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Veröffentlichungsversion / Published Version
Zeitschriftenartikel / journal article

Changes in Class Structures after the Great Recession: Estonia and Lithuania Compared

Vaidas Morkevičius*, Giedrius Žvaliauskas, Aelita Ambrulevičiūtė and Zenonas Norkus

Abstract:

In the studies of transition states and societies, Estonia and Lithuania are considered as twin cases of the neoliberal Baltic model due to similarities in their political economies and macroeconomic policies. Do similarities between the two countries extend to their class structures? We compare changes of the class composition in Estonia and Lithuania during the 2008-2015 period, encompassing the Great Recession and subsequent recovery. For empirical analysis, we use the European Social Survey (ESS) data and employ the framework of the European Socio-economic Classification (ESeC). We find that by 2015 the class structure of the Estonian society became similar to the class structures in the technologically most advanced post-industrial countries. Changes in the class structure of Lithuania diverged from general trends, preserving many features characteristic of industrial societies.

Keywords: Class structure; the Great Recession 2008-10; Baltic States; European Socio-economic classification (ESeC); post-crisis economic growth.

Introduction

In the voluminous literature on post-communist transformation, Baltic countries are reputed to be success cases and are praised for rapid creation of working market economies despite very unfavourable initial conditions due to their tight integration into centrally planned economy of the USSR. Moreover, in the early 2000s they displayed top growth rates among the former communist countries in Europe. However, they were also most severely hit by the Great Recession (in 2008-2010), once again attracting close attention of the international research community. While some authors considered their economic performance during the crisis as exemplary (e.g. Åslund, 2010; Åslund & Dombrovskis, 2011), other authors focused on the social costs of Baltic austerity policies (e.g. Austers, 2014; Bukovskis, 2014; Blyth, 2013, p. 178-228; Sommers & Woolfson, 2014).

International mass media usually represent Baltic countries as one unit. They are seconded by those mainstream transition researchers (mainly with a background in economics), who focus on similarities between Baltic countries, describing them as triplet cases of the single "Baltic model" with the following distinctive features: dominance of foreign capital in the economy (betting on foreign investment-driven growth), absence of active monetary and industrial policy, flat tax rates, and low levels of collective bargaining power (e.g. Åslund, 2007; Myant & Drahokoupil, 2010; Hübner, 2011; Bohle & Greskovits, 2012; Kattel & Raudla, 2013; Kuokštis, 2015; Thorhallsson & Kattel, 2015).

Other researchers (mainly with a background in political science and sociology) focus on differences among the Baltic countries themselves (e.g. Mygind, 2007; Panagiotou, 2001; Clark, 2002; Norkus, 2007; 2012, p. 208-69; Farkas, 2016, p. 373-470). In such a comparison framework, Estonia and Lithuania appear as two polar cases, with Latvia portrayed as a mixed, in-between case. Estonia is usually described as the most successful Baltic country, because it recovered first from the post-communist recession, displayed (until the Great Recession) top growth rates, and joined the Eurozone first (in 2011). Lithuania's later recovery and slower growth is most commonly

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explained by its Catholic cultural background, a legacy of national communism and the strength of ex-communist political parties. However, after the Great Recession Lithuania did catch up with Estonia by its GDP per capita at PPP (Eurostat, 2019).

Class structure is the aspect of the social structure of Baltic countries that has been researched the least, with few cross-country comparative studies available that address only the pre-crisis period (e.g. Blom et al. 1991; Blom & Melin, 2000; Saar 2011; Helemäe & Saar, 2012; Morkevičius & Norkus, 2017). Explicit use of the class framework is a distinctive feature of our contribution. We apply neo-Weberian class theory developed by Robert Erikson, John Goldthorpe and Lucienne Portocarero (in short, EGP theory; Erikson et al., 1979; Erikson & Goldthorpe, 1992; Goldthorpe, 1996; 2008 [2000]). This is a mainstream approach in comparative research of social structure, its transformation, and social mobility in the old EU member states. In this article, we use its most recent elaboration by David Rose and Eric Harrison (2010), known as the European Socio-economic Classification (ESeC), which was specifically developed for use in the EU comparative research. After substantial testing, Eurostat recommended ESeC in 2006 for the national statistical offices of EU countries to implement it as a harmonised variable within the European Statistical System (see Rose et al., 2009, p. 3; Harrison, 2017).

All in all, a rather tumultuous socio-economic history and relatively under-researched status of class structures during and after the Great Recession (2008-14) justified the selection of the Baltic States for this case study. Consequently, in this article we attempt to answer the following research questions: how did the class structures of Estonia and Lithuania change after the Great Recession? Were these changes different or similar to those in other European countries? Did class structures in Estonia and Lithuania change in similar or different ways?

In the next section, we introduce the ESeC class scheme, present the data, and explain the statistical methods used for their analysis. Alongside the old-fashioned comparison of rows and columns of the table containing data on the relative shares of ESeC classes before and after the crisis, we use correspondence analysis (CA), a statistical method applied by Pierre Bourdieu (1984 [1979]; 1990 [1984]) and his school to demonstrate the empirical reality of class divisions across the complete spectrum of social behaviours and experiences. We apply it for a much more modest purpose though – to visualise the changing differences and similarities of class structures across European countries before and after the Great Recession. This is done in the section presenting our findings. In the concluding discussion, we disclose the broader relevance of our findings, focusing on the relation between changes in class structure changes during the crisis and the post-crisis growth performance of Estonia and Lithuania, and delineate the avenues of further research.

