

# The Emerging Models of Capitalism in CEE11 Countries – a Tentative Comparison with Western Europe<sup>1</sup>

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## Abstract

*In this paper, we conduct a comparative analysis of the models of capitalism prevailing in the CEE11 countries. Our overriding aim is to find out how similar or dissimilar are these countries to each of the four models of European capitalism singled out by Amable. We compare 11 sample countries (Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia) with their peers representing the Anglo-Saxon model (UK), the Continental European model (Germany), Scandinavian model (Sweden), and Mediterranean model (Italy or Spain). Our comparison focuses on six institutional areas: product market*

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*competition, labor market and industrial relations, financial system, social protection, knowledge sector, and the housing market, thus extending the original approach adopted by Amable (adding the housing market). We apply our own original methodology based on hexagons. We compare each of the six domains in the CEE11 countries with the reference Western economies using six indicators that best identify the institutional characteristics of a given domain (three indicators represent input variables or the institutional architecture, and three others – output variables or performance of an institutional area). We calculate the ranks of similarity of each indicator for a CEE country to the same indicator for the reference economies. The results of our study show that the CEE11 countries overall (and Poland in particular) exhibit the greatest resemblance to the Mediterranean model of capitalism, while they are the most dissimilar to the Scandinavian model. However, their similarity to the Mediterranean model is strongly determined by output variables or economic performance – in terms of institutional architecture or input variables alone the CEE11 countries are most akin to the Continental European model of capitalism.*

**Key words: varieties of capitalism, institutions, CEE countries, post-communist capitalism**

## Introduction

As the mushrooming literature on the subject has shown, one of the biggest challenges facing the ongoing research on ‘comparative capitalism’ boils down to a question: how to overcome the difficulties with a fully-fledged incorporation of the former socialist countries undergoing systemic transformation from plan to market into the existing conceptual and methodological frameworks aimed to deal with the co-existing varieties of capitalism in the Western developed world.

The primary objective of this paper is to shed some new empirical light on the nature of the emerging post-communist capitalism in eleven Central and Eastern European countries (CEE11) who joined the European Union between 2004 and 2013. To this end, we carry out a comparative analysis of the institutional architectures emerging in eleven CEE countries against the background of the established models of capitalism co-existing in Western Europe, and in particular in the European Union.

The research approach adopted in this study capitalizes on the standard conceptual framework and typology, developed by Bruno Amable (2003) and originally designed for Western market economies. With a view to account for transition-specific characteristics of the evolving institutional setup in CEE11 countries on their road from plan to market and the peculiarities rooted in their command economy legacy, we extended and modified Amable’s original framework. Parallel to that we designed

a project-specific method that enables quantification of the results of the pertinent comparisons.

Our overriding aim 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 ‘ideal-typical’ Western country. At this stage of our research we do not strive however to prejudge whether these countries developed their own, specific model of post-communist capitalism, they host several co-existing such models or they rather converge toward any of the four established patterns of Western European capitalism.

The paper has been structured as follows. Section 2 provides the theoretical and empirical background for our study. In section 3 data and methodology applied is explained. Section 4 discusses the empirical results of our exercise, and section 5 wraps up with the summary of major findings and conclusions.

## 1. Background

Originally, the very idea of ‘comparative capitalism’ was confined solely to the co-existing varieties of capitalism in 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 the case of one of the major contributions to the field made by Bruno Amable (2003). His proposition, to be further dubbed the Diversity of Capitalism (DoC) approach, has triggered a new offspring of research geared towards a direct application of the original framework<sup>2</sup> 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. Simultaneously, 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 the existing standard classifications with derivative categories that would accommodate transition countries too, as the emerging types of post-communist capitalism. These trends have become particularly

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<sup>2</sup> This also applies to another important contribution, made two years earlier by Peter Hall and David Soskice (2001). For more details, see Rapacki et al. (2016).

pronounced since the Eastern enlargement of the European Union in 2004 and 2007 encompassing ten CEE new member states (followed by Croatia in 2013).

In his book Amable raised two important questions, even more so if seen from the angle of transition economies, which experienced fundamental institutional change. First, what mechanisms ensure the efficiency of emerging institutions, and second, how institutional efficiency should be understood and from which perspective institutions should be efficient? Amable claims that the development of specific institutions represents 'the political compromise' between various interest groups in the society. Each institutional reform violates the existing set of interests and requires a strong social support for its implementation.

The core element in Amable's approach is the concept of institutional complementarities, examined earlier by Aoki (1994). He defines complementarity as a relationship between institutions where the presence of one institution increases the efficiency of another. Amable concludes that the models of capitalism should be studied not only as a set of separate institutions but also in a broader perspective, including the relationships among institutions with special emphasis on their complementarities (Amable 2003: 6).

As a first step in his novel methodology, 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.

Second, for each of the five areas concerned Amable selected a set of indicators that best describe the most salient features of institutional setup. It is worth mentioning that he focused predominantly on the 'input' side of the institutional architecture. As a result of selecting the most important indicators and then applying the cluster analysis, Amable identified five models of capitalism co-existing in the Western hemisphere, i.e.:

- the Anglo-Saxon model (UK, USA, Australia, New Zealand, Ireland),
- the Social-democratic model (also dubbed the Nordic or Scandinavian model: Sweden, Norway, Denmark, Finland),
- the Continental European model (France, Germany, the Netherlands, Austria),
- South European (or Mediterranean) capitalism (Greece, Italy, Spain, Portugal),
- the Asian model (Japan, South Korea).

The original proposition put forward by Amable inspired other researchers to apply and extend the original DoC framework with a view to incorporate countries undergoing systemic transformation from socialism to capitalism. Two such attempts

in particular are worth mentioning here – those undertaken by Vlad Mykhnenko (2005) and Farkas (2011, 2013).

The first insightful empirical study on post-communist capitalism emerging in CEE, based on the DoC methodology and encompassing two transition economies - Poland and Ukraine, was conducted by Vlad Mykhnenko (2005). The most important results of his study seem to support the claim that post-communist countries have not evolved into any of the four pure models of Western European capitalism described by Amable. The findings established by Mykhnenko imply 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. And more specifically, whereas in Poland the mix of institutional characteristics in most areas point to a similarity of the emerging type of capitalism to the Mediterranean pattern, the dominant features of the one area, i.e. the social protection system are more akin to the Continental European model. In turn in Ukraine, while the nascent capitalism appears to resemble in most respects the Continental European model, the most salient properties of its social protection sector exhibit much more similarity to the Anglo-Saxon model of capitalism (Mykhnenko 2005).

Another conclusion to be drawn from Mykhnenko's research is that – at least in case of Poland and Ukraine – as a consequence of systemic transformation, and then the EU membership (Poland), the convergence process towards the institutional patterns prevailing in Western Europe has taken place. However, the two countries have apparently been heading for quite distinct benchmarks exhibiting significant differences in their emerging models of capitalism. Equally interesting is the downward trend in institutional complementarities in both countries ('institutional ambiguity' in Mykhnenko's terminology) which tends to adversely affect the efficiency of all institutions involved.

The most plausible explanation of the possible reasons underlying the 'institutional ambiguity' in Poland and Ukraine and more generally – in the whole group of CEE economies, may be synthesized under two headings. First, this is the uncompleted process of building the 'post-communist capitalism' in 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 or external 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, values represented by the majority of the society or just the amount

of money available in this area (path dependency). As a consequence, some parts of the institutional structures predominating in CEE countries are not consistent with other parts, as is usually the case in developed countries representing four models of Western-type capitalism (Rapacki et al. 2016).

Another interesting research that capitalizes on the DoC approach and delves into the intricacies of the emerging post-communist capitalism was conducted by Farkas (2011, 2013). The author tries to answer the question, how the institutions in the new CEE members of the European Union (CEE11) match the institutional order of the old EU countries, and whether they resemble any of the four models of European capitalism singled out by Amable (2003) or rather represent their own pattern.

Using data from various international sources Farkas made an attempt at a modified DoC typology incorporating the CEE countries. To this end she applied the cluster analysis and multidimensional scaling based on measurable data and three-year average values.

The empirical analysis carried out by Farkas implies that the CEE countries evolved into their own, new model of post-communist capitalism. This author argues that the institutional disparities between these countries and the old EU member states embodying Amable's four models of European capitalism are more remarkable than the differences between post-communist economies alone. Only one country – Slovenia – seems to gravitate toward the Continental European model. According to Farkas, there are three main reasons that may explain a new institutional development path of the CEE11 economies: all post-communist countries suffered from (i) the lack of capital and (ii) featured a weak civic society; parallel to that (iii) the EU institutions exerted a strong impact on their economies (Farkas 2011). The lack of capital made foreign investment necessary. Most of FDI went to the financial sector, and in particular to the banking industry, which was conducive to the development of bank-based financial systems (Farkas 2013). There was no domestic, internationally competitive business-led R&D sector. The levels of social protection and welfare distribution in those countries were closely correlated with the strength of civil society or traditions of social institutions (Farkas 2013).

Hence, as may be inferred from the argument of the Hungarian scholar, the CEE11 countries have developed their own pattern of institutional architecture, being a response to their historical legacy and consistent with the initial conditions of systemic transformation.

## 2. Data and Methodology

In this section we aim to compare six institutional domains in each of the CEE11 countries with selected Western European economies, representing various models of capitalism. The six institutional areas adopted for the purpose of this study are based, with one essential extension, on the distinction made by Amable (2003). They are the following: (1) product market competition, (2) labour market and industrial relations, (3) social protection system, (4) knowledge sector, (5) financial system, and (6) housing market. As regards the benchmark or reference countries, we follow Amable's typology and single out four models of capitalism, with one 'ideal-typical' country best representing each model: (1) Anglo-Saxon model (UK), (2) the Nordic or Scandinavian model (Sweden), (3) Continental European model (Germany), and (4) South European (Mediterranean) capitalism (Italy or Spain). In the case of the Mediterranean model, two countries were chosen because in our view both - depending on the institutional area concerned - are equally good representatives of this model.

Each institutional area is compared on the basis of six variables. Three of them (input variables) represent determinants, that is key features/components of a pertinent institutional architecture, whereas three others – outcomes or performance in a given institutional area (output variables). This approach is the extension of the Amable's methodology where mainly inputs were considered.

The selection of pertinent variables was based on the results of earlier studies on the topic (e.g. Rapacki 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. Naturally, to some extent, the list of indicators selected for this study reflect authors' own opinion on the subject.

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. As a result, the following variables have been chosen<sup>3</sup>:

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<sup>3</sup> For the sake of conciseness, we do not explain here the methodology behind the respective variables. The pertinent details can be found in the quoted data sources.

**Area I – product market competition:**

- a) product market regulation (OECD 2017) [PMR];
- b) barriers to market entry (Institutional Profiles Database 2017) [BAR];
- c) business freedom (Heritage Foundation 2017) [BF];
- d) number of enterprises per million inhabitants (Eurostat) [FIR];
- e) number of newly registered firms per 1000 persons aged 15–64 (World Bank 2017) [NEW];
- f) intensity of local competition (Global Competitiveness Report 2017) [COM].

**Area II – labour market and industrial relations:**

- a) trade unions' density (Fulton, Workers' participation database, ETUI 2013) [TUD];
- b) collective agreement's coverage (Fulton, Workers' participation database, ETUI 2013) [CAC];
- c) employees' participation index (Fulton, Workers' participation database, ETUI 2013) [EPI];
- d) temporary employees rate (Eurostat) [TER];
- e) lifelong learning and training (Eurostat) [LLT];
- f) young people neither in employment nor in education or training rate (Eurostat) [NEET].

**Area III – social protection system:**

- a) total benefits to GDP ratio (Eurostat) [BtGDP];
- b) total government expenditure directed to families to total government expenditures ratio (Eurostat) [GFtE];
- c) total government expenditure on healthcare to total government expenditure ratio (Eurostat) [GHtE];
- d) Gini coefficient (Eurostat) [GC];
- e) fertility rate (Eurostat) [FR];
- f) healthy life expectancy for people aged 65 (Eurostat) [HLY65].

**Area IV – knowledge sector:**

- a) R&D expenditure as a percentage of GDP (value for all sectors in the economy) (OECD 2017) [RDEX];
- b) human resources in science and technology sector (% of active population) (OECD 2017) [HRST];
- c) public expenditure on education (% of GDP) (OECD 2017) [PEE];



- d) turnover (of enterprises) from innovation (% of total turnover of enterprises) (OECD 2017) [TOFI];
- e) high-tech exports (% of total exports) (OECD 2017) [HTE];
- f) patent applications to the European Patent Office (EPO) by priority year (per million inhabitants) (OECD 2017) [PATE].

**Area V – financial system:**

- a) domestic credit to private sector (World Bank 2017) [DCPS];
- b) foreign direct investments inflow (% of GDP) (World Bank 2017) [FDII];
- c) mutual fund assets (% of GDP) (World Bank 2017) [MFA];
- d) stock market capitalization (% of GDP) (World Bank 2017) [SMC];
- f) bank concentration (%) – assets of 3 largest commercial banks to assets of all commercial banks (World Bank 2017) [BC];
- g) gross portfolio debt assets (% of GDP) (World Bank 2017) [PDA].

**Area VI – housing market:**

- a) share of owner-occupied housing (Eurostat) [OOH];
- b) rent-to-income ratio (own calculations based on Eurostat and numbeo.com data) [RTI];
- c) total outstanding residential loans (% of GDP) (Hypostat) [MRT];
- d) share of houses owned by municipalities or the state (own calculations based on Housing Europe, TenLaw, national sources and OECD data) [SOC];
- e) real estate tax revenues (% of GDP) (Eurostat) [TAX];
- f) dealing with construction permits: distance to frontier (World Bank Doing Business Report) [DBC].

We collected the values of the above listed variables for each CEE11 country and for four reference economies (Spain or Italy in the case of the Mediterranean model). The observations refer to the latest possible year for which the values for all the countries are available (the exact time bracket for the six institutional areas is specified in the next section).

Based on these variables, we build the hexagons that compare a CEE11 country with the respective reference economies in terms of individual indicators. We also compute the coefficients of similarity to make a more general comparison between the countries involved. On this basis, we compare the model of capitalism in a CEE11 country with the model of capitalism in the reference Western European economy. This is our own method invented specifically for the purpose of this study. The aim was to develop a quantitative technique which would enable cross-country

comparisons including the possibility of expressing the level of institutional similarity in numerical terms.

The axes of the hexagons plot the ranks of similarity between a CEE country and the reference economies in terms of a particular indicator (upward and downward deviations are treated equally). Thus the axes represent the percentage scale and range from 0 to 100. The higher the value, the greater is the similarity of the countries involved.

The ranks 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. In other words, it is the case when a CEE11 country matches exactly a particular model of capitalism.

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

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

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 analyzed group encompassing 11 CEE countries and 4 reference economies. Hence, if the value of a given variable for a CEE11 country exceeds the reference 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 example makes it easier to understand the way the scores are calculated (the ranks of similarity). The variable: total government expenditure directed to families to total government expenditures ratio [GFtE] (used in the area of social protection) assumes the following values for the considered group of countries: Bulgaria: 6.0, Croatia: 3.1, Czech Republic: 2.7, Estonia: 4.6, Hungary: 4.0, Latvia: 2.4, Lithuania: 2.8, Poland: 3.3, Romania: 2.4, Slovakia: 3.1, Slovenia: 4.2, Germany: 3.5, Italy: 2.8, Sweden: 4.9, and the UK: 3.7. The standard deviation of these values equals 0.984.

Let us now conduct the comparison with Italy (the Mediterranean model). The reference value for Italy is 2.8. If a CEE11 country records such a value, the score 100 is ascribed. The boundaries of the interval given by formula (1) equal respectively:

$$2.8 - 3 \times 0.984 = -0.2 \quad \text{and} \quad 2.8 + 3 \times 0.984 = 5.8. \quad (2)$$

If the values for a CEE11 country are lower than (or equal to)  $-0.2$  or greater than (or equal to)  $5.8$ , the score 0 is assigned, indicating complete dissimilarity.

The score for Lithuania is 100 because this country shows exactly the same record as Italy (2.8). Thus, in terms of total government expenditure directed to families, Lithuania is fully similar to the Mediterranean model. Bulgaria, with the ratio of government spending to families at the level of 6.0, falls outside the range given by formula (2) and the score 0 appears. The ranks for Croatia and Slovakia are calculated in the following way:

$$\left(1 - \frac{3.1 - 2.8}{5.8 - 2.8}\right) \times 100\% = \left(1 - \frac{0.3}{3.0}\right) \times 100\% = 90\% \quad (3)$$

while that for Romania as follows:

$$\left(1 - \frac{2.8 - 2.4}{2.8 - (-0.2)}\right) \times 100\% = \left(1 - \frac{0.4}{3.0}\right) \times 100\% = 87\% \quad (4)$$

As we can see, Croatia and Slovakia as well as Romania score comparable results since their distance to Italy in absolute terms is very similar, but the signs of the pertinent differentials are not the same (in Croatia and Slovakia, the volume of government expenditure is greater than that in Italy, while in Romania it is lower).

The virtues of the methodology applied are the following. First, the distance toward the reference value takes into account the character of a variable: for example, the difference by 1 percentage point in the tax revenue-GDP ratio is much less important than the gap by 1 percentage point 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. Third, the percentage scores enable comparisons among countries on the basis of a variety of variables by 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 ranks of similarity can be easily verified by the reader based on actual values of individual variables involved.

