

Comparative capitalism in central and Eastern Europe – A test of similarity to Western Europe

MARIUSZ PRÓCHNIAK^{*1} , RYSZARD RAPACKI¹ ,
ADAM CZERNIAK¹ , JULIUSZ GARDAWSKI² ,
BOŻENA HORBACZEWSKA¹ , ADAM KARBOWSKI³ ,
PIOTR MASZCZYK¹  and RAFAŁ TOWALSKI² 

¹ Department of Economics II, SGH Warsaw School of Economics, al. Niepodległości 162, 02-554, Warsaw, Poland

² Institute of Philosophy, Sociology and Economic Sociology, SGH Warsaw School of Economics, Poland

³ Department of Business Economics, SGH Warsaw School of Economics, Poland

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ABSTRACT

We aimed to enrich the empirical picture and to better understand the nature of post-communist capitalism in the new EU member states in Central and Eastern Europe (CEE11). Our main research goal is to assess the degree of similarity of the institutional architectures in these countries toward each of the four models of capitalism in Western Europe distinguished by Bruno Amable (2003), represented in our research by one Western European country being the most typical empirical approximation of a particular ‘ideal-typical’ model. The study is based on the application of a new method designed for the purpose of our research, the coefficients of similarity. Our empirical exercise shows that the CEE11 countries exhibited on average the greatest relative similarity to the Mediterranean model of capitalism, represented by Spain and Italy. At the same time, they also displayed a considerable institutional proximity to the Continental model of capitalism, represented by Germany, and – to a lesser extent – to two remaining benchmarks. These findings may be generalized as the prevalence of a polycentric pattern of institutional similarity of the CEE11 economies to the established models of Western European capitalism which makes the emerging post-communist capitalism a distinct research category and adds to its patchwork nature.

KEYWORDS

comparative capitalism, models of capitalism, Central and Eastern Europe, institutions, coefficients/hexagons of similarity, patchwork capitalism

* Corresponding author. E-mail: mproch@sgh.waw.pl

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1. INTRODUCTION

One of the key challenges facing the ongoing research on comparative capitalism consists in tackling the problem of a limited applicability of the standard conceptual and methodological frameworks (best exemplified by the works of [Hall – Soskice 2001](#); [Amable 2003](#)), aimed to deal with the co-existing varieties of capitalism in the Western developed world, as a tool capable to fully explain the nature and intricacies of post-communist capitalism. To this end, three possible research approaches have been employed to date: (i) direct applications of the standard frameworks, (ii) extensions and amendments of the standard frameworks, and (iii) non-standard approaches ([Rapacki et al. 2020](#)). Our paper falls under the second heading in the above classification.

Our primary objective is to shed a new empirical light on the nature of post-communist capitalism in 11 Central and Eastern European countries (CEE11) that joined the European Union (EU) between 2004 and 2013.¹ To this end, we carry out a comparative analysis of the institutional architectures evolving in these countries against the backdrop of the established models of Western-type capitalism co-existing in the EU.

The research approach capitalizes on the conceptual framework and typology, developed by Bruno [Amable \(2003\)](#) and originally designed for the Western market economies. With a view to account for peculiar characteristics of the evolving institutional setup in the CEE11 countries on their road from plan to market, we extended and modified the Amablean original framework.² Parallel to that we designed a new tailored-made method that enables quantification of the results of the pertinent comparisons.

The article pursues two interrelated goals. The first, explicit goal is empirical and boils down to producing “novel facts”, as defined by [Lakatos \(1978\)](#). Our overriding aim here is to find out how similar or dissimilar are the CEE11 countries to each of the four models of European capitalism singled out by Amable. For the purpose of this study each model is represented by one Western European country being the most typical empirical approximation of a particular ‘ideal-typical’ model.³ Such an exercise seems particularly justified in the case of latecomers, and

¹CEE11 includes Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia.

²For a detailed description of these amendments, see [Czerniak – Maszczyk \(2019\)](#).

³Here we refer to the distinction made by Max Weber between ‘ideal types’ and ‘average types’, of the statistical-empirical genre ([Weber 2002](#): 16; [Gardawski – Rapacki 2019](#)). The ‘ideal-typical model of capitalism’ will serve as a theoretical reference frame for our research. However, as the comparative study on post-communist capitalism in CEE in this paper is empirical by nature, we will predominantly interpret the results in terms of the Weberian ‘average types’. This implies, among other things, that the real-life institutional arrangements prevailing in the reference countries may in many instances be quite distant from the ‘ideal-typical’ definition. In view of the above distinction however we will treat them as the closest empirical benchmarks or the ‘average types’ representing four Amablean ‘ideal-typical’ models of Western European capitalism. It may be also added that along similar lines, within the Hall and Soskice’s framework (2001), Germany is often treated as the closest empirical representation of the ‘ideal-typical’ model (variety) of a Coordinated Market Economy while the United States would embody a Liberal Market Economy.



even more so – outsiders to the capitalist world such as the CEE countries. Similar comparative approach has been applied e.g., by the EBRD in its annual *Transition Reports* measuring the progress of market or institutional reforms in the former socialist countries and ranking them against the empirical benchmarks of Western European advanced market economies.

We also aim to achieve an implicit cognitive goal, i.e., to shed a new theoretical light on the nature and most salient features of the emerging post-communist capitalism in the CEE11 countries. In particular, we are going to show that these peculiarities comprise, inter alia, the institutional ambiguity which justifies dubbing it a ‘patchwork capitalism’ and make it a new research category, distinct from any of the established Amablean models of Western European capitalism.

The chief rationale for embarking on the present empirical exercise, which boils down to a comparative analysis of the similarity of institutional architectures the CEE11 countries and their Western European counterparts, may be derived from three interconnected logical premises. Firstly, from the very outset of systemic transformation the former socialist countries experienced a strong pressure from international donor organizations (IMF, [World Bank](#), EBRD, etc.) to emulate and copy well-tested institutional arrangements from the Western developed market economies. This pressure was subsequently compounded by the prospective membership of the CEE states in the EU and continued after the EU Eastern enlargement in 2004. Secondly, throughout most of its modern history since the end of 16th century, CEE has remained on the periphery of the mainstream of Western European development and has strived to emulate Western developmental and cultural patterns. However, the region tended to lag behind the Western standards and its development lacked continuity as on many occasions it used to be interrupted. This made the economic, social and political institutions in CEE (at least partially) distorted imitations of their Western counterparts ([Szűcs 1983, 1988](#)). This insight is consistent, inter alia, with the concept of *long durée* propagated by the French historical school (e.g., [Braudel 1999](#)) as well as that of path dependence (e.g., [David 1994](#)). Thirdly, the theoretical inspirations for our research can also be found in the world-system theory ([Wallerstein 1974](#)) and post-colonial theory ([Said 1978](#); [Spivak 1988](#); [Sowa 2011](#)) with their insistence on the pervasive sense of inferiority in either (semi)peripheral or postcolonial societies and the strive of the *subalterns* to become similar to the core or/and former metropolises.

The paper has been structured as follows. *Section 2* provides the theoretical and empirical background. In *Section 3*, data and methodology applied are explained. *Section 4* discusses in detail the empirical results, while *Section 5* provides the summary of major aggregate findings. *Section 6* wraps up with concluding remarks.

2. BACKGROUND

The very idea of ‘comparative capitalism’ was confined solely to the co-existing varieties of capitalism in the Western industrialized countries. As a derivative, the methodological and conceptual frameworks developed towards this end were designed for developed market economies alone. This was in particular true for two major contributions to the field made by [Hall – Soskice \(2001\)](#) and [Amable \(2003\)](#). Their propositions, which will be further dubbed as the ‘Varieties of Capitalism (VoC)’ and ‘Diversity of Capitalism’ (DoC) approaches respectively, have triggered a new offspring of research geared towards a direct application of the original



frameworks involved to the former socialist countries undergoing systemic transformation from a centrally-planned towards a market-driven economy, with an end to explain and better understand the nature of the emerging post-communist models of capitalism there (e.g., Knell – Srholec 2005, 2007; Mykhnenko 2005; Hanson 2006; Babos 2010; Farkas 2011; Ahlborn et al. 2016; Kuruczleki et al. 2022). Based on the original methodology some attempts have also been made to take account of institutional peculiarities inherent in the post-communist transition and to extend standard classifications with derivative categories that would accommodate the transition countries too, as the emerging types of post-communist capitalism (Nölke – Vliegenhart 2009). Simultaneously, the trailblazing studies by Hall – Soskice and Amable triggered a new, non-standard line of research on post-communist capitalism taking a different methodological and conceptual perspective or, at times, being even rooted in a different research tradition (e.g., King – Szelenyi 2005; Myant – Drohokoupil 2011; Bohle – Greskovits 2012).⁴ These trends have become particularly pronounced since the Eastern enlargement of the EU (2004–2013) encompassing 11 CEE new member states.