Class Scheme, Data and Data Analysis Methods

ESeC is a simplified and streamlined version of the broadly used neo-Weberian class scheme, known as the EGP model. EGP is an acronym for the last names of the inventors of this scheme: Robert Erikson, John Goldthorpe and Lucienne Portocarero, who applied it mainly in the research on social mobility (Erikson et al., 1979; Erikson & Goldthorpe, 1992). EGP and ESeC classes are neo-Weberian, because they are elaborations of Weber's concept of *Erwerbsklasse*, which can be loosely translated as "labour market class". However, Weber's own analysis of labour market classes was left incomplete. Drawing the line between employers and employees, he did not set an upper limit to the number of classes. With no such limitation, even single occupations could be considered as classes, because representatives of each occupation take a specific position in the labour market.

To construct a sociologically useful concept of labour market class, occupations should be merged in a non-arbitrary way into a limited number of units, which are internally homogeneous and externally heterogeneous (including most similar occupations and excluding the different ones). A complete derivation of neo-Weberian classes also takes into account: (1) the differences among employers by the number of employees (with a cut-off point of no less than 10 employees to qualify as a large employer); (2) a differentiation among members of service class by the number

of subordinates or level of qualification (higher salariat including professionals and managers with no less than 10 subordinates); (3) division of economy into primary (mainly agriculture), secondary (industry) and tertiary (service) sectors; (4) differences among employees between mainly manual and non-manual work occupations.

The only substantial difference between EGP and ESeC class schemes relates to the introduction of the class "excluded" from the labour market into ESeC, encompassing the long-term unemployed and those who have not entered the labour market yet (students). However, the class of the excluded is usually not included in the empirical applications of the ESeC, where only the first nine classes are considered. Unfortunately, some classes of the ESeC scheme are poorly populated (especially IV and V) in many countries. As statistical methods need substantial sample sizes in order to provide well-grounded results, in such cases the application of the ESeC scheme becomes complicated. A standard solution for this problem is the application of 6-class, 5-class, or 3-class reduced ESeC scheme versions, which are derived by merging the classes of the full scheme (see Table 1). We will not discuss the theoretical rationale beyond such mergers, because this would lead us into the field of the theoretical discussions between competing class-theoretical approaches (see e.g. Atkinson, 2015; Crompton, 1998; Crompton et al., 2000; Esping-Andersen, 1993; Wright, 2005).

Table 1: Complete (10-class) and reduced ESeC versions

<table>
<tr><th>10-class version</th><th>6-class version</th><th>5-class version</th><th>3-class version</th></tr>
<tr><td>I. Higher salariat (service class)</td><td rowspan="2">I+II. Salariat (service class)</td><td rowspan="2">I+II. Salariat (service class)</td><td rowspan="2">I+II. Salariat (service class)</td></tr>
<tr><td>II. Lower salariat (service class)</td></tr>
<tr><td>III. Higher white collar</td><td>III+VI. Higher white and blue collar</td><td>III+VI. Higher white and blue collar</td><td rowspan="4">III+IV+V+VI. Intermediate class</td></tr>
<tr><td>IV. Petite bourgeois</td><td rowspan="2">IV+V. Petite bourgeois</td><td rowspan="2">IV+V. Petite bourgeois</td></tr>
<tr><td>V. Small farmers</td></tr>
<tr><td>VI. Higher blue collar</td><td>III+VI. Higher white and blue collar</td><td>III+VI. Higher white and blue collar</td></tr>
<tr><td>VII. Lower white collar</td><td>VII. Lower white collar</td><td>VII. Lower white collar</td><td rowspan="3">VII+VIII+IX. Working class</td></tr>
<tr><td>VIII. Skilled manual workers</td><td>VIII. Skilled workers</td><td rowspan="2">VIII+IX. Workers</td></tr>
<tr><td>IX. Semi-/non-skilled workers (proletariat)</td><td>IX. Semi-/non-skilled workers</td></tr>
<tr><td colspan="4">(X). Unemployed/excluded</td></tr>
</table>

Source: According to Rose et al., 2010

For the study of class structure change, we use data from the European Social Survey (ESS), which is an academically driven cross-national, representative probabilistic survey that has been conducted every two years across Europe since 2001. In order to present class structure changes in the broader European perspective, we use data from 21 countries, which participated in both ESS Round 4 (2008) and ESS Round 7 (2014). It may also be important to take note of a slight variation in the timings of surveys. Even though the official fieldwork dates for ESS Round 4 were September 1st – December 31st, 2008 not all participating countries were able to comply with this schedule as some of them joined in quite late. The same was true for ESS Round 7 (official fieldwork dates – September 1st – December 31st, 2014). Speaking of the countries that are the focus of our analysis, ESS Round 4 was conducted in 05.11.2008 – 11.03.2009 in Estonia and in 16.10.2009 – 12.01.2010 in

Lithuania[1]. ESS Round 7 was conducted in 07.09.2014 – 29.12.2014 in Estonia and in 11.04.2015 – 14.06.2015 in Lithuania[2].

The class membership of respondents is derived from their answers to questions about their employment status[3], supervision of other employees[4] and occupation[5]. It is important to note here that the class membership of retirees and the unemployed was established according to their last employment. The only groups that our sample does not include are students who have never been in employment as well as other persons who have never participated in the labour market (e.g. housewives)[6]. During the Great Recession, many young people returned to school and continued their education in order to avoid unemployment. They are included in the sample together with other short-term unemployed and their class membership was established according to their last paid work.