### 3. Empirical results

This section presents and interprets the empirical results of the application of our hexagon method. It focuses on comparing the institutional arrangements in each of the CEE11 countries with the models of capitalism prevailing in four reference Western European states. Each of the six institutional domains is discussed separately on the basis of the coefficients of similarity calculated according to the methodology described in the previous section.

For each institutional area, we draw the hexagons that compare a CEE11 country with four reference economies. Each CEE country is plotted on a separate hexagon. Hence, the total number of hexagons amounts to 66 (6 institutional areas  $\times$  11 CEE countries). The most interesting hexagons are shown in the main text of the paper. The remaining hexagons can be found in the Appendix. The bigger is the area marked by a respective curve, the greater the similarity of a particular CEE11 country toward a Western European economy in terms of six analyzed indicators on a given hexagon.

Tables 1–6 show the aggregated coefficients of similarity. They are calculated as the arithmetic average of the ranks associated with individual indicators. The data in the tables are averages of the scores plotted on the axes of respective hexagons. Dark grey cells indicate the Western European model of capitalism to which a given CEE11 country converges most significantly while the shaded ones point to the second-closest benchmark (if the score differential does not exceed 3 percentage points).

#### 3.1. Product Market Competition

The values for the variables pertaining to the area: product market competition refer to the years between 2012 and 2016, depending on the country and the data source. Different years for different variables result from the fact that many indices are not available on an annual basis (e.g. OECD product market regulation indicators are published every 5 years).

The first three indicators (product market regulation, barriers to market entry, and business freedom) are interpreted as yardsticks of the institutional infrastructure (determinants) of product market competition (input variables) while the last three variables (number of enterprises, number of newly registered firms, and intensity of

competition) represent outcomes of product market competition (output variables). We tried to include variables from various sources, highlighting different aspects of product market competition, representing stocks and flows (that is why there are two variables representing the number of firms), as well as taken both from official statistics and survey data.

**Table 1. Coefficients of similarity in the area: product market competition (%)**

Country	Reference country			
	Germany	Spain	Sweden	United Kingdom
Bulgaria	43.8	61.4	59.8	46.2
Croatia	39.1	55.3	35.3	26.0
Czech Republic	57.2	70.6	63.4	44.3
Estonia	62.0	69.8	63.9	71.8
Hungary	59.0	76.1	69.5	54.2
Latvia	59.5	77.5	72.1	58.7
Lithuania	69.4	86.3	79.3	58.9
Poland	57.6	69.2	64.5	46.6
Romania	53.9	60.3	44.4	36.0
Slovakia	50.6	67.2	67.1	44.7
Slovenia	52.7	75.0	66.9	35.8

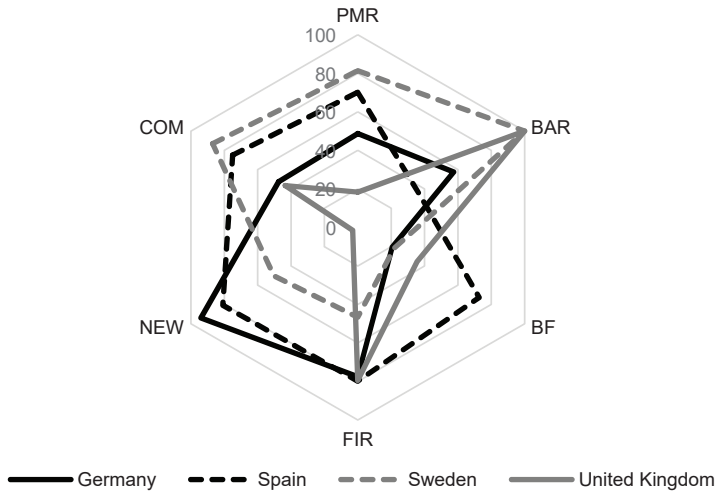
Note: Shadow cells indicate the highest similarity of a given CEE country.

Source: Own calculations.

The hexagons for Poland, Estonia, Hungary, and Lithuania are shown in Figures 1–4. The hexagons for the remaining countries are depicted in Figures A1–A7, in the Appendix. Table 1 shows the coefficients of similarity for all the CEE11 countries compared with reference economies (Spain was included as the reference country for the Mediterranean model). The analysis yields a number of interesting findings.

First of all, data in Table 1 indicate that ten CEE countries (except Estonia) exhibit the greatest similarity to Spain. The results are unlikely to be a coincidence. The coefficients of similarity to three other benchmark models of capitalism are – in the case of many CEE11 economies – significantly lower. The highest coefficients of similarity to Spain have been recorded in two Baltic states (Lithuania 86.3% and Latvia 77.5%). Hungary, Slovenia, the Czech Republic and Poland also display relatively high figures (76.1%, 75.0%, 70.6%, and 69.2% respectively) meaning that – in terms of the analyzed six variables – the model of capitalism in these countries was very similar to that prevailing in Spain.

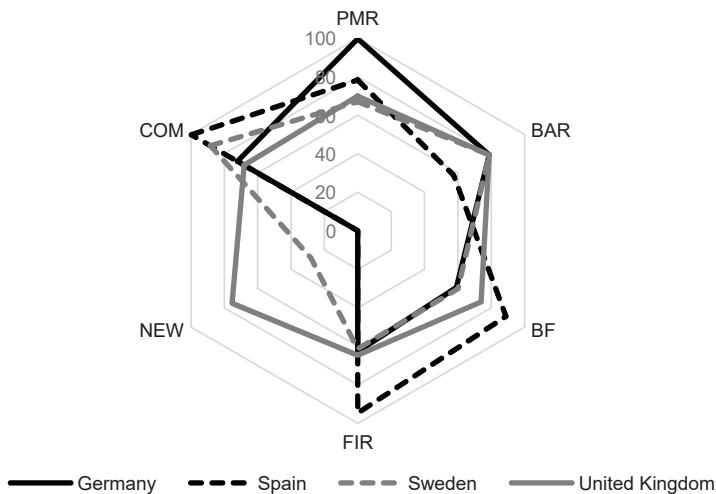
**Figure 1. Performance of Poland against reference countries in the area: product market competition**



Note: PMR – product market regulation; BAR – barriers to market entry; BF– business freedom; FIR – number of enterprises per million inhabitants; NEW – number of newly registered firms per 1000 persons aged 15–64; COM – intensity of local competition.

Source: Own calculations.

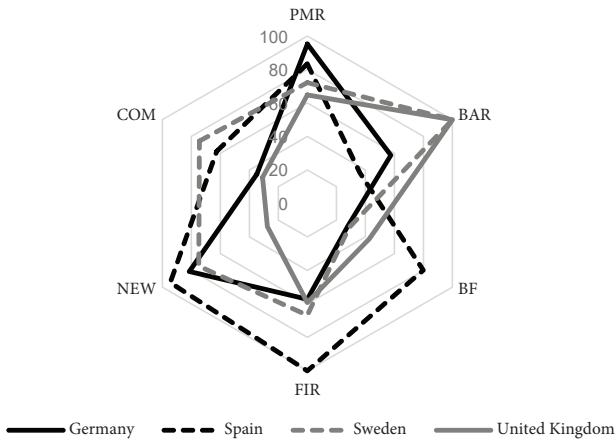
**Figure 2. Performance of Estonia against reference countries in the area: product market competition**



Notes as in Figure 1.

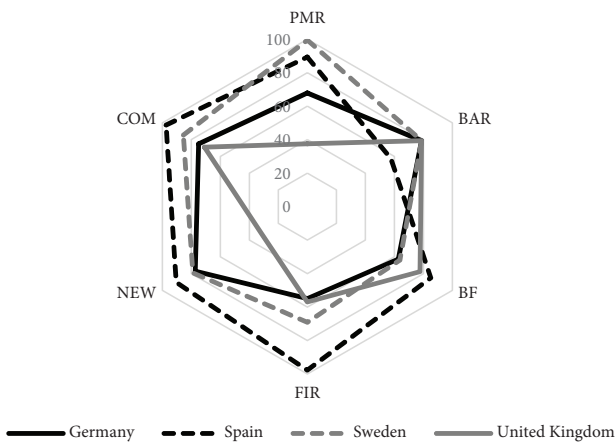
Source: Own calculations.

**Figure 3. Performance of Hungary against reference countries in the area: product market competition**



Notes as in Figure 1.  
Source: Own calculations.

**Figure 4. Performance of Lithuania against reference countries in the area: product market competition**



Notes as in Figure 1.  
Source: Own calculations.

Secondly, Estonia shows strong similarity to the UK, that is the Anglo-Saxon model of capitalism (at the level of 71.8%). The similarity between the UK and the other CEE11 countries is much lower. Estonia's resemblance to

the Anglo-Saxon capitalism, as far as product market competition is concerned, can be explained, *inter alia*, by the fact that it is a technologically advanced country, with high scope of economic freedom and well-developed private sector.

Thirdly, Sweden ranks 2<sup>nd</sup> as regards the level of similarity for most CEE11 countries. Exceptions comprise Croatia, Estonia and Romania, that is – apart of Estonia – the most recent entrants to the European Union. This finding implies that the model of capitalism emerging in CEE11 countries displays also a good deal of resemblance to the Scandinavian pattern.

A more in-depth analysis of hexagons yields the following findings. First, the hexagon for Lithuania shows that this country is very similar to Spain – in particular in terms of outcomes of product market competition. The left-hand side tops of the hexagon, representing outcomes [FIR, NEW, COM], are almost fully reached by the curve for Spain while the right-hand side ones for institutional infrastructure [PMR, BAR, BF] are more distant. The similarity of Lithuania to Sweden and Germany is also generally stable throughout the whole hexagon while the resemblance to the UK is very weak. Second, in the case of Poland, one can notice high similarity to Spain mainly on the outcomes side of product market competition while the similarity in terms of the institutional characteristics is much weaker (especially as regards barriers to market entry). Third, the hexagon for Estonia points to quite a strong similarity to the Anglo-Saxon model prevailing in the UK. The solid grey line for the UK is very uniformly distributed among the tops of the Estonian hexagon. In this country, the curves for the other reference economies do not reach the top for the variable: newly registered firms [NEW]. This is a flow variable which exhibits relatively large cyclical fluctuations (the dynamic comparison that includes volatility across various years would show more robust results in terms of annual fluctuations of the individual variables; this is however beyond the coverage of the present study).

### 3.2. Labour Market and Industrial Relations

The variables representing the labour market and industrial relations cover the period from 2013 to 2015. There is one exception concerning EPI variable. Croatia was excluded from statistics provided by ETUI. Since the index in question ranges from 0 to 1, the value 0.50 was assigned.



The first three indicators (trade unions' density, collective agreements' coverage, employees participation index) are interpreted as institutional descriptors of the labour market and industrial relations system, while temporary employees rate, lifelong learning and training, young people neither in employment nor in education or training rate represent outcomes in this institutional area.

The results are shown in Figures A8 – A18 (in the Appendix), and in Table 2. Data in Table 2 indicate that CEE11 countries can be grouped into three categories.

**Table 2. Coefficients of similarity in the area: labour market and industrial relations (%)**

Country	Reference country			
	Germany	Spain	Sweden	United Kingdom
Bulgaria	53.5	56.0	10.6	73.4
Croatia	64.7	79.0	36.5	49.8
Czech Republic	87.1	68.9	40.2	72.1
Estonia	70.6	63.4	32.3	79.7
Hungary	78.7	70.8	34.0	73.8
Latvia	59.8	48.9	19.5	79.8
Lithuania	65.7	51.2	23.0	79.2
Poland	62.6	69.4	25.5	63.4
Romania	50.0	53.7	16.1	68.4
Slovakia	77.0	70.1	33.7	67.1
Slovenia	75.6	71.5	61.7	56.7

Notes as in Table 1.

Source: Own calculations.

The first and largest group contains countries that exhibit similarities to the pattern of industrial relations prevailing in the UK where work and employment terms and conditions are primarily determined at the level of individual organizations, whether through collective bargaining between unions and employers at the firm level, through individual negotiations, or via unilateral employer setting of employment terms and conditions. The role of employment law is to establish a basket of minimum standards that are built into the employment relationship, which can then be improved upon by the parties.

These countries include Bulgaria, Estonia, Lithuania, Latvia and Romania. While Baltic states are traditionally described in terms of neoliberal industrial relations, the presence of two Balkan countries needs more research and explanation.

The second group encompasses countries exhibiting similarities to Germany. The Czech Republic, Hungary, Slovakia and Slovenia tend to converge to the model known as the Rhine (Continental European) capitalism/corporatism. The most salient features of this model comprise the partnership between labour and capital, symbolized by the system of co-determination; patterns of long-term employment for many employees, an emphasis on specific skills and correspondingly high investments in vocational training, competition based on quality.

The remaining two CEE11 countries: Poland and Croatia, tend to develop a system of industrial relations based on the dominant role of the state. In this regard they seem to be the most akin to the Mediterranean model of capitalism.

### 3.3. Social Protection System

In the case of social protection system, the values of the respective variables refer to 2014 or 2015, depending on the country. The first three indicators (BtGDP, GFtE and GHtE) are treated as proxies that best describe the institutional architecture of the social protection system (input variables), while the last three variables (GC, FR and HLY65) represent outcomes of social protection.

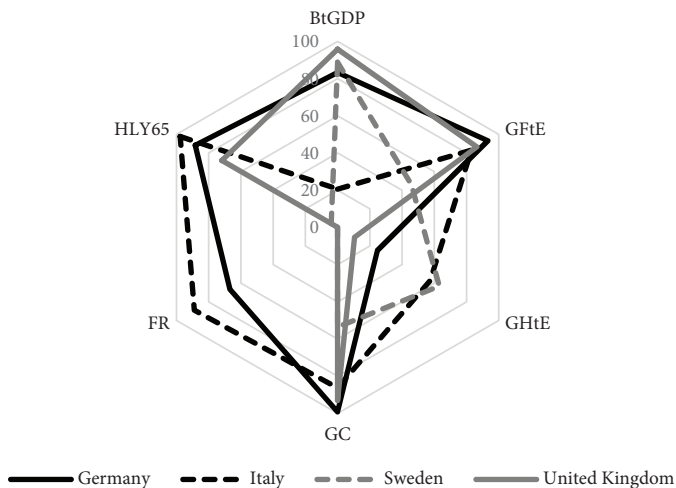
The hexagons for Poland, Croatia, Slovakia, Latvia and Romania are drawn in Figures 5–9. The hexagons for the remaining countries are depicted in Figures A19–A24 in the Appendix. Table 3 shows the coefficients of similarity for all CEE11 countries compared with reference economies (in this particular institutional area Italy was included as the benchmark for the Mediterranean model). The analysis yields a number of findings that are worth emphasizing.

**Table 3. Coefficients of similarity in the area: social protection system (%)**

Country	Reference country			
	Germany	Italy	Sweden	United Kingdom
Bulgaria	57.0	51.0	49.0	55.1
Croatia	86.2	74.8	48.4	64.7
Czech Republic	70.6	54.4	48.1	67.5
Estonia	65.7	57.0	49.5	55.2
Hungary	71.7	57.2	48.4	54.0
Latvia	49.3	50.8	31.2	44.8
Lithuania	70.5	62.6	36.5	64.4
Poland	75.9	72.3	42.5	59.6
Romania	61.5	62.8	30.9	47.3
Slovakia	73.8	66.7	52.7	53.2
Slovenia	72.3	61.6	62.2	60.7

Notes as in Table 1.  
Source: Own calculations.

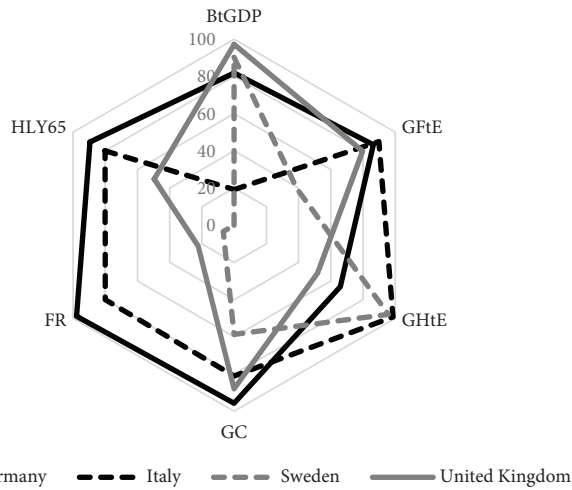
**Figure 5. Performance of Poland against reference countries in the area: social protection system**



Note: BtGDP – total benefits to GDP ratio; GFtE – total government expenditure directed to families to total government expenditures ratio; GHtE – total government expenditure on healthcare to total government expenditure ratio; GC– Gini coefficient; FR – fertility rate; HLY65 – healthy life expectancy for people aged 65.

