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STRUCTURAL CONVERGENCE OF THE CEE COUNTRIES WITH THE EURO AREA: EVIDENCE FROM THE DISTRIBUTION OF EMPLOYMENT BETWEEN THE ECONOMIC SECTORS

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Abstract

This paper examines the structural convergence of the CEE countries with the euro area with respect to the distribution of employment between the economic sectors. The existence of such a process contributes to the synchronization of business cycles and the efficiency of monetary policy. The purpose of the paper is to explore in which member states a convergence process with the euro area exists and smaller dissimilarities are observed over the period 2000 – 2018. Through the evaluation of the divergence index and the application of sigma convergence analysis it is identified that employment structure convergence of most CEE countries towards the euro area exists. However, considerably less dissimilarities with the euro area are observed over the whole period in countries that currently use the euro.

Key words: structural convergence, CEE countries, employment, euro area, divergence index

JEL: E24, F02, L16, O47

Introduction

Due to the strengthening of the integration within the EU, the convergence process receives a lot of attention, but also variations in the aspect in which it is considered. Achieving nominal and real convergence is important for EU Member States, but implementation of a comprehensive convergence process also involves convergence in the structure of economy. According to Wacziarg (2004, p. 3) "two countries are said to structurally converge if convergence in their per capita incomes is accompanied by convergence in their sectoral structure".

In general, structural convergence can be defined as convergence in the economic structure between individual countries over time. Economic structure, in turn, may encompass various characteristics of the economic system, such as share of employed labour in the different sectors of the economy, distribution of income, share of GDP or GVA in the economic sectors, etc. For this reason, structural convergence can be defined differently depending on the indicators used to measure it [1].

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The distribution of labour among economic sectors is an important projection of the economic structure. It is namely through employment in the different sectors that the present study, as well as a number of other studies [2], measure the structure of the economy, as it is considered a key structural indicator, along with GDP and GVA. According to Abegaz (2007, p. 1), "the manufacturing sectors of two countries are said to structurally converge if comparability in the economy-wide shares of manufacturing is accompanied by a growing resemblance in the sectoral composition of output or factor use".

The attention to the structural convergence process in the relevant literature has been increasing recently due to its importance for achieving business cycles synchronization and mitigation of the asymmetric impact of shocks on the economy. There is evidence in the literature for the significant positive impact of structural similarities between the economies of groups of countries within the European Union on the business cycles synchronization [3]. Therefore, structural convergence is essential for the stability of the European Monetary Union (EMU) due to its impact on the efficiency of the monetary policy of the European Central Bank. In this context, it is important to be monitored whether such a process exists between CEE countries that have not adopted the euro yet and the euro area. This could be taken as an additional assessment of the readiness of their economies to join the EMU. At the same time, increasing the similarities in the structure of the economies among the countries within the euro area is also important.

The countries of Central and Eastern Europe have been part of the European Union for more than a decade. In the early 1990s they began a real transition to a market economy, accompanied by a structural change. The change in the structure of the economies continues in the period after the entry in the European Union and even in the pre-accession period there is an inherent for the developed economies structure of labour distribution – with a predominant share of services, followed by industry and agriculture, forestry and fishing. Despite the similarities in the economic development of the CEE countries in the past, some of them have achieved convergence with the old Member States more quickly and are now part of the euro area.

Employment structure convergence could be influenced by various factors, such as change and harmonization in the production structure of GDP, convergence in labour productivity, growth in labour productivity, but also by the "Europeanization effect" [4]. Although there are no supranational regulations in the field, the functioning of the common market and the European Monetary Union, the transfer of knowledge and technology, as well as the existence of common policies, goals, institutions, regulations within the EU can favour the employment structure convergence between CEE countries and the euro area.

The Europeanization effect should be stronger in the CEE countries that have already adopted the euro due to greater economic relations and stronger

supranational regulations within the euro area. In this regard, differences with the euro area in these countries can be expected to be smaller than in CEE countries that have not adopted the euro yet.