Thus, although the sample includes many persons who were temporary unemployed when ESS Round 4 was conducted (2008-10), it reflects the employment situation before the crisis. On the other hand, at the time of the ESS Round 7 (2014-16), the situation in the Baltic labour market was already in the normal state again[7], and GDP per capita in both studied countries (Estonia by 2015, Lithuania already in 2012) recovered to the pre-crisis levels (Word Bank 2019). These features of our data make them adequate for our aim to compare class structures of Baltic countries before and after the Great Recession. They also increase the probability that changes in-between are crisis-related, although they do not validate (*post hoc* does not mean *propter hoc*) the claim that the crisis was the sole or even the main cause of these changes. However, as time goes on the crisis-relatedness of differences between the ESS Round 4 cross-section of class structures and those provided by later ESS rounds becomes ever more tenuous. Therefore, we described these changes drawing upon the ESS Round 7 data, using the ESS Round 8 data only to check the robustness of our findings (see the concluding discussion).

On the other, this study does not explicitly aim to test the causal hypothesis that the crisis was the only or even the main cause of the changes during the 5-6 years encompassing the crisis and the post-crisis recovery. In designing this study, we followed John Gerring's assertion that "there are good reasons to approach description as a distinctive – and essential – task of social science" (2012, p. 110). Thus, our analysis is mostly descriptive and comparative. For the comparative part, along with traditional contingency table analysis we applied correspondence analysis (CA), which is a descriptive statistical method allowing visual portrayal of contingency tables that may contain a temporal dimension, thus allowing for temporal comparisons.

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1 Dates of ESS Round 4 fieldwork in other countries can be found here: www.europeansocialsurvey.org/data/deviations_4.html.

2 Dates of ESS Round 7 fieldwork in other countries can be found here: www.europeansocialsurvey.org/data/deviations_7.html.

3 Literal question: In your main job are/were you… 1) Employee, 2) Self-employed, 3) Working for own family business?

4 Literal questions: In your main job, do/did you have any responsibility for supervising the work of other employees? (1 – Yes, 2 – No)? How many people are/were you responsible for?

5 Literal questions: What is/was the name or title of your main job? In your main job, what kind of work do/did you do most of the time? What training or qualifications are/were needed for the job? Based on answers to these questions (also considering respondents' education and industry where they work) respondents' occupations are coded according to the standard occupation classification schemes: ISCO(COM)88 for ESS Round 4 and ISCO08 for ESS Round 7 (see www.ilo.org/public/english/bureau/stat/isco). At the lowest 4th level of these schemes occupations are just a bit more broad terms than separate job titles (and are defined according to similarity of the performed work and tasks). Higher levels of classification merge these small and specific categories into broader ones. ESS provides respondents' occupation classification at the lowest ISCO 4th level, which can be conveniently used for derivation of class position according to the ESeC scheme. Derivation in this article was performed using SPSS syntax available at www.iser.essex.ac.uk/archives/esec/matrices-and-syntax (for ESeC derivation from ISCO(COM)88) and www.ericharrison.co.uk/european-socio-economic-classification-esec.html (for ESeC derivation from ISCO08).

6 A total of about 15% of cases was excluded from the samples due to this fact.

7 Before the Great Recession (in 2008) the unemployment level in Estonia was 5.5% and in Lithuania 5.8%. During the crisis, it increased rapidly and in 2010 reached 16.7% in Estonia and 17.8 in Lithuania. By 2015, the unemployment rate decreased to 6.2% in Estonia and 9.1% in Lithuania and fully converged with pre-crisis level in 2018 (5.4% in Estonia and 6.2% in Lithuania). Data retrieved from the Eurostat annual unemployment rate data: https://ec.europa.eu/eurostat/product?code=UNE_RT_A&mode=view.

CA is a statistical technique for visualising the data of a two-way table by calculating coordinates representing both its rows and columns[8]. These coordinates are analogous to factor loadings in a principal components analysis, factor analysis or multidimensional scaling, except in that they partition the Chi-square value used in testing the independence of row and column variable categories instead of the total variance. Although the dimensions onto which coordinates are transferred invite for interpretation, their interpretation in CA is different from that in factor analysis (Greenacre, 2017). This is mostly due to the fact that the categories of two categorical variables are analysed separately and plotted together using a biplot, where positions of categories might be quite arbitrary[9]. Since the two spaces (separately constructed for categories of row and column variables) are portrayed on the plot[10], the singular interpretation (or "naming") of axes (dimensions) is difficult. Usually, one proceeds by looking at which categories are opposed on the first and the second dimensions for the two variables separately and then trying to identify if there is any structure to the distribution of points[11]. Importantly, distances between the points of categories represent Chi-square (and not Euclidean) differences and, therefore, are quite abstract quantities.

Spatial locations of categories of variables provide a visual picture of the pattern of the relationship between the analysed variables. For the presentation of CA results, we use the so-called "contribution biplots", as this type of presentation is advocated by Greenacre (2017, p. 295) for tables involving units (countries in our case) as rows and variables (classes in our case) as columns. According to Greenacre, "This version of biplot displays optimally the distances between the sampling units and gives a valid biplot interpretation of the units projected onto the variable directions, as well as giving a meaningful lengths to the variable vectors". Therefore, the distances between countries are directly interpretable in terms of their positions vis-a-vis class representations on the plot. For categories of separate variables (countries and class), the angle between the origin and the two points (categories) is most important. If the angle is small (close to 0°), the two categories are positively related. If the angle is 90°, the two categories are not related at all. And if the angle is 180° (they are opposite each other), the two categories are negatively related. Also, country positions projected on the line going through the origin and a single class point can be interpreted as showing country differences regarding that class. Finally, the more distant the points are from the origin, the more distinctive they are from the average profile. Therefore, points close to the origin of the plot are not very interesting for the interpretation of CA results.