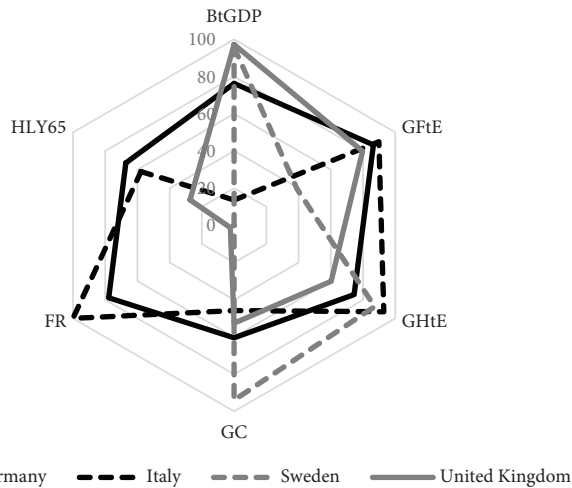
Source: Own calculations.

**Figure 6. Performance of Croatia against reference countries in the area: social protection system**



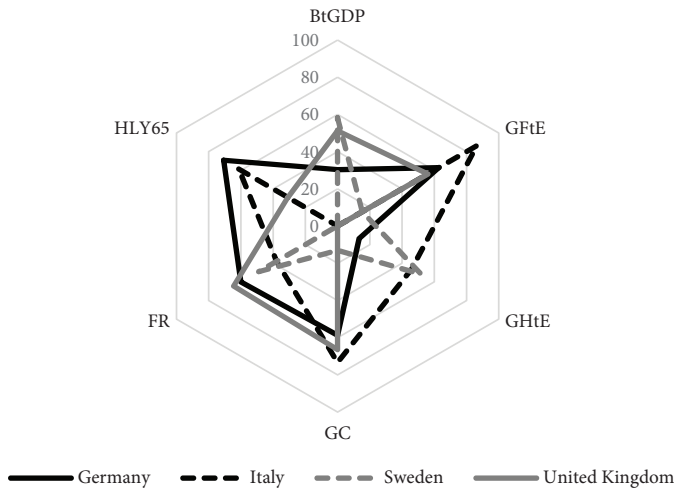
Notes as in Figure 5.  
Source: Own calculations.

**Figure 7. Performance of Slovakia against reference countries in the area: social protection system**



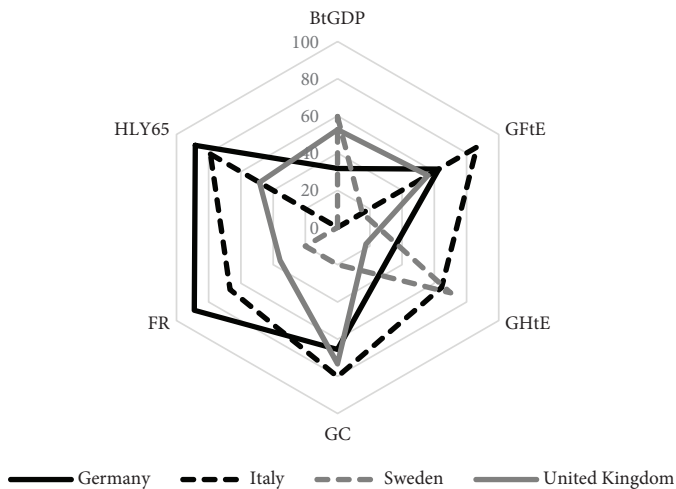
Notes as in Figure 5.  
Source: Own calculations.

**Figure 8. Performance of Latvia against reference countries in the area: social protection system**



Notes as in Figure 5.  
Source: Own calculations.

**Figure 9. Performance of Romania against reference countries in the area: social protection system**



Notes as in Figure 5.  
Source: Own calculations.

First of all, data in Table 3 indicate that nine CEE11 countries (except Latvia and Romania) exhibit the greatest resemblance to Germany, that is to the Continental European model of capitalism. In contrast, ten out of eleven analyzed countries (except Slovenia) demonstrate the lowest resemblance to Sweden, embodying the Nordic/Scandinavian model of capitalism.

The results are unlikely to be a coincidence. The coefficients of similarity with the other two models of capitalism in the social protection area are – in the case of nine CEE11 economies (except Latvia and Romania) – lower by more than 7.7 percentage points. The highest coefficients of similarity with Germany are recorded in Croatia (86.2%), Poland (75.9%) and Slovakia (73.8%), which implies that – in terms of the analyzed six variables – the institutional arrangements in these countries seem to be the closest to those prevailing in the Continental model of capitalism.

Secondly, although Latvia and Romania show similarity with Italy the level of resemblance is relatively lower, compared to the rest of the CEE11 group (62.8% in Romania and 50.8% in Latvia). Moreover, the coefficients of similarity with the other models of capitalism in these two countries are only insignificantly lower, by 1.3 and 1.5 percentage points respectively. What is even more important, the second-closest benchmark for Romania and Latvia is the Continental model of capitalism (Germany).

Thirdly, Sweden ranks last, as regards the level of similarity for ten CEE11 countries (except Slovenia). This result may imply that – at least in the social protection system – the model of capitalism emerging in the CEE region is the least akin to the Nordic benchmark. It is even more visible, when we take into account only the output variables (outcomes) of social protection (especially FR and HLY65). In the case of these two variables the level of resemblance to Sweden is well below 50%, and for 8 countries in the sample (except Bulgaria, Czech Republic and Slovenia) equals zero. Thus, this result could be treated as some evidence that the main problem CEE11 countries appear to face boils down to the efficiency of institutions in this particular domain, as the Nordic states are widely deemed the world leaders in solving social protection problems.

An in-depth analysis of hexagons yields the following findings. First, the hexagon for Croatia indicates that this country is very similar to Germany – in particular in terms of outcomes of the social protection system. The left-hand side tops of the hexagon, representing outcomes [GC, FR, HLY65], are almost fully reached by the curve for Germany while the right-hand side ones for inputs [BtGDP, GFtE, GHtE] are more distant. The similarity of Croatia with Germany and Italy is generally

stable throughout the whole hexagon while the resemblance to Sweden is very weak. Second, in the case of Poland, one can also see high similarity with Germany mainly in terms of the outcomes of social protection system [GC and HLY65] while the similarity concerned in terms of institutional arrangements (inputs) is slightly weaker (especially as regards the relative amount of public resources directed to healthcare –GHtE). Third, the hexagon for Slovakia points to a pretty close proximity to Germany, mostly in terms of the institutional architecture of social protection system. This country would probably display the highest similarity to Italy, if we left out the BtGDP variable.

### 3.4. Knowledge Sector

The variables chosen to best describe the area of knowledge creation (innovation, research and development, education) refer to 2014. The first three variables (R&D expenditures, human resources in science and technology sector, public expenditure on education) represent the institutional infrastructure of the knowledge sector (input variables), while the last three indicators (turnover from innovation, high-tech exports, patent applications to the EPO) show its outcomes or performance. The selected set of variables includes both stocks and flows, and allows to describe the sector of knowledge creation in the economies concerned in a relatively broad and complex way.

The hexagons for Poland, Estonia, Hungary, and Lithuania are presented in Figures 10–13. The hexagons for the remaining countries are drawn in Figures A25–A31 in the Appendix. Table 4 shows the coefficients of similarity for all CEE11 countries compared with the reference economies (here Italy was included as the benchmark for the Mediterranean model).

Several findings of our exercise in the area of knowledge creation are particularly worth emphasizing. First of all, data in Table 4 indicate that ten CEE countries (except Estonia) exhibit the greatest similarity with Italy. The results are robust and cannot be a coincidence. The coefficients of similarity with the three other models of capitalism are – in the case of many CEE11 economies – significantly lower. The highest coefficients of similarity with Italy are witnessed in Croatia and Hungary (Croatia 90.2% and Hungary 79.9%). Bulgaria, the Czech Republic, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia also record relatively high figures (77.2%,

74.2%, 72.6%, 72.6%, 77.7%, 68.4%, 79.5% and 72.0% respectively) which implies that – in terms of the analyzed six variables – the emerging model of capitalism in these countries was very akin to that prevailing in Italy.

**Table 4. Coefficients of similarity in the area: knowledge sector (%)**

Country	Reference country			
	Germany	Italy	Sweden	United Kingdom
Bulgaria	30.1	77.2	21.4	32.7
Croatia	43.5	90.2	22.3	45.7
Czech Republic	69.9	74.2	35.8	70.7
Estonia	66.1	64.3	51.2	74.5
Hungary	62.0	79.9	36.9	65.4
Latvia	50.6	72.6	38.8	52.8
Lithuania	51.6	72.6	43.2	56.9
Poland	50.7	77.7	38.7	52.8
Romania	22.1	68.4	23.6	28.2
Slovakia	36.6	79.5	9.2	41.8
Slovenia	69.3	72.0	52.6	70.7

Notes as in Table 1.

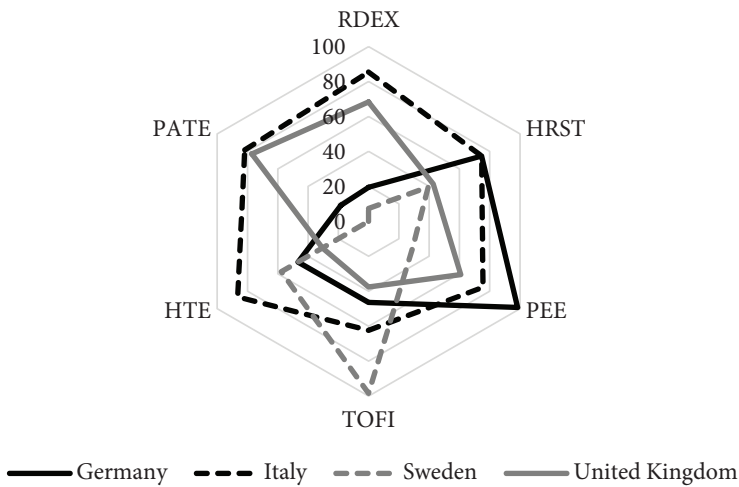
Source: Own calculations.

Secondly, Estonia shows a very close proximity to the UK, that is the Anglo-Saxon model of capitalism (at the level of 74.5%). The resemblance between the other CEE11 countries and the UK is much weaker. Estonia's convergence toward the Anglo-Saxon capitalism can be explained, among other things, by the fact that this country is technologically advanced and enjoys relatively mobile and highly educated labor force with mostly general skills, i.e. characteristics that are typical for the Anglo-Saxon model of capitalism.

Thirdly, the United Kingdom ranks 2<sup>nd</sup> as regards the level of similarity for most of the CEE11 countries in terms of the knowledge system. This outcome may suggest that the pattern of knowledge creation in our sample countries shares quite a good deal of similarities with the Anglo-Saxon model too.

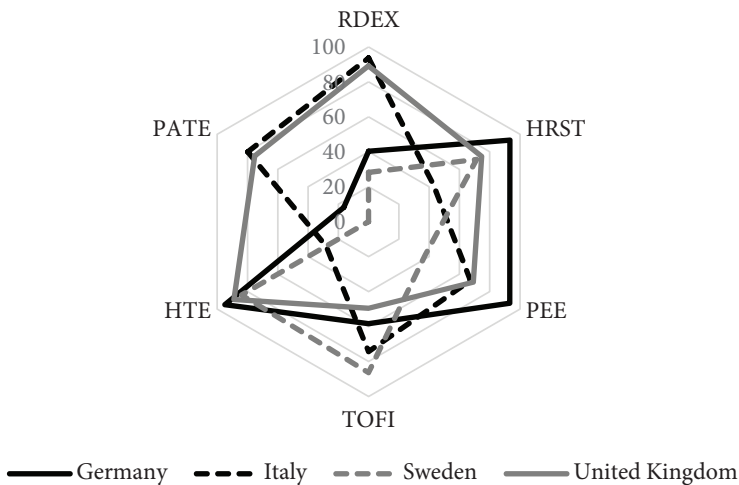


**Figure 10. Performance of Poland against reference countries in the area: knowledge sector**



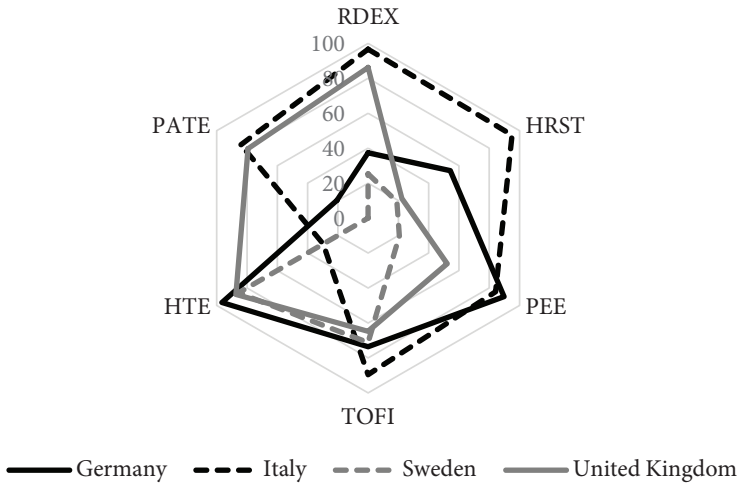
Note: RDEX – R&D expenditure as a percentage of GDP (value for all sectors in the economy); HRST – human resources in science and technology sector (% of active population); PEE – public expenditure on education (% of GDP); TOFI – turnover (of enterprises) from innovation (% of total turnover of enterprises); HTE – high-tech exports (% of total exports); PATE – patent applications to the European Patent Office by priority year (per million inhabitants)  
 Source: Own calculations.

**Figure 11. Performance of Estonia against reference countries in the area: knowledge sector**



Notes as in Figure 10.  
 Source: Own calculations.

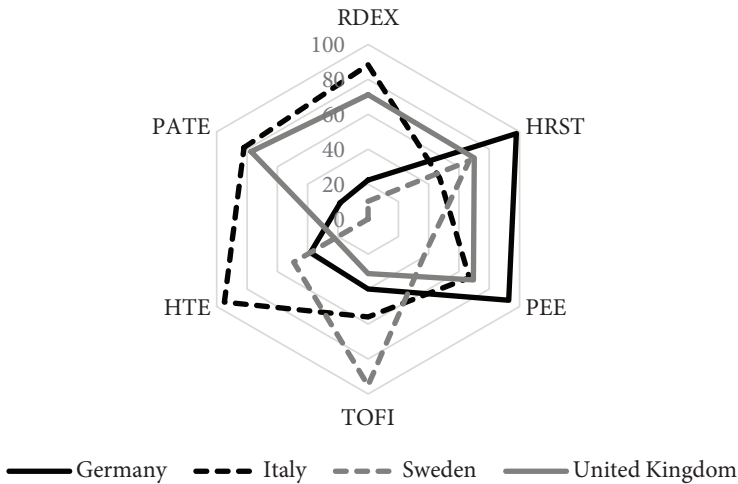
**Figure 12. Performance of Hungary against reference countries in the area: knowledge sector**



Notes as in Figure 10.

Source: Own calculations.

**Figure 13. Performance of Lithuania against reference countries in the area: knowledge sector**



Notes as in Figure 10.

Source: Own calculations.

A more detailed analysis of hexagons yields the following findings. First, the hexagon for Lithuania reveals that this country is most similar to Italy – especially in terms of RDEX, PATE and HTE variables. At the same time, Lithuania displays also

some symptoms of institutional convergence toward Germany, as shown by HRST and PEE variables. Second, in the case of Poland, we can also notice high resemblance to Italy, mainly in terms of RDEX, PATE and HTE variables. Third, the hexagon for Estonia implies a substantial similarity with the Anglo-Saxon model prevailing in the UK mainly in terms of HTE and RDEX. Lastly, the hexagon for Hungary points to a relatively close proximity to Italy, particularly in terms of RDEX, HRST and TOFI.

### 3.5. Financial system

The values of the variables representing financial system cover the years from 2012 to 2015. The first three indicators (domestic credit to private sector, inflow of foreign direct investments and mutual fund assets) are input variables or proxies for the institutional environment of financial system while the next three variables (stock market capitalization, bank concentration and gross portfolio debt assets) represent outcomes of the financial system.

The hexagons for Croatia, Estonia, Poland and Slovakia are presented in Figures 14–17. The hexagons for the remaining countries are provided in Figures A32–A38 in the Appendix. Table 5 shows the coefficients of similarity for all CEE11 countries against the respective benchmarks.

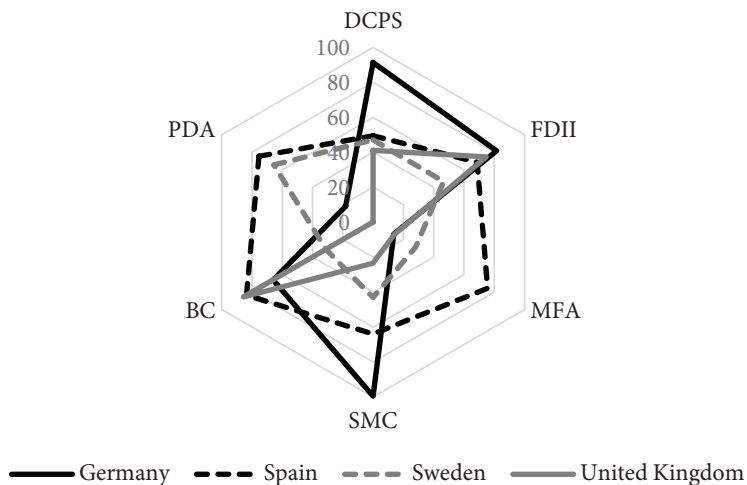
**Table 5. Coefficients of similarity in the area: financial system (%)**

Country	Reference country			
	Germany	Spain	Sweden	United Kingdom
Bulgaria	48.6	60.5	42.0	31.9
Croatia	61.7	69.4	43.6	39.8
Czech Republic	60.1	67.6	41.8	35.0
Estonia	39.7	42.4	36.1	6.0
Hungary	55.4	57.3	37.1	23.0
Latvia	54.4	66.3	44.7	39.0
Lithuania	52.0	58.0	43.7	22.7
Poland	50.1	62.0	42.0	36.0
Romania	50.0	61.8	37.8	32.4
Slovakia	67.3	66.0	49.6	32.4
Slovenia	54.3	64.0	47.7	36.5

Notes as in Table 1.

