countries is high, the differential contribution is relatively lower with respect to other welfare regimes, probably because of the large size of this group caused by the huge loss of employment during the Great Recession (especially in Greece and Spain). In social-democratic regimes where unemployment is less frequent, insecurity is more concentrated among those without employment.

5. Conclusions

In this paper, we have analyzed economic insecurity by welfare-state regime in a comparative perspective by using a counting approach methodology proposed in [Romaguera-de-la-Cruz \(2019\)](#). We use a multidimensional individual index of economic insecurity considering both subjective and objective indicators, and past experiences and predictions of future states. These include the incapacity to face unexpected expenses, a measure of financial dissatisfaction, and changes in the ability to go on vacation as subjective dimensions together with other objective indicators such as large income drops, unemployment risk, and the probability of extreme expenditure distress.

An individual approach to measuring insecurity allows for a detailed comparative analysis of the level and evolution of insecurity in European countries by studying the relationship between insecurity and the level of income, and the contribution of each dimension and different subpopulations to overall insecurity, in several welfare regimes. Our analysis provides a sound comparison of economic insecurity levels and their evolution within a European context by using the EU-SILC dataset. The methodology allows us to identify the most insecure subgroups in the population, the principal sources of insecurity in general and in each region, where to focus public action.

Notably, similar demographic and socioeconomic characteristics imply a relatively higher contribution to general insecurity in all regimes: young individuals, those who have not reached tertiary education, unemployed individuals, and individuals living in households with dependent children. This result calls for broader public programs of support for young, low-educated individuals as a key policy recommendation. Nevertheless, the results show the important role of family aid in Mediterranean and Eastern Europe countries, where individuals who anticipate future economic distress rely on relatives to cope with this expectation. Moreover, that social-democratic regimes are succeeding in preventing insecurity for households with children appears to be related to the universality of their welfare systems. Additionally, homeownership seems to be key everywhere in helping individuals avoid economic insecurity.

The results show that Mediterranean and Eastern European countries are the most insecure regions, and social-democratic countries have the lowest levels of economic insecurity. On average, the economic crisis is associated with an increase in insecurity levels in corporatist, liberal, and Mediterranean regimes while remaining largely stable in social-democratic countries. We also confirm our first hypothesis on the relevant incidence of economic insecurity on European middle classes and find that this result is largely independent of the measure used to proxy economic insecurity and has a more general basis. A key novel result is that this is not the case in all countries: It is only in Eastern European and Mediterranean welfare-state regimes that a relevant group of insecure individuals are placed in intermediate income deciles. This implies that in contrast with social-democratic, corporatist, and liberal regimes, economic insecurity in Eastern European and Mediterranean countries affects a significant part of the middle class.

Nevertheless, regarding our second hypothesis, we confirm that the role of insecurity dimensions on overall insecurity levels differs between welfare-state regimes. In general, the contribution of objective versus subjective dimensions is well-balanced, except for Eastern European countries, where objective dimensions are more relevant. Therefore, the role of objective versus subjective dimensions is larger in post-transition Eastern European regimes than in long-standing capitalist countries. Short-term income losses are relatively more important to liberal regimes, the opposite of the unemployment risk, revealing that their welfare-state systems are

able to avoid insecurity by promoting employment through active employment measures but do not cover some needs because of low means-tested benefits. Changes in the ability to go on vacation are the least relevant indicator for all regions because it affects individuals in middle-income positions with lower economic insecurity levels.

We also find that the contribution of each insecurity dimension to overall insecurity differs by income group. There are no large differences between low- and middle-income individuals when analyzing the role of the incapacity to face unexpected expenses, which is more of a transitory distress in contrast with financial dissatisfaction. Income drops instead contribute more to poor individuals' insecurity, even though the distance between income groups is smaller in Eastern European and Mediterranean regimes, where non-means-tested benefits and contributory pensions play important roles.

Acknowledgments

Olga Cantó and Marina Romaguera-de-la-Cruz acknowledge financial support from Programas Nacionales del Plan Nacional de Investigación Científica, Desarrollo e Innovación Tecnológica I+D+I Ministerio de Economía y Competitividad (Proyecto ECO2016-76506-C4-2-R). Carmelo García-Pérez acknowledges support from H2019/HUM-5793 Research Project (Comunidad de Madrid) and SBPLY/19/180501/000132 Research Project (Comunidad de Castilla-La Mancha) for his research activities.