In his book, Bruno Amable singled out *five major institutional areas* or key elements of the overall institutional architecture of a country, i.e.:

- (i) Product market competition,
- (ii) Wage-labour nexus and labour market institutions,
- (iii) Financial intermediation sector and corporate governance,
- (iv) Social protection sector, and
- (v) Education and knowledge sector.

Based on the application of principal components and cluster analyses and using five sets of indicators – mostly input variables – that best describe the most salient institutional characteristics of each area, he identified five models of capitalism co-existing in the Western hemisphere:

- (i) Anglo-Saxon model,
- (ii) Social-democratic model (also dubbed as the Nordic or Scandinavian model),
- (iii) Continental European model,
- (iv) South European (or Mediterranean) capitalism, and
- (v) Asian model.

The original proposition put forward by Amable inspired other researchers to apply and/or extend the original DoC framework with a view to incorporate countries undergoing systemic transformation. Two such attempts are worth mentioning here (Rapacki – Czerniak 2018). The first is the empirical study on post-communist capitalism emerging in CEE, based on the DoC methodology and encompassing two transition economies: Poland and Ukraine,⁵ conducted by Mykhnenko (2005). The most important results of his study seem to support the claim that *the post-communist countries have not evolved into any of the four pure models of Western European capitalism*. He also implied that while in some respects either of the two countries examined resembles one particular model of capitalism, in some other respects they tend to converge to quite a different model ('institutional ambiguity').

⁴For a more comprehensive survey of the recent research on post-communist capitalism, see Rapacki et al. (2020).

⁵The first manuscript of this paper was submitted before the Russian invasion of Ukraine (Editor's note).



The most plausible explanation of the possible reasons underlying the institutional ambiguity in Poland and Ukraine, and more generally – in the whole group of the CEE economies – may be synthesized under two headings. First, this is an incomplete process of building ‘post-communist capitalism’ in the transition economies that makes their institutional infrastructure still a ‘work in progress’ (Rapacki 2012). The second reason is due to the fact that at least a part of the institutional environment analysed by Amable has been formatted under a strong impact of exogenous factors, such as foreign investors, multinational corporations or international organizations (EU, IMF, EBRD or the World Bank). Still another part (first of all the social protection sector) has been determined mostly by endogenous drivers, such as politics, history and values represented by the majority of the society (path dependence). As a consequence, some parts of the institutional environment predominating in the CEE countries are not consistent with other parts, as is usually the case in developed countries representing four models of Western European capitalism (Rapacki 2019).

The second research that capitalizes on the DoC approach with a view to extend its coverage and to delve into the intricacies of the emerging post-communist capitalism was carried out by Farkas (2011, 2013). The author seeks to answer the question how the institutions in the new CEE members match the institutional orders of the old EU countries, and whether they resemble any of the four models of Western European capitalism or rather form a new one. She argues that the CEE countries evolved into their own, new model of post-communist capitalism and claims that the institutional disparities between these countries and the old EU member states representing Amable’s four models of European capitalism are more pronounced than the differences between the CEE economies alone. Only one country – Slovenia – seems to approach the Continental European model.

Based on her results, Farkas concludes that the CEE11 countries are subject to a path dependence. As a derivative, they developed their own pattern of institutional architecture, being a response to their historical legacy and consistent with the initial conditions of systemic transformation. In her view, there is no reason to believe that the emerging model of post-communist capitalism in these countries is just a temporary phenomenon, which will one day converge into any of the Western European varieties or models of capitalism.

3. DATA AND METHODOLOGY

We chose six institutional areas following, with one essential extension, the distinction made by Amable (2003), which encompass:

- a. Product market competition,
- b. Labour market and industrial relations,
- c. Financial intermediation,
- d. Social protection system,
- e. Knowledge system, and on top of that also
- f. Housing market.

We added this particular area, since the global financial and economic crisis of 2008 has vividly shown that there exists a very strong link between general economic conditions and the state of the housing market, as well as between the housing market condition and its



institutional surrounding (Czerniak – Rubaszek 2018). This insight has gained increased scholarly support pointing to the need of more research attention being geared toward comparative studies of the varieties of residential capitalism (Schwartz – Seabrooke 2009).

As regards the benchmark or reference countries, we follow Amable's typology and single out four models of *European* capitalism, with one 'old' EU country best representing each model: (1) Anglo-Saxon model (United Kingdom), (2) the Nordic or Scandinavian model (Sweden), (3) Continental European model (Germany), and (4) South European (Mediterranean) capitalism (Italy or Spain). In the last case, two countries were chosen as in our view both – depending on the institutional area concerned – are equally typical representatives of this model.⁶

Each institutional area is subject to comparisons based on six indicators. Three of them (input variables) represent the design or key features/components of a pertinent institutional architecture, whereas three other – outcomes or performance of a given institutional area (output variables). This approach is the extension of the Amablean methodology as it applies input and output variables consistently across all institutional areas involved.^{7,8}

The selection of the pertinent variables was based on the prevailing consensus in the relevant literature, the results of our earlier studies on the subject (e.g., Próchniak et al. 2016), the economic significance of a particular variable, data availability, cross-country variance, the range of values assumed by a variable, as well as on its theoretical justification. At the same time, the set of indicators employed reflects to some extent authors' own judgement on their relevance.

The method applied does not work well in the case of binary variables or the variables that are not differentiated between various countries; hence, such variables had to be excluded from our empirical exercise.

We collected the values of the foregoing variables for each CEE11 country and four reference economies. Hence, a complete data set encompassed 36 indicators for each country (6 variables × 6 areas) amounting to a total of 540 variables for the whole sample. With a view to add a more dynamic perspective to our comparative exercise we made two snapshots for two different years. Thus, our time series comprised two data sets, one for the initial year (2005 or – in case of missing or incomplete data – the closest year) and one for the end year of our study (most recent available data, usually for 2014 or 2015). It should be emphasized, however, that during this period the reference economies have also undergone institutional changes in various directions which make the final result a function of parallel changes both in the CEE and Western European countries.

Based on these variables, we computed the coefficients of similarity that compare the institutional characteristics of capitalism in a CEE11 country with those in the reference Western

⁶The main rationales behind the choice of the reference countries or benchmarks in our sample comprised (i) their economic potential (size of their economies in terms of GDP) and (ii) the fact of being most similar to one of the four ideal-typical models of Western European capitalism identified in the previous research (Amable 2003).

⁷The distinction between input and output variables describing two interconnected dimensions of the institutional architecture of an economy is consistent with a good deal of most representative studies in the state-of-the-art comparative capitalism literature. In addition to the very frame of reference of the present paper, i.e., the original work of Amable (2003), see for example Layard – Nickell (1999); Boeri et al. (2001); Checchi – Lucifora (2002); Ahlborn et al. (2016).

⁸The indicators selected for our study are described in more detail in the next section, separately for each institutional area.



European economy. This is our own method devised specifically for the purpose of this study. The aim was to develop a quantitative technique which would enable the cross-country comparisons including the possibility of expressing the level of institutional similarity in numerical terms.⁹

The coefficients of similarity range from 0 to 100 and are calculated in the following way. The highest score (100) corresponds to the situation when the value of a variable for a CEE country is exactly the same as the value for the benchmark economy. It implies full similarity between a CEE11 country and a particular reference Western European economy in terms of this variable.