Source: Own calculations.

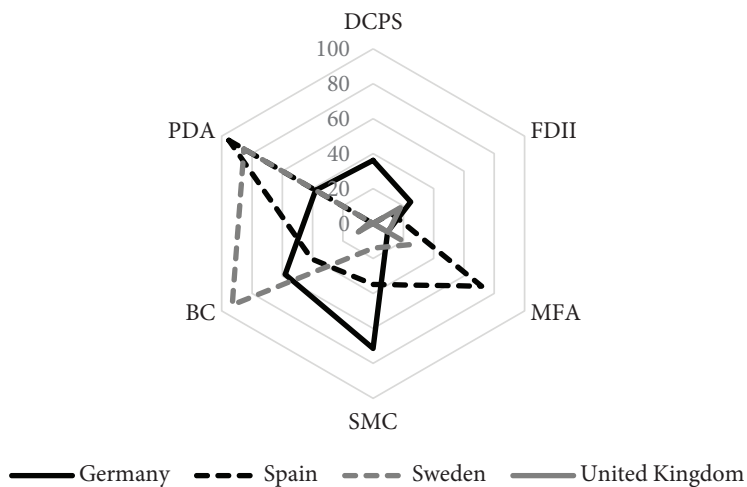
**Figure 14. Performance of Croatia against reference countries in the area:  
financial system**



Note: DCPS – domestic credit to private sector; FDII – foreign direct investments inflow (% of GDP); MFA – mutual fund assets (% of GDP); SMC – stock market capitalization (% of GDP); BC – bank concentration (%) – assets of 3 largest commercial banks; PDA – gross portfolio debt assets (% of GDP).

Source: Own calculations.

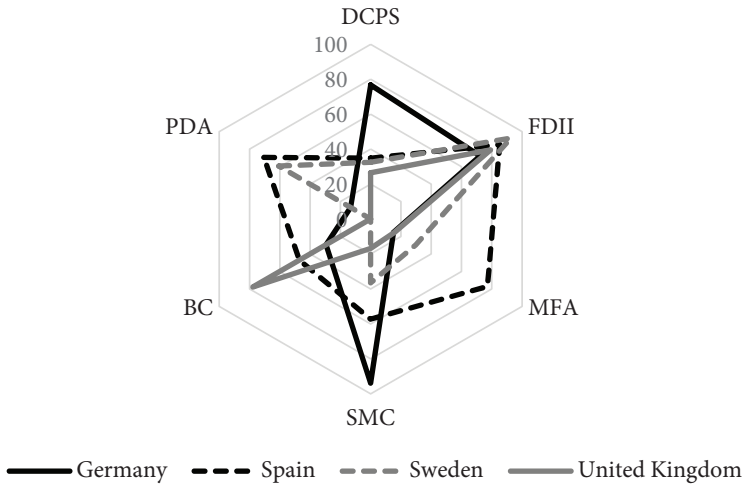
**Figure 15. Performance of Estonia against reference countries in the area:  
financial system**



Notes as in Figure 14.

Source: Own calculations.

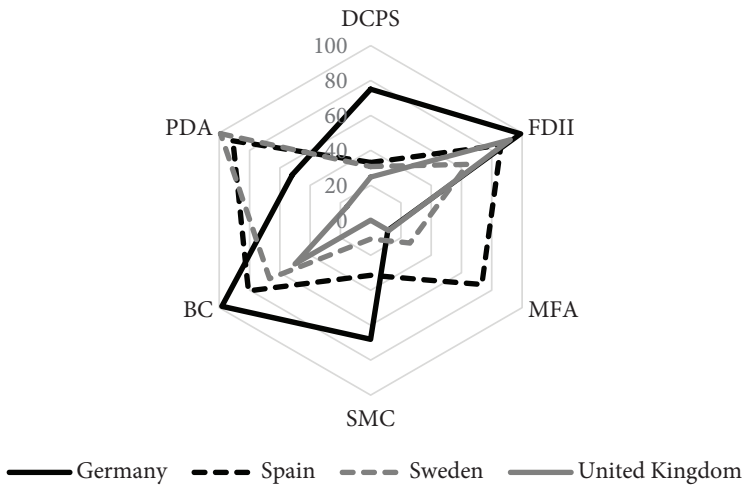
**Figure 16. Performance of Poland against reference countries in the area: financial system**



Notes as in Figure 14.

Source: Own calculations.

**Figure 17. Performance of Slovakia against reference countries in the area: financial system**



Notes as in Figure 14.

Source: Own calculations.

The data in Table 5 indicate that the CEE11 countries (exception being Slovakia) exhibit the greatest resemblance to Spain that is to the Mediterranean model. The results do seem to be robust. The coefficients of similarity to this model of capitalism are very high, while being simultaneously relatively low in case of other models. The highest coefficients of similarity with Spain are recorded for Croatia (69.4%) and the Czech Republic (67.6%). Quite high resemblance (exceeding 60%) can also be seen in Latvia (66.3%), Slovakia (66.0%, although the similarity to Germany in this country is slightly higher – 67.3%), Slovenia (64.0%), Poland (62.0%), Romania (61.8%) and Bulgaria (60.5%). This result may be interpreted as the empirical evidence that the model of financial intermediation emerging in these countries make it the most akin to that prevailing in Spain.

On the other hand, all CEE11 countries recorded the lowest coefficients of similarity to the United Kingdom (below 40%, and only 6% in Estonia).

In the case of Slovakia the coefficient of similarity is the highest with respect to Germany (67.3%). However, the same indicator vis-à-vis Spain amounts to 66.0%, which implies that Slovakia is almost equally close to two different models of capitalism.

A more in-depth analysis of hexagons yields some more interesting results. First, the hexagon for Croatia shows resemblance to Spain, which is quite uniform across all six variables. The country's similarity to Germany is very high for two input variables [DCPS and FDII] and one outcome indicator [SMC], but at the same time it is very low for other variables.

Second, Estonia displays an extremely low similarity to the UK for all six variables. This country seems to be dissimilar to any of the reference countries on the right-hand side of the hexagon representing the institutional infrastructure of the financial system, the only exception being [MFA], which is quite akin to Spain. In turn, on the outcomes side, the highest is the resemblance to Sweden [BC, PDA] and Spain [PDA].

Third, in Poland the similarity to Spain is quite the same across all six variables. The values for [FDII] are very high for all the reference countries, while the [SMC] is very high only for Germany and [BC] is high for the UK.

Finally, Slovakia's resemblance to Germany is a derivative of almost 100% similarity in [FDII] and [BC]. In the case of Spain three coefficients reached 80–90% of similarity: [PDA, FDII, BC]. Similarly to Poland, the coefficients of similarity in [FDII] assumed very high values with regard to all four reference countries.

For four CEE11 countries analyzed above the similarity in [DCPS] and [SMC] is the highest relative to Germany, while in terms of [MFA] and [PDA] these countries (except Slovakia, though the difference is not significant) seem to be the closest to the pattern prevailing in Spain.

### 3.6. Housing Market

The variables describing the housing market refer to 2014. As in other areas, three indicators (social housing, real estate taxes, ease of dealing with construction permits) represent different measures of the institutional surrounding of the housing market and can be seen as input variables while the remaining three yardsticks (share of owner-occupied housing, rent-to-income ratio, and residential loans) are treated as output variables or outcomes of the institutional determination of housing markets. Some variables are based on our own computations that comprise data from different sources, so as to give a more comprehensive and holistic picture of the varieties of residential capitalism in the sample countries.

The hexagons for Poland, Estonia, Hungary, and Lithuania are drawn in Figures 18–21. The hexagons for the remaining countries are depicted in Figures A39–A45 in the Appendix. Table 6 shows the coefficients of similarity for all CEE11 countries compared with reference economies (Italy was included as a representative of the Mediterranean model).

**Table 6. Coefficients of similarity in the area: housing market (%)**

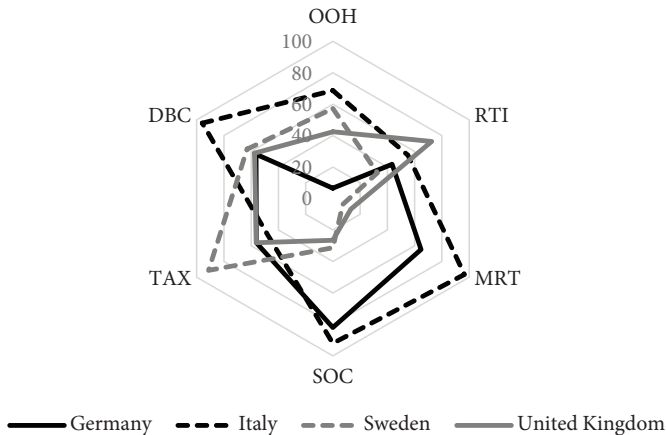
Country	Reference country			
	Germany	Italy	Sweden	United Kingdom
Bulgaria	56.0	62.6	35.8	29.5
Croatia	47.5	56.8	31.1	27.1
Czech Republic	55.1	65.2	33.8	30.2
Estonia	72.1	61.6	49.2	45.2
Hungary	62.2	68.5	41.8	36.5
Latvia	63.4	70.0	51.0	46.5
Lithuania	58.5	54.4	34.2	28.9
Poland	51.6	75.9	47.1	44.8
Romania	42.8	49.2	25.3	13.1
Slovakia	60.6	66.1	36.1	30.8
Slovenia	68.2	79.2	53.5	39.1

Notes as in Table 1.

Source: Own calculations.

First of all, data in Table 6 indicate that all CEE11 countries are a mixture of the Mediterranean, or the so-called Catholic-familial model, and the Corporatist market model, represented by Germany (Schwartz and Seebroke 2009) as in all cases the difference between the similarity coefficients is not larger than 15 pp. and in nine out of ten cases not larger than 10 pp. However, only two Baltic states (Estonia and Lithuania) display higher similarity with the Corporatist model and nine countries exhibit a higher resemblance to the Catholic-familial model. From the latter group Slovenia and Poland record the highest similarity coefficient (79.2% and 75.9%, respectively). On the opposite side of the scale is Romania with similarity coefficients for all reference economies lower than 50%. It is worth noting that also for other CEE11 countries the scale of resemblance in the housing market dimension is much smaller than for other institutional areas analyzed in this study – seven out of eleven countries have their highest similarity coefficients lower than two-thirds.

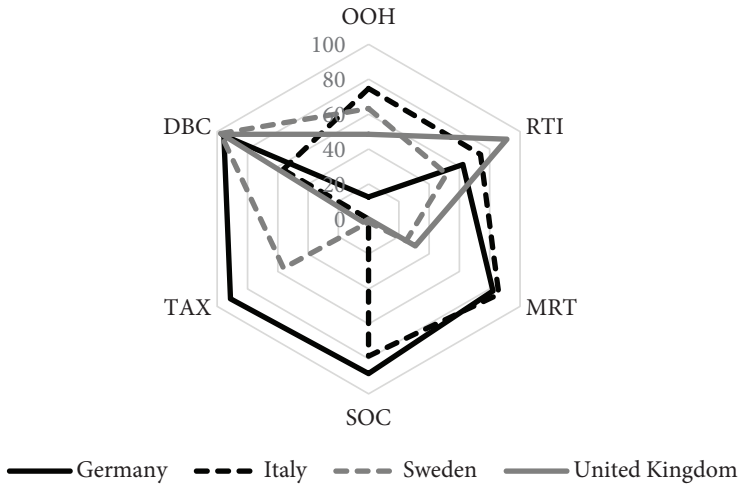
**Figure 18. Performance of Poland against reference countries in the area: housing market**



Note: OOH – share of owner-occupied housing; RTI – rent-to-income ratio; MRT – total outstanding residential loans (% of GDP); SOC – share of houses owned by municipalities or the state; TAX – real estate tax revenues (% of GDP); DBC – dealing with construction permits: distance to frontier. Source: Own calculations.



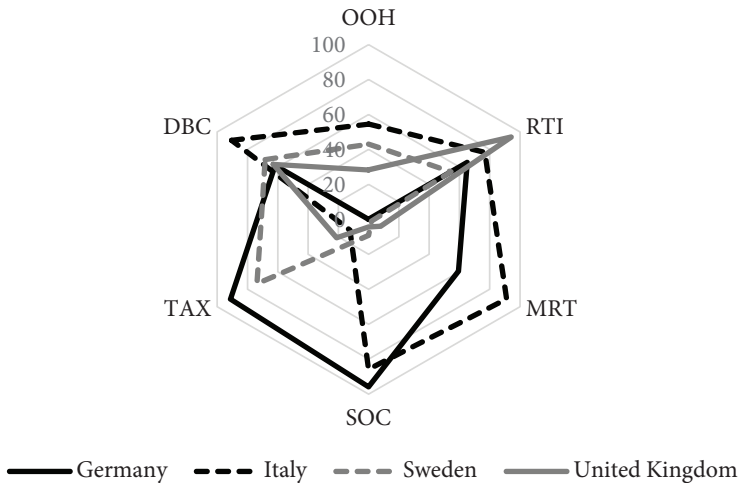
**Figure 19. Performance of Estonia against reference countries in the area: housing market**



Notes as in Figure 18.

Source: Own calculations.

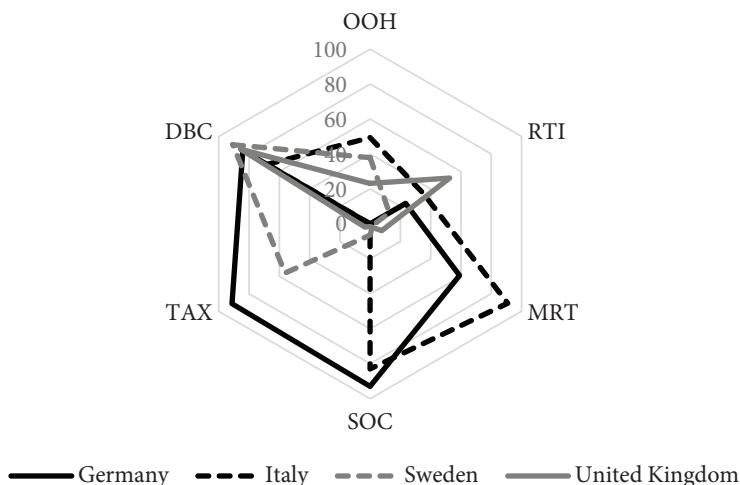
**Figure 20. Performance of Hungary against reference countries in the area: housing market**



Notes as in Figure 18.

Source: Own calculations.

**Figure 21. Performance of Lithuania against reference countries in the area: housing market**



Source: Own calculations.

All analyzed countries are least akin to the Liberal market (Anglo-Saxon) model, represented by the United Kingdom. In fact the majority of them witness a similarity coefficient lower than 33%. A slightly higher resemblance (in all but two cases the coefficient value lies below 50%) can be seen when comparing CEE11 countries to the Swedish statist-developmental (Nordic) model. These findings indicate that while developing their institutional infrastructure of the housing market the CEE11 countries' governments did not take the pertinent patterns from the Anglo-Saxon or Scandinavian countries, despite the fact that a lot of them claimed the opposite.

Another important observation comes from a more detailed analysis of hexagons. For all countries concerned the resemblance to the Catholic-familial model is primarily a derivative of their similarity in output variables, especially in terms of the low amount of mortgage loans and large scale of owner-occupation. The former variable reflects low commodification of residential estates, i.e. that houses and flats are not seen as assets but as family goods that are transferred from generation to generation together and should not be burdened with mortgages. The latter indicator reflects the high importance of ownership in the housing market, indicating that CEE11 countries are most likely the ownership societies, in which high symbolic value is ascribed to houses that are occupied by their owners and renting is perceived as an inferior form of tenure.

In contrast, the similarity to the Corporatist market model comes usually from the input variables – low taxation of real estates and low provision of social housing owned by state agencies at the municipal or central level. This input-output division in similarities can be explained by two disjoint hypotheses. On the one hand, there might exist a low coherence between the institutional environment of the housing market (mainly housing policies) and the informal institutions standing behind market forces that shape the actual landscape of residential estates in CEE11 countries, i.e. low housing commodification and high desire of ownership. On the other hand, there might exist a spurious correlation between the residential capitalism models in CEE countries and that of the Corporatist market model. Other evidence seems to support the latter hypothesis – in the Corporatist market model social housing is provided through the market mechanism (e.g. through publicly subsidized but private and for-profit housing associations), whereas in CEE11 countries and in the Catholic-familial model housing policies are focused on subsidizing ownership. Moreover, corporatist policies are concentrated on leveling out the taxation incentives for tenants and home buyers, whereas in CEE11 countries low real estate taxation is an effect of subsidizing ownership (Schwartz and Seebroke 2009). This indicates that these countries developed their own, specific model of residential capitalism which only reassembles some parts of other models, that have been already described in the literature.