The purpose of the paper is to explore in which member states from Central and Eastern Europe a convergence process with the euro area exists and smaller dissimilarities are observed with respect to the distribution of employment between the economic sectors over the period 2000 – 2018.

The paper is structured as follows. The next section provides a brief review of existing relevant literature in the field. The second part describes the methodology adopted. The third part presents the main results of the study conducted, identifying the countries that have converged to the euro area and the magnitude of the dissimilarities between them and the euro area with respect to the employment structure. The last part presents the main conclusions drawn from the analysis.

Literature Review

The structural convergence with respect to the distribution of employment between economic sectors is an interesting field of analysis, which is not yet widely represented in the corresponding literature. The prevailing part of the existing researches in the field attempt to verify the existence of such processes between different groups of countries in the European Union.

Höhenberger and Schmiedeberg (2008) analyze the structure convergence with respect to employment between 14 EU Member States during the period 1970 – 2004/2005 [5]. The basic hypothesis of the study is the existence of convergence after 1970, as the countries, which at the beginning of the period are characterized by very high employment in agriculture and relatively low productivity, carry out intensive catching up and transition to an economy based on industry and services. Furthermore, as the income of poorer countries increases, the demand pattern should converge to that of richer countries, which is related to the shift in consumer demand from goods to services. The authors do not expect a complete convergence process, as differences in natural resources, size of the state, institutional framework and cultural characteristics exist between the countries under research. According to Höhenberger and Schmiedeberg (2008), while the importance of the latter two factors is diminishing due to the consequences of the ongoing process of European integration, the impact of the size of the state on divergence should not be underestimated. By applying the methods of σ and β convergence, authors prove the existence of a significant and strong structural convergence in the considered group of countries.

Olczyk and Lechman (2011) examine the existence of structural convergence with respect to the relative share of employment in the three main sectors of the

economy – agriculture, industry and services, as well as in low-tech economic activities in the industry sector in four countries (Poland, the Czech Republic, Hungary and Slovakia) as compared to Germany. The choice of the countries is determined by the similar characteristics of their economic systems. The period considered is from 2000 to 2007. The data source is the database of the Organization for Economic Cooperation and Development (OECD). For the verification of the hypothesis of employment structure convergence in the four transition economies to Germany, Olczyk and Lechman applied a multidimensional analysis using basic taxonomy methods. The authors calculate the Euclidean metric in 18-dimensional Euclidean space. The publication concludes that, during the analyzed period, only the Czech Republic converges structurally with Germany, while the other countries are diverging. In comparative terms Poland is the country which economy structure diverges most significantly from Germany.

Albu (2012) explores the existence of structural convergence in the share of employment among EU Member States for the period 2000 – 2011 [6]. Using the Lorenz curve, the Gini coefficient (measured in two ways), the RH index (Robin Hood coefficient) and the coefficient of variation, the author proves the existence of a convergent process in the share of employment, which is valid at EU-25 level, as well as at EU-15 and EU-10 level. Applying the same methodology in the services sector proves convergence in the share of employment in the EU-10, but not in the EU-27 and EU-15 groups. Trends in the agriculture, forestry and fishing sector are opposite and reveal convergence in the EU-27 and EU-15, and divergence in the EU-10.

Regardless of the different time period and geographical scope, all the empirical studies considered prove the existence of a certain degree of structural convergence with respect to employment. The most relevant to the present paper is the study of Olczyk and Lechman (2011), as it has a similar purpose. Its results show that in most CEE countries there is a divergent process compared to Germany with respect to the employment structure. However, it should be noted that conclusions may vary with a change in the country used as a benchmark and the time period.

Methodology

The empirical analysis is performed in two directions in order to evaluate the scale of dissimilarities and existing convergence and divergence tendencies between CEE member states and the euro area. Initially, a descriptive analysis is applied that derives the main tendencies in the indicators studied. Secondly, the sigma convergence method is employed on the basis of the calculated divergence index (DIV) with the aim of revealing existing tendencies in the structural convergence in the distribution of labour resources. The divergence index is first

developed by Krugman (1993) in a simpler form and, consequently, is used in alternative forms [7]. In the present study, it is calculated by adapting the formula applied by Stattev and Raleva (2006) when measuring the convergence in the expenditure and production structure of Bulgaria's GDP in comparison to the euro area. The index is calculated as follows:

$$\mathbf{DIV} = - \sum \frac{(E_{nx} - E_{EAx})^2}{E_{EAx}}, \quad (1)$$

where: DIV is the divergence index, x denotes the economic sector, n is the CEE country, EA is the euro area, Enx and E_{EAx} are the relative shares of employment of sector x in total employment in country n and in euro area respectively.