Appendix

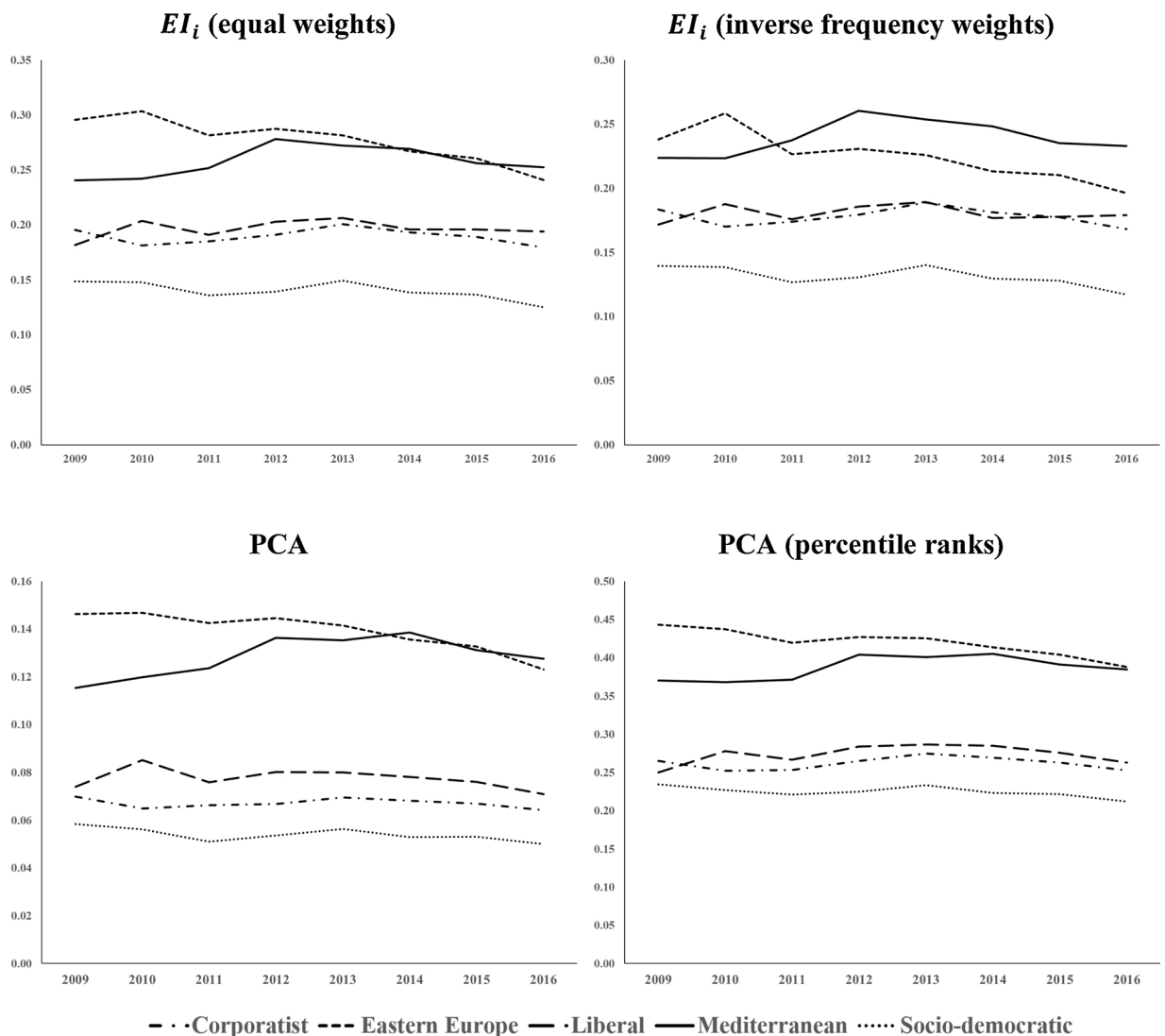


Fig. A1. Evolution of individual economic insecurity by country group.
 Note: Results correspond to the eight-year period and should be interpreted as a mean for the whole time window.
 Source: Authors' calculations based on the longitudinal EU-SILC dataset.