### 3.7. Overall Picture

As a final step in our empirical exercise, we aggregated the coefficients of similarity pertaining to each of the six institutional areas and subsequently computed the average indicators for individual CEE11 countries with respect to four benchmarks. Table 7 gives account of the results including the mean coefficients of similarity for the whole CEE11 group (last row). The main findings are discussed in the next section, as part of the Summary and Conclusions.

**Table 7. Mean coefficients of similarity for six institutional areas**

Country	Reference country			
	Germany	Spain/Italy	Sweden	United Kingdom
Bulgaria	48.2	61.5	36.4	44.8
Croatia	57.1	70.9	36.2	42.2
Czech Republic	67.4	66.8	43.9	53.3
Estonia	62.7	59.8	47.0	55.4
Hungary	64.8	68.3	44.6	51.2
Latvia	56.2	64.4	42.9	53.6
Lithuania	61.3	64.2	43.3	51.8
Poland	58.1	71.1	43.4	50.5
Romania	46.7	59.4	29.7	37.6
Slovakia	61.0	69.3	41.4	45.0
Slovenia	65.4	70.6	57.4	49.9
<b>Mean</b>	<b>59.8</b>	<b>66.0</b>	<b>42.4</b>	<b>48.7</b>

Notes as in Table 1.

Source: Own calculations.

## 4. Summary and Conclusions

The empirical exercise carried out in this paper yielded a number of interesting results that may be seen as a contribution to the ongoing scholarly debate on the nature of the emerging post-communist capitalism. The most important findings are summarized below under the following headings.

1. At the most aggregate level, i.e. the averages for the entire sample analyzed and for six institutional areas involved, the CEE11 countries overall exhibit the greatest resemblance to the Mediterranean model of capitalism, represented by Spain/Italy. This conclusion seems well grounded in three interconnected results. First, as can be seen in table 7, the mean coefficient of similarity with regard to Spain/Italy amounts to 66.0% and is the highest across the reference countries (compared to 59.8% for Germany, 48.7% for the UK and 42.4% for Sweden). Second, the coefficients of similarity vis-à-vis Spain/Italy in all six institutional areas are above 60% which is not the case for the three remaining benchmark countries. Third, in terms of relative (average) proximity or resemblance Spain/Italy is ranked 1<sup>st</sup>

in four out of six areas, the only exceptions being industrial relations and social protection system.

2. At the level of individual countries, Poland, Croatia and Slovenia exhibit the strongest relative resemblance to the Mediterranean model (table 7), with their coefficients of similarity amounting to 71.1%, 70.9% and 70.6% respectively. On the opposite side of the spectrum, we have Romania (59.4%), Estonia (59.8%) and Bulgaria (61.5%).
3. On the other hand, the sample countries are the least similar to the Nordic (Scandinavian or Social-democratic) model of capitalism, the only exception being product market competition where the pertinent coefficient of similarity with respect to Sweden exceeds 60%.
4. Simultaneously, in terms of average indicators the CEE11 economies display quite a strong resemblance to the Continental European model of capitalism, represented by Germany, too. With the mean coefficient of similarity close to 60%, this country is ranked 1<sup>st</sup> as the closest benchmark in the social protection area and 2<sup>nd</sup> in most of the remaining institutional domains concerned.
5. 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 seems to indicate quite a considerable level of homogeneity. In all but one area (industrial relations) a vast majority of CEE11 countries (ten out of eleven in three areas and nine in two other areas) tend to gravitate towards the same model of capitalism.
6. On the other hand however it should be noticed, as a word of caution, that in a number of areas and for many sample countries the homogeneity implied might have been spurious and perhaps misleading. This reservation stems from the fact that in many instances individual CEE11 countries or even the entire group appear to reveal institutional proximity to more than one model of capitalism at the same time, with the differentials in the respective coefficients of similarity being quite small. At the most aggregate level this is particularly true for product market competition and industrial relations where the institutional features of the sample countries make them almost equally akin to the Mediterranean, the Continental and the Nordic (product market competition) or Anglo-Saxon (industrial relations) models of capitalism, at the level of similarity exceeding in all cases 60%. When disaggregated, this pattern also applies in many instances to individual CEE11 countries.

7. Another interesting finding comes from a more in-depth analysis of the information content of the hexagons once we split them into two separate parts representing input and output variables respectively. The analysis sheds a new light on the picture of the emerging patterns of post-communist capitalism in Central and Eastern Europe. In particular the results show that while most CEE11 countries are the closest to the Mediterranean model of capitalism in terms of output variables (or performance) they are much more akin to the Continental model when it comes to inputs (institutional arrangements). If contrasted with the first finding discussed in point 1 above, this implies that the effect of output variables outweighs the impact of input indicators on the overall average value of the coefficient of similarity both at the level of the CEE11 group and most of its individual members making them gravitate – in average – toward the Mediterranean model of capitalism.

As a wrap up, based on the findings of our empirical study just discussed, three conclusions of a more general nature can be formulated.

First, it sounds like a plausible assertion that even the well-tested and otherwise efficient institutions do not automatically guarantee equally good outcomes if transplanted to a different socio-cultural, political and economic context. Having developed institutions that in many respects resemble the most the institutional architecture prevailing in the Continental European model of capitalism many CEE11 countries have fallen short of the economic performance standards established in benchmark countries embodying this model. As a result, in terms of output variables applied in this study they are much closer to the Mediterranean model of capitalism.

Second, the results of the present study imply a hybrid nature of the emerging capitalism in CEE11 countries and the institutional ambiguity embedded in its design and evolution. In many economies involved and areas covered by this research the institutional architectures resemble two or even three different models of Western capitalism at a time. Simultaneously, they exhibit a clear deficiency of institutional complementarities being inherent to their Western prototypes. This refers both to a sizeable gap between input and output variables (institutional environment and performance) in CEE11 countries, to inconsistencies in institutional design within particular areas as well as between these areas. In this way, the present paper corroborates and extends a number of conclusions formulated in the literature. In particular, our findings support and make more general two claims put forward by Mykhnenko (2005) regarding (i) Poland's proximity to the Mediterranean model, and (ii) the institutional ambiguity of the nascent post-communist capitalism that makes the process of institution-building still a 'work-in-progress'.

Third, 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. For example, while we argue that most of CEE11 countries seem to reveal – in varying degree – a relatively strongest resemblance to the Mediterranean model of capitalism, we do not strive to foretell at this stage whether this is equivalent to the emergence of one single pattern or rather the diversity of post-communist capitalism in the CEE region. Other important unanswered questions include in particular:

- the imitative pattern of development in CEE11 countries as a determinant of their convergence toward Western benchmarks,
- the role of their geographical location at the EU periphery 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 dependency’ factor in particular CEE countries,
- the role of economic policies as a differentiating factor of the institutional design e.g. of their social protection systems,
- the role of domestic politics as a driver of the diverging patterns in the labour markets and industrial relations as well as the housing markets (models of residential capitalism) in CEE countries,
- the importance of informal institutions as building blocks of institutional architectures and determinants of the ‘comparative capitalism’ in the CEE region.

The last conclusion implies that a good deal of caution is advisable while interpreting the results of our research achieved so far, as preliminary and tentative. Further studies on the subject are therefore necessary, based on an upgraded and more versatile research methods and tools that would enable, inter alia, the principal components and cluster analyses, while at the same time allowing to broaden the scope of indicators aimed to best describe the institutional infrastructure of the evolving market economies in CEE11 countries, and to better capture the role of informal institutions.

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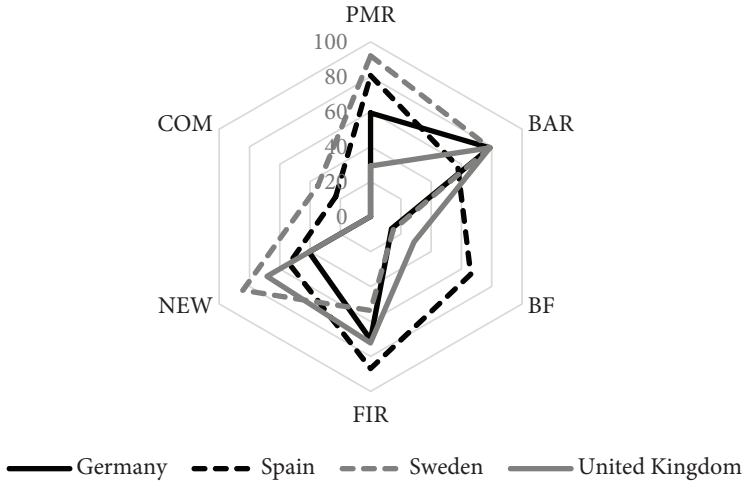
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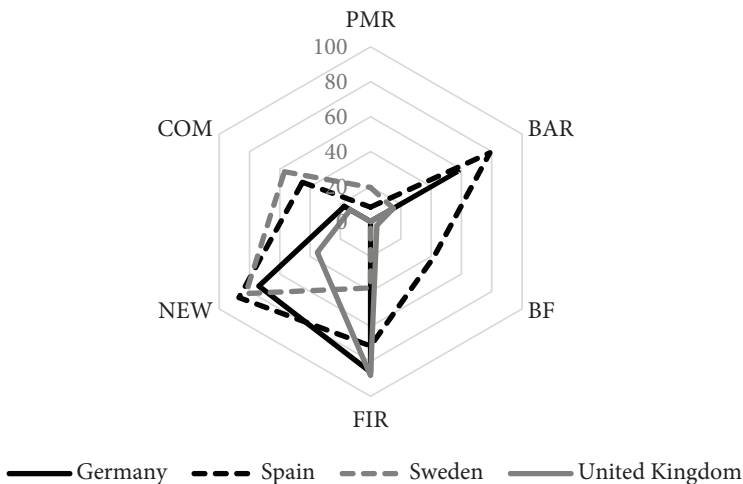
APPENDIX

**Figure A1. Performance of Bulgaria against reference countries in the area: product market competition**



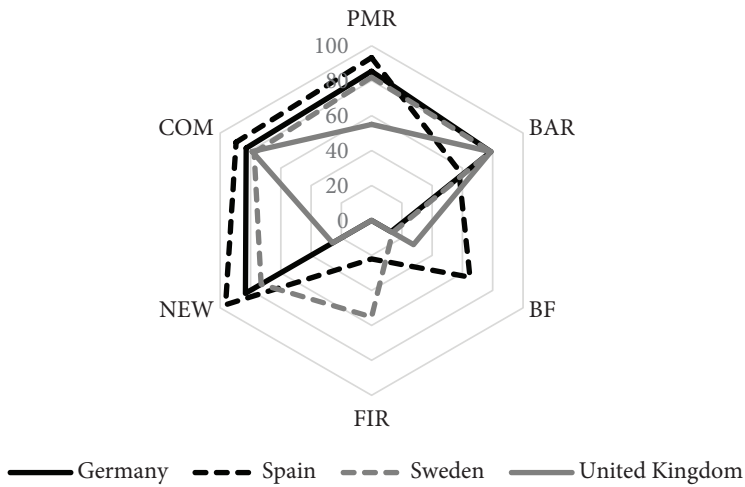
Note: PMR – product market regulation; BAR – barriers to market entry; BF– business freedom; FIR – number of enterprises per million inhabitants; NEW – number of newly registered firms per 1000 persons aged 15–64; COM – intensity of local competition.  
Source: Own calculations.

**Figure A2. Performance of Croatia against reference countries in the area: product market competition**



Notes as in Figure A1.  
Source: Own calculations.

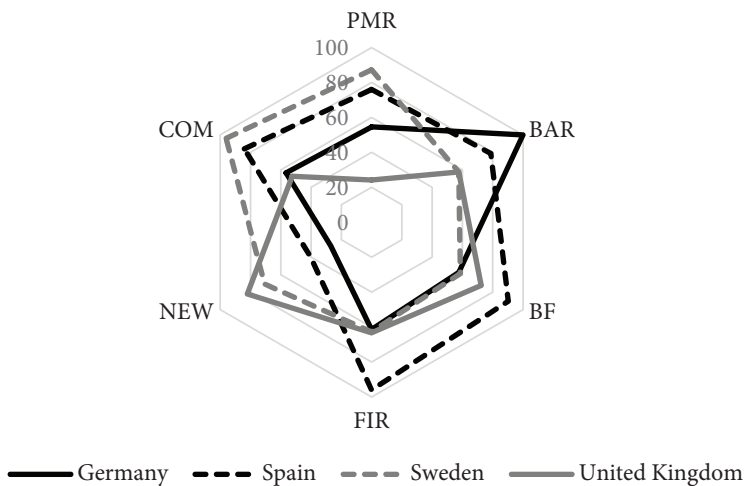
**Figure A3. Performance of the Czech Republic against reference countries in the area: product market competition**



Notes as in Figure A1.

Source: Own calculations.

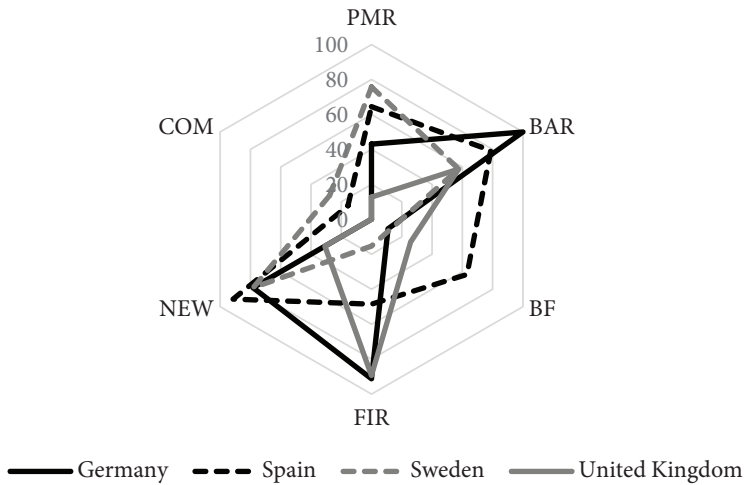
**Figure A4. Performance of Latvia against reference countries in the area: product market competition**



Notes as in Figure A1.

Source: Own calculations.

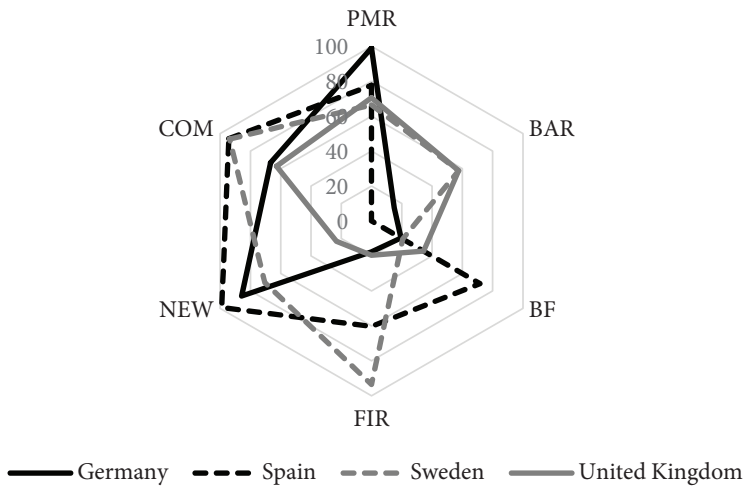
**Figure A5. Performance of Romania against reference countries in the area: product market competition**



Notes as in Figure A1.

Source: Own calculations.

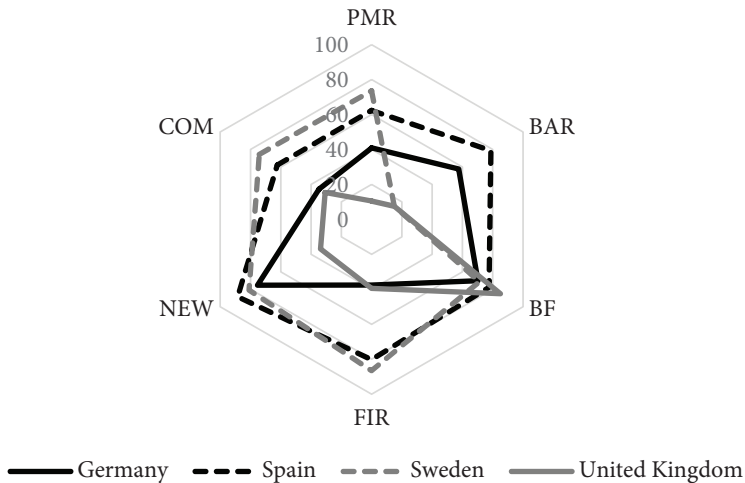
**Figure A6. Performance of Slovakia against reference countries in the area: product market competition**



Notes as in Figure A1.

