Integration of Central and Eastern European Countries: Increasing EU Heterogeneity?

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Integration of Central and Eastern European Countries: Increasing EU Heterogeneity?

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Contribution to the Project

The paper deals with examining the level of heterogeneity in the EU. Focusing on the aspects of the European integration process, we particularly ask what the influence of CEECs upon the changing level of heterogeneity is in the EU over time. The estimated contribution of CEE countries to increasing heterogeneity is compared to other EU clusters such as the periphery countries. The integration and transition strategies of the CEECs are analysed, focusing on the transition period before the EU enlargement in 2004, and the factors determining differences in the reached level of integration are discussed.

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Abstract

The paper assesses the heterogeneity of an enlarged European Union and discusses the role and contribution of CEECs on the development of this heterogeneity over time. The two central research questions are: What are the factors that distinguish between successful and less successful CEE countries in terms of the EU enlargement? How was heterogeneity in the EU developed in the last decade? Using cluster analysis methods allow the focusing on heterogeneity in the five selected dimensions of interest: Institutions and Governance; Single Market and Openness; Macroeconomic Policies; Symmetry and Convergence; and Competitiveness. We can find that the specific macroeconomic policies followed by CEE countries during the transformation period were less decisive for a successful transition than the level of (non-elite) political stability, the quality of institutional framework, the maturity and compatibility of informal institutions and the initial level of economic development. We also can find substantial convergence in terms of economic indicators in the EU in the period considered but none or a very slow convergence in terms of institutional indicators. The negative consequences of such heterogeneity were strengthened by the crisis. As a consequence the tensions caused by these different speeds of convergence in different fields challenge the long-term sustainability of EMU, and the consequences of this situation should be more intensively discussed in the EU. We also argue that the experience of transition of CEE countries holds valuable lessons for the currently discussed reforms of the southern periphery of Europe. Similarly to the CEECs before their entrance to the EU, the periphery countries need to find a direction to head for in the next 10-15 years. Budgetary savings are inevitable; nevertheless positive long-term visions should be formulated as well.

Executive summary

European Union enlargement by Central and Eastern European countries (CEECs) brought about a discussion on common policy coordination. The paper assesses the heterogeneity of an enlarged European Union and discusses the role and contribution of CEECs on the development of this heterogeneity over time. The two central research questions are examined in the paper: 1. What are the factors that distinguish between successful and less successful CEE countries in terms of the EU enlargement? 2. How was heterogeneity in the EU developed in the last decade? As regards the former, we focus particularly on the identification and discussion of factors determining the integration strategies of CEE countries during the transition period in the 1990s. As far as the later is concerned, using cluster analysis methods allow the focusing on heterogeneity in the five selected dimensions of interest: Institutions and Governance; Single Market and Openness; Macroeconomic Policies; Symmetry and Convergence; and Competitiveness. The attention is also paid to the evolution of cluster memberships over time by using four milestones: 2000 (the starting point of analysis), 2004 (the EU enlargement), 2008 (the start of the financial crisis) and 2011 (the most recent period with the available data). In addition to that, contribution of the CEECs to development of the EU heterogeneity over time is examined. Within the analysis, we employ especially the data by Eurostat, World Bank and Heritage.

Focusing on the first central research question, we can find that ex-ante strategies of economic reforms and specific macroeconomic policies followed by CEE countries during the transition period were less decisive for a successful transition than the level of (non-elite) political stability, the quality of institutional framework, the maturity and compatibility of informal institutions and the initial level of economic development. Furthermore, we emphasize the importance of a clear prospect – accession to the EU – for the success of the transition process. Focusing on the second research question, we can find that the EU countries do not make homogeneous clusters. Neither do the CEE countries make a homogenous cluster in most of the dimensions over the whole period analysed. The most homogeneous "Eastern" cluster still exists in the area of institutions, where in 2008 only Estonia joined the Western countries. The polarization North-West vs. South-East is identifiable particularly in the dimensions of Governance and Institutions and Competitiveness, in other dimensions such as Single Market and Openness or Symmetry and Convergence, the CEE countries have already converged considerably. The heterogeneity increases when enlarging the core of the EU/EMU by the CEECs in almost all dimensions. However, their contribution to EU heterogeneity is comparable to the impact of the periphery countries in most of the dimensions.

According to our results, we can emphasize two major policy relevant conclusions. Firstly, we argue that the experience of transition of CEE countries holds valuable lessons for the currently discussed reforms of the southern periphery of Europe. Similarly to the CEECs before their entrance to the EU, the periphery countries need to find a direction to head for in the next 10-15 years. Budgetary savings are inevitable, nevertheless, positive long-term visions should be formulated as well. On the other hand, it is not so important whether the way to competitiveness should be based on, e.g., knowledge economy, cheap exports or tourism since, in our opinion, there could be more alternative ways to prosperity. Rather than particular forms of economic policies, the existence of a vision itself and its support across the political spectrum are more important for successful transformation of peripheral countries.

Secondly, we also point out the contrast among development in particular dimensions. We can find substantial convergence in terms of economic indicators in the EU in the period considered but none or a very slow convergence in terms of institutional indicators. The negative consequences of such heterogeneity were strengthened by the crisis. As a result, the tensions caused by these different speeds of convergence in different fields challenge the long-term sustainability of EMU, and the consequences of this situation should be more intensively discussed in the EU. On the other hand, we consider a certain level of heterogeneity in some dimensions such as in the fiscal area as natural because of different welfare state models and considerably varying living standard across European countries. To be more specific, instead of harmonization being discussed, we call for better coordination and joint responsibility in terms of policies and institutions in the European Union.

1. Introduction

Europe is integrating. Apart from the indisputable benefits of European Union enlargement based on fundamental ideas of European unity, there are also difficulties associated with integration that should be solved. European Union enlargement by Central and Eastern European countries (CEECs) in 2004 and 2007 as well as enlargement by Croatia in 2013 brought about higher demands for common policy coordination. It also increased the complexity of decision-making mechanisms and of reaching a common consensus[1]. Regarding EU enlargement in 2004, Zielonka (2007) notices that the hierarchical governance structure has become insufficient and suggests delegating authority to specialized institutions[2]. In addition, Delhey (2007) points out that EU enlargement brought about a decline in social cohesion between the old and new EU countries within the EU[3].

When joining the EU the CEECs explicitly accepted a commitment to seek the adoption of the Euro in the forthcoming future. However, the monetary unification process seems to continue slowly towards the East of Europe. The heterogeneous approach towards the monetary unification process among the new members of the EU in 2004 and later leads to an existing insider-outsider constellation in the EU. Focusing on the CEECs one can distinguish between countries in favour of a common currency, such as Slovenia, Slovakia or the Baltics and also countries with a purely pessimistic approach like the Czech Republic. Poland's statements regarding the Euro might be considered as careful regarding the current state of the fulfilment of Maastricht criteria. The recent economic problems of Hungary have postponed serious thoughts about Euro adoption to a time after 2020.

As regards fiscal policy and public finance, the CEECs' strategies and outcomes are rather heterogeneous as well. While Slovenia, Hungary and Poland are approaching the average Western European level of redistribution; the other CEE countries are redistributing an obviously lower share of their GDP[4]. Similarly, as far as public debt is concerned, most of the CEE countries are considered to be trustworthy debtors, moreover, Estonia together with Luxemburg are permanently the least indebted countries in Europe. On the other hand, Hungary, Latvia and Romania had to ask for foreign financial aid during the first wave of the economic crisis.

Regarding a large enlargement of the EU and the CEECs' rather disharmonised stances and approaches, one might ask the question about the current level of heterogeneity in the EU and the contribution of the CEECs to its development.

In this paper we assess the heterogeneity of an enlarging European Union and discuss the role and contribution of CEECs to the development of heterogeneity over time.

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[1] These are well illustrated by the establishment of the Treaty on Stability, Coordination and Governance Union (known as TSCG or the Fiscal Stability Treaty). The treaty could not be incorporated into the primary legislation of the EU due to the refusal of Great Britain. Accordingly, the treaty was signed by 25 EU countries as an intergovernmental treaty with the exception of Great Britain and the Czech Republic.

[2] Establishing the European System of Financial Supervision might be considered as an example of such an institution.

[3] Delhey computed an *index of trust* based on the Commission's Eurobarometer Survey and the Central and Eastern Eurobarometer.

[4] Measured as Government spending/GDP

Two central research questions are examined in the paper.

1) What are the factors that distinguish between successful and less successful CEE countries in terms of the EU enlargement?
2) How was heterogeneity in the EU developed in the last decade?

Considering the first central question, we focus on the identification and discussion of factors determining the integration strategies of CEE countries during the transition period in the 1990s. We particularly focus on the changing political and institutional environment and macroeconomic policies of the CEECs in relation to the processes of integration. Regarding the second central question, we use the cluster analysis methods to examine the degree of homogeneity in the enlarging European Union. We apply a multi-dimensional approach focusing on heterogeneity in five selected areas of interest: 1) Institutions and Governance; 2) Single Market and Openness; 3) Macroeconomic Policies; 4) Symmetry and Convergence; and 5) Competitiveness. In particular, the cluster analysis is applied to examine four constituent questions: (*i) To what extent do EU countries make homogenous clusters and which countries tend to make common clusters or act as usual outliers (i.e. to explore the degree of homogeneity)? (ii) Do CEECs act as an internally homogeneous cluster within the EU? (iii) How does the clustering structure evolve over time? (iv) What is the contribution of CEECs to the changing degree of homogeneity (i.e. do CEE countries increase EU heterogeneity)?*

Given the examination of heterogeneity as the main goal of the paper, one might ask whether the high level of homogeneity and the reducing heterogeneity are a desirable goal of European integration. Arguments justifying rising homogeneity can be found in economic literature and EU legislation.