If the index value is zero, this testifies to an identical employment structure in both the country studied and the euro area. When the DIV has a negative number, this indicates the existence of a difference in the employment structure between the relevant country and the euro area. The higher the absolute value of the index, the more substantial the differences observed.

In the current paper, the index is calculated for each year of the studied period. The focus in the interpretation of results is placed on the direction and rate of its variations over time. Based on the calculated index, a sigma convergence analysis is applied and it is determined if there is a convergence between CEE countries and the euro area at the end of the period observed compared to its beginning. The analysis spans the period of 2000 to 2018. To measure the structural convergence in employment, the study uses data on the thousand hours worked in the three economic sectors due to higher level of accuracy of this indicator compared to the employment – thousand persons.

To distinguish the economic sectors, the NACE Rev. 2 classification is used. According to it, after the 2008 revision, 21 main economic activities (from A to U) are identified. In evaluating the structural convergence, the study takes into consideration the three main economic sectors – agriculture, forestry and fishing (activity A); industry including construction (activities C to F); and services (activities G to U), based on NACE Rev. 2.

The empirical analysis focuses on exploring the structural convergence of employment in the CEE countries to the euro area. This determines the geographical range of the data employed. With reference to this, data on the CEE countries and average values for the euro area countries is used (Euro area-19 countries). The data is collected by Eurostat in its capacity as a common statistical organization responsible for the methodological and operational activities for creating quality database in the EU.

Results

The comparison of tendencies in the relative shares of employment in the three economic sectors between the CEE countries and the euro area based on the data presented in Table 1 shows that there are dissimilarities between them. At the beginning of the period considered, the value of the relative share of employment in the agriculture, forestry and fishing sector in the euro area is smaller than it is in all the CEE countries (with the exception of the Czech Republic), with Slovakia being closest to the euro area indicator. In the industry sector, the share of the number of hours worked in the euro area is smaller than that of all the CEE countries (except for Latvia), Lithuania registering the value closest to that for the euro area. In 2000, the share of employment in the service sector in the euro area is higher than that of all the CEE countries, Slovakia being closest to the euro area value. The tendencies derived show that two of the countries, which are currently EMU members, come close to a greater extent to the employment structure in the euro area.

Table 1: Relative share of employment in agriculture, forestry and fishing sector, industry sector and service sector in CEE countries (%)

	2000			2018		
	Agriculture, forestry and fishing	**Industry**	**Service**	**Agriculture, forestry and fishing**	**Industry**	**Service**
Bulgaria	21.1	28.5	50.4	16.0	26.3	57.7
Czech Republic	5.0	38.7	56.3	3.3	36.1	60.5
Estonia	8.1	32.2	59.6	3.6	29.1	67.4
Croatia	13.2	32.3	54.5	6.4	27.5	66.2
Latvia	14.4	27.0	58.6	7.9	24.2	67.9
Lithuania	17.6	27.3	55.1	7.5	26.9	65.7
Hungary	13.1	30.9	56.0	6.2	28.3	65.5
Poland	17.5	30.4	52.1	9.6	32.3	58.0
Romania	42.2	28.1	29.8	19.0	31.3	49.7
Slovenia	16.2	35.2	48.6	9.0	29.4	61.5
Slovakia	6.5	33.4	60.1	3.2	32.2	64.5
Average	15.9	31.3	52.8	8.3	29.4	62.2

	2000			2018		
	Agriculture, forestry and fishing	**Industry**	**Service**	**Agriculture, forestry and fishing**	**Industry**	**Service**
Coefficient of variation between CEEE countries (%)	63.1	11.5	16.0	61.0	11.5	8.8
Euro area – 19 countries	6.21	27.25	66.54	4.21	21.82	73.97

Source: Authors' calculations based on Eurostat data.