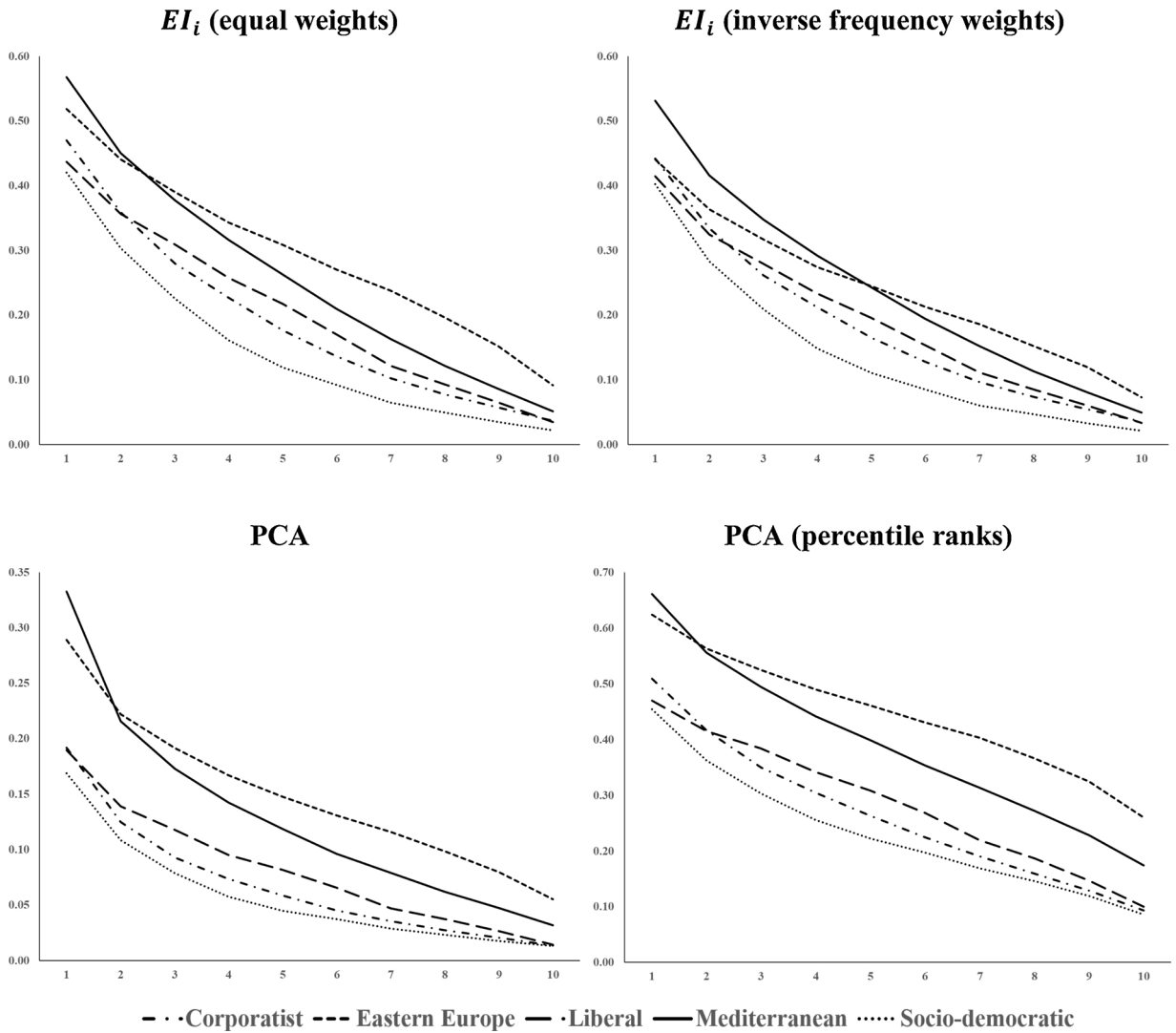


Fig. A2. Distribution of individual economic insecurity by country group.
 Note: Results correspond to the eight-year period and should be interpreted as a mean for the whole time window.
 Source: Authors' calculations based on the longitudinal EU-SILC dataset.