Finally, since we compare the class structures of European countries at two points in time (2008-2010 and 2014-2016), the CA of two stacked data matrices (tables constructed using ESS Round 4 and ESS Round 7 data) is employed. This type of analysis allows for a common origin point and the same points for classes at both time points (Greenacre, 2017, p. 129-136). Therefore, a comparison of temporal "movement" of countries with regard to the class structure becomes possible. All in all, it is important to note that all the results of CA are relative, that is, they have to be interpreted taking into consideration all the categories of both variables not just a few selected ones.

8 For comprehensive introductions into CA, see Le Roux and Rouanet (2004), Blasius and Greenacre (2015), Greenacre (2017), Husson, Le and Pagès (2017).

9 Coordinate scores are variously transformed in order to allow for different types of interpretation.

10 Simultaneous portrayal is only possible because the origins of the two spaces (for categories of row and column variables) coincide and the variation (both total and for each separate dimension) is the same.

11 We try to provide this type of interpretation of biplot axes in our discussion of CA results.

Changes in Class Divisions in Estonia and Lithuania in 2008-2014

Table 2 provides an overview of the ESeC class structures of the 21 countries which participated both in ESS R4 (2008-10) and ESS R7 (2014-15). General trends of change in class structures emerge when comparing the average profiles of relative class sizes in 2008-10 and 2014-16 in the Table 2 (last row). There are three conspicuous overall changes:

(1) An expansion of the upper salariat (I) (from 11.2% to 17.6%).
(2) A contraction of the unskilled and semi-skilled worker class (IX) (from 20.2% to 14.7%)
(3) An expansion of the lower white-collar class (VII) (from 11.9% to 15.5%).

The relative sizes of the other classes remained practically unchanged, although a note should be taken of a small contraction of the lower salariat (II) (from 19.3% to 17.9%) and the higher white-collar class (III) – from 9.0% to 7.2%.

Table 2: ESeC classes in 21 countries in 2008-2010 and 2014-2016

Country	I. Higher salariat		II. Lower salariat		III. Higher white collar		IV. Petite bourgeois		V. Small farmers		VI. Higher grade blue collar		VII. Lower white collar		VIII. Skilled workers		IX. Semi-/ non-skilled workers ("proletariat")	
	R4	**R7**	**R4**	**R7**	**R4**	**R7**	**R4**	**R7**	**R4**	**R7**	**R4**	**R7**	**R4**	**R7**	**R4**	**R7**	**R4**	**R7**
Austria	12.3	18.9	20.1	15.5	13.8	11.0	6.2	4.5	4.2	2.8	6.5	3.9	14.7	18.3	7.5	12.2	14.7	12.9
Belgium	12.2	17.8	19.4	21.8	9.0	8.0	7.0	7.5	1.0	1.8	11.2	7.8	9.8	11.0	8.8	7.5	21.6	16.8
Czech Republic	6.4	14.8	27.5	16.9	7.7	8.0	6.6	7.3	0.5	0.9	4.2	4.5	5.6	16.8	17.2	13.3	24.1	17.4
Denmark	10.4	20.5	18.0	16.0	9.4	7.9	6.8	4.9	0.9	1.1	10.9	9.1	17.3	18.1	8.2	8.5	18.0	13.8
Estonia	17.5	20.1	14.2	20.8	4.4	3.3	5.3	5.7	0.5	0.3	9.8	9.1	8.9	12.8	17.9	15.3	21.5	12.7
Finland	14.1	18.0	18.5	16.1	6.8	7.9	6.4	5.7	3.1	2.8	6.2	6.3	12.7	16.5	12.9	13.1	19.3	13.6
France	10.6	15.1	19.4	21.9	11.7	7.2	5.9	4.7	1.5	1.9	13.0	12.7	11.2	11.5	8.0	9.2	18.9	15.7
Germany	11.1	17.6	19.6	19.4	13.0	11.6	6.0	4.3	0.8	0.9	11.6	11.7	10.8	13.9	9.4	9.4	17.8	11.2
Hungary	5.5	13.1	16.1	11.5	7.1	9.1	4.1	3.2	0.3	0.6	6.9	1.9	9.6	11.2	16.3	24.1	34.2	25.3
Ireland	10.2	17.0	18.5	16.6	7.2	6.8	6.7	6.5	3.2	4.1	11.1	7.7	15.2	20.4	6.8	7.2	20.9	13.6
Israel	11.9	17.5	20.7	16.0	9.4	7.9	9.9	8.1	0.7	0.3	10.5	9.4	14.7	22.3	7.5	5.8	14.8	12.7
Lithuania	10.7	11.1	17.5	12.0	5.9	4.6	3.4	6.0	0.7	0.5	1.4	2.9	10.5	17.2	18.3	18.9	31.6	26.8
Netherlands	16.4	23.3	28.0	19.9	9.0	8.6	6.3	6.0	0.7	0.6	11.9	14.8	12.0	12.7	5.1	3.4	10.5	10.7
Norway	9.6	21.1	23.4	23.3	8.6	5.0	4.3	4.1	1.5	1.6	11.8	9.7	17.5	21.4	7.3	6.8	16.0	7.0
Poland	8.8	14.4	16.4	16.7	8.3	4.2	5.9	5.9	10.8	9.7	5.8	2.7	9.9	14.0	12.2	16.4	22.0	16.0
Portugal	5.1	10.9	10.4	12.3	5.7	4.6	11.2	9.6	1.8	3.4	7.5	14.3	12.5	13.1	18.9	12.7	26.8	19.2
Slovenia	13.3	19.5	17.2	19.0	9.1	5.2	5.4	6.0	0.6	0.8	14.6	11.9	8.8	10.1	9.8	9.7	21.2	17.9
Spain	9.4	14.1	10.8	16.4	10.6	7.5	11.3	8.8	2.6	2.3	6.7	8.3	9.8	16.2	12.4	8.2	26.3	18.2
Sweden	15.2	20.1	23.4	22.7	9.9	7.3	5.6	4.4	1.0	0.5	8.4	10.6	15.9	17.4	7.2	7.0	13.4	10.0
Switzerland	11.3	25.0	27.3	21.9	13.2	8.5	7.0	5.6	1.6	1.3	10.6	10.7	9.0	11.9	8.0	9.1	12.1	6.1
United Kingdom	13.7	18.6	19.4	19.4	9.3	7.3	8.5	8.8	0.7	0.7	13.9	9.9	13.1	17.5	3.2	5.8	18.1	12.1
Average profile	11.2	17.6	19.3	17.9	9.0	7.2	6.7	6.1	1.8	1.8	9.3	8.6	11.9	15.5	10.6	10.6	20.2	14.7