In 2018, the situation is different, especially with regard to the share of hours worked in the agriculture, forestry and fishing sector, since more countries show values lower than the average for the euro area. These are the Czech Republic, Estonia and Slovakia, with the latter two countries having already adopted the euro. In the industry and service sector, in none of the countries studied there is a share of hours worked that is lower or higher respectively than the average for the euro area. In Latvia, which has been an EMU member since 2014, the values of the share of employment registered in the industry and service sector are closest to those for the euro area but the differences are considerable.

The tendencies derived demonstrate that there are dissimilarities in the employment structure in the main economic sectors between the CEE countries and the euro area both at the beginning and at the end of the period monitored. The differences observed are due to the fact that most of the EMU members are countries that had undergone a structural change in their economies at an earlier stage compared to the CEE countries. Despite that, the distance in the shares of employment in the agriculture, forestry and fishing sector between the euro area and the average value for the CEE countries decreases in 2018 in comparison to 2000, which suggests the presence of a convergence process. In the industry sector, an opposite tendency is registered, with certain specificities existing in the different countries (see Table 1).

It can be noted that, in addition to the common characteristics in the economic development of the CEE countries studied before their transition to market economy, some similarities related to tendencies in the employment structure in the three main economic sectors are found. In particular, identical directions of change in the shares of the employment are observed, with those in the agriculture, forestry and fishing and in the industry decrease (with the exception of Poland and Romania), and with those in the service sector increase (see Table 2). Analogical dynamics of the indicators studied for the period considered are also typical of the euro area.

Together with the common characteristics of the CEE countries, there are some considerable differences among them in 2000. The data in Table 1 show that the biggest dispersion among the countries is observed with respect to the shares of employment in the agriculture, forestry and fishing sector, where the coefficient of variation in 2000 is 63,11 %. The Czech Republic, Slovakia and Estonia register the lowest levels of the indicator, which are 5 %, 6,5 % and 8,1 %, respectively. The countries with the highest shares of employment in this sector at the beginning of the period are Romania (42,2 %), Bulgaria (21,1 %) and Poland (17,5 %), which are not members of the euro area. It is these countries that are characterized by the highest values of the indicator at the end of the period as well. Romania is the only country which in 2000 has a higher share of employment in the agriculture, forestry and fishing sector than in the industry sector, which continues until 2004. The data in Table 2 reveal that the highest rate of decrease in the share of the agriculture, forestry and fishing sector is registered in this country as well. In Bulgaria, despite the high level of the indicator in 2000, the lowest rate of decrease (-24,2 %) is registered as compared to 2000 among all the countries studied. In other countries, such as Lithuania, Estonia, Romania, Hungary, Croatia and Slovakia, the share of employment in the sector decreases by more than 50 %. It is worth noting that two of the countries with the lowest share of employment in the agriculture, forestry and fishing sector at the beginning of the period – Estonia and Slovakia, register some of the highest rates of decrease of the indicator in 2018 compared to 2000. It is important to emphasize as well that the differences among the countries, measured by the coefficient of variation, in terms of the share of employment in this sector diminish to a very small extent (by 2.1 percent points) at the end of the period studied compared to 2000.

Table 2: Rate of change of share of employment in agriculture, forestry and fishing sector, industry sector and service sector in CEE countries in 2018 compared to 2000 (%)

	Agriculture, forestry and fishing	**Industry**	**Service**
Bulgaria	-24.2	-7.9	14.6
Czech Republic	-33.4	-6.8	7.6
Estonia	-56.4	-9.8	13.0
Croatia	-51.7	-14.9	21.3
Latvia	-45.0	-10.5	15.8
Lithuania	-57.7	-1.5	19.2
Hungary	-52.9	-8.4	17.0
Poland	-45.1	6.5	11.4
Romania	-54.9	11.6	66.8

	Agriculture, forestry and fishing	Industry	Service
Slovenia	-44.4	-16.3	26.6
Slovakia	-50.3	-3.5	7.4

Source: Authors' calculations based on Eurostat data.