Table A1
 Definition of insecurity dimensions.
 Source: Authors' own elaboration based on the longitudinal EU-SILC dataset.

Indicator	Variable	Description	Threshold
Subjective	D1	Incapacity to face unexpected expenses	Household cannot afford an unexpected required expense and pays through its own resources, meaning not asking for financial help, the account must be debited within the required period, and the situation regarding potential debts is not deteriorated.
	D2	Financial dissatisfaction	Difference between lowest annual income to make ends meet (to pay usual necessary expenses) and current household disposable income in relation to needed income. This indicator has a value of 0 when the difference is negative (disposable income is larger than needed income).
	D3	Changes in ability to go on vacation	Household's incapacity to afford one week away from home in the current period (t), while the household could afford this vacation in the previous period ($t - 1$).
Objective	D4	Income drops	Drop in household equivalized disposable income from one year ($t - 1$) to another (t). This indicator takes a value of 0 if this drop is not at least 25% and current income is not below permanent income.
	D5	Unemployment risk	Probability of unemployment (not finding a job or losing the current one).
	D6	Probability of extreme expenditure or rent, (2) utility bills, (3) hire purchase installments or other loans.	Probability of having at least two arrears in the following household payments: (1) mortgage or rent, (2) utility bills, (3) hire purchase installments or other loans.
			Individual has a probability of unemployment above the society mean. Individual has a probability of extreme expenditure distress above the society mean.

Table A2Contribution of dimensions to the economic insecurity adjusted rate (M_{EI}) by income group.

Source: Authors' calculations based on the longitudinal EU-SILC dataset.

		Corporatist	Eastern Europe	Liberal	Mediterranean	Social-democratic
Incapacity to face unexpected expenses	Low income	0.192 (0.001)	0.162 (0.001)	0.159 (0.002)	0.187 (0.001)	0.198 (0.002)
	Middle income	0.196 (0.001)	0.149 (0.001)	0.161 (0.004)	0.186 (0.001)	0.226 (0.006)
Financial dissatisfaction	Low income	0.207 (0.001)	0.184 (0.000)	0.185 (0.004)	0.196 (0.001)	0.194 (0.003)
	Middle income	0.174 (0.003)	0.155 (0.001)	0.118 (0.007)	0.145 (0.002)	0.163 (0.012)
Changes in ability to go on vacation	Low income	0.083 (0.001)	0.042 (0.001)	0.121 (0.004)	0.071 (0.001)	0.105 (0.004)
	Middle income	0.179 (0.004)	0.128 (0.002)	0.239 (0.007)	0.188 (0.002)	0.203 (0.015)
Income drops	Low income	0.122 (0.001)	0.178 (0.001)	0.192 (0.003)	0.160 (0.001)	0.150 (0.004)
	Middle income	0.069 (0.003)	0.138 (0.002)	0.083 (0.007)	0.115 (0.002)	0.062 (0.011)
Unemployment risk	Low income	0.194 (0.001)	0.215 (0.001)	0.156 (0.003)	0.185 (0.001)	0.183 (0.003)
	Middle income	0.205 (0.003)	0.226 (0.002)	0.212 (0.006)	0.199 (0.002)	0.192 (0.010)
Probability of extreme expenditure distress	Low income	0.202 (0.001)	0.217 (0.001)	0.187 (0.002)	0.201 (0.001)	0.170 (0.002)
	Middle income	0.177 (0.003)	0.204 (0.001)	0.187 (0.005)	0.169 (0.002)	0.154 (0.010)

Notes: (1) Results correspond to the eight-year period and should be interpreted as a mean for the whole time window. (2) Standard errors are shown in brackets.

Table A3Aggregate indicators of economic insecurity ($k = 1$).

Source: Authors' calculations based on the longitudinal EU-SILC dataset.

	Corporatist	Eastern Europe	Liberal	Mediterranean	Social-democratic
Incidence (H_{EI})	0.382 (0.001)	0.595 (0.001)	0.489 (0.002)	0.528 (0.001)	0.288 (0.002)
Intensity (A)	0.391 (0.001)	0.358 (0.001)	0.335 (0.001)	0.408 (0.001)	0.361 (0.001)
Economic insecurity adjusted rate (M_{EI})	0.149 (0.001)	0.213 (0.001)	0.164 (0.001)	0.215 (0.001)	0.104 (0.001)

Notes: (1) Results correspond to the eight-year period and should be interpreted as a mean for the whole time window. (2) Standard errors are shown in brackets.