The lowest score (0) occurs when the value of a variable for a CEE11 country is outside the following range:

$$(X_{refC} - 3 \times \text{st.dev.}(X_1 \dots X_{15}); X_{refC} + 3 \times \text{st.dev.}(X_1 \dots X_{15})), \quad (1)$$

where X_{refC} is the value of the variable X for the reference country (representing a specified model of capitalism), while $\text{st.dev.}(X_1 \dots X_{15})$ is the standard deviation of the variable X in the whole analysed group encompassing 11 CEE countries and 4 reference economies. Hence, if the value of a given variable for a CEE11 country exceeds the value for a reference country by three standard deviations or more (regardless of the direction), score 0 is ascribed meaning that there is no similarity whatsoever between the two countries concerned.

If the value of a given variable for a CEE11 country is inside the interval described by formula (1), the scores are calculated in percentage terms, that is proportionally to the distance between the reference value (X_{refC}), for which the score 100 is assigned, and the boundary value [$X_{refC} - 3 \times \text{st.dev.}(X_1 \dots X_{15})$ or $X_{refC} + 3 \times \text{st.dev.}(X_1 \dots X_{15})$], depending on the direction of dissimilarity], which is associated with the score 0.

The following virtues of the methodology applied are worth emphasizing. First, the distance toward the reference value takes into account the character of a variable: for example, the difference by 1 percentage point (p.p.) in the tax revenue-GDP ratio is much less important than the distance by 1 p.p. in R&D expenditures to GDP ratio. Second, upward and downward deviations are treated equally, so the comparison is made exactly toward a reference economy without assessing which value of a given variable is the best outcome. Third, the percentage scores enable comparisons among countries on the basis of a variety of variables by means of calculating average coefficients of similarity. Fourth, variables of both continuous and discrete scale (with some exceptions, e.g., in the case of binary variables) can be included. Fifth, the mathematical transformation of variables is limited so the reader can easily verify the ranks of similarity based on actual values of individual variables involved.

4. EMPIRICAL RESULTS

Tables 1–6 show the aggregated coefficients of similarity in each of the six institutional areas scrutinized for the initial and end year, respectively. They are calculated as the arithmetic average of the ranks associated with individual indicators. Dark grey cells indicate the reference

⁹The complete method has also its graphical part that is the hexagons of similarity which plot the ranks of similarity for all six variables in a particular institutional area. For a more comprehensive explanation of this method and full results of its application, see e.g., Próchniak et al. (2016) and Rapacki et al. (2019).



country to which a given CEE11 economy converges most significantly while the shaded cells point to the second-closest benchmark (if the score differential does not exceed 3 p.p.).

The analysis is based on arithmetic means since the number of variables is limited, and the indicators selected are not redundant. Each variable represents a different part of a particular institutional area and there is no overlapping among the pertinent variables. If the number of indicators were much bigger, the weighted average as a way of aggregating the results would be a better option due to higher probability of data redundancy.

4.1. Product market competition

The first three indicators (cost of procedures required to start a business as % of GNI per capita (World Bank) [COST], time required to start a business in days (World Bank) [TIME], and business freedom (Heritage Foundation) [BF]) are interpreted as input variables while the three remaining measures (number of enterprises per million inhabitants (Eurostat) [FIR], global competitiveness index (Global Competitiveness Report) [GCI] and intensity of local competition (Global Competitiveness Report) [COM]) represent output variables.

The values of similarity coefficients for 2005 do not indicate that the CEE11 countries converged toward any specific model of Western European capitalism (Table 1). Instead, particular countries tended to display relatively closest institutional proximity to different benchmarks. Nevertheless, some salient trends can be found.

First of all, the richest CEE economies, i.e., the Visegrad group (excluding Slovakia but including Slovenia), turned out to resemble Spain the most in terms of product market competition.

Table 1. Coefficients of similarity – product market competition, 2005 and 2014 (%)

Country	Reference country			
	Germany	Spain	Sweden	United Kingdom
Bulgaria	41.4 (46.1)	65.3 (43.3)	44.4 (37.0)	41.3 (32.9)
Croatia	46.9 (48.7)	65.2 (55.0)	40.4 (45.3)	39.5 (35.8)
Czech Republic	43.8 (55.8)	74.9 (75.4)	48.5 (64.9)	39.1 (40.4)
Estonia	66.1 (66.2)	80.3 (61.5)	72.3 (62.9)	73.1 (69.9)
Hungary	40.7 (50.0)	75.4 (80.5)	50.9 (60.3)	45.2 (38.1)
Latvia	61.5 (68.7)	80.3 (56.7)	71.4 (68.8)	66.2 (59.8)
Lithuania	62.5 (69.7)	80.0 (63.7)	72.6 (72.2)	71.8 (58.2)
Poland	29.1 (44.7)	62.1 (70.9)	31.1 (43.2)	31.6 (30.9)
Romania	50.0 (54.0)	57.8 (37.7)	42.3 (46.3)	49.6 (46.7)
Slovakia	50.0 (71.3)	75.0 (54.1)	64.5 (59.1)	46.6 (54.5)
Slovenia	51.9 (39.6)	67.8 (75.0)	73.0 (45.6)	60.5 (43.4)
Mean	49.4 (55.9)	71.3 (61.3)	55.6 (55.1)	51.3 (46.4)

Notes: (1) Dark shaded cells indicate the highest similarity of a given CEE country to a benchmark whereas light shaded cells point to the second-closest (or in some cases the third-closest) benchmark with a difference below 3 p.p.

(2) Main figures show the coefficients of similarity for 2014 while those in brackets are for 2005.

Source: Own calculations.



Secondly, the Baltic countries tended to converge mostly to three other models of capitalism. Whereas Latvia and Lithuania revealed a relatively high similarity to the Continental model (Germany) and the Scandinavian one (Sweden), Estonia was most akin to the Anglo-Saxon capitalism (the UK). High similarity between Latvia, Lithuania and Sweden was related with intensive economic cooperation between the Baltic states and the Scandinavian countries, including trade and capital flows, due to the geographical and historical factors. Estonia, with its wide scope of economic freedom, had its product market highly competitive, like the UK.

Thirdly, in terms of their institutional architectures Slovakia, Romania and Bulgaria seemed to gravitate toward Germany. However, in the case of the Balkan countries, the values of the similarity coefficients were relatively low.

Ten years after the EU Eastern enlargement, the situation of the CEE countries changed significantly as shown by data in [Table 1](#). In 2014, all the CEE countries (except Slovenia) displayed the highest similarity to Spain. For the Baltic countries, the values of the similarity coefficient exceeded 80%. For the Visegrad group, except Poland, it stood at approximately 75%. The institutional proximity to three other reference economies was significantly lower. Only Slovenia experienced the greatest convergence toward Sweden, followed by Spain. The average statistics for the CEE group show undoubtedly the closest resemblance to the Mediterranean model of capitalism. The mean coefficient of similarity to Spain by far exceeded the figures for Sweden, the UK and Germany. Simultaneously, worth noting is also the fact that in several CEE countries (notably the Baltic states, Slovakia and Slovenia) a polycentric pattern of institutional similarity to more than one Western benchmark prevailed.

As can be seen, the institutional architecture of product market competition area in the CEE11 countries changed during the first decade of their EU membership. This process stemmed from two factors. Firstly, as new EU members, the CEE countries were required to adopt regulations aimed at promoting competition in line with the EU standards. As a derivative, they increased i.a. the scope of economic freedom, liberalized start-up procedures for private firms, adopted anti-monopoly regulations, and introduced laws against discrimination of some firms (e.g., foreign or private companies). These actions combined to raise the institutional convergence among the CEE countries. Secondly, the highest similarity to Spain is likely to be co-determined by a comparable level of economic development. In terms of GDP per capita at PPP, most CEE countries are ranked quite close to Spain, where this yardstick is the lowest in four reference economies.

4.2. Labour market and industrial relations

In the area of labour market and industrial relations, three indicators (trade unions density [UD], adjusted coverage of collective agreements [ADCOV] and government intervention in wage bargaining [GOVINT]; all data come from [ICTWSS](#)) are treated as input variables, while three other institutional measures (employees with contract of limited duration [EMPLD], average weekly working hours [AWWH] and the rate of young people neither in employment nor in education or training [NEET]; [Eurostat](#)) represent outputs.

In 2005, most CEE11 countries showed the institutional characteristics resembling the Mediterranean or Anglo-Saxon models ([Table 2](#)).