As regards general statements related to EU homogeneity, Cappelen et al. (2003) state that *Greater equality across Europe in productivity and income has been one of the central goals of the European Community since the early days of European economic integration.* Alesina et al. (2005) add that countries of the Union should be homogenous to reach the economies of scale or externality internalisation as a positive outcome of integration. Also the recently adopted legislations on the Macroeconomic Imbalance Procedure (MIP), the Fiscal Compact presented in the Treaty on Stability, Coordination and Governance (TSCG) or the Euro Plus Pact[5] are based on the assumption of higher structural similarity within the EU, since the introduction of these procedures and treaties aims to support the convergence of individual economies to reduce national deviations. According to Trichet (2013) this leads to a remarkable progress in coordination of EU governance.

Also the major part of the EU budget consolidated in the structural funds is aimed at decreasing regional disparities. The Europe 2020 Strategy aims at achieving smart, sustainable and inclusive growth. In the frame of the definition of inclusive growth, the Strategy stresses the need for reducing regional disparities stating that "*Regional development and investment also support inclusive growth by helping disparities among regions diminish and making sure that the benefits of growth reach all corners of the EU*" (European Commission, 2012a).

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[5] The pact includes the treaty of 24 EU countries (excluding the Czech Republic, Hungary, Sweden and the UK) on the introduction of structural reforms improving competitiveness and fiscal discipline. The reforms are also aimed at supporting the convergence processes in individual EU economies.

The paper is structured as follows: The introductory section explains the motivation and goal of our research. The methodology and data are explained in the second section. The third section focuses on a descriptive analysis and discussion on the integration strategies of the CEECs towards the EU and EMU. In the fourth section the results of the cluster analyses examining the degree of homogeneity in the EU are presented. Results of the sensitivity analysis are described and summarized in the fifth section. The sixth section is the conclusion.

2. Methodology and data

Cluster analysis is an appropriate and much used method to identify groups of internally homogenous countries with similar characteristics in respective areas. Focusing on the EU from an economic or political sciences perspective there are a number of studies following cluster analysis in recent literature[6]. Since we are interested in the level of EU integration that can be seen as a degree of homogeneity among the studied EU countries, attention is paid not only to the clustering itself but also to the evolution of cluster memberships over time. For this purpose we apply the agglomerative Ward method with a squared Euclidean distance in order to emphasize inner homogeneity and to stress outliers reflecting the scope of this contribution. We firstly explore the resulting clusters in the EU from a static point of view. Consequently, we examine the dynamics of clustering. Analysing the evolution of the average distances and their variances measured in the dendrograms to get evidence of the continuing integration process. In addition to that, the contribution of CEECs to the level of heterogeneity in the EU over time can be observed both from dynamic graphs and radar graphs that depict consecutive historical milestones in modern EU history.

The milestones include the year 2000 as a starting point to explore the integration. 2004 was chosen as the year of EU enlargement, mainly with the Central and Eastern European countries. Next, we consider 2008 as the end of the boom period and the start of the financial crisis; and finally 2011 as the most recent period in which the impact of the crisis could already be analysed. The group of CEECs involves the Czech Republic, Hungary, Poland, Slovenia Slovakia and the Baltic countries Estonia, Latvia and Lithuania. These countries enlarged the European Union in 2004. We also include Bulgaria and Romania in the analysis as a part of CEE countries, joining the EU in 2007. The contribution of CEECs to EU heterogeneity is compared to the potential contribution of groups (proposed ex-ante) made by the core and periphery countries. For this part of the analysis we define the core countries as a group that keeps a relatively higher level of productivity measures, macroeconomic policy consistency and fiscal sustainability with respect to the global crisis and also to a long-term perspective in comparison to the rest of the EU. Recently, instead of using the designation of the core, the term "*austerity and competitive north of Europe"* is often used in literature. For the purpose of trying to detect some aspects of CEECs' contribution to the insider-outsider constellation with respect to the EMU, we include only the Eurozone members in the core group. Thus in our analysis the core includes Austria, Belgium, Germany, Finland, France and the Netherlands. Periphery countries have especially lower

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[6] See Artis and Zhang (2001), Boreiko (2003), Camacho et al. (2006, 2008) or Song and Wang (2008) and Qauh and Crowley (2010), who focused on clustering East-Asian countries.

competitiveness measures, macroeconomic policy inconsistency and also difficulties with public finances' sustainability in common. Therefore, the periphery cluster is made up of Portugal, Italy[7], Greece and Spain. Moreover, we decided to also include Ireland, in particular, because of the current context of the global crisis.

In our view, an assessment of aggregate EU heterogeneity using one or few composite indicators (such as GDP correlation, etc.) might lead to a simplified and inaccurate interpretation to a certain extent. Similar to Saraceno and Keck (2010) and König and Ohr (2012), we rather apply a multi-dimensional approach to cluster analysis to capture some unique details related to heterogeneity development in different areas of research interest. Five thematic domains containing related indicators were selected to examine heterogeneity in the EU from different perspectives. The initial data sample was reduced to a final shape, as shown in table 1, due to multicollinearity testing. Highly correlated measures (as suggested, e.g., by Dormann, 2012) were excluded from the sample. Consequently, variables were transformed into an index I representing the country's position relative to the rest of the sample of countries using the following formula

$$I_{i,t} = \frac{v_{i,t}}{WAVG(v_t)}$$
(1)

Where v represents a respective variable, i stands for a country in the time period t, and $WAVG$ is the weighted average of the particular variable composed of the rest of the EU countries – excluding the ith country, weights being the ith country's GDP. Index I can be used to describe the contribution of a country to the level of heterogeneity within the EU and, hence, to provide information on the integration process in the EU. A country's position is given when compared to the average. A value greater than 1 implies that the country is above EU average, while a value smaller than 1 means a below-average result. The distance from the average reflects the degree of heterogeneity: the further the value from 1 the higher the degree of heterogeneity. In addition to that, the direction of deviation matters, since it helps us distinguish between above- and below-average countries.

As the indices can range from zero to theoretical infinity, all indices were normalized applying the formula

$$N_{i,t} = \frac{I_{i,t} - MIN(I_T)}{MAX(I_T) - MIN(I_T)},$$
(2)

to preserve the equal impact of all indices. Where I is the value of the index in time period t. $MAX(I_T)$ $(MIN(I_T))$ represents a maximal (minimal) value of the index during the whole time span T, respectively, which returns the value of each index within the range 0-1 and has lower sensitivity to extreme values[8].

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[7] In our opinion, Italy belongs to the periphery group mainly due to its long-term negative trends of losing competitiveness, rising public debt, economic stagnation and weak governance. In addition to that, Italy was hit by the debt crisis, which led to reaching over a level of 6% of government bond interest rates as well as repeated speculations of a bailout. In recent literature the term GIIPS is also used for periphery countries including Italy.

[8] Although a method of standardisation (i.e. the transformation of indices so that they have a mean 0 and variance 1, proposed for example by Tryfos, 1998) can be used for the purpose of an equal impact of all variables employed in the cluster analysis; in our case it does not reduce the problem of unequal contribution since some variables with larger

Having normalized the indices, t cluster analysis was applied in order to examine EU heterogeneity and its evolution in five thematic dimensions, as explained in the introductory section of this paper. The final indicators comprised in the dimensions are presented in table 1.

Table 1: Dimensions and indicators

Dimension	Variable	Unit	Source
1 – governance and institutions	Political Stability and Absence of Violence	<–2.5, 2.5>	World Bank
	Property Rights	<0, 100>	Heritage
	Business Freedom	<0, 100>	Heritage
2 – macroeconomic policy harmonisation	Total General Government Expenditure	% of GDP	Eurostat
	Implicit Tax Rate on Labour	%	Eurostat
	Official Lending Rates	%	Eurostat
	Money and Quasi Money (M2)	% of GDP	World Bank
3 – single market and openness	Intra-European Trade[9]	%	Eurostat
	Grubel-Lloyd Index	%	Eurostat, own calculations
	Market Integration - Foreign Direct Investment Intensity	%	Eurostat
	Labour Migration	%	Eurostat
4 – symmetry and convergence	Growth Business Cycle (GDP)	<-1, 1>	Eurostat, own calculations
	Growth Business Cycle (IP)	<-1, 1>	Eurostat, own calculations
	HICP	<-1, 1>	Eurostat, own calculations
5 – competitiveness	Labour Productivity[10]	EU27 = 100	Eurostat
	Real Effective Exchange Rate[11]	1996=100	Eurostat
	Persons with Upper Secondary or Tertiary Education Attainment	% of total population	Eurostat
	Total Intramural R&D Expenditure (GERD)	% of GDP	Eurostat

1) Applying the Governance and Institutions dimension we aim to examine the current and changing heterogeneity of the EU from the perspective of the governance quality and institutional environment in EU member countries. The indicator of Political Stability and Absence of Violence

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values still dominate, which could bias the results. As a consequence, we prefer normalisation of indices according to the abovementioned formula.