Sources: ESS Round 4: European Social Survey Round 4 Data (2008); ESS Round 4: European Social Survey Round 4, Austria (2008); ESS Round 7: European Social Survey Round 7 Data (2014).

Changes in class divisions in particular countries transpire when comparing data about shares of specific classes in 2008-10 and 2014-16 in the country rows. Alternatively, they can be spotted when comparing the positions of particular classes in the biplots visualizing data for 2008-10 (Fig.1) and for 2014-16 (Fig. 2)[12]. In both biplots, the horizontal axis may be interpreted as standing for a "post-industrial vs. industrial" dimension, where post-industrial countries with relatively largest service classes take a position on the right side of biplot, and those displaying features characteristic of industrial societies (relatively large worker classes) are located on the left. The vertical axis can be interpreted as standing for an "agriculture vs. non-agriculture employment" dimension, with the countries displaying relatively larger shares of small farmers located at the bottom.

The relative positions (with a 180° angle) of the higher salariat (I) and semi-skilled and non-skilled workers (IX) neatly visualize the opposition relation between these classes (see Fig. 1 and 2). A very small angle (near to 0°) between arrows connecting positions of higher white collar (III) and higher blue collar (VI) classes with the origin point expresses a close relation between these classes, which validates their collapsing into a single class in the reduced versions of the ESeC scheme (cp. Table 1). A rather small angle between the arrows of both blue-collar classes (VIII and IX) provides the rationale for their merging into a single manual worker class. We can also discern a very sharp distinction (but not opposition) between these two classes and the higher blue-collar class (VI), with the arrow of this class nearly perpendicular to the arrows of the former two blue-collar classes. A small farmer class (V) emerges as most sharply differentiated from other classes, its most distinctive position expressed both by the relatively largest distance from the origin point and large angles (mainly between 90° and 180°) between the arrow connecting the biplot location of this class with the point of origin and the arrows of most remaining classes.

For 2008-2010, the ESS data provide evidence (except Poland "strolling alone" because of its exceptionally large small farmer class (10.8% in 2008-10) and Slovenia, which was closer to post-industrial Western European countries) that most post-communist countries represented worker class or industrial type of class societies. In this variety, manual workers (or "blue-collar") classes (VIII+IX) were relatively predominant. This is displayed by the spatial closeness of the dots representing these classes and those standing for Czech Republic, Hungary, Lithuania, Estonia as well as Spain and Portugal (see Fig. 1). For 2014-16, the visualised data validate the claim that Estonia converged with post-industrial Western and Northern European countries, where the salariat (or service class, I and II classes) is relatively dominant, while Lithuania diverged. In fact, comparing Figures 1 and 2, we see that Estonia "moved" toward the biplot location of the salariat (classes I and II), while Lithuania's (and Hungary's) position changed only a little, with overall distance (dissimilarity) between Lithuania and Estonia increasing.

12 To check for the robustness of our findings, we ran a CA analysis with the ESS Round 8 data, collected in 2016-18. We do not present the results of this supplementary analysis not only because of space economy reasons, but also because they did not display any noticeable changes in the class structures of both countries during the next 2-3 years: Lithuania clustered with Hungary together as two special cases, while Estonia enjoyed the company of the post-industrial countries of Northern and Western Europe (as in Fig. 2).