In terms of relative institutional proximity, the Anglo-Saxon model settled in the Baltic countries, the Czech Republic and Bulgaria (although Czechia gravitated simultaneously



Table 2. Coefficients of similarity – labour market and industrial relations, 2005 and 2014 (%)

Country	Reference country			
	Germany	Spain	Sweden	United Kingdom
Bulgaria	41.4 (46.5)	53.3 (50.5)	18.4 (23.9)	58.5 (52.1)
Croatia	53.3 (75.8)	69.7 (65.8)	41.3 (55.1)	46.9 (66.4)
Czech Republic	71.0 (68.9)	45.7 (58.2)	52.3 (46.3)	64.6 (68.9)
Estonia	57.7 (67.6)	42.6 (58.8)	41.8 (50.6)	78.4 (75.1)
Hungary	48.5 (60.8)	55.2 (70.6)	31.0 (41.1)	64.7 (66.6)
Latvia	47.9 (70.2)	50.3 (54.6)	30.1 (49.5)	69.1 (75.4)
Lithuania	51.3 (67.6)	48.0 (56.3)	36.3 (48.1)	67.1 (78.7)
Poland	60.9 (54.6)	50.5 (76.0)	43.2 (38.3)	61.3 (49.9)
Romania	42.7 (48.1)	58.1 (63.4)	23.3 (51.6)	62.5 (47.6)
Slovakia	49.9 (55.2)	53.7 (63.6)	30.6 (34.4)	64.4 (61.4)
Slovenia	69.5 (53.3)	70.2 (59.1)	55.4 (53.5)	53.7 (48.2)
Mean	54.0 (60.8)	54.3 (61.5)	36.7 (44.8)	62.8 (62.8)

Notes. As in Table 1.
Source: Own calculations.

toward the Continental model). Meanwhile, Poland, Hungary, Romania, Slovakia and Slovenia displayed more similarity to the Mediterranean model. The exception on this map was Croatia (and Czechia) where the institutional architectures tended to approximate the logic of the Continental model. Worth emphasizing is also dissimilarity of the sample countries to the Scandinavian benchmark.

Between 2005 and 2014, significant changes took place in the area concerned. A vast majority of the CEE countries exhibited a clear convergence toward the Anglo-Saxon model (Table 2). The number of such countries augmented to embrace Hungary, Poland, Romania and Slovakia (but excluding Czechia). This may indicate an increased popularity of the neoliberal prescriptions in the labour market and industrial relations area. Only the Czech Republic has not only maintained but even narrowed its institutional distance to the Continental model. Meanwhile, Croatia switched toward the Mediterranean model, thus joining Slovenia.

An equally interesting finding in this part of our study is the prevalence of a bi-polar or even polycentric pattern of institutional proximity in most CEE11 countries to more than one reference country. This was especially true for the Czech Republic, Hungary, Poland, Romania and Slovakia. As a result, the mean coefficients of similarity for the whole sample were subject to the same regularity, too (Table 2).

The basic conclusion is that in 2005–2014 the CEE11 countries experienced a strong liberal trend. Only the Czech Republic did not give up in converging toward the Continental model.

4.3. Financial intermediation

Similar to other institutional areas, six variables have been employed to describe the financial intermediation system in 2005 and 2014. Three of them (domestic credit to private sector [DCPS], net inflow of foreign direct investments as % of GDP [FDI] and assets of mutual funds, insurance companies and pension funds as % of GDP [MIPFA]) are treated as input variables.



The remaining three variables (gross portfolio equity assets (% GDP) [GPEA], stock market capitalization (% GDP) [SMC] and assets of 5 largest banks as a share of total commercial banking assets [BAC-5]; all data come from the World Bank) reflect the output side of the financial system.

In 2005, financial intermediation systems of the CEE11 countries proved most similar to the Continental model but the institutional proximity to the Mediterranean benchmark was only slightly smaller (Table 3). The variances between the respective coefficients in individual countries (except Estonia and Lithuania) ranged from 0.8 to 1.6 p.p. The only deviation from this general pattern was Bulgaria with a reverted order of resemblance to Spain and Germany, respectively. Among the CEE countries, the Lithuanian, Slovenian and Croatian financial systems were the most similar to the German benchmark.

By 2014, the overall picture changed significantly. The mean coefficients of similarity to Germany and Spain went up by 6.0 p.p. and 8.1 p.p. respectively making the latter the closest institutional benchmark for the CEE11 group. The similarity coefficients also rose for all CEE countries except Lithuania and Slovenia. Unlike in 2005 however, only four economies – Croatia, Estonia, Lithuania and Slovakia – continued to exhibit the highest similarity to the Continental model of capitalism while six other countries (except Bulgaria) witnessed some kind of institutional shift showing the greatest resemblance to the Mediterranean model. Worth stressing in this context is also the fact that both at the level of individual economies and the group average the CEE11 countries tended to exhibit a bi-polar pattern of institutional resemblance to two different benchmarks, i.e., Spain and Germany, with the respective coefficients being very close.

The highest similarity to the Mediterranean model was recorded in Slovakia, Croatia and Estonia whereas Bulgaria, Romania and Slovenia proved the most institutionally distant from this benchmark. As for the resemblance to the Continental model, the closest proximity was

Table 3. Coefficients of similarity – financial intermediation, 2005 and 2014 (%)

Country	Reference country			
	Germany	Spain	Sweden	United Kingdom
Bulgaria	45.2 (36.0)	48.4 (37.6)	12.7 (14.4)	24.1 (13.6)
Croatia	72.8 (60.8)	66.9 (59.9)	36.5 (35.7)	33.8 (32.1)
Czech Republic	61.0 (56.4)	64.2 (55.4)	24.4 (31.1)	23.0 (26.4)
Estonia	72.4 (56.7)	66.5 (51.1)	35.0 (42.7)	28.1 (20.4)
Hungary	61.6 (57.4)	63.8 (56.4)	25.2 (32.1)	29.1 (35.4)
Latvia	61.0 (56.8)	64.3 (55.9)	24.6 (31.7)	34.9 (33.3)
Lithuania	59.9 (62.9)	56.6 (57.2)	25.7 (39.0)	21.8 (27.2)
Poland	59.7 (49.7)	62.9 (48.8)	24.0 (27.0)	30.4 (28.0)
Romania	47.5 (46.5)	50.7 (45.7)	12.3 (21.7)	21.0 (24.5)
Slovakia	67.5 (50.3)	67.4 (49.4)	31.9 (25.2)	22.6 (26.2)
Slovenia	52.3 (62.0)	55.5 (61.1)	15.3 (36.8)	22.2 (37.3)
Mean	60.1 (54.1)	60.7 (52.6)	24.3 (30.7)	26.5 (27.7)

Notes: As in Table 1.

Source: Own calculations.



found in Croatia, Estonia and Slovakia. On the other end of the spectrum again stood Bulgaria, Romania and Slovenia.

Summing up, between 2005 and 2014 the institutional architectures of the financial intermediation area in the CEE11 countries displayed a clear convergence toward the Mediterranean and Continental European models of capitalism, which proved the most pronounced vis-à-vis the former. At the same time, they witnessed a divergence trend from the Anglo-Saxon and Nordic benchmarks.

4.4. Social protection system

Three indicators (total benefits to GDP ratio [BtGDP], total government expenditure directed to families to total government expenditures ratio [GFtE] and total government expenditure on healthcare to total government expenditure ratio [GhtE]) are interpreted as input variables, while the three remaining variables (Gini coefficient [GC], fertility rate [FR] and healthy life expectancy for people aged 65 [HLY65]) represent outcomes of social protection. All data come from Eurostat.

Based on the 2005 data it may be claimed that in the area of social protection the CEE11 countries as a whole did not unambiguously converge toward any specific model of capitalism prevailing in “old” EU countries (Table 4). In fact, various CEE countries tended to gravitate toward different such models or to more than one model at the same time. Yet, two salient features can be traced in the snapshot made for the initial year of our exercise.