[9] imports and exports of goods and services as a percent of total trade in goods and services

[10] based on PPS per hours worked

[11] deflator: consumer price indices - 27 trading partners

taken from the World Bank reflects the perceptions of the likelihood that the government will be destabilized by unconstitutional or violent means; in fact, it monitors such events as armed conflict, violent demonstrations, social unrest, ethnic conflicts, terrorist threats, and so on. Regarding governance and institutions' quality, we use the indicators on Property Rights and Business Freedom published by the Heritage database[12]. The Heritage Foundation establishes the Property Rights measures to assess the ability of individuals to accumulate private property, secured by clear laws fully enforced by the government. The Business Freedom measure is set as the overall indicator evaluating another essential area of governance in market economies – to create favourable conditions for private enterprise.[13]

2) The Macroeconomic Policy Harmonisation dimension is designed to describe the monetary and fiscal policy mix harmonisation process in the EU. The dimension contains two fiscal and two monetary measures. The Total Government Expenditures as a percentage of GDP is a measure that is not included in the set of Maastricht criteria. In fact there are differences across Europe in that measure since, for instance, Denmark and Sweden re-distribute around 50-60% of their GDP, whereas Estonia only 30%. These countries have no problems with keeping fiscal sustainability. In including this criterion into the dimension and also analysing the fiscal dimension separately in the sensitivity analysis we aim to identify the current level of fiscal heterogeneity with regards to the current debate on the need for a common fiscal policy. Consecutively, the Implicit Tax Rate on Labour provided by Eurostat is interesting for us since this measure is also not explicitly determined by the Growth and Stability Pact, neither is its actual modification in the form of the European Fiscal Compact signed in 2012. Thus it can be to a certain extent operated independently by national governments. Therefore, including the Labour Tax into the analysis contributes to accessing the tax harmonisation processes in the EU. Monetary policy harmonisation is examined using the Money and Quasi Money (M2) and Official Lending Rates provided by the Eurostat[14]. Considering the explicit commitment of all new EU member states, including the CEECs, to strive for monetary integration and keep joint fiscal discipline, one would expect to see decreasing heterogeneity implying strong integration processes till the crisis period across the EU at least. However, the uneven impact of crises upon particular European economies revealed the problems of structural dissimilarity[15] of economies and a different approach to the joint policy harmonisation effort in the EU and even the Euro area. Analysing this dimension we particularly intend to focus on the problem of insider and outsider EMU constellation and the role of CEE countries. In addition, we would like to provide some evidence of a current heterogeneity level and the position of CEECs, taking into account criteria excluded from the supranational supervision, i.e. Maastricht criteria and the European Fiscal Compact.

3) The Single Market and Openness dimension is based on the fundamental idea of European Integration to eliminate trade barriers among countries to create a large common market. From this point of view we particularly focus on examining Intra-European trade measuring the total

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[12] The Heritage Database – Index of Economic Freedom 2013

[13] For a full definitive version, see the Heritage – Index of Economic Freedom 2013 available at http://www.heritage.org/index/

[14] The Official Lending Rates represent a marginal lending facility vis-à-vis the banking sector, representing the ceiling for movements in short-term money market rates (Source: Eurostat).

[15] For impacts of structural differences among the EU countries in crisis, see Archibugi and Filippetti (2011).

trade intensity between a particular EU country and the rest of the EU. Following the suggestions by Fidrmuc (2004), Kandogan (2006) or Gabrish (2009), arguing that business cycle similarity is influenced by the structure of trade rather than its intensity, we employ the indicator of intra-industry trade measured by applying the Grubel Lloyd index

$$GL_t = 1 - \frac{\sum_k \sum_i |X_{it}^k - M_{it}^k|}{\sum_k \sum_i |X_{it}^k + M_{it}^k|}, \tag{1}$$

GL_t represents a ratio of the absolute value of intra-industry trade to total foreign trade. X_{it}^k and M_{it}^k are the values of exports and imports of commodity i produced in country k in the time period t. The index ranges from 0 (indicating a complete lack of intra-industry trade and the existence of inter-industry trade only, implying specialisation in different commodities) to 1 (meaning fully integrated foreign trade and the presence of intra-industry trade solely).

Apart from the intra EU related indicators we also examined the general openness of EU countries, measured through Foreign Direct Investment flows and Labour Migration. For this reason we applied the foreign market investment intensity indicator measured as an average value of inward and outward Foreign Direct Investment flows (in % of GDP, multiplied by 100). As a Labour Migration measure we use the percentage of foreigners working in an EU country (following the ILO definition)[16]. The principles of the Common European Market came into existence in 1992 after adopting the Single European Act in 1987. Since then a lot of barriers to free trade flows have been eliminated. Also the new EU member states entering the EU in 2004 and later could benefit from an enlarged single market from the very beginning of their membership. Accordingly, we expect the European Union to be highly integrated in trade and openness with a low level of heterogeneity implying a low average distance and variance of estimated clusters.

4) In considering the expected EMU integration of the CEECs in the future, we employ the dimension of Symmetry and Convergence. The business cycle and shock similarity reflect the "new" Optimum Currency Area theory criteria[17]. We employ various indicators of business cycle similarity. In particular, the 5-year rolling window coefficients, based on quarterly GDP and Industrial Production (IP), detrended by the Christiano-Fitzgerald filter, are used in the analysis. Also the rolling correlation coefficients of the Harmonized Indices of Consumer Prices (HICP), based on monthly data, complete the set of similarity indicators. In considering the OCA endogeneity hypothesis, we assume increasing similarity of business cycle over time across the EU due to rising integration. As regards the convergence measure, we assume the gap between the EU core, periphery and CEE countries to diminish over time, mainly in the 2000-2008 period. There is also the question whether the CEECs appear as an internally homogenous cluster in the periods analysed. In addition to that, the uneven impact of the crisis might negatively influence the business cycle similarity, as suggested by Hallet and Richter (2012) or Gächter et al. (2012).

5) Higher competitiveness of the EU economy as a whole, compared to large world economies such as the US, Japan, or currently also the BRICS countries, belongs to the main expected

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[16] The measure capturing all foreigners in the EU countries was used due to low data availability of intra-EU labour mobility indicators, especially for CEE countries.

[17] For recent results of the business cycle and shock symmetry in the EU see, for instance ,Altavilla (2004), Kalemli-Ozcan et al. (2010), Mink et al. (2012).

benefits of the European integration process. In fact, the differences in competitiveness of individual EU states are often discussed in literature (De Grauwe, 2012). The increasing gap between countries with higher competitiveness towards the north of Europe and those closer to the south is becoming more obvious. Naturally, we also employ the competitiveness dimension in the analysis to examine the current level of heterogeneity among the EU states and to concentrate on the position of the CEE countries. Apart from traditional competitiveness indicators such as Labour Productivity, Real Effective Exchange Rate (REER) and Unit Labour Costs[18], the knowledge based economy indicators were also employed. These include Educational Attainment and the Total Intramural Research and Development Expenditures (GERD). Educational Attainment is measured by the percentage of persons attaining upper secondary or tertiary education in particular countries and years.

3. Discussion on transition and integration strategies of the CEE countries

Focusing on the integration strategies and processes during the transition period of CEE countries, we should start with a definition of how we approach the term CEE countries in this text. First of all, these countries had less or more centrally-planned economies till late 1980s. It means they had an economic system where the government owned and managed a vast majority of production facilities and where prices and wages were not determined by supply and demand. Second of all, these countries had a common general aim in the early 1990s: a transition to a more effective economic system, based on principles of market economy, enabling a growth of living standards.

Generally, we can talk about the same direction of transition, however, regarding particular features of transition strategies, there were many ambiguous questions: Firstly, where to head specifically? Towards a social market economy, a Scandinavian type of welfare state, the Anglo-Saxon model or the Eastern model of market economy? Secondly, how fast to transform the economic system? Using a shock therapy or rather a gradualism approach?

Moreover, the initial transition intentions were often modified soon, in dependence on:

- economic level (more developed Western CEE vs. less developed Eastern CEE)
- historical experience with democracy and market economy (Western CEE vs. Eastern CEE)
- quality of informal institutions (culture, social capital)
- level of transformation in the 1980s (more liberal Poland, Hungary, Slovenia vs. strictly centralized Czecho-Slovakia, Bulgaria)
- first results of transition (a relative success vs. failure)
- reaction of citizens (acceptance of first negative impacts of reforms vs. refusal of the whole transition process and re-sentiment for the socialist era)
- consistency of economy policies, etc.

Analysing the situation in particular CEE countries, we can assume that social-economic development was rather heterogeneous during the transition period. In a long-term perspective,

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[18] The ULC indicators had to be excluded from the final analysis due to low data availability and comparability.

evaluating the overall success of the transition process in Central and Eastern Europe shows the existence of two main groups of countries. Accession into the EU as a part of the so-called first wave in 2004 may serve as a clear-cut criterion for dividing the groups. The Visegrad Four, dynamically growing Baltic countries and the wealthiest country in the region, Slovenia, unquestionably converge quantitatively and qualitatively with developed countries in Western Europe over the long-term. Their entry into the EU gives high credibility to their success in social and economic transition. The level of transition achieved (economic development, character of institutions, stability of democracy, development of civil society, etc.) in most of Balkan and post-Soviet countries, which form the second main group of CEE countries, is at a markedly lower level than in the *successful* group. On the boundary line between the two groups, Bulgaria and Romania, lie countries whose accession to the EU in 2007 is possible to consider rather as an incentive for the successful completion of the transition process than as a reward for the level of transition attained. Another specific case is Croatia, differing from all other non-member countries in the former Eastern Bloc regarding its level of social-economic development, moreover, with a real prospect of accession. Therefore, Bulgaria, Romania and Croatia form in fact the third group of CEE countries.[19]

In addition to the heterogeneity level within the broad group of the CEE countries, in this paper we shall cope also with the fact of a rather long time period and a wide spectrum of topics related to the transition and integration processes. In order to identify and analyse the integration strategies, we applied three selection criteria for the analysis:

1. selection of transition countries
   - criterion: accession to the EU in 2004
     - successful countries (Visegrad, Baltics, Slovenia)
     - "between the groups" (Bulgaria, Romania, Croatia)
     - less successful countries (Balkan, Post-soviet region)
2. selection of periods
   - 1990s – "transition period" (in the qualitative analysis)
   - 2000s – "integration period" (particularly in the quantitative analysis)
3. selection of research areas
   - governance and institutions
   - macroeconomic policy harmonization
   - single market and openness
   - symmetry and convergence
   - competitiveness

In the paper we deal with the first two groups of countries, it means in total with eleven countries of the CEE country group. However, because of the lack of data, Croatia is included only partially in this qualitative analysis. As far as the second criterion is concerned, in this part, we focus especially on the 1990s, when the transition and integration strategies were formulated and implemented, nevertheless, with logical overlaps to the 2000s when the *successful* countries

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[19] Based on results of transition, Aslund (2008) distinguishes among three group of CEE countries: radical reformers (Central Europe, the Baltics) x gradual reformers (South-Eastern Europe, most of the post-Soviet states) x countries that have maintained old dictatorship (Belarus, Turkmenistan, Uzbekistan).