In the industry, the differences among the CEE countries, measured by the coefficient of variation, remain at the same level in 2000 and 2018 – 11,5% (see Table 1). In this sector, the lowest dispersion among the countries is registered in 2000 in comparison to the agriculture, forestry and fishing and services. Furthermore, the rates of change of the share of employment in the industry in 2018 compared to 2000 are lower in terms of absolute values in comparison to those in the other two sectors in all the countries. The countries studied (except for Poland and Romania) are also characterized by a decrease of the share of employment in the sector in 2018 compared to 2000. Poland and Romania are precisely two of the countries with the highest share of the number hours worked in the agriculture, forestry and fishing sector at the beginning of the period, which significantly decreases over time at the expense of an increase of employment in the other two sectors. In comparative terms, Bulgaria is one of the countries which can be characterized as the least industrialised country in terms of the share of employment in the sector, with the feature specified being typical both at the beginning and at the end of the period analyzed.

In the service sector, the dispersion among the countries measured by the coefficient of variation, decreases by almost a half in 2018 compared to 2000. Moreover, in all the CEE countries an increase of the share of employment in the sector is registered, which is the tendency in the developed economies. The countries with the highest shares of the hours worked in the sector in 2000 are Slovakia, Estonia and Latvia. These three countries, which are already members of the euro area, maintain the high values of the indicator in comparative terms also at the end of the period. Slovakia is the country that has the lowest rate of change in the relative share of employment, followed by the Czech Republic, while the highest rates of changes with values of above 20% are registered in Romania, Slovenia and Croatia (see Table 2).

The analysis of the values of the coefficients of variation among the CEE countries showed a strong dispersion in the share of employment in the agriculture, forestry and fishing sector and a weak dispersion in the other two sectors. Between all the CEE countries and the euro area there also exists a distance in the employment structure but in some countries it is smaller.

The data in Table 3 show that the lowest average value in absolute terms for the period considered of the divergence index measuring the differences from

the euro area in the employment structure is registered in two countries which, currently, are EMU members – Estonia and Slovakia, as well as Hungary, and the highest average value – in Romania and Bulgaria. The high absolute value of the index for Bulgaria is mainly due to the differences from the euro area in terms of the relative share of employment in the agriculture, forestry and fishing sector, with an analogous situation existing in Romania and the other CEE countries, with the exception of Slovakia. Slovakia and Estonia have the lowest absolute value of the divergence index also at the beginning of the period, whereas Estonia, Croatia, Hungary, Latvia and Lithuania show the smallest differences with the euro area with an absolute value of the index under 5 in 2018.

Table 3: Divergence index in CEE countries

	Bulgaria	Czech Republic	Croatia	Hungary	Poland	Romania	Average
2000	-39.7	-6.7	-10.9	-9.9	-24.1	-228.7	-53.3
2001	-38.0	-6.7	-10.6	-8.3	-29.1	-228.6	-53.6
2002	-40.2	-7.2	-11.6	-8.6	-30.3	-143.7	-40.3
2003	-42.0	-6.8	-12.2	-5.5	-28.5	-148.8	-40.6
2004	-41.9	-7.8	-12.3	-4.6	-29.1	-116.2	-35.3
2005	-40.3	-8.4	-13.1	-4.5	-28.2	-130.7	-37.5
2006	-38.7	-8.2	-12.9	-4.6	-23.8	-120.2	-34.7
2007	-37.9	-8.1	-12.8	-4.6	-21.4	-120.0	-34.1
2008	-39.6	-8.4	-13.0	-4.8	-22.6	-120.5	-34.8
2009	-42.1	-8.7	-13.4	-3.7	-20.6	-123.4	-35.3
2010	-42.5	-9.9	-15.4	-3.8	-19.2	-135.4	-37.7
2011	-42.9	-10.7	-18.1	-4.0	-20.3	-113.0	-34.8
2012	-39.5	-11.9	-12.2	-5.6	-20.3	-117.4	-34.5
2013	-40.9	-12.1	-8.6	-4.2	-19.4	-115.1	-33.4
2014	-42.9	-11.9	-6.3	-3.5	-18.3	-110.9	-32.3
2015	-40.9	-12.9	-5.6	-2.7	-19.1	-83.9	-27.5
2016	-37.5	-12.6	-4.7	-2.9	-17.6	-69.1	-24.0
2017	-43.2	-12.4	-3.6	-3.4	-16.8	-67.4	-24.5
2018	-37.4	-12.0	-3.4	-3.8	-15.4	-64.3	-22.7
Average	-40.4	-9.6	-10.6	-4.9	-22.3	-124.1	-35.3