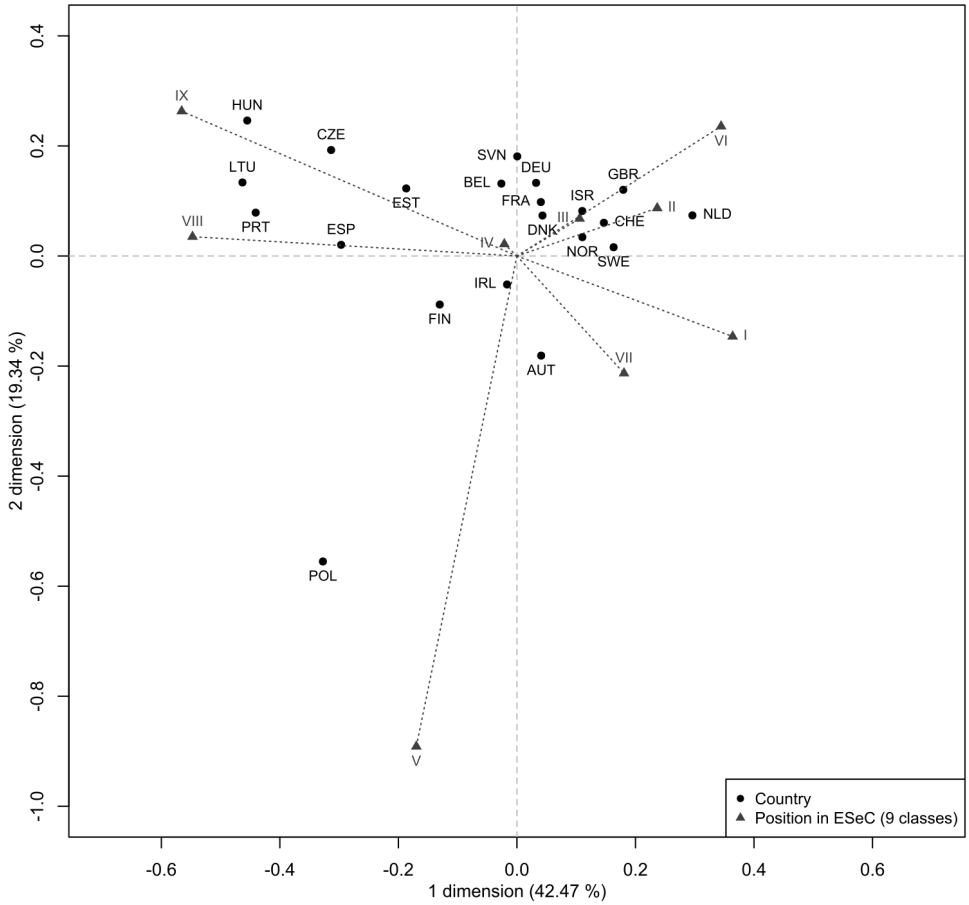

Figure 1: ESeC class structures in European countries in 2008-2010: contribution biplot of CA results of the joint ESS Round 4 and ESS Round 7 dataset (with 21 countries for both rounds)
Source: www.europeansocialsurvey.org/data (only Round 4 results displayed)

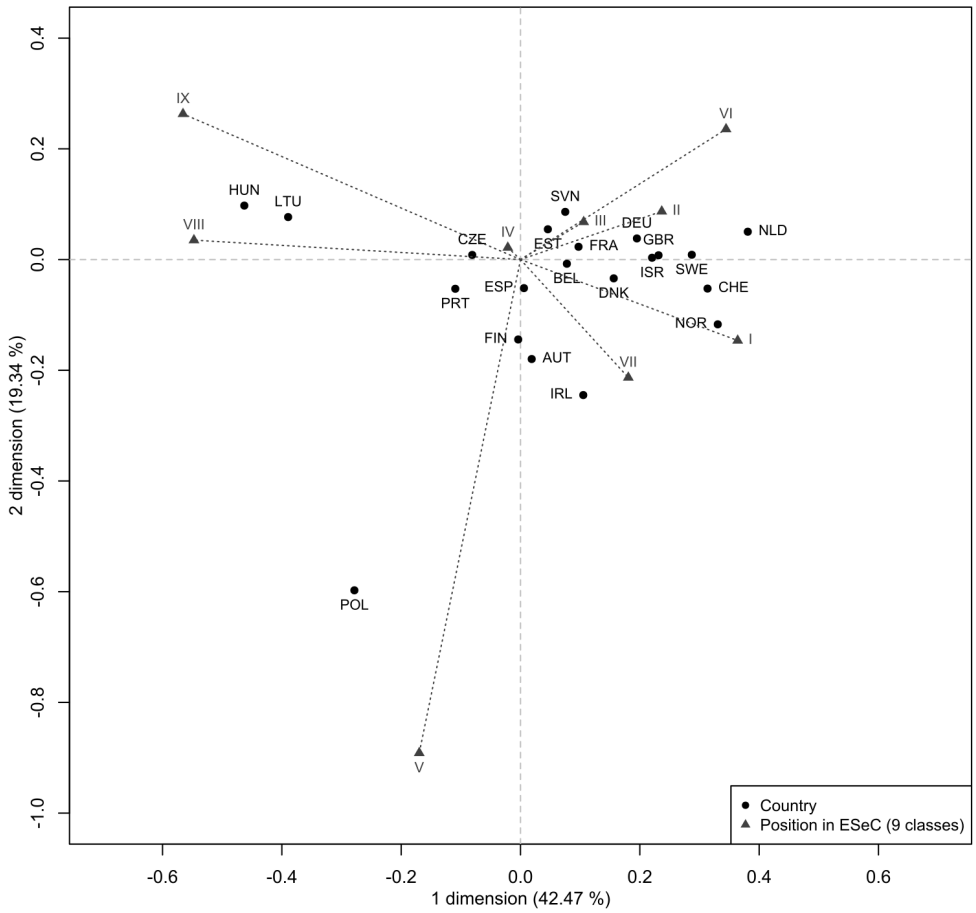

Figure 2: ESeC class structures in European countries in 2014-2016: contribution biplot of CA results of the joint ESS Round 4 and ESS Round 7 dataset (with 21 countries for both rounds)
Source: www.europeansocialsurvey.org/data (only Round 7 results displayed)

Indeed, this is also what a closer inspection of data in Table 2 discloses. In all three countries, the share of the higher salariat (I) increased, while that of routine (unskilled and semi-skilled) workers (IX class) decreased along with the expansion of the lower white-collar (VII class). These local trends correspond to general trends described above. However, in Estonia the relative size of the upper salariat increased from 17.5% to 20.1%, while in Lithuania the expansion of this class was minuscule (from 10.7% to 11.1%). So in Estonia this class was almost twice as large by 2015 (in relative terms) as in Lithuania, with every fifth Estonian but only every tenth Lithuanian belonging to this class.