Similarly, Lane and Myant (2007) state three groups of post-communist countries: fairly successful transition countries (explicitly Estonia, Slovenia, Eastern Germany, the Czech Republic, Poland, Ukraine) x hybrid economies (Russia, Kazakhstan, Georgia, the Western Balkans) x statist societies (Belarus, China).

entered the EU. As regards the third criterion, in this part we deal particularly with the first dimension since political and institutional development was determining transition and integration strategies and their implementation. In terms of the other dimensions, a generalizing summary of main macroeconomic policy trends in the CEE countries is provided.

3.1 Political and institutional environment: a key to the transition and integration strategies and their successfulness

Discussing the integration strategies of CEE countries in a long-term perspective, it is necessary to emphasize that these were, to a large degree, determined by the transition strategies chosen already shortly after the fall of the communist regime. Comparing it with the causality of transition processes in other parts of world, the sequence of political and economic changes in Central and Eastern Europe was rather untypical. In particular, most of the successful Asian countries experienced economic reforms accompanied by economic growth at first, later on by political liberalization and democratization (Taiwan, Korea, Malaysia, Indonesia, however, China and Vietnam as well). As, e.g., Zakaria (2004) argues, a country must become rich at first; an educated middle class grows up which starts to demand democratic reforms. Central and Eastern Europe experienced an inversed course of changes: falls of autocratic regimes, the birth of democracy and only then implementation of vast economic reforms. Orenstein (2001:3) states three particular factors of this development: firstly, the forceful personalities at the head of the opposition such as Lech Walesa in Poland or Václav Havel in the former Czechoslovakia; secondly, a democratic tradition (or we say a tradition of relatively liberal policies) of most countries in the region, especially from the interwar period; thirdly, the strong impact of the European Union on adherence to the principles of democracy. In this context Aslund (2008) even claims that the accession to the EU boosted democracy much more than economic growth. As regards this debate on causalities in terms of political and economic changes, we should add the argument that at least Central European (*successful*) countries were relatively developed already at the beginning of the transition process. Realizing the fact that Slovenia, Czechoslovakia or Hungary belonged to the middle-income countries in the late 1980s, the abovementioned ideas are not contradictory. Moreover, these initial conditions at the outset of transition were fundamental to the success of transition and integration strategies.

Analysing the literature on the transition process of CEE countries, we can summarize a list of political, institutional and economic features that, in our opinion, considerably determined the success of transition and integration strategies in the CEE countries:

- political stability
  - e.g., Grochova and Kouba (2011): only elite political instability (all successful countries) vs. non-elite political instability (former Yugoslavia, Georgia, Ukraine)
- formal (political) institutions
  - democratic elections (all successful countries) vs. autocratic tendencies (Serbia, Belarus, Ukraine, Georgia, Central Asia)
  - parliamentary system (all successful countries except Romania) vs. presidential system (Russia, Belarus, Ukraine, Georgia, Central Asia); (e.g., Novotna, 2011)
  - proportional election system (all successful countries) vs. majoritarian election system; (e.g., Novotna, 2011)

- informal institutions
  - e.g., Zweynert and Goldschmidt (2005): extended order based on Western Christianity tradition (all successful countries) vs. holistic order based on Eastern Christianity tradition (Balkan and Post-soviet countries)
  - their compatibility with formal institutions, according to North (1990)
- economic level
- real prospect of accession to the European union

Generally, political stability is considered to be the essential prerequisite for successful economic development, e.g., Alesina et al (1996), Jong-A-Pin (2009), Aisen and Veiga (2013). Nevertheless, the literature based on the ideas of new political economy usually doesn't distinguish between two levels of political instability, so-called elite and non-elite political instability. While non-elite political instability concerns violent coups, riots or civil wars, elite political instability covers "soft changes" such as government breakdowns, fragile majority or minority governments. Inspired by Gyimah-Brempong and Dapaah (1996), who used the conception elite vs. non-elite political instability in the case of Sub-Saharan Africa in Grochova and Kouba (2011), we applied this perspective on political instability in the case of CEE countries. Exploring, e.g., the durability of governments, we can see that in the period 1993-2008, Poland and Latvia experienced 16 different governments, Estonia and Lithuania no fewer than 11 different governments. Furthermore, all governments in the Czech Republic between 1996 and 2010 were extremely weak and unstable, similarly, both Slovak pro-reform governments under the prime-minister Dzurinda in the period 1998-2006, etc. Thus, we can generalize – all these *successful* CEE countries suffered from considerable features of elite political instability during the transition period; despite it, they experienced fast economic growth and achieved their main goal – accession to the European Union. On the other hand, all these *successful* countries managed to avoid symptoms of non-elite political instability. And here we can see an important difference between our main groups – *successful* and *less successful* countries. An illustrative example is the totally different course of separation in Czechoslovakia compared with Yugoslavia. Moreover, Croatia, which was initially perceived as a very promising candidate for a fast integration into the European structures, lost its chance for progress in integration in the 1990s just because of non-elite political instability (war, autocratic regime). Only after the end of violent conflict in post-Yugoslavian area, furthermore, after the fall of Tudman's autocratic regime in 2002, Croatia managed to carry out a fast and successful integration process. Therefore, we can claim: non-elite political stability was the first precondition for prosperous implementation of transition and integration strategies.

As regards the set of formal institutions having political character, the literature of new political economy extensively discusses the significance of a political regime for economic development. Moreover, this question started to be popular particularly in the 1990s just because of the geopolitical changes that were related to the collapse of the Soviet bloc and the democratization process in the CEE region, e.g., Alesina and Perotti (1994), Clague (1997), Olson (2000), Lindert (2003). In a general perspective, the results of this strand of research are rather ambiguous – both democratic and autocratic states can prosper in the long run, both of them can experience long-term economic decline. Nevertheless, in the prospect of CEE countries aiming for the integration into the community of developed Western countries, democracy was an imperative condition. For this reason, it is beneficial to point out the character of political institutions in *successful* democratic countries. As Novotna (2011) summarizes, all *successful* countries

decided for parliamentary democracy and a proportional election system in the early 1990s.[20] In traditional western democracies, of course, there exist various combinations of political system (parliamentary – presidential, proportional – majoritarian election system, mono-cameralism – bi-cameralism and so on). However, the abovementioned examples of post-Soviet and Balkan countries that decided for majoritarian election systems and particularly for a strong institution of presidency could warn: after (long) periods of autocratic regimes, it is highly recommendable to avoid political institutions based on a "winner takes all" principle. In other words, we can imply that the selection of parliamentary democracy with a proportional election system was another crucial part of (successful) transition and integration strategies.

While the essential change of formal institutions, both political and economic, was in fact the core of transition, the authors of transition strategies had to take the post-socialistic state of informal institutions into account as well. In the last two decades, the most cited conception of an institution is Douglas North's one (1990:3): *"Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction."* Nevertheless, discussing the role of informal institutions, we tend to use another of North's reformulations (1990:4): *"formal written rules as well as typically unwritten conduct of behaviour that underlie and supplement formal rules."* Informal institutions themselves are usually explained as norms, habits, conventions, customs, traditions, taboos, values, ways of thinking, codes of behaviour and so on. We prefer the latter North definition since it comprises his crucial requirement for compatibility between formal and informal institutions. Moreover, it enables us to cover also behavioural practices that could be from our point of view hardly separated from norms or values. In the contemporary literature of new institutional economics, there is also a line of research dealing with the relationship between informal institutions and economic development, e.g., Knowles and Wheaterston (2006), De Soysa and Jütting (2007), Foa (2008), Hansen (2013). Furthermore, there is a strand of growth theory of new institutional economics emphasizing the importance of compatibility between formal and informal institutions, besides North (1990), e.g., Mantzavinos (2001) or Williamson (2009) and in fact also influential papers by Greif (1993) and Tabellini (2010), who, however, use the term culture instead of informal institutions.

Compatibility between formal and informal institutions is an extraordinarily important issue just in the case of the CEE transition economies, since the CEE countries adopted a formal institutional framework of Western democratic market economies during a very short period. This begs the question whether (or to what extent) people in the CEE countries were able and willing to think and behave according to Western formal rules. Within this context, we can mention the papers by Zweynert and Goldschmitd (2005) or Kouba (2010). In Kouba (2010), we use North's concept for a component explanation of the unsuccess of the transition process in the former German Democratic Republic. Zweynert and Goldschmitd (2005) apply North's concept for dividing the CEE countries into two groups in a similar way to our approach. They distinguish between *Latin* countries with a Western Christianity tradition (Central Europe and Baltic states as well) and Eastern countries with strong holistic *Orthodox* tradition. Zweynert and Goldschmitd claim that societies in Latin countries historically showed substantial progress towards *extended order* (which is typical for Western European countries). Therefore, during the period of communist

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[20] Furthermore, within the whole group of new EU member states, only in the Romanian case can we talk about a semi-presidential system.

regimes, their informal institutions were more resistant to incompatible formal institutions introduced in Central and Eastern Europe from the Soviet Union. Moreover, these informal institutions were more compatible with the Western formal rules during the transition period. The argumentation on *extended order* in *Latin* countries made by Zweynert and Goldschmitd is an analogy to our group of *successful* countries – these had historical cultural ties to the West or, in other words, educated societies with relatively mature informal institutions. On the other hand, in many *less successful* or *orthodox* Eastern countries, people after a short time refused reforms in a convincing way and started to demand a strong government with often autocratic tendencies again. Concluding, historical experience with democracy and informal institutions relatively adaptable to Western formal institutions belonged to the key prerequisites for prosperous implementation of transition and integration strategies in the CEE countries.

Following the discussion on institutions in CEE countries, it is necessary to stress that their quality is not exogenous in relation to economic development. Therefore, we can imply that initial economic level of particular CEE countries was another important determinant of successful transition and integration into the European structures. Based on available data, the following table shows that successful countries were relatively more developed already on the threshold of transition.