	Estonia	Latvia	Lithuania	Slovenia	Slovakia	Average	
2000	-2.2	-11.7	-22.9	-23.3	-2.0	-12.4	
2001	-1.9	-15.5	-18.8	-22.3	-2.2	-12.1	
2002	-2.1	-16.5	-21.2	-18.5	-2.1	-12.1	
2003	-2.6	-12.7	-22.6	-16.2	-3.1	-11.4	
2004	-3.3	-7.1	-17.3	-13.7	-3.5	-9.0	
2005	-3.5	-5.8	-14.8	-14.4	-3.5	-8.4	
2006	-3.9	-9.0	-16.8	-12.6	-3.7	-9.2	
2007	-4.1	-4.6	-6.8	-12.2	-3.8	-6.3	
2008	-3.6	-2.8	-5.1	-12.8	-5.1	-5.9	
2009	-3.4	-3.9	-5.0	-10.9	-4.4	-5.5	
2010	-2.9	-3.1	-4.9	-9.6	-4.9	-5.1	
2011	-3.3	-3.8	-5.4	-9.7	-5.0	-5.4	
2012	-3.9	-3.7	-6.8	-10.8	-5.0	-6.1	
2013	-3.5	-3.3	-6.1	-10.4	-5.0	-5.7	
2014	-3.6	-3.3	-7.2	-9.9	-5.4	-5.9	
2015	-3.6	-4.4	-7.4	-9.7	-5.4	-6.1	
2016	-3.8	-3.6	-5.0	-9.9	-5.9	-5.7	
2017	-3.5	-4.1	-5.1	-9.6	-6.4	-5.7	
2018	-3.1	-4.0	-4.6	-10.2	-6.4	-5.7	
Average	-3.2	-6.5	-10.7	-13.0	-4.4	-7.6	

Source: Authors' calculations based on Eurostat data

In 2018 compared to 2000 in most of the countries studied convergence in the employment structure is observed since the divergence indexes in terms of absolute value decrease. There is divergence process only in three countries – the Czech Republic, Estonia and Slovakia, which stand out with the best baseline positions in 2000.

The most distinct process of reducing distance with the euro area is observed in Romania, which is due to the very high relative share of employment in the agriculture, forestry and fishing sector at the beginning of the period – 42,2%, with a value for the euro area of 6,21 . This leads to a divergence index in the employment structure in the sector in Romania of –208,4 in 2000. In spite of the positive tendency registered, Romania continues to demonstrate the most considerable deviations from the euro area according to the values of the divergence index, which in 2018 is –64,3. In comparative terms, in Lithuania and Slovenia, which are currently members of the euro area, a stronger convergence

process is observed. With regard to Bulgaria, it can be pointed out that the country has a lower level of differences in the structure of employment from the euro area in comparison to Romania but do not show a strong convergence over time.

It is important to explore whether in the CEE countries, which are already part of the euro area, smaller differences in the employment structure by economic sectors and stronger convergence tendencies due to the stronger integration of their economies within the euro area are observed. Although there are no supranational regulations in the sphere, the data in Table 3 demonstrate that in 2018 the CEE countries, which have adopted the euro, manifest a higher level of similarity to the euro area, with the divergence index having an absolute value less than 10. The only exception in this group is Slovenia, in which the divergence index is –10,2. At the same time, however, Slovenia is one of the countries where a particularly intensive process of convergence is registered over the period studied. Of the countries, which have not adopted the euro, absolute values lower than 10 in 2018 are registered only in Croatia and Hungary, whereas in the other countries the divergence index is much more negative. Despite the greater differences in the employment structure for the groups of countries outside the euro area, it is worth pointing out that a process of decreasing the variation from the euro area exists in all of them in 2018 as compared to 2020. At the same time, in three out of the five CEE countries, which have already introduced the euro, convergence to the euro area occurring at different scope is observed.