Table A4Aggregate indicators of economic insecurity ($k = 2$).

Source: Authors' calculations based on the longitudinal EU-SILC dataset.

	Corporatist	Eastern Europe	Liberal	Mediterranean	Social-democratic
Incidence (H_{EI})	0.201 (0.001)	0.292 (0.001)	0.188 (0.002)	0.310 (0.001)	0.118 (0.001)
Intensity (A)	0.500 (0.001)	0.480 (0.001)	0.487 (0.001)	0.513 (0.001)	0.501 (0.002)
Economic insecurity adjusted rate (M_{EI})	0.100 (0.001)	0.139 (0.001)	0.091 (0.001)	0.159 (0.001)	0.059 (0.001)

Notes: (1) Results correspond to the eight-year period and should be interpreted as a mean for the whole time window. (2) Standard errors are shown in brackets.

Table A5

Average correlations of economic insecurity dimensions by country group.

Source: Authors' calculations based on the longitudinal EU-SILC dataset.

Corporatist						
	D1	D2	D3	D4	D5	D6
D1	1					
D2	0.235	1				
D3	0.171	0.056	1			
D4	-0.032	-0.274	-0.033	1		
D5	0.198	0.098	0.023	-0.032	1	
D6	0.437	0.183	0.052	0.003	0.377	1
Eastern Europe						
	D1	D2	D3	D4	D5	D6
D1	1					
D2	0.233	1				
D3	0.021	-0.022	1			
D4	-0.053	-0.259	-0.039	1		
D5	0.142	0.093	-0.024	-0.038	1	
D6	0.261	0.195	-0.03	-0.043	0.334	1
Liberal						
	D1	D2	D3	D4	D5	D6
D1	1					
D2	0.041	1				
D3	0.202	0.029	1			
D4	-0.004	-0.384	-0.046	1		
D5	0.145	0.004	0.009	0.016	1	
D6	0.472	0.029	0.04	0.042	0.308	1
Mediterranean						
	D1	D2	D3	D4	D5	D6
D1	1					
D2	0.278	1				
D3	0.111	0.022	1			
D4	-0.103	-0.411	-0.053	1		
D5	0.211	0.137	-0.005	-0.071	1	
D6	0.416	0.349	-0.016	-0.079	0.35	1
Social-democratic						
	D1	D2	D3	D4	D5	D6
D1	1					
D2	0.107	1				
D3	0.242	0.046	1			
D4	-0.062	-0.227	-0.060	1		
D5	0.174	0.088	0.061	-0.113	1	
D6	0.381	0.113	0.135	0.000	0.404	1

Notes: (1) Results correspond to the eight-year period and should be interpreted as a mean for the whole time window. (2) D1 = Incapacity to face unexpected expenses; D2 = Financial dissatisfaction; D3 = Changes in ability to go on vacation; D4 = Income drops; D5 = Unemployment risk; D6 = Probability of extreme expenditure distress.

Table A6

Individual economic insecurity index by country group.

Source: Authors' calculations based on the longitudinal EU-SILC dataset.

	PCA	PCA (percentile ranks)	EI_i		
			Inverse frequency weights	Equal weights	Frequency weights
Corporatist	0.067 (0.000)	0.262 (0.000)	0.178 (0.000)	0.190 (0.000)	0.238 (0.001)
Eastern Europe	0.148 (0.000)	0.443 (0.000)	0.236 (0.000)	0.292 (0.000)	0.417 (0.001)
Liberal	0.078 (0.000)	0.275 (0.001)	0.180 (0.001)	0.197 (0.001)	0.262 (0.001)
Mediterranean	0.128 (0.000)	0.386 (0.000)	0.239 (0.000)	0.257 (0.000)	0.306 (0.001)
Socio-democratic	0.054 (0.000)	0.224 (0.001)	0.131 (0.001)	0.139 (0.001)	0.191 (0.001)

Notes: (1) Results correspond to the eight-year period and should be interpreted as a mean for the whole time window. (2) Bootstrap standard errors (1000 replications) are shown in brackets.

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