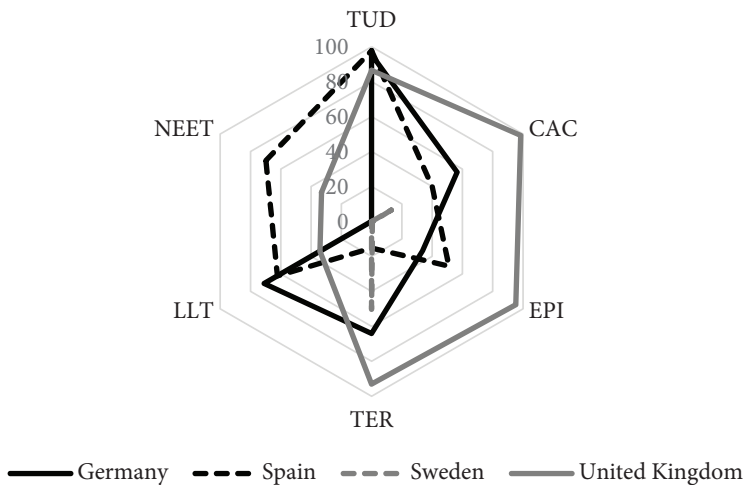
Source: Own calculations.

**Figure A7. Performance of Slovenia against reference countries in the area: product market competition**



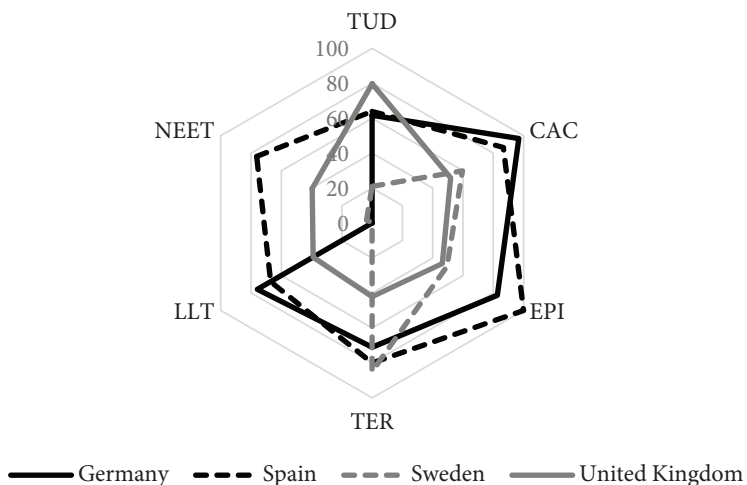
Notes as in Figure A1.  
Source: Own calculations.

**Figure A8. Performance of Bulgaria against the reference countries in the area: labour market and industrial relations**



Note: TUD – trade unions’ density ; CAC – collective agreement’s coverage; EPI – employees’ participation index; TER – temporary employees rate; LLT – lifelong learning and training; NEET – young people neither in employment nor in education or training rate  
Source: Own calculations.

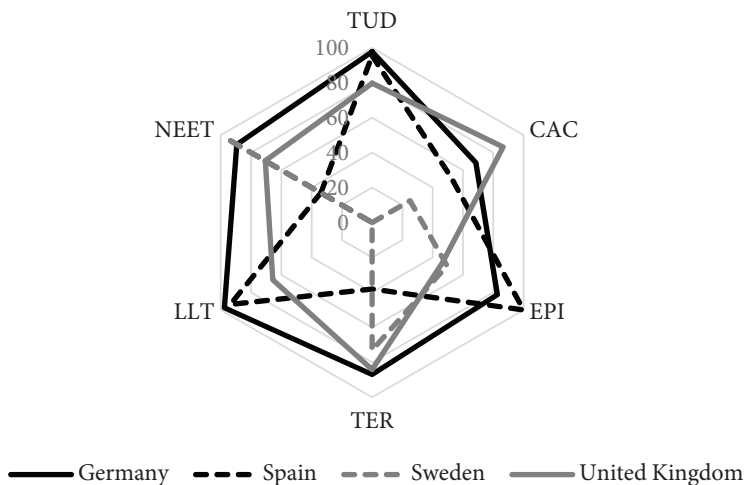
**Figure A9. Performance of Croatia against the reference countries in the area: labour market and industrial relations**



Notes as in Figure A8.

Source: Own calculations.

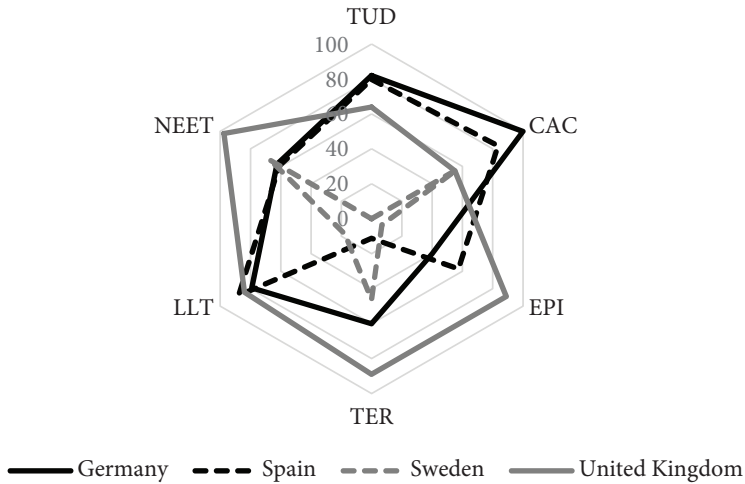
**Figure A10. Performance of Czech Republic against the reference countries in the area: labour market and industrial relations**



Notes as in Figure A8.

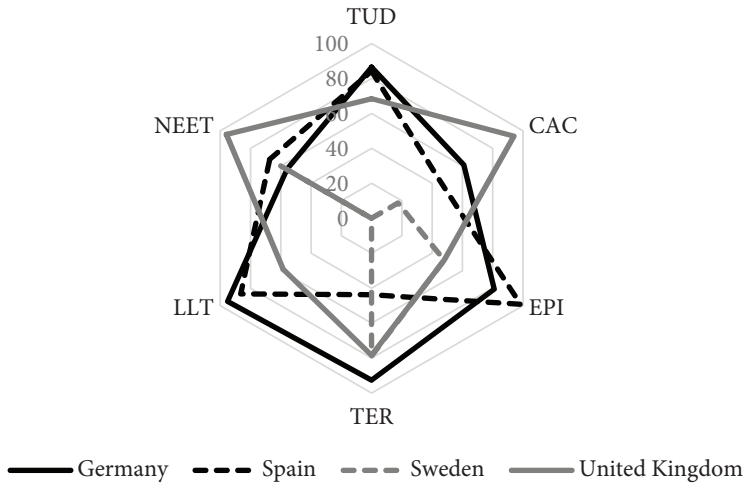
Source: Own calculations.

**Figure A11. Performance of Estonia against the reference countries in the area: labour market and industrial relations**



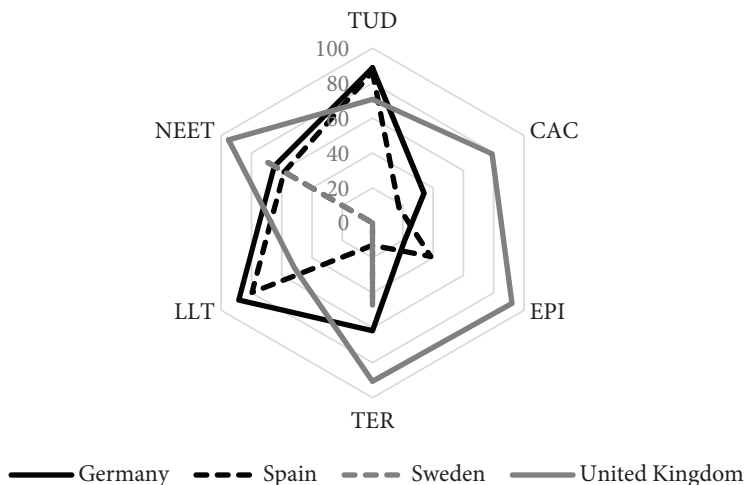
Notes as in Figure A8.  
Source: Own calculations.

**Figure A12. Performance of Hungary against the reference countries in the area: labour market and industrial relations**



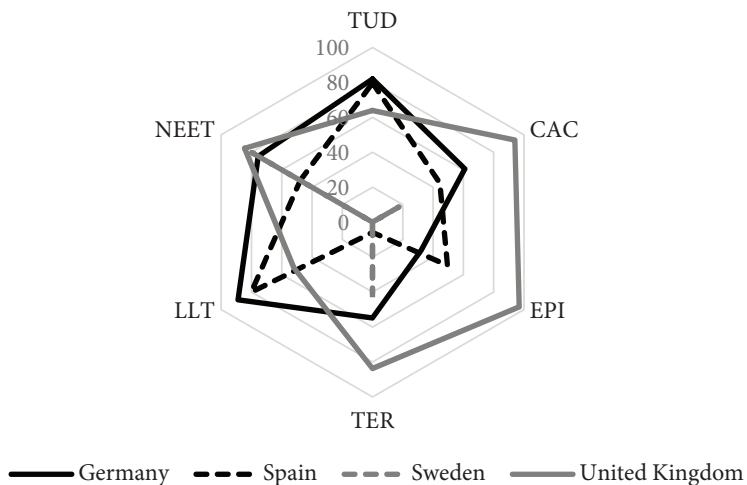
Notes as in Figure A8.  
Source: Own calculations.

**Figure A13. Performance of Latvia against the reference countries in the area:  
labour market and industrial relations**



Notes as in Figure A8.  
Source: Own calculations.

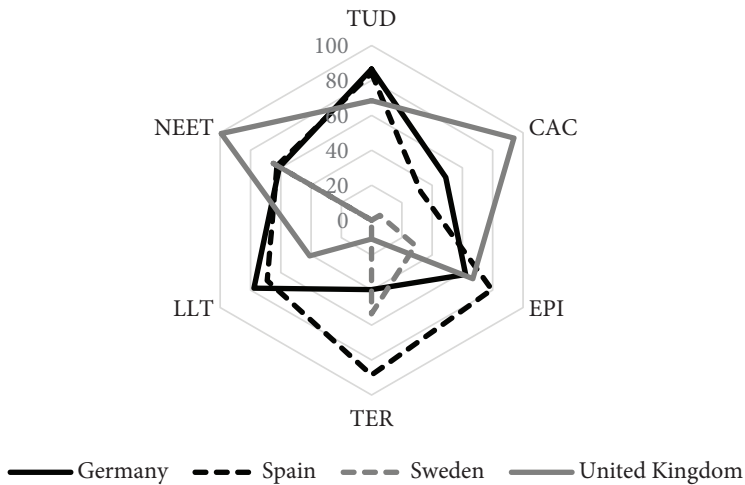
**Figure A14. Performance of Lithuania against the reference countries in the area:  
labour market and industrial relations**



Notes as in Figure A8.  
Source: Own calculations.

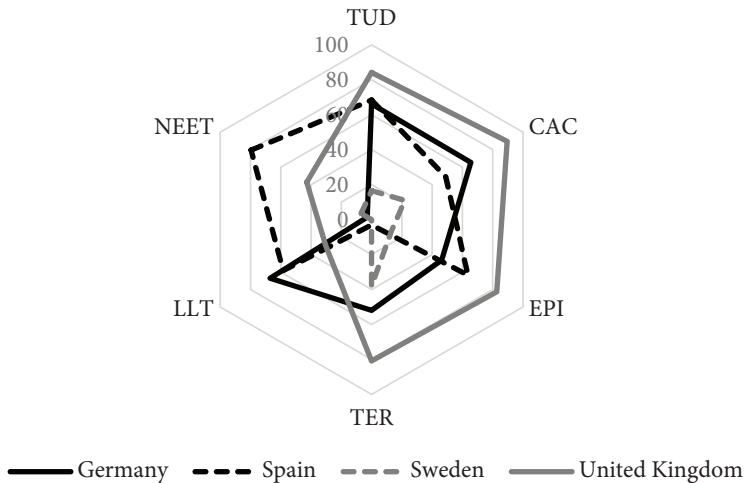


**Figure A15. Performance of Poland against the reference countries in the area: labour market and industrial relation**



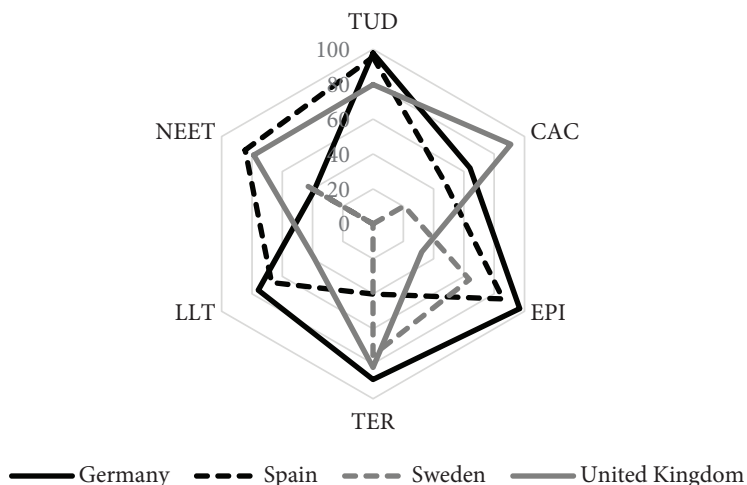
Notes as in Figure A8.  
Source: Own calculations.

**Figure A16. Performance of Romania against the reference countries in the area: labour market and industrial relations**



Notes as in Figure A8.  
Source: Own calculations.

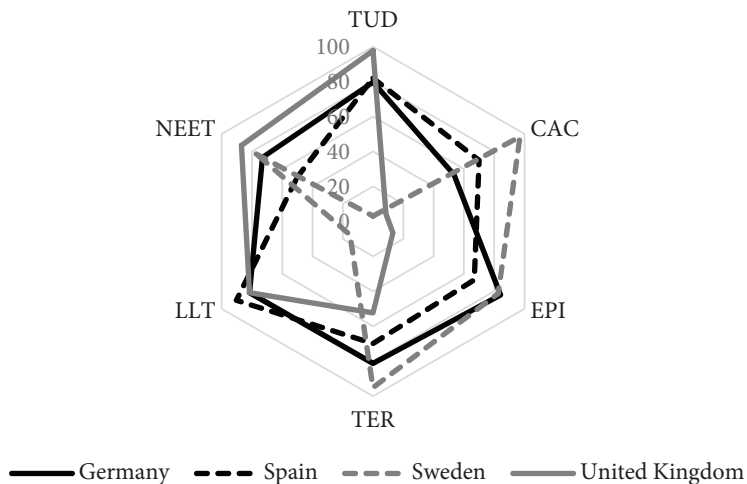
**Figure A17. Performance of Slovakia against the reference countries in the area: labour market and industrial relations**



Notes as in Figure A8.

Source: Own calculations.

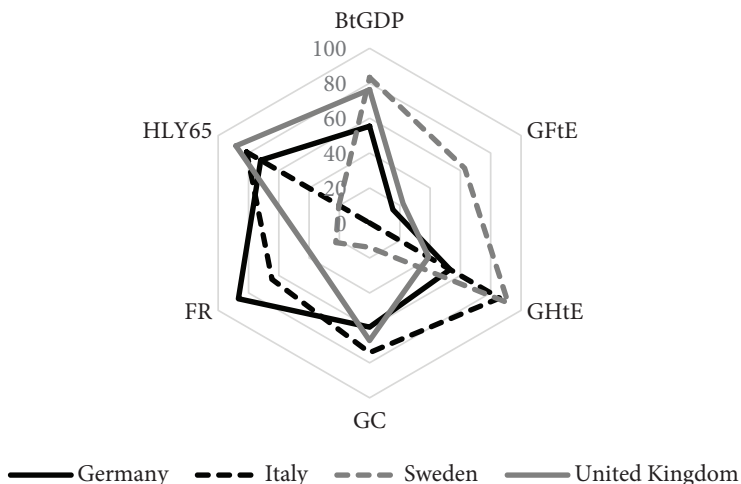
**Figure A18. Performance of Slovenia against the reference countries in the area: labour market and industrial relations**



Notes as in Figure A8.

Source: Own calculations.

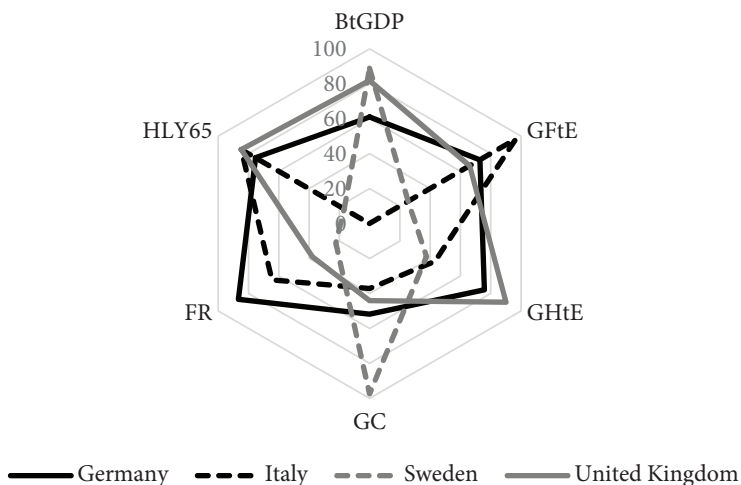
**Figure A19. Performance of Bulgaria against reference countries in the area: social protection system**



Note: BtGDP – total benefits to GDP ratio; GFtE – total government expenditure directed to families to total government expenditures ratio; GHtE – total government expenditure on healthcare to total government expenditure ratio; GC – Gini coefficient; FR – fertility rate; HLY65 – healthy life expectancy for people aged 65.