Table 2: GNI per capita (PPP, US dollars)

Country	1990	1995	2000	2010
Austria	19 152	23 116	28 417	40 307
Albania	2 822	2 980	4 378	8 559
Belarus	4 645	3 404	5 135	13 560
Bulgaria	4 973	5 346	6 069	13 455
Czech Republic	11 518[21]	13 385	15 279	23 456
Estonia	:	6 318	9 559	18 971
Hungary	8 538	8 678	11 292	19 725
Latvia	7 813	5 410	8 019	16 280
Lithuania	9 311	6 187	8 468	17 973
Macedonia, FYR	5 491	4 756	5 827	11 177
Poland	5 713[22]	7 300	10 476	19 311
Romania	5 167	5 329	5 618	14 602
Slovak Republic	7 703	8 336	10 945	21 772
Slovenia	10 439	13 114	17 567	26 118
Turkey	4 344	5 270	9 123	15 675
Ukraine	5 955	3 121	3 180	6 580

Source: World bank

And last but not least, another crucial determinant of successful implementation of transition and integration strategies was, of course, the permanent pressure by the European Union. In

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[21] 1992

[22] 1992

particular, it was an extraordinarily strong incentive for consistent reformatory policies in the case of these CEE countries that had a real perspective of accession into the EU.

Comparing it with the relevance of political and institutional factors, in our opinion, economic policies themselves, both in the 1980s and the reform strategies designed in the early 1990s, were in fact much less important for the long-term successfulness of CEE transition and integration strategies:

- level of transformation in the 1980s
    - more liberal policies (Poland, Hungary, Yugoslavia) vs. strictly centralized economies (Czechoslovakia, Bulgaria, the Soviet Union)
- strategies of economic transition
    - Aslund (2008): shock therapy: (Poland, the Czech Republic, the Baltic states; Russia supported) vs. gradualism (Hungary, south-eastern Europe, most of the Soviet Union)
    - Orenstein (2001): shock therapy (Poland) vs. social liberalism (the Czech Republic)

As regards particular economic policies in the 1980s, these seem to be relatively irrelevant in terms of their impact on the course of the transition and integration period. In particular, Hungary and Poland were often stated as examples of countries that implemented a lot of liberal reforms in the 1980s, such as the abolition of binding central plans, partial price liberalization or freedom of business, and these reforms were often interpreted as a comparative advantage. On the other hand, in the 1980s former Czechoslovakia belonged to the most centralized countries from all over the world.[23] Despite this fact, both the Czech Republic and Slovakia were ranked among the most successful countries within the transition period. Furthermore, the most liberal Yugoslavian economy was not by far a sufficient condition for the prosperous course of transition in post-Yugoslavian republics (except for Slovenia). Table 3 summarizes the development of the private sector share in the CEECs according to the EBRD data.

Table 3: Private sector share (% of GDP)

Country	1990	1995	2000	2010
Bulgaria	10	50	70	75[24]
Czech Republic	10	70	80	80[25]
Estonia	10	65	75	80
Hungary	25	60	80	80
Latvia	10	55	65	70
Lithuania	10	65	70	75
Poland	30	60	70	75
Romania	15	45	60	70
Slovak Republic	10	60	80	80
Slovenia	15	50	65	70

Source: EBRD

As far as the initial conditions of CEE countries and their influence were relatively frequently discussed, in the case of transition strategies, there is extraordinarily vast literature analysing and

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[23] According to Tošovský (2000), only 2 % of Czechoslovak national income in the 1980s was produced in the private sector.

[24] 2007

[25] 2007

identifying various transition strategies and discussing their implementation and results. First of all, we shall mention the strand focused on the question of whether to choose shock therapy or a gradualist approach to reforms, e.g., Roland (1994), Hoen (1996) or Popov (2007). As regards inclusion of CEE countries into particular categories, e.g., Aslund (2008) provides a relatively common – abovementioned – categorization. At first sight, the countries having implemented shock therapy seem to be more successful, however, in the long run, at least Hungary from the latter group belongs into the group of *successful* countries without any doubt. In addition to that, also the categorization of single countries into particular groups is far from an unambiguous consensus. E.g., Orenstein (2001) labels reforms in the Czech Republic as *social liberal* and confronts them with *shock therapy* in Poland. And finally, the transition and integration strategies were implemented in the CEECs over two decades, thus, the original strategies were repeatedly modified in dependence on actual economic development, government changes and so on.

Therefore we imply: in a long perspective, the ex-ante strategies of economic transition themselves and individual economic policies in partial stages as well were not essential for the successfulness of integration process. In our persuasion, the main determinants of the course and result of the integration process in Central and Eastern Europe were the level of (non-elite) political stability, quality of institutional framework, maturity and compatibility of informal institutions and initial economic level. The countries having reached positive features within these four categories were predestined to become members of the European Union.

3.2 Macroeconomic policy trends in the transition and integration period of CEE countries

Let's have a look now at main macroeconomic policy trends in the transition and integration period. Analysing fiscal policies, former centrally-planned economies in Central and Eastern Europe have redistributed a lower share of their GDPs and have managed to keep lower public debts in comparison with stable Western market economies.

The available dataset dealing with public finance indicators in CEECs starts with the data for 1995. As regards the ratio of government expenditures to GDP, only Hungary, Poland and Slovenia approach the EU15 average in the long run. Figure 1 indicates also the impact of the financial and economic crisis on public finance of particular countries. It is possible to identify a few swings such as the Bulgarian case in 1996, when the country experienced a simultaneous banking crisis, currency crisis and public finance crisis. Apart from these crises effects, the most significant purposeful change in policy trend can be identified in the case of Slovakia where the government expenditure ratio decreased between 2001 and 2007 by roughly 15 % as a consequence of the Slovak liberal policy of Dzurinda's reformatory governments. This Slovakian case can also be interpreted as the most visible example of a general trend within transition and integration strategies: in order to sustain their competitive advantage within the convergence process, the CEE countries enabled keeping relatively low taxes and thus a low level of redistribution as well.

Figure 1: Total general government expenditure (% GDP)
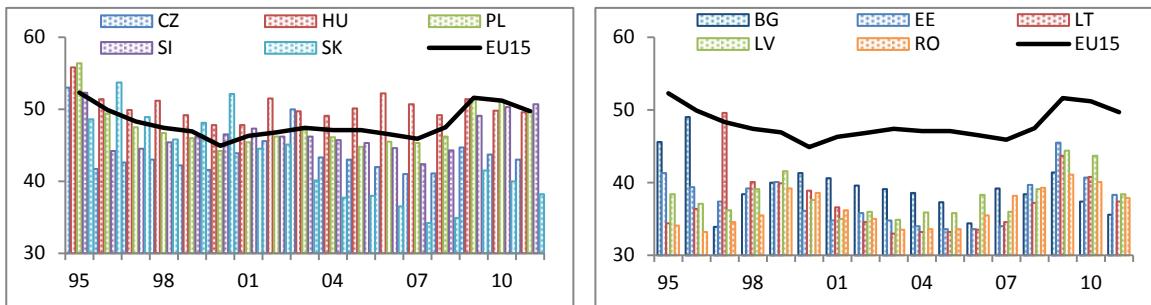
Source: Eurostat

In terms of public debt, unfortunately, the applicable dataset starts also with the 1995 data, which does not explicitly show the situation of CEECs on the threshold of transition. Despite this weakness, the subsequent figure suggests the fact that Hungary and Poland inherited higher indebtedness already from the communist period. On the contrary, all other CEE countries started their transition and integration process with a very low public debt level, less than 25% of GDP. On the other hand, a mildly growing trend with acceleration in the period of financial and economic crisis is typical for the whole CEE region. On the contrary, Bulgaria is a unique case because of its unprecedented fall of public debt after the crisis in 1996, furthermore, the power of Bulgarian rigidly restrictive policies proved after 2008 when the country sustained its fiscal stability, unlike Romania or the Baltic states. Nevertheless, just in the Baltic region we find another Eastern European solitaire concerning austerity – Estonia, which permanently belongs together with Luxemburg as the couple of least indebted states in Europe.

Figure 2: Government consolidated gross debt in the CEECs (% GDP)
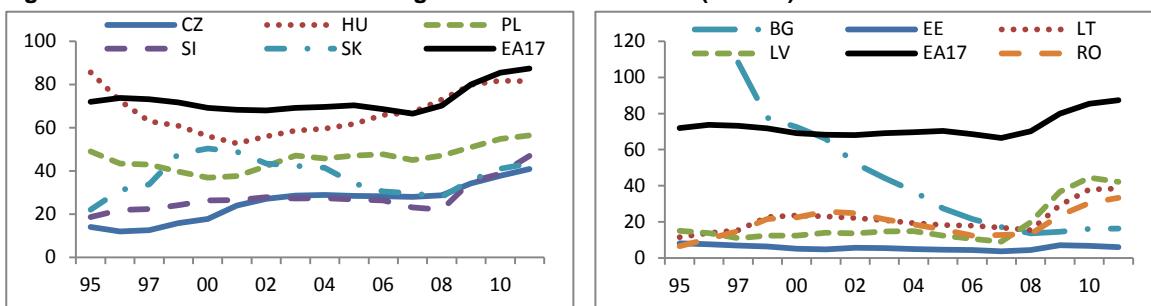
Source: Eurostat

If in the case of transition and integration strategies on fiscal policy it is possible to identify some common trends in the group of CEE countries, the development in the monetary area was fully heterogeneous. Only in the early phase of transition, monetary policy in the whole of Central and Eastern Europe was focused on the struggle against the consequences of price liberalization. After that, during the whole integration period, the single CEECs implemented a broad range of either discretionary or rule-oriented monetary policies, resuming in the following table.