As a result, by 2016 Estonia took 6th place by share of the higher salariat (20.1%) following Switzerland (25.0%), Netherlands (23.3%), Norway (21.1%), Denmark (20.5%) and only closely losing to Sweden (20.1%), with Slovenia (19.5%) and Finland (18.0%) trailing behind Estonia. On the opposite side, the share of the "proletarian" IXth class contracted in Estonia from 21.5% to 12.7% – nearly halving! It is important to note that by 2014 the crisis was over in both countries. Therefore, this change cannot be attributed to just a temporary reduction of economically active lower classes due to an increased unemployment level during the crisis, although our data do not allow for discerning which part of this change can be related to outmigration and which one to the horizontal mobility to the lower white-collar class (VII). However, in Lithuania the contraction of the "proletariat" was quite insignificant – from 31.6% to 26.8%. As a result, its relative size in Lithuania still remained

nearly twice the above all-sample mean (14.7%). Therefore, after the crisis Lithuania with 26.8% had the highest share of the "proletariat" among the 21 countries, with Hungary (25.3%), Portugal (19.2%) and Spain (18.2%) following next.

In both countries, the lower white-collar class (VII) expanded (in tune with the general trend). In Lithuania, its expansion was quite considerable – from 10.5% to 17.2%, while in Estonia it increased from 8.9% to 12.8%. The contraction of the upper white-collar class (III) was of a similar size: from 5.9% to 4.6% in Lithuania, and from 4.4% to 3.3% in Estonia. A truly exceptional change in the class structure of Lithuania was in the contraction of the lower salariat (II) from 17.5% to 12.0%. We suggest that there may be a connection between this contraction and the expansion of the lower white-collar class (from 10.5% to 17.2%), meaning downward mobility from class II to VII.

Importantly, the claim that the lower salariat was the main victim of the Great Recession in Lithuania can be corroborated by the cross-country comparisons. There were marked decreases of the lower salariat in some other countries as well: In the Czech Republic (from 27.5% to 16.9%, accompanied by an increase of class VII from 5.6% to 16.8%) and in Hungary (decrease of II from 16.1% to 11.5%, increase of class VII from 9.6% to 11.2%). However, in these countries there was also a significant expansion of the higher salariat (from 6.4% to 14.8% in the Czech Republic, from 5.5% to 13.1% in Hungary). Therefore, the contraction of the lower salariat can be explained here by the vertical mobility of its members into the higher salariat, while the increase of lower white collar (VII) class can be explained by the parts of the IX (unskilled and semi-skilled workers) moving to class VII. In fact, in the Czech Republic this class contracted from 24.1% to 17.4%, and in Hungary from 34.2% to 25.3%.

However, these explanations cannot be applied to Lithuania, because the upper salariat expanded too insignificantly (to recall, only from 10.7% to 11.1%) to allow for significant vertical mobility from lower to higher salariat. On the other hand, the unskilled and semi-skilled worker class (IX) contracted too insignificantly (from 31.6% to 26.8%) to account for the expansion of the lower white-collar class (VII) (from 10.5% to 17.2%) just by redundant manual workers moving to lower sales and services. To recall, according to the data of average profiles (see bottom row in the Table 2) the lower salariat contracted only slightly (from 19.3% to 17.9%). This contraction can be completely explained by vertical mobility, because there was a significant expansion of the upper salariat (from 11.3% to 17.6% at the aggregate level).

Lithuania seems to be a special case. In Estonia, both the higher (from 17.5% to 20.1%) and lower salariats (from 14.2% to 20.8%) increased in size. The lower white-collar class (VII) expanded too (from 8.9% to 12.8%), but this expansion can be completely accounted for by the reduction of the "proletariat" (class IX) from 21.5% to 12.7%. Thus, changes in Estonia correspond to the general trends as described above, but Lithuania stands apart because of relatively small changes in the relative sizes of the higher salariat and "proletariat", accompanied by the rather drastic contraction of the lower salariat. In turn, because of a significant expansion of both salariat classes and a large decrease of "proletariat", by 2015 Estonia became the post-communist country, whose class structure most conspicuously (even more than that of Slovenia) displays post-industrial features. In fact, it now stands in this respect on par with other Nordic countries, except Finland.

Our findings are also of broader relevance, because the divergence in the class structures of Estonia and Lithuania was accompanied by a convergence of their economic performance, as measured by the GDP per capita at PPP. Lithuania's recovery from crisis was more swift, and as a result, by 2015 Lithuania almost caught up with Estonia[13], which for many years was reputed as the Baltic front-runner in economic performance. As countries featuring a post-industrial class structure (see Fig. 2) generally display a higher level of productivity, recent dynamics of the GDP per capita in Estonia and Lithuania appear puzzling.

13 In 2008, GDP per capita at PPP was 17 900 EUR in Estonia and 16 400 EUR in Lithuania, while in 2015 it was, respectively, 22 000 EUR and 21 700 EUR (data retrieved from the Eurostat: https://ec.europa.eu/eurostat/web/products-datasets/-/sdg_10_10).

It may be speculated that Lithuania's deviant class structure change may be related to its superior post-crisis growth performance. Estonia's slower recovery from the crisis may be explained by the close entanglement of Estonia's economy with that of neighbouring Finland, which suffered a "double dip" recession. Finland's economy resumed growth already in 2010, but then contracted for another three years (in 2012-14) (World Bank, 2019). Estonia's growth was positive but weak in these years, improving only since 2015, with both Estonia and Lithuania displaying 3-4% annual GDP growth rates in 2016-18. We would argue that Estonia's post-industrial class structure is an important asset, which may enable it to accelerate catching up with the EU's technological frontier countries in the coming decades (cp. Karo et al., 2015; Ukrainski & Varblane, 2015). Very differently, industrial society features of Lithuania may be symptomatic of a greater risk of economic growth slowing down and heading into a "middle income" trap (cp. Eichengreen et al., 2012; 2014; Staehr, 2015).