Firstly, eight CEE11 countries (except Bulgaria, Estonia and Poland) exhibited the greatest resemblance to Germany or the Continental European model of capitalism. However, in four countries concerned the similarity to this model was relatively low. Moreover, in the case of Romania and Slovenia, the coefficients of similarity to Italy – compared to those for Germany – were only slightly lower, by 1.8 and 2.1 p.p. respectively. Secondly, Bulgaria, Poland and Estonia

Table 4. Coefficients of similarity – social protection system, 2005 and 2014 (%)

Country	Reference country			
	Germany	Italy	Sweden	United Kingdom
Bulgaria	57.0 (61.9)	51.0 (67.6)	49.0 (55.7)	55.1 (55.5)
Croatia	86.2 (75.3)	74.8 (62.3)	48.4 (57.6)	64.7 (61.6)
Czech Republic	70.6 (79.8)	54.4 (73.1)	48.1 (51.4)	67.5 (47.6)
Estonia	65.7 (50.6)	57.0 (35.6)	49.5 (49.6)	55.2 (56.1)
Hungary	71.7 (80.2)	57.2 (65.5)	48.4 (58.6)	54.0 (41.2)
Latvia	49.3 (61.7)	50.8 (52.4)	31.2 (35.7)	44.8 (43.6)
Lithuania	70.5 (66.7)	62.6 (55.4)	36.5 (35.5)	64.4 (45.6)
Poland	75.9 (65.4)	72.3 (69.6)	42.5 (49.3)	59.6 (45.5)
Romania	61.5 (49.0)	62.8 (47.2)	30.9 (31.3)	47.3 (39.1)
Slovakia	73.8 (67.5)	66.7 (53.6)	52.7 (40.2)	53.2 (29.9)
Slovenia	72.3 (80.2)	61.6 (78.1)	62.2 (73.0)	60.7 (46.9)
Mean	68.6 (67.1)	61.0 (60.0)	45.4 (48.9)	57.0 (46.6)

Notes: As in Table 1.
Source: Own calculations.



may be seen as outliers from the core of CEE11 displaying the highest similarity to Italy and the UK (Estonia) respectively. Moreover, Estonia and Romania alike seemed to be institutionally most distant from any Western European model with their similarity coefficients standing below 60% and 50% respectively.

The snapshot made for 2014, i.e., a decade after the EU Eastern enlargement, reveals a number of interesting changes in the area of social protection.

As the data in Table 4 indicate, all but two CEE11 economies (Latvia and Romania) continued exhibiting the greatest resemblance to the Continental European model of capitalism (Germany) with the mean coefficient of similarity showing an upward trend by 1.5 p.p. The composition of this group also changed over ten years: Bulgaria, Estonia and Poland joined this cohort while Latvia and Romania moved away.

Simultaneously, by 2014 the highest coefficients of similarity to Germany were recorded in Croatia, Poland and Slovakia, which implies that – in terms of all six variables involved – the institutional arrangements in these countries tended to gravitate toward those prevailing in the Continental model of capitalism. On the other hand, Latvia and Romania showed the closest relative proximity to the Mediterranean model, beneath the levels though recorded in the rest of the CEE11 group vis-à-vis Germany.

On the other hand, the model of capitalism in the social protection area emerging in the CEE region was the least akin to the Nordic benchmark. This finding is even more visible, when we consider output variables alone, especially [FR] and [HLY65]. For these two variables the resemblance to Sweden was well below 50%, and for 8 countries in the sample (except Bulgaria, Czechia and Slovenia) equalled zero.

The empirical evidence provided in Table 4 also reveals an important salient feature of the emerging capitalism in the social protection area in the CEE11 countries which was again – similar to other areas under review – a polycentric pattern of institutional proximity to more than one Western European benchmark. This was particularly true for Bulgaria (at a relatively low level of similarity though), Czech Republic, Estonia, Lithuania, Poland, Romania, Slovakia and Slovenia (with the last country showing all four coefficients above the 60% level).

4.5. Knowledge sector

In the area of knowledge creation (innovation, research and development, education), the input variables comprise R&D expenditures (% GDP) [RDEX], human resources in science and technology as % of active population [HRST], and public expenditure on education (% GDP) [PEE], while the three remaining indicators (turnover from innovation (% of total turnover of enterprises) [TOFI], high-tech exports as % of total exports [THE], and patent applications to the EPO per million inhabitants [PATE]) show the output side of this area. All pertinent data come from OECD.

As the data in Table 5 clearly show, in 2005 all but one CEE11 countries (Hungary only slightly deviating from this general pattern) exhibited the highest resemblance to the Mediterranean benchmark, coupled with a major component of institutional arrangements typical of the Anglo-Saxon model of capitalism. The respective coefficients of similarity to the Mediterranean model ranged between 64% and 85%. The second-closest benchmark was the Anglo-Saxon model with the similarity coefficients in a number of countries exceeding 70%. In the case of Bulgaria, Croatia, Latvia, Lithuania, Poland, Romania and Slovakia, the



Table 5. Coefficients of similarity in the knowledge sector, 2005 and 2014 (%)

Country	Reference country			
	Germany	Italy	Sweden	United Kingdom
Bulgaria	30.1 (39.7)	77.2 (84.8)	21.4 (25.6)	32.7 (55.0)
Croatia	43.5 (42.4)	90.2 (85.2)	22.3 (27.4)	45.7 (58.0)
Czech Republic	69.9 (59.8)	74.2 (77.3)	35.8 (37.4)	70.7 (72.9)
Estonia	66.1 (55.3)	64.3 (79.3)	51.2 (44.2)	74.5 (71.6)
Hungary	62.0 (32.6)	79.9 (63.9)	36.9 (27.4)	65.4 (66.0)
Latvia	50.6 (32.5)	72.6 (75.0)	38.8 (22.2)	52.8 (52.9)
Lithuania	51.6 (46.8)	72.6 (81.3)	43.2 (34.0)	56.9 (66.2)
Poland	50.7 (36.7)	77.7 (76.6)	38.7 (32.6)	52.8 (61.7)
Romania	22.1 (34.3)	68.4 (65.6)	23.6 (18.9)	28.2 (40.2)
Slovakia	36.6 (44.2)	79.5 (73.7)	9.2 (19.5)	41.8 (48.3)
Slovenia	69.3 (52.6)	72.0 (78.1)	52.6 (47.0)	70.7 (77.0)
Mean	50.2 (43.4)	75.3 (76.4)	34.0 (30.6)	53.8 (60.9)

Notes. As in Table 1.
Source: Own calculations.

similarity to the Mediterranean model was the highest both in terms of input and output variables. Czechia was the most akin to the Mediterranean benchmark only in respect of input variables while in terms of output measures the country gravitated toward the Anglo-Saxon model. The opposite pattern held for Estonia and Slovenia – they were the most similar to Italy only at the level of output variables whereas in terms of input indicators they revealed the highest relative institutional proximity to the Anglo-Saxon model. In turn, Hungary, being the only deviation from the general trend in the CEE11 group, turned out the most akin to the Anglo-Saxon model in terms of output variables, which outweighed its relatively closest proximity to the Mediterranean model in respect of input measures of the institutional architecture.

It may be concluded that by 2005 the emerging institutional architecture in the knowledge sector of the CEE11 countries (except – to some extent – Hungary) revealed quite a homogeneous pattern. The sample countries tended to gravitate predominantly to the Mediterranean model while at the same time displaying a substantial proximity to the Anglo-Saxon model of capitalism. The picture established for 2005 did not change much over the next 10 years. By 2014 (Table 5) the CEE11 countries (the only exception was Estonia) continued to exhibit the highest resemblance to the Mediterranean model of capitalism, the second-closest benchmark being the Anglo-Saxon model.

Yet, worth noting are two new salient features of the snapshot made for 2014. First – unlike in 2005 – a number of CEE economies (notably Czechia, Estonia, Hungary and Slovenia) revealed some convergence trends towards the Continental model of capitalism. Second, three CEE countries – Czechia, Estonia and Slovenia – displayed a polycentric pattern of similarity to the Western benchmarks, with the respective coefficients of similarity ranging within a band of less than 10 p.p.



In the case of Bulgaria, Croatia, Latvia, Poland, Romania and Slovakia the similarity to the Mediterranean model was the highest both in terms of input and output variables. A similar pattern held for Estonia whose closest benchmark however was the Anglo-Saxon model represented by the UK. Instead, Czechia and Hungary were the most akin to Italy only in terms of input measures whereas in respect of output indicators they resembled most the Anglo-Saxon model. A reverse picture was true for Lithuania, whose economy was most similar to Italy in terms of output variables while in terms of inputs to the UK. Yet another case was Slovenia which gravitated mostly toward Italy in terms of output yardsticks whereas the input measures pointed to its closest proximity to Germany.