Source: Own calculations.

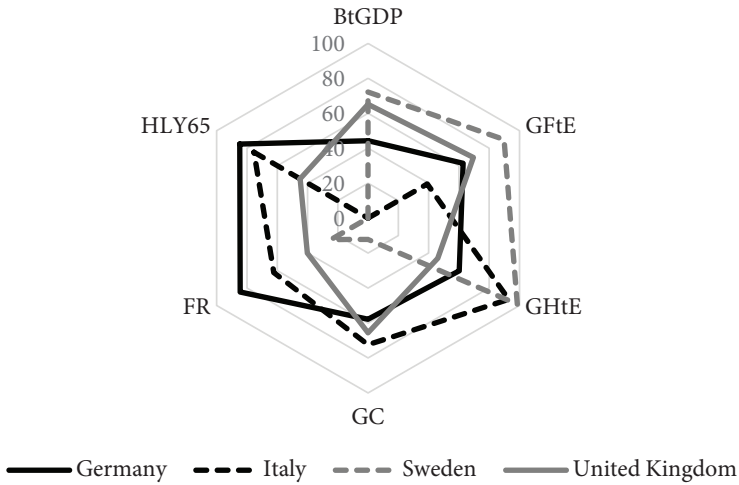
**Figure A20. Performance of the Czech Republic against reference countries in the area: social protection system**



Notes as in Figure A19.

Source: Own calculations.

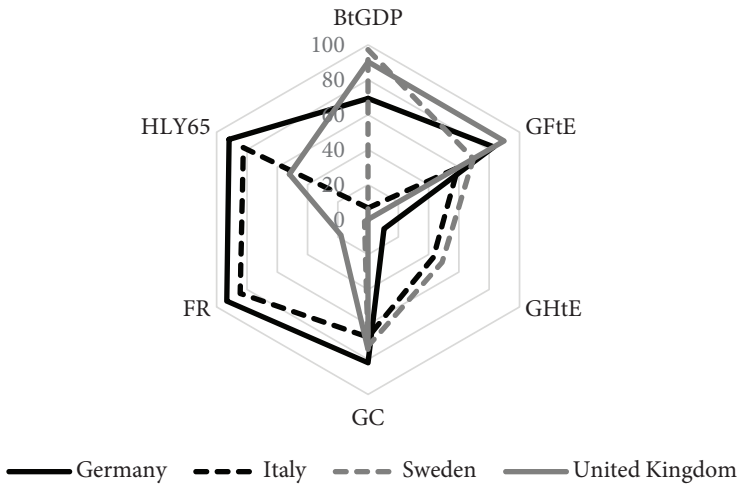
**Figure A21. Performance of Estonia against reference countries in the area: social protection system**



Notes as in Figure A19.

Source: Own calculations.

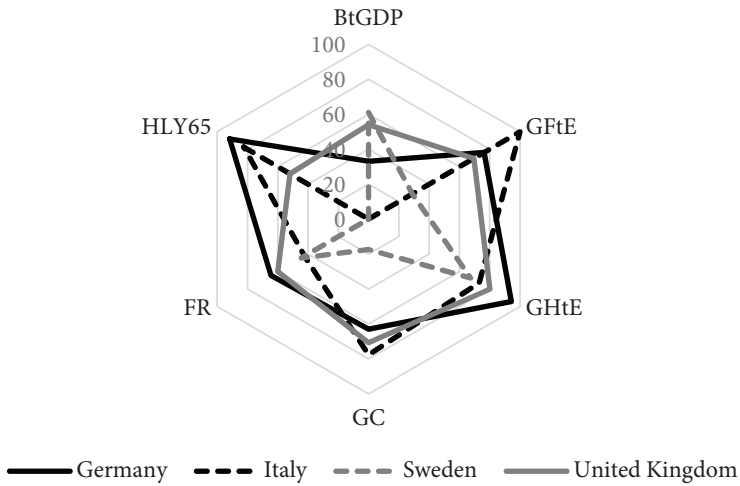
**Figure A22. Performance of Hungary against reference countries in the area: social protection system**



Notes as in Figure A19.

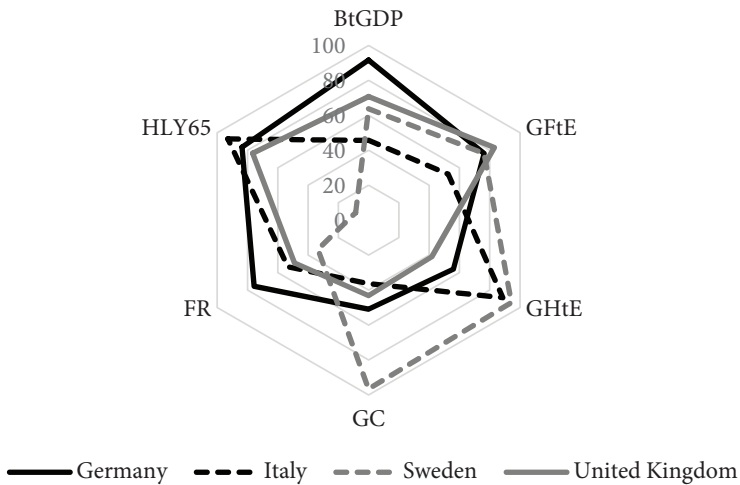
Source: Own calculations.

**Figure A23. Performance of Lithuania against reference countries in the area: social protection system**



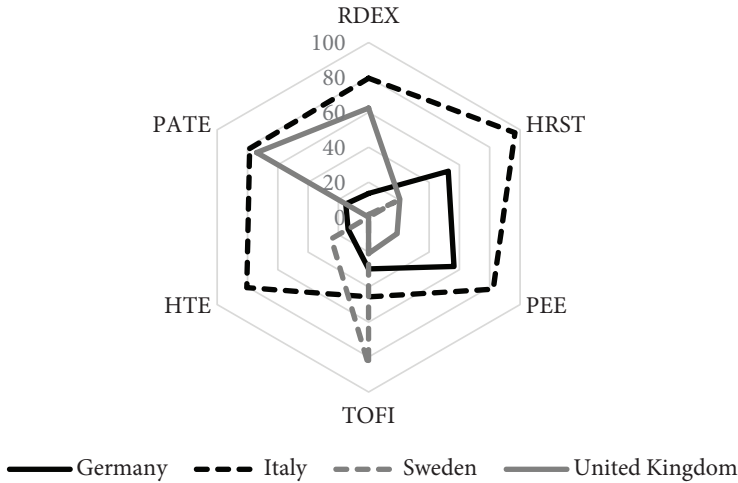
Notes as in Figure A19.  
Source: Own calculations.

**Figure A24. Performance of Slovenia against reference countries in the area: social protection system**



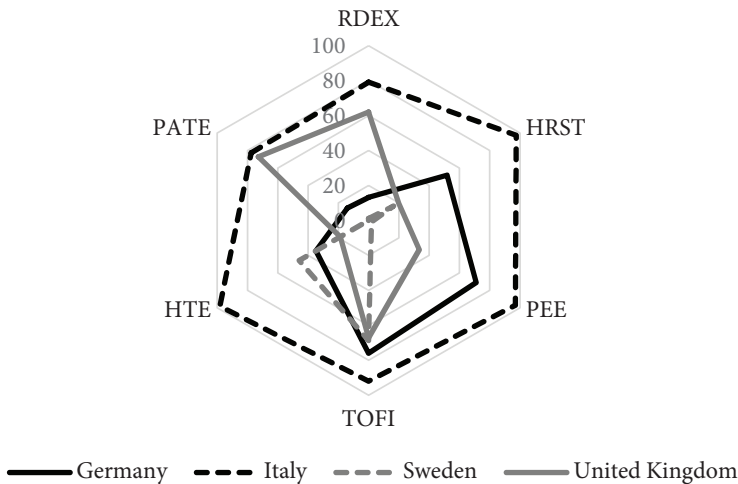
Notes as in Figure A19.  
Source: Own calculations.

**Figure A25. Performance of Bulgaria against reference countries in the area: knowledge sector**



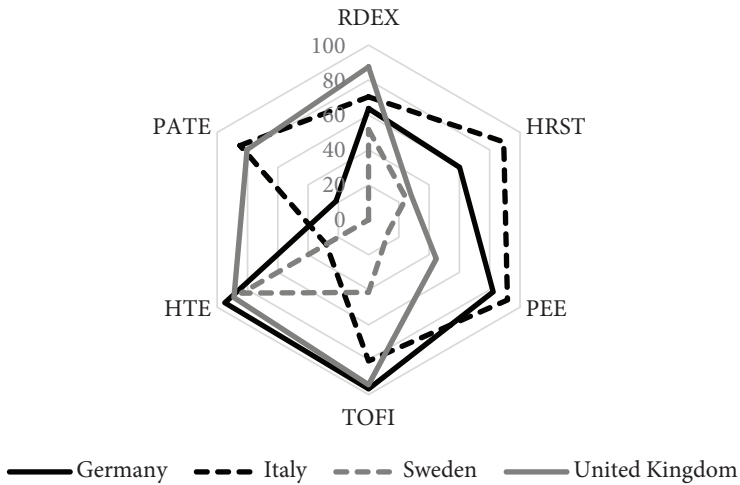
Note: RDEX – R&D expenditure as a percentage of GDP (value for all sectors in the economy); HRST – human resources in science and technology sector (% of active population); PEE – public expenditure on education (% of GDP); TOFI – turnover (of enterprises) from innovation (% of total turnover of enterprises); HTE – high-tech exports (% of total exports); PATE – patent applications to the European Patent Office by priority year (per million inhabitants)  
Source: Own calculations.

**Figure A26. Performance of Croatia against reference countries in the area: knowledge sector**



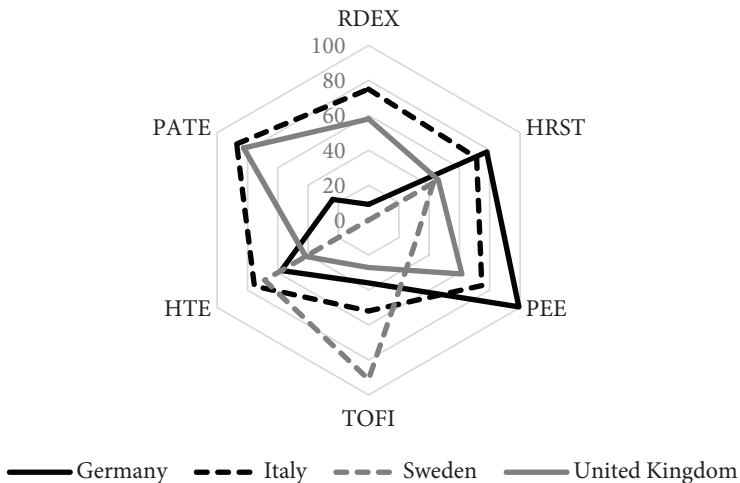
Notes as in Figure A25.  
Source: Own calculations.

**Figure A27. Performance of the Czech Republic against reference countries in the area: knowledge sector**



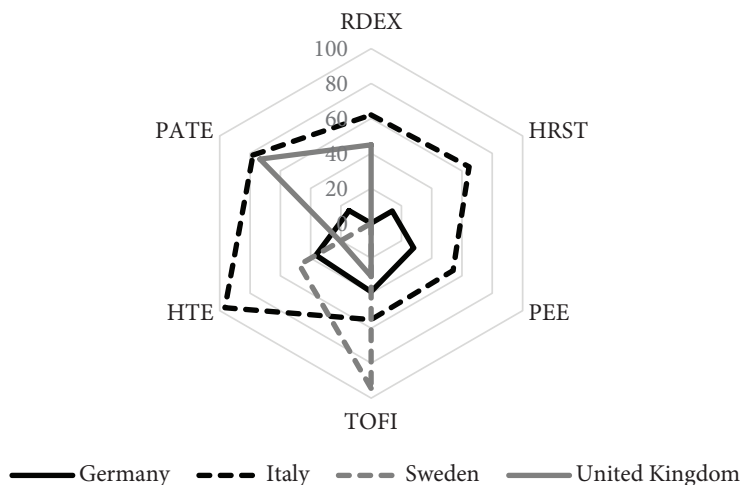
Notes as in Figure A25.  
Source: Own calculations..

**Figure A28. Performance of Latvia against reference countries in the area: knowledge sector**



Notes as in Figure A25.  
Source: Own calculations..

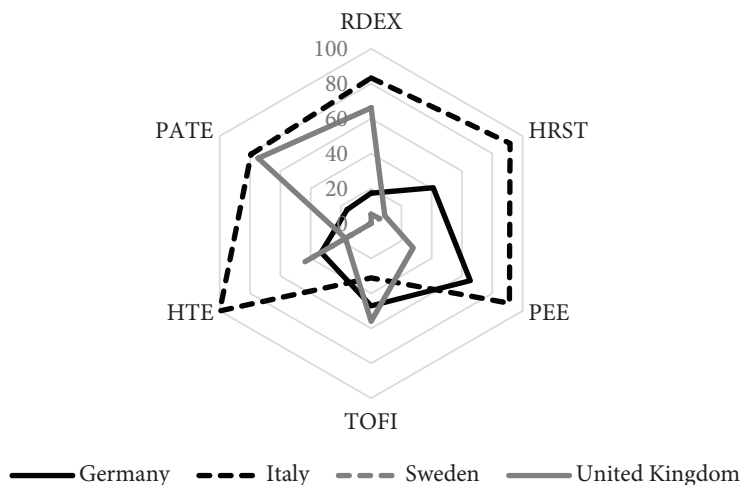
**Figure A29. Performance of Romania against reference countries in the area: knowledge sector**



Notes as in Figure A25.

Source: Own calculations..

**Figure A30. Performance of Slovakia against reference countries in the area: knowledge sector**

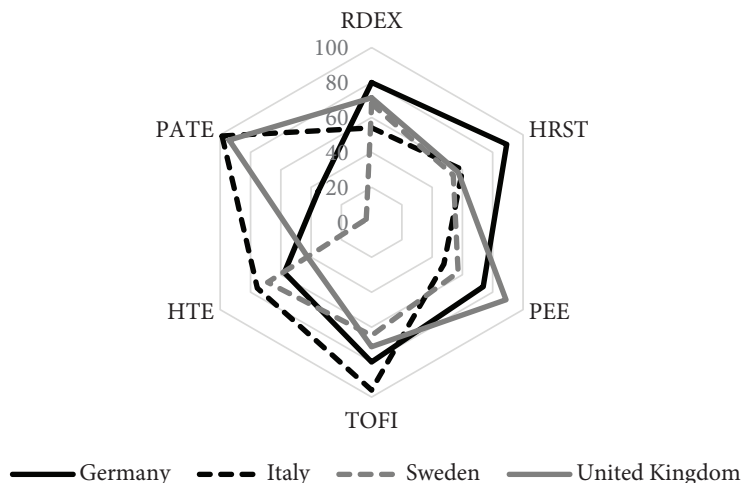


Notes as in Figure A25.

Source: Own calculations..



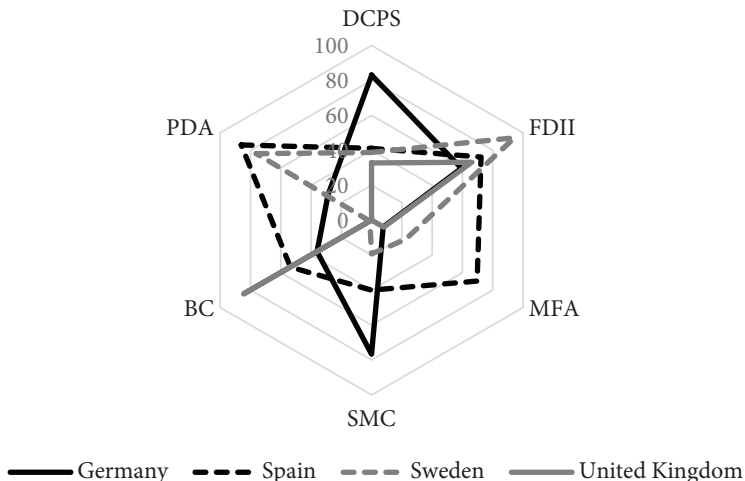
**Figure A31. Performance of Slovenia against reference countries in the area: knowledge sector**



Notes as in Figure A25.

Source: Own calculations..