Conclusion

In comparing the employment structure in the CEE countries and the euro area, it is established that in 2000 and 2018 employment structure closest to that of the euro area is observed in countries which currently are part of the euro area (Slovakia and Lithuania in 2000 and Estonia and Latvia in 2018). Furthermore, in comparative terms, the smallest dissimilarities for the period 2000 – 2018 according to the divergence index are also registered in two of the countries which, as of now, have adopted the euro (Estonia and Slovakia) and in Hungary, and the highest ones are registered in Romania and Bulgaria.

Sigma convergence in 2018 compared to 2000 in the employment structure is registered in most of the CEE countries. This contributes to a stronger integration of the economies of the euro area members and has a positive impact on the other countries' readiness to adopt the euro. A divergence process exists only in three countries – the Czech Republic, Estonia and Slovakia, but they register the lowest absolute value of the divergence index in 2000. In Bulgaria, the weakest convergence in 2018 as compared to 2000 among the CEE countries is observed.

The analysis demonstrated a distinction among the euro area members and the other CEE countries with respect to the dissimilarities in the employment

structure with the euro area. In 2018, the CEE countries (with the exception of Slovenia), which have adopted the euro, register lower absolute values (under 10) of the divergence index, which shows a narrower distance with the euro area. Of the countries which have not adopted the euro yet, only Croatia and Hungary register absolute values of the indicator under 10 in 2018. In the other countries, much bigger differences are observed. This suggests the existence of a relationship between achieving a nominal convergence and converging in the economic structure.

The derived tendencies also show that, despite the absence of supranational regulations aiming at unifying the distribution of employment among the economic sectors, the stronger integration of the economies of the countries within the euro area, the common monetary policy implemented by the European central bank and the achieved nominal convergence among the countries have contributed to a more uniform allocation of labour resources among the economic sectors. According to calculated divergence indexes it is worth pointing out that among the countries that have adopted the euro, only Slovakia does not demonstrate an employment structure closer to the one of the euro area in 2018 as compared to the year when the euro was adopted.

In conclusion, it can be pointed out that besides the significance of achieving convergence in the economic structure measured by the distribution of labour resources among the economic sectors for the stability and functioning of the EMU, there is also a reciprocal influence. The stronger "Europeanization effect" and achieving the nominal convergence criteria in the countries having adopted the euro have an impact on the structure of economy.

Notes

[1] For structural convergence of the GDP production structure see Raleva and Damyanov (2019), Damyanov (2019), Stattev and Raleva (2006), Darvas and Szapary (2004), etc. For structural convergence of the GDP expenditure components see Stattev and Raleva (2006), Velichkov (2019), etc. For structural convergence of the foreign trade see Pirimova (2019). For institutional convergence see Marikina (2019). For convergence of productivity see Peshev and Pirimova (2020).

[2] See Wacziarg (2004), Höhenberger and Schmiedeberg (2008), Doyle and O'Leary (1999), Naveed and Ahmad (2016), etc.

[3] See Beck (2013), Imbs (2001), etc.

[4] For a more thorough analysis of the factors leading to convergence in the employment structure see Stefanova (2019).

[5] The research encompasses all old EU Member States before the Eastern Enlargement except Luxemburg.

[6] The research encompasses all EU Member States in 2012. The author distinguishes between 2 groups: the EU-15, which includes the EU Member States before the Eastern

Enlargement, and the EU-10 – includes all Member States that joined after 2004 without Malta and Cyprus.

[7] See Kallioras and Petrakos (2007), Stattev and Raleva (2006), Percoco et al (2005), etc.

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