The changes that took place between 2005 and 2014 in the knowledge sector in the CEE11 economies were relatively small. However, it should be noted that over this period, Hungary experienced a marked shift of its institutional architecture from a position relatively close to the Anglo-Saxon model towards the Mediterranean one. At the same time, the institutional development in Estonia took the opposite direction, diverging from the Mediterranean model towards the Anglo-Saxon pattern.

As a concluding remark it may be argued that the institutional evolution of the knowledge sector in the CEE11 countries followed a pretty homogeneous path. The sample countries tended to gravitate predominantly to the Mediterranean model while at the same time displaying a substantial proximity to the Anglo-Saxon model of capitalism. The only deviation from this general trend was Estonia, whose closest benchmark was the Anglo-Saxon model of capitalism.

4.6. Housing market

Six measures of the housing market characteristics and key dimensions of its institutional environment were used to analyse the evolution of the model of residential capitalism in the CEE11 countries. The following variables were selected as input measures of this institutional area: share of state-owned apartments (own calculations based on Housing Europe, TenLaw, national sources and [OECD](#) data) [SOC]; state revenues from property tax in relation to GDP [TAX], state expenditure on housing and development of the housing market as a proportion of GDP [GGH] (Eurostat data for [TAX] and [GGH]). Simultaneously, another three variables were used as output measures of the model of residential capitalism in the CEE region: share of owner-occupied dwellings [OOH] ([Eurostat](#)), share of expenditures for residential purposes in disposable income [HSC] ([Eurostat](#)) and value of housing loans as % GDP [MRT] ([Hypostat](#)).

In 2005, Poland was the only country in the CEE region for which the model of residential capitalism was more akin to the one found in Sweden than to the Italian benchmark ([Table 6](#)). This was mainly the outcome of the highest share of social houses in the dwelling stock and the highest tax burden on real estate owners among all CEE11 countries. Moreover, due to the largest number of co-operative housings in the whole EU the share of owner-occupied dwellings in the Polish housing market was quite low and similar to the level typical for the Nordic states.

The characteristics of residential capitalism in other CEE11 countries proved most akin to those prevailing in Italy, followed by Germany, Sweden and the UK. This pattern clearly indicates that in 2005 the housing market in the new EU member states and its institutional surrounding resembled the Mediterranean model most. This was true for Croatia and Latvia, where the coefficient of similarity to the Italian benchmark exceeded 80%, and whose



Table 6. Coefficients of similarity – housing market, 2005 and 2014 (%)

Country	Reference country			
	Germany	Italy	Sweden	United Kingdom
Bulgaria	61.5 (55.1)	50.8 (67.6)	45.6 (42.7)	27.3 (28.7)
Croatia	50.4 (61.3)	67.3 (82.9)	44.9 (51.0)	19.8 (27.5)
Czech Republic	67.0 (65.5)	55.7 (71.8)	48.0 (49.5)	28.4 (33.7)
Estonia	57.3 (52.2)	69.6 (73.7)	45.1 (38.1)	18.5 (13.8)
Hungary	69.2 (54.5)	53.7 (58.0)	47.6 (38.6)	29.7 (40.5)
Latvia	58.2 (62.3)	70.6 (81.6)	55.6 (55.5)	24.7 (29.4)
Lithuania	52.6 (54.0)	66.4 (79.7)	38.3 (39.5)	11.2 (14.9)
Poland	59.9 (61.3)	70.1 (62.5)	63.7 (72.9)	36.2 (59.9)
Romania	61.7 (55.1)	52.3 (65.8)	39.1 (38.2)	21.3 (23.2)
Slovakia	60.9 (64.3)	65.0 (76.8)	46.3 (51.9)	16.2 (29.8)
Slovenia	55.6 (49.9)	81.1 (74.9)	49.8 (36.3)	20.9 (15.6)
Mean	59.5 (57.8)	63.9 (72.3)	47.6 (46.7)	23.1 (28.8)

Notes: As in Table 1.
Source: Own calculations.

housing market characteristics were comparable to those in Italy. These included low public expenditures on housing policies (Croatia), a relatively higher than in other CEE11 countries residential credit burden of households (Latvia), and relatively high government revenues from real estate taxes. Also, like other housing markets in the CEE region, Croatia and Latvia exhibited a high share of owner-occupied residential estates and low share of social housing in the dwelling stock.

It is worth noting that Germany was the second-closest benchmark for all CEE11 countries but Poland when it comes to housing market’s main characteristics. In Germany, similarly to many post-communist EU members, the tax burden of real estate owners as well as the share of state-owned dwellings were relatively low. The institutional proximity of the housing markets to the German pattern was most pronounced in the Czech Republic and Slovakia – in both countries the size of the rental market was much higher than the average for the CEE region, as in the majority of CEE11 countries availability of residential houses was scarce and fragmented, in contrast to a very highly developed rental market in Germany. In both countries that constituted Czechoslovakia also the scope of state interventions in the housing market, as measured by public expenditures on housing policies, was higher than in other CEE11, what made their housing markets look more similar to the one in Germany.

By 2005 the EU members from the CEE region had almost nothing in common with the UK when it comes to the most salient features of their residential capitalism. In contrast to the CEE11 countries, the British housing market was characterized by a high supply of social houses, a large tax burden of real estate owners and residential credit burden of households, as well as high public expenditures on housing policies and high private expenditures on housing maintenance and services. Only the Polish housing market resembled to some extent its British counterpart – the coefficient of similarity in this institutional area was by far the highest in



the whole CEE region, mainly due to a high share of social dwellings and high public expenditures on housing policies in Poland.

Over the following decade the models of residential capitalism in the CEE11 countries evolved and became more statist, as shown by an upward trend in the mean coefficients of similarity to Germany and Sweden (Table 6). Moreover, the institutional architecture of the housing market in four out of eleven CEE countries experienced a remarkable shift in their point of gravity toward the German benchmark, away from the Mediterranean model, represented by Italy. On the one hand, this was a derivative of an increase in mortgage indebtedness of CEE households and a rise in tax levies on real estate owners, and on the other hand, a result of a shrinking scale of state interventions in the German housing market – the government reduced expenses on housing policies and backed down from owning social dwellings. Remarkably, the Hungarian housing market became the most akin to its German peer, as the government in Budapest (in contrast to many other governments in the region) decided to cut on public financing of housing policies by a half and at the same time doubled the tax burden of real estate owners.

As a derivative of the foregoing trends, the prevailing pattern of institutional similarity of the housing market in the CEE region toward the Western European benchmarks became bi-polar, with the differentials in the levels of the mean coefficients for the whole sample with regard to Germany and Italy not exceeding 5 p.p.

Interestingly, the convergence of residential capitalism in the CEE region to the German benchmark took place mainly in the field of housing policies measured mostly by input variables. If one considered output variables only, the institutional traits of housing markets in the CEE countries would still be very akin to those seen in 2014 in Italy. These findings suggest that the governments involved tended to pursue policies typical for the statist countries (and to some extent also for the liberal states), neglecting informal institutions in which their housing markets were embedded.

Only in two CEE11 countries the institutional proximity of their housing markets to the Mediterranean model increased between 2005 and 2014. The first exception was Slovenia, where the share of owner-occupied dwellings fell, despite a growth in mortgage credit indebtedness of households. The second country that deviated from the general trend observed in the region was again Poland. The privatization of social housing and introduction of policies aimed at augmenting the financial availability of owner-occupied houses made Poland's residential capitalism resembling the Italian pattern most. At the same time, unlike in other CEE11 countries (Germany), Sweden remained the second-closest benchmark for Poland. This was a consequence of high taxes imposed on real estate owners in Poland and still large (at the same level as in Sweden) public expenses on housing policies. It is also worth noting that for the same reasons residential capitalism in Poland was relatively the most similar to the Anglo-Saxon model among all CEE countries, although the similarity coefficient in 2014 was only 36.2%.

Summing up it may be argued that the model of residential capitalism in the CEE11 countries is still in a state of flux. It is internally incoherent as input and output measures do not match each other due to the adoption of Western housing policies without amending them to fit the institutional properties of the CEE housing markets and to satisfy the needs of households in the region. Moreover, each CEE11 country tried to follow its own path of transforming the housing market which gave birth to a gradual divergence of its characteristics



across the region. Nonetheless, all CEE11 countries share a number of key features of their housing markets – high owner-occupation rates, low but rising mortgage credit indebtedness and small supply of social housing – what makes them distinct from all four analysed reference countries.