Table 4: Monetary policy regimes in the CEECs

Country	Monetary policy regime
BG	since 1997 currency board
CZ	1994–1997 exchange rate and monetary base targeting; since 1998 inflation targeting
EE	exchange rate targeting; since the 2011 Euro system
HR	since 1994 exchange rate targeting
HU	1994–2001 exchange rate targeting; since 2001 inflation targeting
LT	exchange rate targeting
LV	exchange rate targeting
PL	1994–1998 exchange rate targeting; since 1998 inflation targeting
RO	exchange rate targeting; since 2005 inflation targeting
SI	1995–2001 exchange rate and monetary base targeting; 2001–2006 inflation targeting; since the 2007 Euro system
SK	1994–1998 exchange rate targeting; 1998–2008 inflation targeting; since the 2009 Euro system

Source: Gnan et al. (2005), Vašíček (2009), Ziegler (2012)

The previous statement on heterogeneity in monetary area is even more apparent in the case of exchange rate policies in CEECs. While the transition period was, in particular, under the sign of more or less fast deregulation of exchange rates in connection with liberalization of both current and capital account, after assurance on acceptance to the European Union the particular countries implemented miscellaneous exchange rate policies. As regards their results, nowadays, Slovenia, Slovakia and Estonia are members of the Eurozone, on the contrary, Bulgaria, Czech Republic and Hungary have not set a date for Euro adoption yet.

Table 5: Exchange rate regimes in the CEECs

Country	Exchange rate regime	Declared accession to EMU
LT	ERM II	no date; ASAP
LV	ERM II	2014
BG	currency board	no date
CZ	managed floating	no date
RO	managed floating	2014
HU	free floating	no date
PL	free floating	no date; government priority

**Source: European Commission (2012b), ECB (2012)**

In the next chapter, a finer optics focused on the policies and outputs of the CEE countries will be applied within the cluster analysis aimed at the integration period after 2000.

4.   Empirical results

4.1   EU heterogeneity: Identification of clusters

The first part of the cluster analysis is focused on the identification of clusters and their structure in selected dimensions composed of socio-economic indicators. The changing structure and relative homogeneity level is examined in four consecutive years from between the 2000-2011 period. The results described in the dendrograms should contribute to answering the questions to what extent the EU countries make common clusters, what are the usual outliers and what is the position of CEE countries. Comparing the clustering structure in four forthcoming years provides some evidence of the evolution of clusters over time.

**Figure 3: Clustering in the dimension of Governance and Institutions**
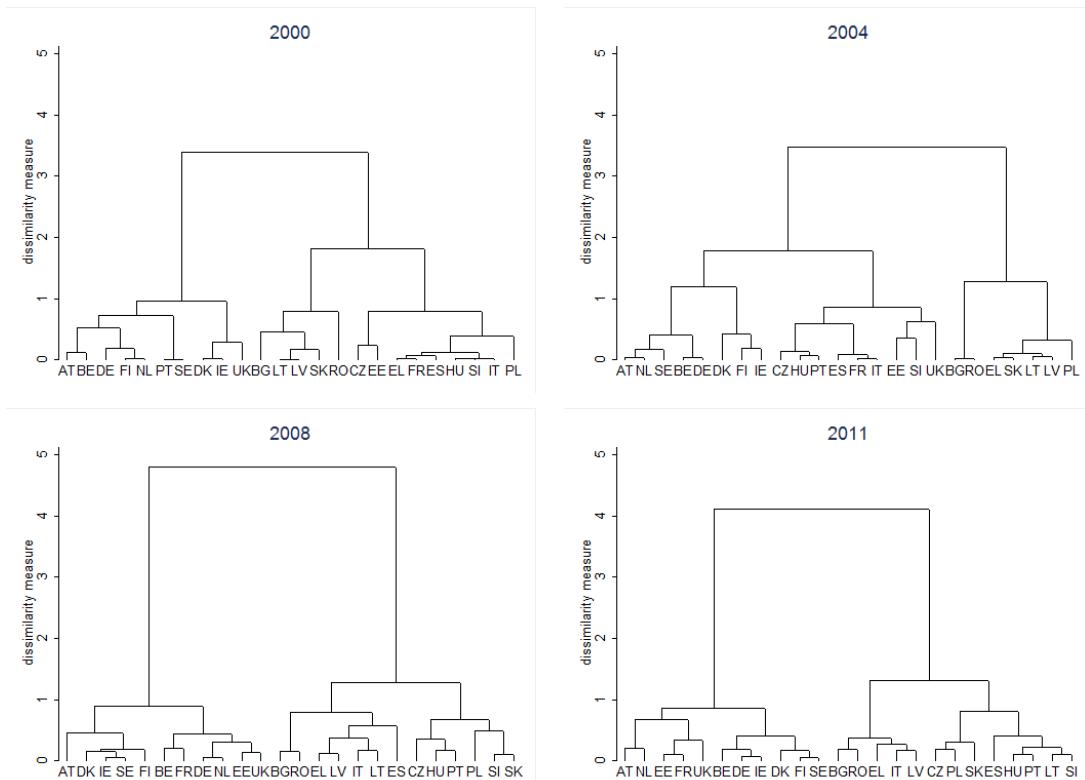
Source: Authors' calculations

As regards the dimension of Governance and Institutions, we are able to identify a priori predictable distribution of clusters which is, moreover, relatively stable over the whole analysed period. Analysing particularly legal framework (indicator Property Rights) and conditions for private enterprise (indicator Business Freedom), one can still expect the division between a group of Western and Northern countries on the one hand and a group of Southern and Eastern countries on the other. This supposition is confirmed by the analysis – the first major cluster consists of the Western countries Austria, Belgium, France, Germany, Ireland, the Netherlands, the United Kingdom and Nordic countries Denmark, Finland and Sweden, the second major cluster includes Southern and Eastern countries in the years 2000, 2008 and 2011. A surprising fact could be the unstable position of the United Kingdom and especially France. This instability is caused, in particular, by the third indicator included in this dimension – Political Stability. Big

countries such as France and the United Kingdom (and also Spain) suffer more often with terroristic attacks (Madrid 2004, London 2005), are responsible for military intervention, etc. Moreover, the United Kingdom and Spain are confronted with separatist tendencies in the long-run, France experienced violent social and ethnic disturbances in the previous decade and all these phenomena are reflected in the indicator of Political Stability. On the contrary, as far as the CEE countries are concerned, their main problem within this dimension is related to the low quality of their legal and institutional framework. The only country that was able to converge during the analysed period is Estonia, which became a member of the Western-North cluster in 2008.

**Figure 4: Clustering in the dimension of Macroeconomic Policy**
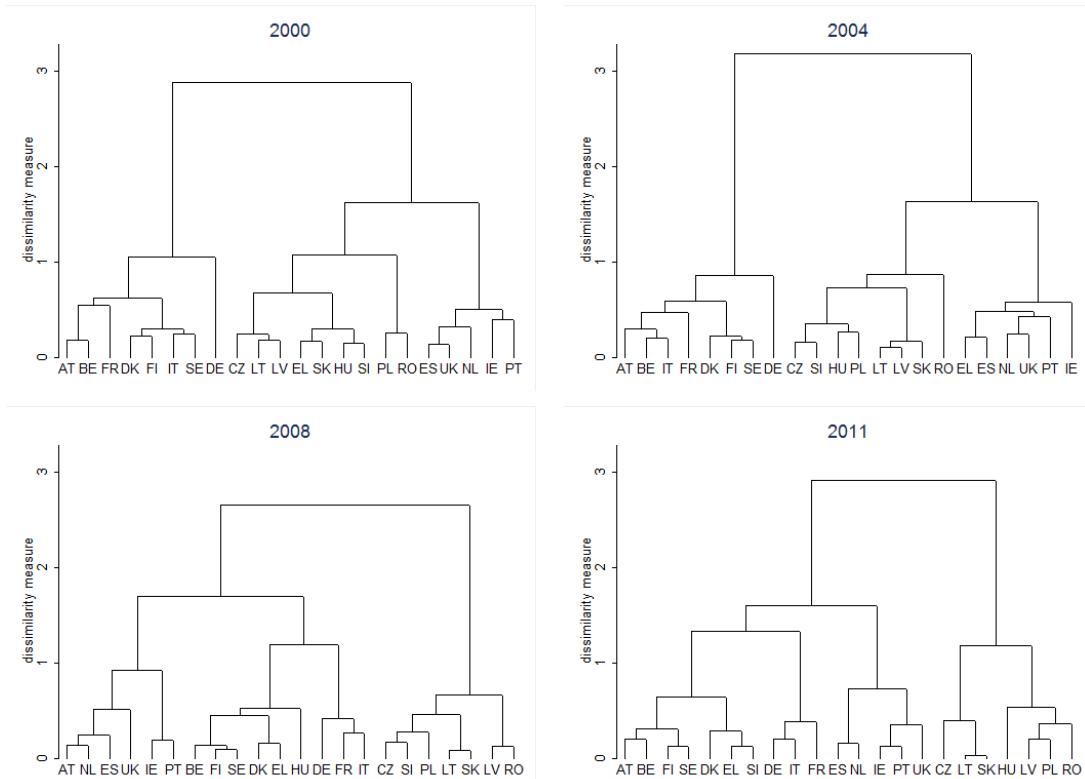
Source: Authors' calculations

A few interesting observations can be made when analysing clusters in the dimension of Macroeconomic Policy. There is a relatively homogenous cluster made of Spain, Portugal, Netherland, Ireland and the United Kingdom over the whole analysed period. These countries have a lower average Implicit Tax Rate on Labour and Government Spending compared to the rest of the EU15. Apart from the UK, their measures of monetary policy do not differ with regards to their membership in the EMU. Common monetary policy seems to have an impact on making the cluster of EMU core countries. The opt-out countries Sweden and Denmark also belong to this common cluster. Only the Netherlands moves out due to a rather different development of fiscal indicators, as mentioned above. Although we classify Italy among periphery countries, due to its worse economic performance, high indebtedness and lower competitiveness, it appears as

a part of the core from the perspective of Macroeconomic Policy dimension. Also the CEECs[26] create a rather homogenous cluster due to their low Government Spending, low Implicit Tax Rate on Labour, and similar development of the Monetary Base measured with M2 aggregate. In addition, the lending interest rates of CEE countries are higher, particularly in the first half of the analysed period, compared to the rest of the EU. Slovenia moved out of the CEEC cluster closer to the core of EMU in the last part of the analysed period, as is clear from the 2011 dendrogram. We attribute this shift to its membership of the EMU. Apart from the common movement in Lending Rates and M2 indicator also the Government Spending in Slovenia increased significantly in 2009 as a reaction to start of the crisis.