Importantly, Lithuania displays GDP per capita convergence with Estonia only adjusting for differences in price levels in two countries. With no such adjustment, Estonia's real GDP per capita (15 100 EUR in 2018) still noticeably surpasses Lithuania's (13 300 EUR in 2018)[14], with Estonia's relative price gap compared to the EU average much smaller than that of Lithuania. This gap (as well as the cross-country difference between Estonia and Lithuania) is especially large in prices for services: in 2019 Lithuania's prices were still less than 50% of the EU average, while Estonia's prices approached 66% of this value (see Swedbank, 2017, p. 17). Swedbank analysts (2017) conclude that the comparatively low non-tradable (service) sector is the main international competitive advantage of the Lithuanian economy.

We were not able to find a completely articulated economic analysis of Lithuania's recent catching up with Estonia by output per capita in the economic literature. However, our sociological findings about divergence in the class structures of Estonia and Lithuania may provide an important piece of information for a comprehensive explanation of why service price convergence with the EU average was stagnant after the crisis in the latter country, enabling an "industrial" (according to class structure) Lithuania to catch up with "post-industrial" Estonia in the short run by total output per capita. To recall, we detected as exceptional features of the changes in Lithuania's class structure the stagnation of the relative size of the upper service class (I), and the contraction of the lower service class (II). Although our data does not allow to validate beyond reasonable doubt the conjecture that the expansion of the lower white-collar class (VII) was propelled by the downward mobility of class II, it is indirectly supported by only small changes in the size of the worker classes (VIII and IX), which was the main source of expansion of the white-collar class in other countries.

The stagnation in the highly paid service jobs (taken by members of upper and lower service classes) and the increase of low paid service jobs (class VII) via downward mobility from other classes indicate a situation on the labour market, where the growth of labour costs in the non-tradable sector was contained or reduced, enabling Lithuanian employers to pay lower wages in the tradable sector, enhancing their international competitiveness and boosting Lithuanian exports, which were the main drivers of the rapid post-crisis recovery of the Lithuanian economy.

Concluding Discussion: Changes in Class Structures and Their Implications for Economic Growth Performance

Using the ESS data and the ESeC class scheme, we explored the class structures of Estonia and Lithuania before and after the Great Recession, which hit Baltic countries in 2008-2010. The main findings indicate that changes of class structure in Estonia corresponded to general trends, involving the expansion of the higher salariat, the lower white-collar class, and the contraction of the "proletariat" – manual routine workers class. By 2016, among former communist countries Estonia's class structure displayed the most similarities with the post-industrial type of class

14 Data retrieved from Eurostat: https://ec.europa.eu/eurostat/databrowser/view/sdg_08_10/default/table?lang=en.

structure of the advanced Northern and Western European countries. Quite differently, Lithuania's class structure still retained the characteristic features of an industrial type of class structure. The slow contraction of the manual worker class and the near stagnation in the growth of the upper salariat, accompanied by the marked decrease of the relative size of the lower salariat, made the evolution of Lithuania's class structure during the recent decade a deviant case. Thus, by 2016 the class structures of both countries were very different, despite the marked similarities in their political economies and macro-economic policies, summarily described in the large literature on the "Baltic neoliberal model".

Among the most important findings of changes in class structures of the analysed Baltic States is the contraction of the Lithuanian lower salariat class. Trying to explain this change, we may speculate that representatives of the lower salariat class were well qualified (due to higher education and knowledge of foreign languages) and strongly motivated (shortage of opportunities for vertical mobility in Lithuania) to look for better opportunities abroad and, thus, were responsible for a great deal of the Lithuanians' emigration during the Great Recession. On the other hand, there was a significant expansion of the urban self-employed and small employers' (petite bourgeois) class in Lithuania (from 3.4% to 6.0%), its relative size nearly doubling, while in Estonia its size remained nearly unchanged (5.3% in 2008-09 and 5.7% in 2014). This expansion could proceed at the expense of the lower salariat, too. Our data just do not allow for testing these hypotheses about the destination class of the former members of the lower salariat. However, in fact, these two hypotheses do not contradict, but rather supplement each other.

More broadly, the character of changes in the class structure of Estonia during the Great Recession and recovery period suggests that this country not only preserved but also enhanced its potential for a leapfrogging growth in the coming decades, while class structure changes in Lithuania most likely decreased its potential to avoid the middle income trap. The lack of expansion of the upper service class (observed in other European countries during the period under analysis) and the contraction of the lower service class (II), including mainly persons with high education and vertical mobility aspirations, may have had among its side-effects a severe "brain drain", endangering the long-run prospects of Lithuania's growth catching up, which is conditional on the preservation of the pool of highly educated labour, employable in the high technology sector.

As our data do not allow to differentiate conclusively between different mobility routes out of the lower service class, many statements in this section remain hypotheses which can be tested only in further research. However, the lack of differences between two consecutive cross-sections of class structures originating from ESS Round 7 and Round 8 data provide some evidence that the very marked differences between cross-sections originating from ESS Round 4 and Round 7 data are crisis-related, as we can expect more rapid change in class structures during crisis times.

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Acknowledgments

This project received funding from the European Social Fund (Project No 09.3.3-LMT-K-712-01-0006) under the grant agreement with the Research Council of Lithuania. We thank the anonymous reviewers for their constructive criticisms and suggestions for improvement of this article.