5. MAIN FINDINGS

As a final step, we aggregated the coefficients of similarity pertaining to each of the six institutional areas and subsequently computed the average indicators for individual areas and CEE11 countries with respect to four benchmarks. The aggregated data are provided in [Tables 7–10](#).

Table 7. Mean coefficients of similarity for six institutional areas, 2005

Area	Reference country			
	Germany	Spain/Italy	Sweden	United Kingdom
Product market	55.9	61.3	55.1	46.4
Labour market	60.8	61.5	44.8	62.8
Financial markets	54.1	52.6	30.7	27.7
Social protection	67.1	60.0	48.9	46.6
Knowledge system	43.4	76.4	30.6	60.9
Housing market	57.8	72.3	46.7	28.8
Mean	56.5	64.0	42.8	45.5

Notes: Dark shaded cells indicate the highest similarity to a benchmark whereas light shaded cells point to the second-closest (or even third-closest) benchmark with a difference below 3 p.p.

Source: Own calculations.

Table 8. Mean coefficients of similarity for six institutional areas, 2014

Area	Reference country			
	Germany	Spain/Italy	Sweden	United Kingdom
Product market	49.4 (–6.5)	71.3 (10.0)	55.6 (0.5)	51.3 (4.9)
Labour market	54.0 (–6.8)	54.3 (–7.2)	36.7 (–8.1)	62.8 (0.0)
Financial markets	60.1 (6.0)	60.7 (8.1)	24.3 (–6.4)	26.5 (–1.2)
Social protection	68.6 (1.5)	61.0 (1.0)	45.4 (–3.5)	57.0 (10.4)
Knowledge system	50.2 (6.8)	75.3 (–1.1)	34.0 (3.4)	53.8 (–7.1)
Housing market	59.5 (1.7)	63.9 (–8.4)	47.6 (0.9)	23.1 (–5.7)
Mean	57.0 (0.5)	64.4 (0.4)	40.6 (–2.2)	45.8 (0.2)

Notes: (1) as in [Table 7](#).

(2) Figures in parentheses show the changes in the level of coefficients of similarity (in p.p.) between 2005 and 2014.

(3) The changes are calculated on the exact values (without rounding). Hence, small differences may appear if the change is calculated directly between rounded data in [Table 7](#) and rounded data in [Table 8](#).

Source: Own calculations.



Table 9. Mean coefficients of similarity across CEE11 countries, 2005

Country	Reference country			
	Germany	Spain/Italy	Sweden	United Kingdom
Bulgaria	47.6	58.6	33.2	39.6
Croatia	60.7	68.5	45.4	46.9
Czech Republic	64.4	68.5	46.8	48.3
Estonia	58.1	60.0	48.0	51.2
Hungary	55.9	65.8	43.0	48.0
Latvia	58.7	62.7	43.9	49.1
Lithuania	61.3	65.6	44.7	48.5
Poland	52.1	67.4	43.9	46.0
Romania	47.8	54.2	34.7	36.9
Slovakia	58.8	61.9	38.4	41.7
Slovenia	56.3	71.1	48.7	44.7
Mean	56.5	64.0	42.8	45.5

Notes: As in Table 7.

Source: Own calculations.

Table 10. Mean coefficients of similarity across CEE11 countries, 2014

Country	Reference country			
	Germany	Spain/Italy	Sweden	United Kingdom
Bulgaria	46.1 (−1.5)	57.7 (−0.9)	31.9 (−1.3)	39.8 (0.2)
Croatia	58.9 (−1.9)	72.4 (3.8)	39.0 (−6.4)	41.7 (−5.2)
Czech Republic	63.9 (−0.5)	61.5 (−7.0)	42.9 (−3.9)	48.9 (0.6)
Estonia	64.2 (6.1)	63.4 (3.4)	49.2 (1.1)	54.6 (3.5)
Hungary	59.0 (3.0)	64.2 (−1.6)	40.0 (−3.0)	48.0 (0.0)
Latvia	54.8 (−4.0)	64.8 (2.1)	42.0 (−2.0)	48.8 (−0.3)
Lithuania	58.1 (−3.2)	64.4 (−1.2)	42.1 (−2.6)	48.9 (0.4)
Poland	56.0 (4.0)	65.9 (−1.5)	40.5 (−3.4)	45.3 (−0.7)
Romania	47.6 (−0.3)	58.4 (4.1)	28.6 (−6.1)	38.3 (1.4)
Slovakia	56.5 (−2.4)	67.9 (6.0)	39.2 (0.8)	40.8 (−0.9)
Slovenia	61.8 (5.6)	68.0 (−3.0)	51.4 (2.7)	48.1 (3.4)
Mean	57.0 (0.5)	64.4 (0.4)	40.6 (−2.2)	45.8 (0.2)

Notes: (1) As in Table 7.

(2) Figures in parentheses show the changes in the level of coefficients of similarity (in p.p.) between 2005 and 2014.

(3) The changes are calculated on the exact values (without rounding). Hence, small differences may appear if the change is calculated directly between rounded data in Table 9 and rounded data in Table 10.

Source: Own calculations.



The most important findings are summarised below:

1. In most aggregate terms, i.e., the averages for the entire sample analysed and for six institutional areas involved, the CEE11 countries revealed a simultaneous institutional proximity to more than one model of capitalism, with the differentials in the respective coefficients of similarity being quite small. At the level of institutional areas this **polycentric pattern of similarity** can be traced in the labour market and industrial relations, financial intermediation, social protection system and the housing market where the institutional features of the sample countries made them almost equally akin to the Mediterranean and the Continental models of capitalism as well as to the Anglo-Saxon model (labour market), with the similarity coefficients exceeding in most cases 60%.
2. In turn, regarding particular benchmarks, the CEE11 countries exhibited the greatest relative resemblance to the Mediterranean model of capitalism, represented by Spain/Italy. This conclusion seems robust in terms of its time stability (2014 vs. 2005) and well-grounded in three interconnected results. First, as can be seen in [Tables 9 and 10](#), the mean coefficients of similarity with regard to Spain/Italy were the highest across the reference countries. Second, in each year the coefficients of similarity vis-à-vis Spain/Italy in all but one institutional area exceeded 60% unlike in three remaining benchmark countries. Third, in terms of relative (average) proximity or resemblance Spain/Italy was ranked first in 2005 in three out of six areas, the exceptions being labour market and industrial relations, financial markets, and social protection system. In 2014, Spain/Italy was ranked first in four areas, the exceptions being labour market and social protection system.
3. At the level of individual countries in 2014, Croatia, Slovenia and Slovakia exhibited the strongest relative resemblance to the Mediterranean model ([Table 10](#)). On the opposite side of the spectrum, we had Bulgaria and Romania.
4. The sample countries were the least similar to the Nordic model of capitalism, the only exceptions being product market competition and the housing market, where Sweden was ranked higher than the UK embodying the Anglo-Saxon model of capitalism.
5. Simultaneously, in terms of average indicators, the CEE11 economies displayed quite a strong resemblance to the Continental European model of capitalism, represented by Germany, too. With the mean coefficient of similarity close to 60% in 2014, this country was ranked first as the closest benchmark in the social protection area and second in financial intermediation and the housing market.
6. Seen from the angle of distribution of the pertinent coefficients of similarity across the CEE11 countries and institutional areas involved, the pattern emerging from our study indicates quite a considerable level of homogeneity. In the end year of the analysis, in all areas a vast majority of the CEE11 countries (ten out of eleven in two areas and seven to nine in three other areas) tended to gravitate – in relative terms – towards the same model of capitalism while also demonstrating a bi- or polycentric pattern of similarity discussed in the point 1 above.
7. Simultaneously our picture, if disaggregated, reveals huge discrepancies between particular input and output variables in individual countries and even more so – between the average values for the input and output parts of institutional architectures concerned. Parallel to that, in the light of a more in-depth qualitative analysis of pertinent institutional measures across six areas concerned it seems also legitimate to argue that the sample countries witnessed a remarkable misfit between formal and informal institutions.