**Figure 5: Clustering in the dimension of Single Market and Openness**
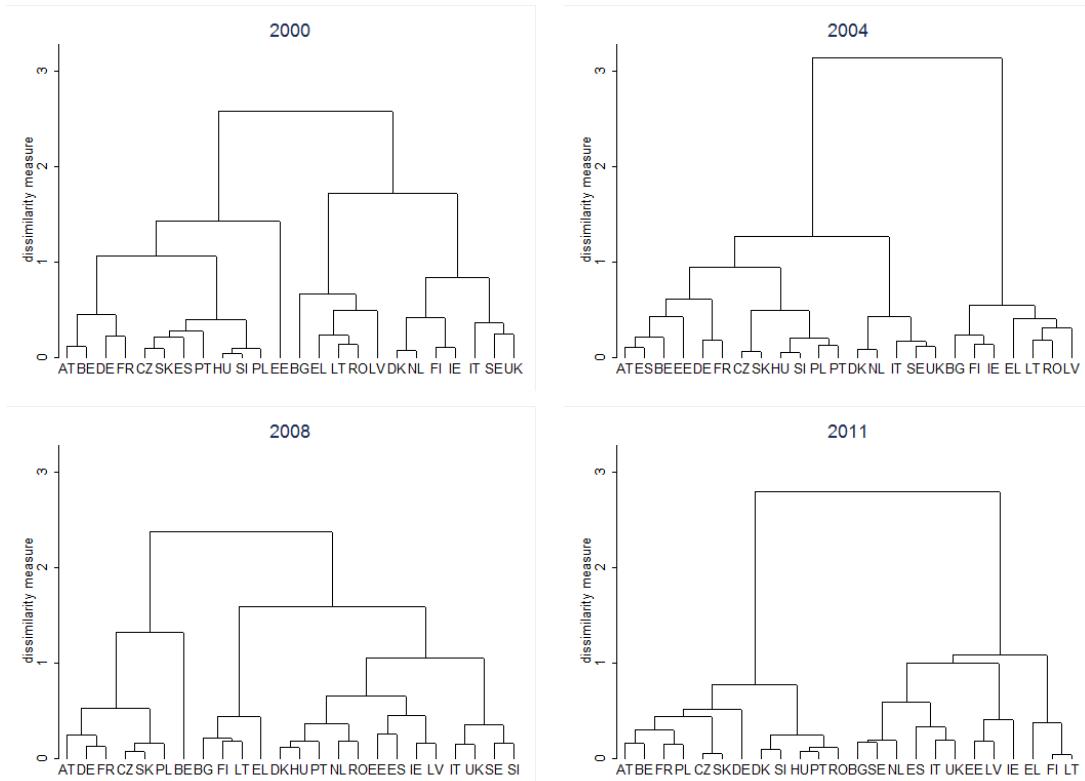
Source: Authors' calculations

Regarding the Openess and Single Market dimension, there are no clear homogenous clusters staying stable over the whole analysed period. However, this does not mean that there are no differences identified among countries related to trade measures. Countries with a relatively low intra-industry trade measured with the Grubel-Llyod Index can be identified in the sample. These are Finland, Ireland and the Netherlands. Also their trade with the rest of EU 27 is relatively low compared to the rest of the sample especially in the second half of the analysed period. Also decreasing distances in individual clusters give evidence of integration related to trade linkages in the EU. CEECs do not create a homogenous cluster. Poland and Slovakia have a relatively higher level of intra-industry trade and also total trade with other EU countries, which shifts them closer to core countries such as Austria and Belgium. Nevertheless, the distance from other

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[26] Estonia was excluded from this part of analysis due to low data availability.

CEECs is not too high. The Czech Republic and Slovakia reveal similar Foreign Direct Investment Intensity to Austria, France and Belgium in most of analysed period.

Figure 6: Clustering in the dimension of Symmetry and Convergence
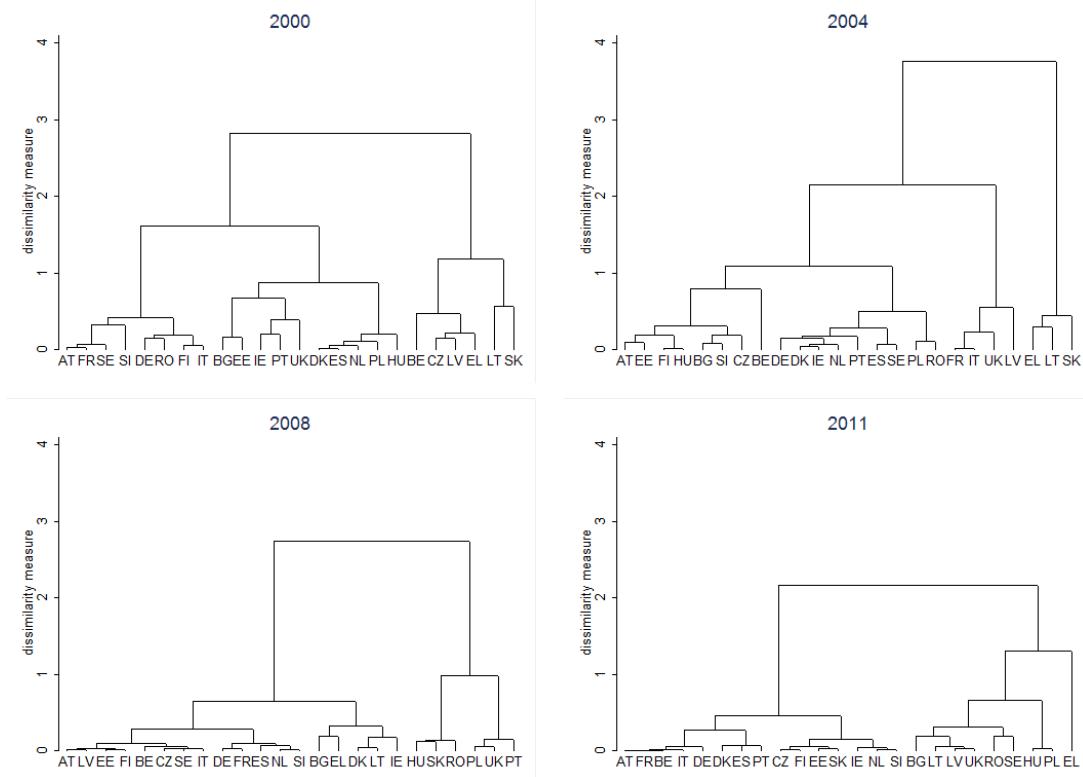
Source: Authors' calculations

Assessing the dimension of Symmetry and Convergence capturing the business cycle similarity measures one might notice a generally low average distance in dendrograms in figure 6. Putting together four measures of Business Cycle Similarity Europe seems to be highly integrating and converging. Examining the detailed results some outliers are obvious in each analysed year, apart from the boom year of 2008. At the beginning of the analysed period in 2000 a cluster of countries standing out of the majority of the EU is identified. These are the CEECs, including the Czech Republic, Slovakia, Lithuania and Latvia. Also Belgium and Greece shift out in that year. In the year of a large EU enlargement, 2004, a cluster of countries consisting of Slovakia, Greece and Lithuania lies out from the rest of EU countries. The gap even increased, compared to situation in 2000. The rest of the EU is characterised with a high level of Business Cycle Similarity. In the break year of 2008, meaning the end of years of growth and the beginning of the crisis for the majority of countries, no outlying clusters can be clearly identified. Differences between all countries are very low. The average distance between countries in clusters goes to zero. To be very detailed, a cluster of CEECs made of Hungary, Slovakia, Romania and Poland is observed in that year. Greece shifted out making a one-country cluster, compared to the rest of the EU in 2011. Particularly, GDP correlation of Greece to the EU average decreased remarkably. Focusing on the CEE countries, a cluster of Bulgaria, Lithuania, Latvia, Romania, Hungary and Poland is delimiting in the sample. Still, the differences between that cluster and the rest of the EU covering the core, periphery and other CEECs are negligible.

**Figure 7: Clustering in the dimension of Competitiveness**
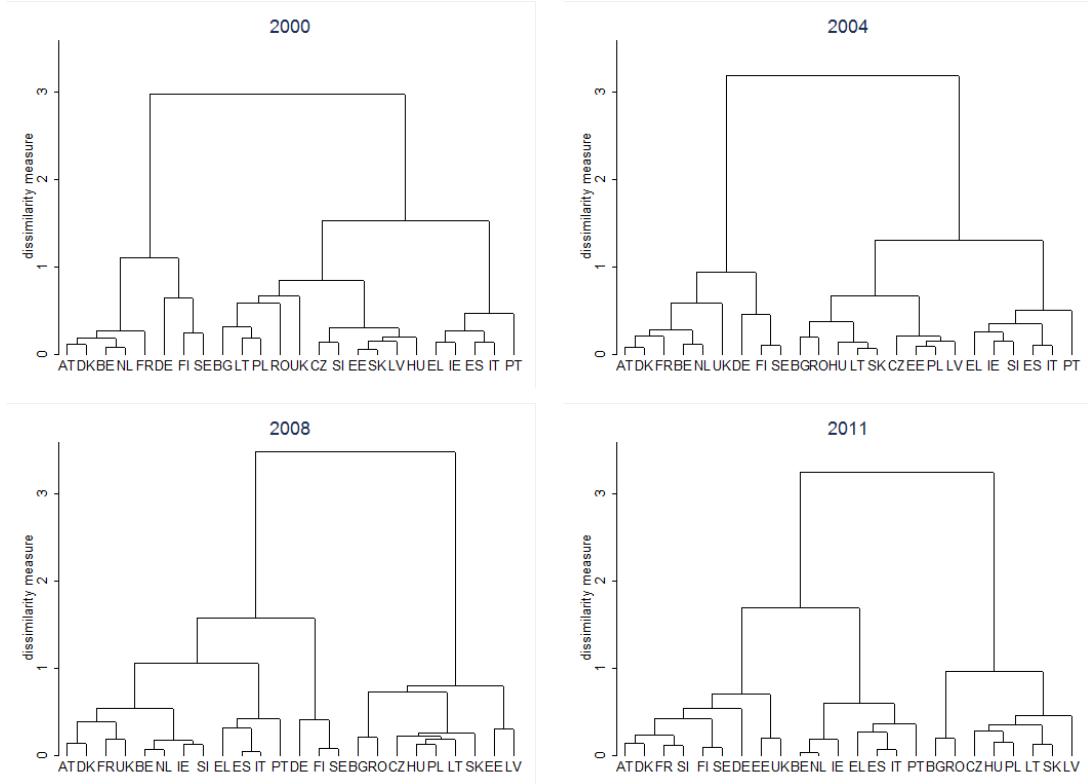
Source: Authors' calculations