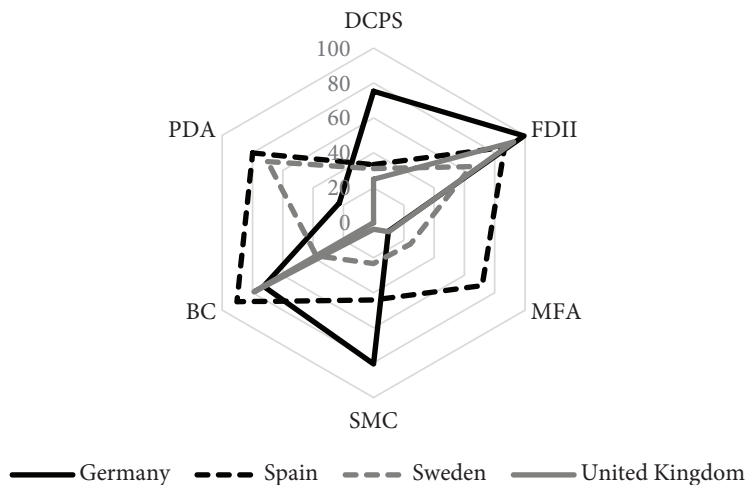
**Figure A32. Performance of Bulgaria against reference countries in the area: financial system**



Note: DCPS – domestic credit to private sector; FDII – foreign direct investments inflow (% of GDP); MFA – mutual fund assets (% of GDP); SMC – stock market capitalization (% of GDP); BC – bank concentration (%) – assets of 3 largest commercial banks to assets of all commercial banks; PDA – gross portfolio debt assets (% of GDP).

Source: Own calculations

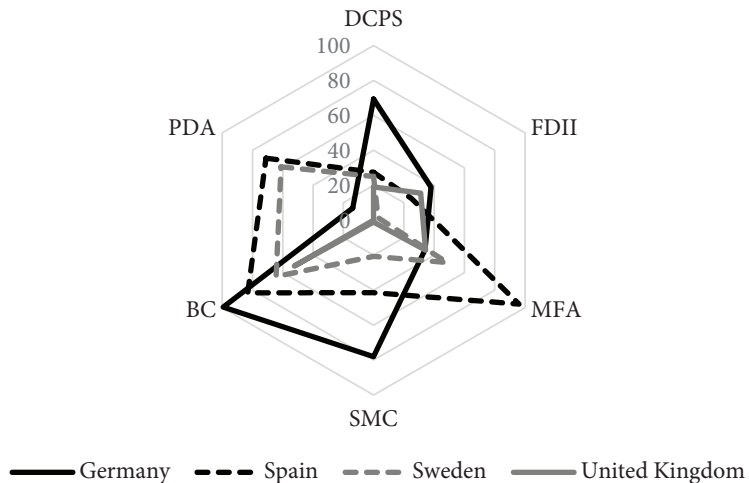
**Figure A33. Performance of the Czech Republic against reference countries in the area: financial system**



Notes as in Figure A25.

Source: Own calculations..

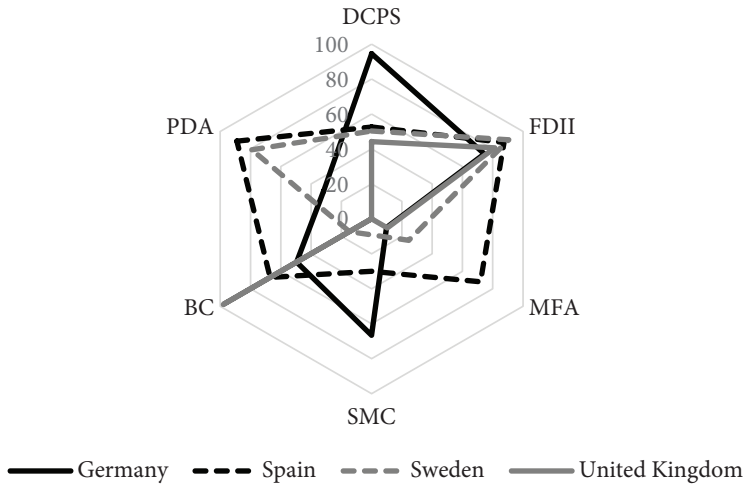
**Figure A34. Performance of Hungary against reference countries in the area: financial system**



Notes as in Figure A25.

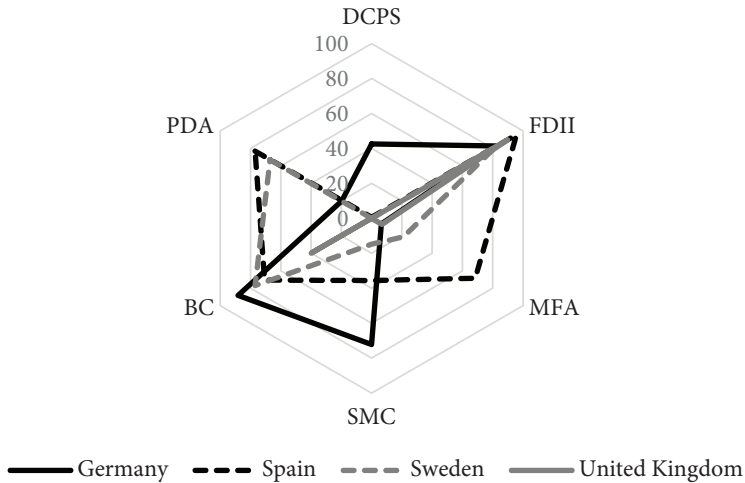
Source: Own calculations..

**Figure A35. Performance of Latvia against reference countries in the area: financial system**



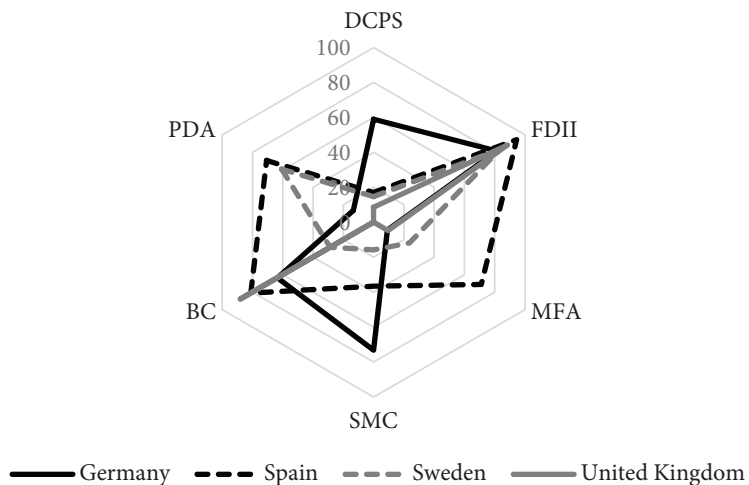
Notes as in Figure A25.  
Source: Own calculations..

**Figure A36. Performance of Lithuania against reference countries in the area: financial system**



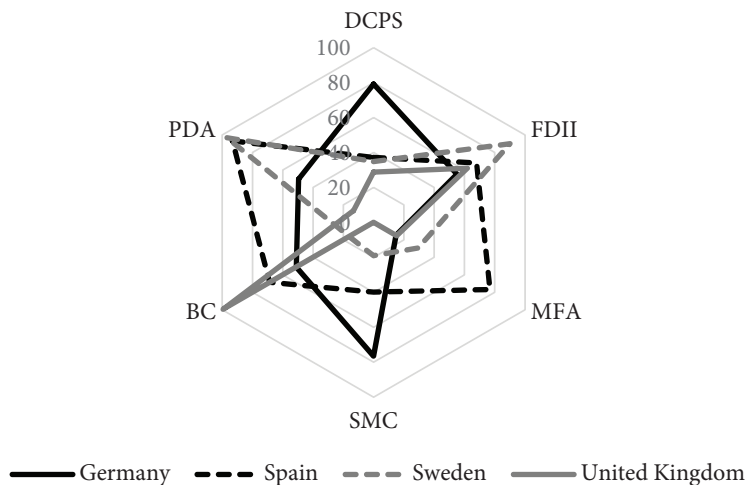
Notes as in Figure A25.  
Source: Own calculations.

**Figure A37. Performance of Romania against reference countries in the area: financial system**



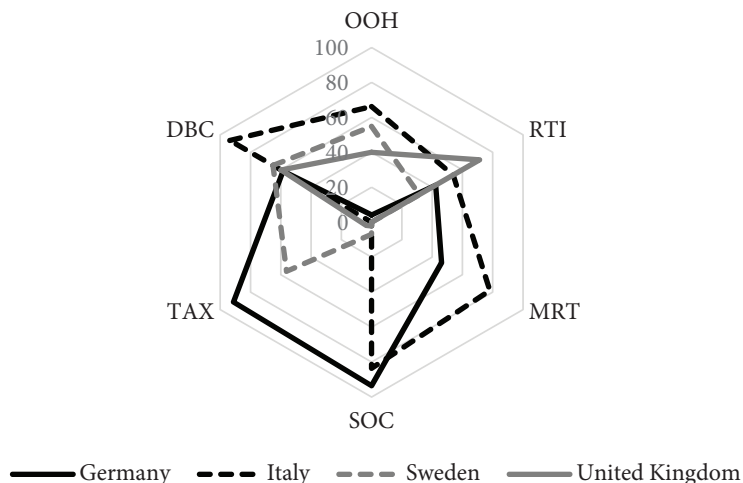
Notes as in Figure A25.  
Source: Own calculations..

**Figure A38. Performance of Slovenia against reference countries in the area: financial system**



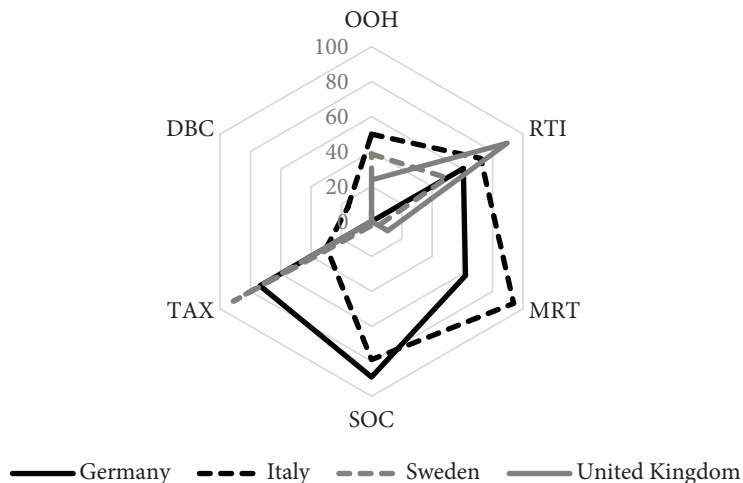
Notes as in Figure A25.  
Source: Own calculations..

**Figure A39. Performance of Bulgaria against reference countries in the area: housing market**



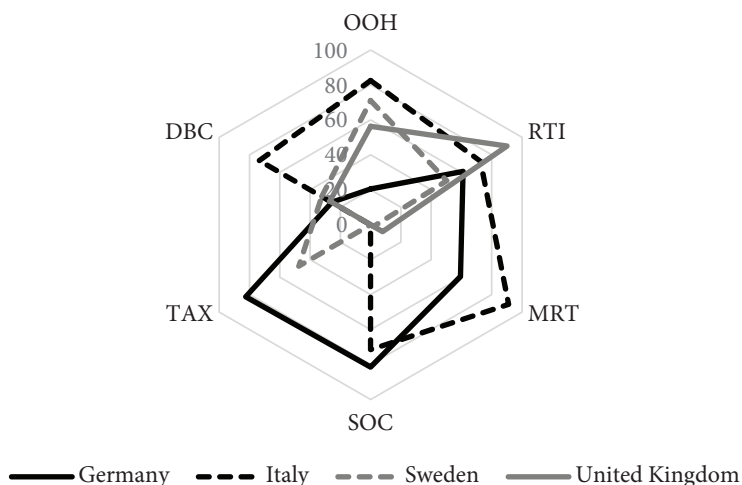
Note: OOH – share of owner-occupied housing; RTI – rent-to-income ratio; MRT – total outstanding residential loans (% of GDP); SOC – share of houses owned by municipalities or the state; TAX – real estate tax revenues (% of GDP); DBC – dealing with construction permits: distance to frontier.  
Source: Own calculations.

**Figure A40. Performance of Croatia against reference countries in the area: housing market**



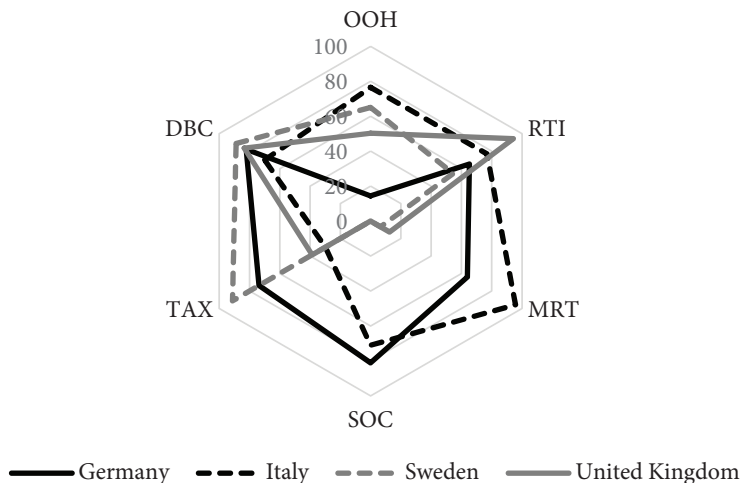
Notes as in Figure A39.  
Source: Own calculations.

**Figure A41. Performance of the Czech Republic against reference countries in the area: housing market**



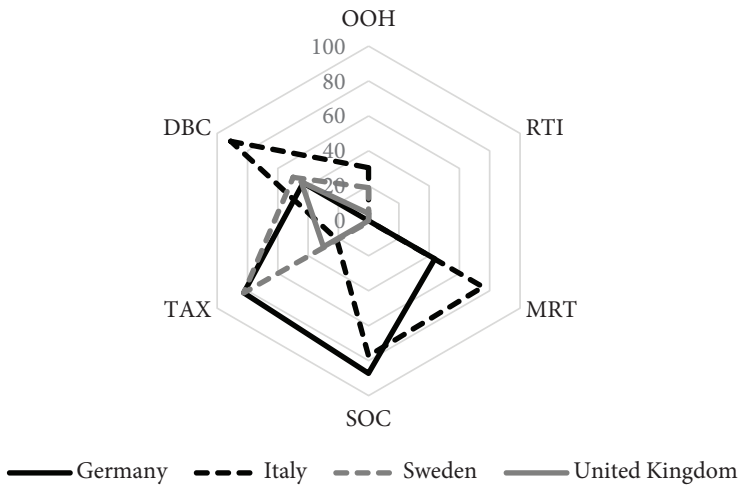
Notes as in Figure A39.  
Source: Own calculations.

**Figure A42. Performance of Latvia against reference countries in the area: housing market**



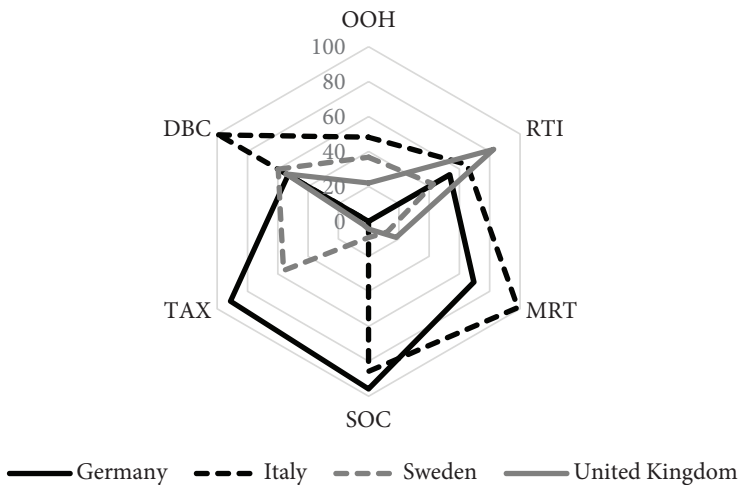
Notes as in Figure A39.  
Source: Own calculations.

**Figure A43. Performance of Romania against reference countries in the area: housing market**



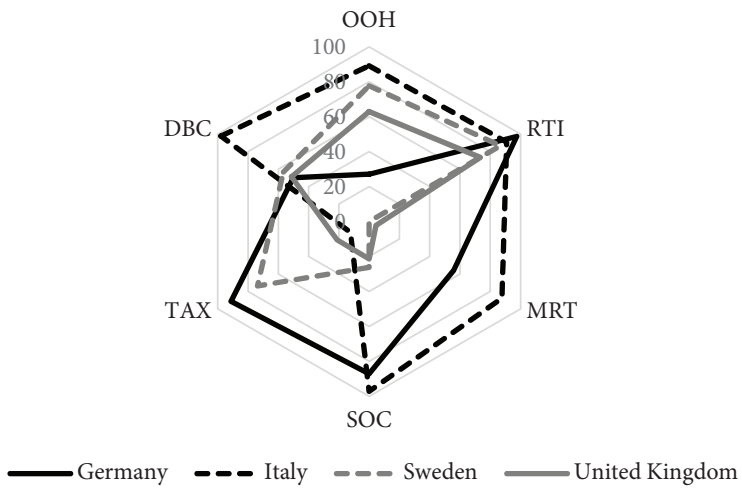
Notes as in Figure A39.  
Source: Own calculations.

**Figure A44. Performance of Slovakia against reference countries in the area: housing market**



Notes as in Figure A39.  
Source: Own calculations.

**Figure A45. Performance of Slovenia against reference countries in the area:  
housing market**



Notes as in Figure A39.

Source: Own calculations.