8. A more in-depth, separate examination of input and output variables shows that while most CEE11 countries were the closest to the Mediterranean model of capitalism in terms of output variables (or performance) they were much more akin to the Continental model when it comes to inputs (institutional arrangements). If contrasted with the other, more aggregate findings discussed above, this implies that the effect of output variables outweighed the impact of input indicators on the overall value of the coefficient of similarity both at the level of the CEE11 group and most of its individual members making them gravitate relatively stronger – on average – toward the Mediterranean model of capitalism.
9. Based on the comparison of the results of two snapshots made for 2014 and 2005 it can be claimed that the patterns of institutional architecture – in terms of their similarity or dissimilarity to four benchmark models of Western European capitalism – established for the whole group of the CEE11 economies exhibited a considerable stability over time. This claim may be split into two interrelated observations. First, the ranking of the CEE11 group's resemblance to four benchmarks between 2005 and 2014 remained unchanged (Mediterranean model – Continental model – Anglo-Saxon model – Nordic model). Second, at the most aggregate level the changes of the average coefficients of similarity in the CEE11 group experienced between 2005 and 2014 turned out quite insignificant. For example, the incremental mean coefficient of similarity with regard to the Mediterranean (Spain/Italy) and the Continental models (Germany) amounted to just 0.4 and 0.5 p.p. respectively, whereas the change in question vis-à-vis the Nordic model totalled –2.2 p.p.
10. As a word of caution however, it should be emphasized that the averages for the whole group may, to some extent, blur the picture of the evolution of institutional architecture in individual CEE countries and particular institutional areas. In fact, between 2005 and 2014 the sample countries experienced quite sizeable (at the order of 7 p. p.) changes in the levels of similarity coefficients vis-à-vis the reference countries, not infrequently going in the opposite directions. While in some countries (notably, Estonia, Hungary, Poland and Slovenia) the relative institutional distance towards the Continental European model has been shortened, some other countries (Croatia, Latvia, Romania and Slovakia) have displayed a trend to get even closer to the Mediterranean model of capitalism. Similar patterns can be found if we disaggregate data into six institutional areas involved (Table 8). The respective incremental coefficients of similarity ranged between –8.4 and 10.4 p.p. (i.e., within a band of almost 19 points). Yet, both findings do not contradict the general picture just described as the changes concerned tended to go in the opposite directions and mostly cancelled out.

6. CONCLUDING REMARKS

The comparative empirical analysis adds to our understanding of the nature and most salient features of the emerging capitalism in the CEE11 countries. In particular, it allows - *inter alia* - to operationalize the proposition put forward in the state-of-the-art literature implying institutional heterogeneity or ambiguity inherent in the design and evolution of the post-communist capitalism, and to fill these notions with new referents. The results of our research show that the institutional ambiguity in question can be found at three different levels of the institutional architecture in these countries, that is:



- *Country level.* The mean coefficients of similarity in many individual CEE11 countries tended to exhibit a bi-polar or a polycentric pattern (e.g., Estonia), i.e., they pointed to a simultaneous institutional resemblance to two or even three different models of Western European capitalism.
- *Institutional area level.* Two cases may be distinguished: (i) intra-area ambiguity and (ii) inter-area ambiguity. In the former the same, polycentric pattern held as at the country level, i.e., a simultaneous similarity of most institutional areas to more than one model of Western European capitalism. In the latter case, whereas some areas in a CEE11 country (even if they displayed a monocentric pattern of similarity) showed the highest institutional proximity to a particular benchmark (e.g., Spain/Italy), some other areas tended to gravitate toward another reference country representing a distinct model of Western European capitalism (e.g., Germany) and still other seemed to converge toward the institutional arrangements prevailing in the UK or Sweden. This frequently made individual institutional areas incompatible as they represented a divergent inner logic, which hampered economic development and triggered social tensions.
- *Institutional indicators.* The institutional architectures in the CEE11 countries tended to also display strong symptoms of systemic mismatch between their input and output measures. A closer look at the average values of input and output variables in these countries reveals again a clearly ambiguous picture of similarity of the former and the latter to two or more Western European models of capitalism.

The empirical results of this study and the cognitive generalizations outlined above justify in our view the use of the term **patchwork capitalism** as the most adequate descriptor of the essence and peculiar institutional characteristics of post-communist capitalism that has evolved in the CEE11 countries since the outset of systemic transformation. The notion of patchwork capitalism can be best comprehended as an institutional matrix incorporating building blocks transplanted from various institutional orders, with special emphasis on the co-existing models of contemporary Western-type capitalism. Simultaneously, what makes patchwork capitalism even more ‘patchy’ and incoherent is a significant component of path dependence in each CEE country which entails an important role of proto-capitalist and command economy legacies as determinants of the present institutional order in those countries.¹⁰ As a result, the present institutional architectures in the CEE region are made up of components rooted in three time layers: (i) the proto-capitalist legacy, (ii) the socialist legacy and (iii) institutions transplanted from the contemporary models of Western capitalism. Whereas the first two layers carry forward mostly informal institutions from a country’s history, which is consistent with the Braudelian concept of *long durée* (Braudel 1999), the last layer involves predominantly formal institutions. This pattern may explain the existing mismatch between formal and informal institutions and weak social embeddedness of the former. Even more important is the fact that such an institutional matrix hosts components and parts (institutions and institutional areas), which are only loosely stitched to each other as there is no canvas or fabric that would provide a common thread or organizing principle uniting the parts into a coherent whole. As a derivative, particular institutional areas and institutional arrangements are incompatible – they embody divergent inner logics coupled with the co-existence of different coordination

¹⁰For a more in-depth discussion of the concept of patchwork capitalism, see Rapacki – Gardawski (2019).



mechanisms (e.g., market vs. administrative) which often gives rise to systematic mismatch and negative synergies or entropy¹¹ within the institutional architecture.¹²

As a final remark, we are well aware that our research leaves some essential questions yet to be answered, that some answers may not be definitive, and that some ambiguities may still be present. Simultaneously, since the completion of our study new questions or research challenges have emerged. They are due in particular to a marked acceleration of institutional changes in the CEE region, including dramatic shifts of institutional trajectories in Hungary and Poland since 2010 and 2015 respectively, and to the outbreak of the COVID-19 pandemic in 2020.¹³ The major unanswered queries and/or new research challenges include (*inter alia*):

- the imitative pattern of development in the CEE11 countries as a determinant of their convergence toward Western benchmarks;
- the role of their (semi)peripheral position in the EU as a potential explanatory variable;
- relative proximity of more advanced CEE economies to the Mediterranean countries in terms of their economic development level as a possible determinant of their convergence toward this model of capitalism as well as their gaps between input and output variables;
- the significance of the ‘path dependence’ factor in the CEE11 countries, with special regard to the importance of informal institutions inherited from the past as building blocks of institutional architectures and crucial determinants of the patchwork nature of post-communist capitalism in the CEE region; and
- the importance of institutional complementarities (their deficit) as an explanatory variable of patchwork capitalism in the CEE11 countries including the ways of overcoming a formidable methodological challenge of their proper measurement by means of quantitative methods.

Hence, in view of the foregoing insights a good deal of caution is advisable when interpreting the results of our research achieved so far, as preliminary and tentative. Further studies on the subject are therefore necessary, based on upgraded and more versatile research methods and tools that would allow to broaden the scope of indicators aimed to best describe the evolving institutional infrastructure in the CEE11 countries, and to better capture its patchwork nature.

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¹¹In this respect our conceptualization may be contrasted with the idea of ‘cocktail capitalism’ put forward by Cernat (2006). While the latter concept implies intentionality and gives rise to positive synergies, patchwork capitalism emerges as a result of non-intentional ‘institutional drift’ and entails mostly negative synergies. For a more detailed discussion, see Rapacki – Gardawski (2019).

¹²It is worth mentioning in this context that the patchwork nature of the emerging capitalism in the CEE11 countries has been also corroborated in two other empirical studies by the present authors (Rapacki – Czerniak 2018; Rapacki 2019) based on the application of a different analytical method, that is subspace clustering.

¹³In a recent study (Próchniak et al. 2020), some of the present authors embarked on an early, tentative assessment of the major effects of COVID-19 pandemic on institutional developments in the CEE11 countries in 2020 and outlined the resulting possible future scenarios of institutional changes in these countries.



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