Regarding the Competitiveness measures one might expect clearly distinguished clusters of countries with higher competitiveness such as the core countries or countries in the north of Europe, including Sweden and Denmark. On the contrary, the south European countries or the so-called periphery are considered to have lower competitiveness with possible convergence tendencies. We also ask whether the CEECs make a homogenous cluster and how it changes during the integration process. As is clear from figure 7, the structure of clusters based on competitiveness measures is not changing during the analysed period from 2000 to 2011. We can see a homogenous cluster of the core countries completed with the "opt-outs" Sweden, Denmark and the United Kingdom. Italy, Spain, Portugal and Greece making the south periphery create a common cluster over the whole analysed period. Ireland moved from that cluster in 2005 closer to the core countries meaning rising competitiveness and convergence. The CEECs also put together a relatively homogenous cluster with a low internal average distance, which implies similar competitiveness measures' development during the integration process. One should note Slovenia converging faster than the rest of CEECs and joining the core cluster in 2005. Similarly, Estonia shifted out from the CEECs cluster closer to the core of the EU. The general differences between the core, periphery and CEE countries might be summarised as follows: The core countries reveal a high level of GERD, a high Real Productivity of Labour together with a stable or slightly decreasing REER. On the contrary, CEECs spend much less for Research and Development (GERD), productivity is constantly lower reaching half of the average of core. The indicator of REER of CEECs is growing steadily over the analysed period. However, one might be careful when interpreting rising REER since in some countries, such as the Czech Republic, this might imply continuing real and price convergence.

## 4.2 Dynamic analysis: continuing integration of the EU?

The second part of the cluster analysis focuses on assessing the evolution of the homogeneity level over time. The estimated internal average distance is suggested as the measure of homogeneity. Clusters with a lower average distance reveal less different characteristics in terms of applied indicators and thus are considered as more homogenous country groups. Increasing average distances meaning relatively larger differences in common characteristics imply lower homogeneity and thus increasing heterogeneity in the sample. To examine the contribution of CEECs towards increasing heterogeneity within the EU we set the ex-ante groups capturing the core, periphery, CEE countries and also the whole EU 27. Identifying the core as a cluster with a high homogeneity level in the first part of the cluster analysis using dendrograms, we estimate the impact of the core enlargement with the CEE countries upon a change in homogeneity level. A rising average distance in the enlarged cluster, labelled as core+CEECs, compared to the core cluster implies rising heterogeneity due to enlargement. Then the situation is compared to the cluster made of core and periphery countries and also the whole EU.

Figure 8: Average distances in clusters
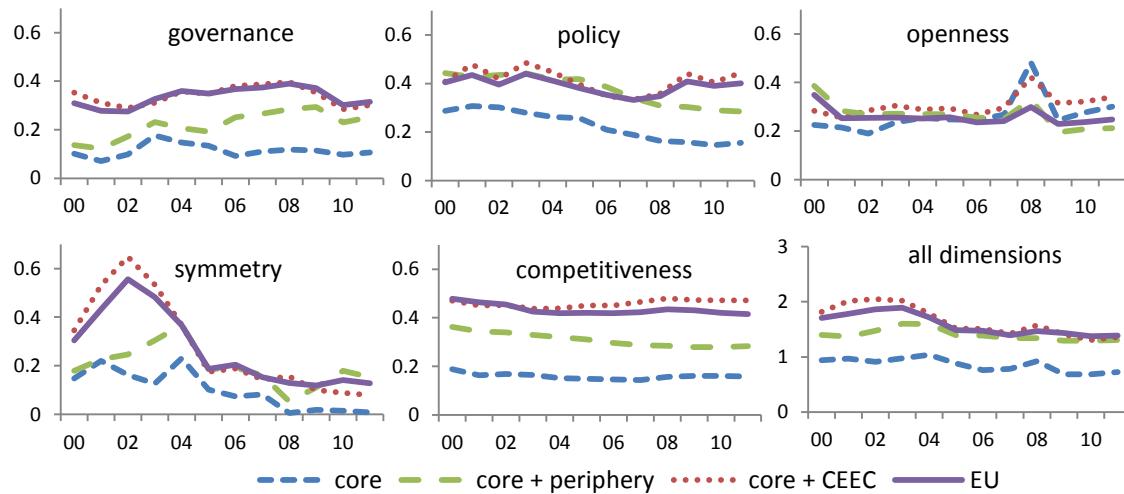
Source: authors' calculations

Figure 9: Variance of distances in clusters
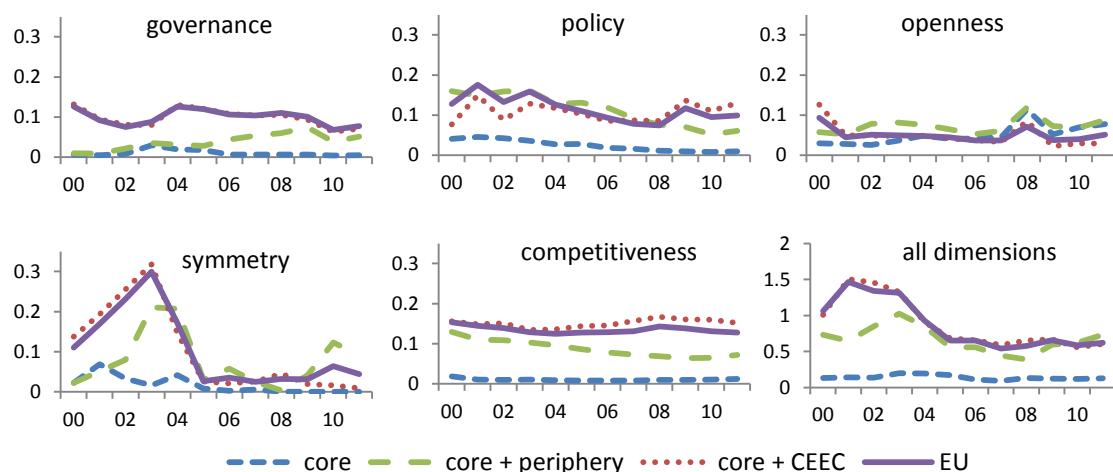
Source: authors' calculations

Beginning with the Governance and Institutions dimension, the persisting gap between the core countries and the rest of the EU is apparent. Discussing dynamics in this dimension, first of all, it is necessary to stress that indicators of institutional quality are in principle comparatively stable over time. On the other hand, theoretically, a relatively higher volatility of political instability can be expected. We have already discussed the symptoms of political instability in big countries such as France, Spain or the United Kingdom in the previous section 4.1. Moreover, the periphery countries started to diverge in the second half of the analysed period, which can be explained by the consequences of the financial and economic crisis. Social unrest and even violent demonstrations that have frequently occurred in Southern countries during recent years are also included in the indicator of political instability. On the contrary, the CEE region as a whole was not so intensively impacted on by the financial and economic crisis and this fact could be in the background of gentle convergence tendencies within this area.

The continual distance between the core and the rest of the EU is apparent when assessing the homogeneity level in the Macroeconomic Policy dimension. From 2000 to 2011 the level of internal homogeneity of the cluster made of the core countries increased steadily. Common monetary policy and a similar approach to fiscal stabilization among the core countries are considered the main determinant for the declining trend in the average distance in clusters as shown in figure 8. The average internal distance of the cluster made of the core and periphery countries is higher. However, the declining trend is obvious over time, meaning rising homogeneity. The impact of CEECs[27] and periphery countries upon the homogeneity level of the enlarged EU/EMU core seems to be similar till the beginning of the crisis in 2008. Since then the macroeconomic policy mix of CEECs starts to be different and increases the general heterogeneity level in the EU. This is in line with a decreasing trend in distance variances in the case of the core and its enlargement with periphery. The variance increases in the case of a cluster made of core and CEECs as well as the whole EU since 2007/2008. Looking at the data of the dimension one might notice a significant common decrease in the Official Lending Rates in the Euro area countries since 2007. The rates declined from 5% in 2007 to 1.75% in 2011. On the contrary, the change in Lending Rates was not as apparent in the case of CEECs. The rates in Hungary and Romania even increased or remained the same as in Poland and the gap from the Euro area remained significant till 2011. The impact of a common monetary policy in the Euro area appears to be significant, particularly in the crisis times at which the CEECs did not react similarly. This contributes to rising heterogeneity in the EU after the beginning of the crisis regarding the insider-outsider constellation with respect to the EMU. Analysing the development of M2 and Government Expenditures, no apparent differences between ex-ante country-groups are identified. In the case of Government Expenditures, all EU countries apart from Hungary included in this part of analysis increased government spending (as a % of GDP) in 2008 and 2009. In the rest of the analysed period in 2010 and 2011 almost all EU countries, regardless of being members of core, periphery or CEECs, reduced their annual spending. Focusing on the Implicit Tax Rate on Labour (ITR) development in detail, only a slight change in the case of CEECs is observed. Whereas the average rate in core countries remained unchanged, it decreased by roughly 2 percentage points in the CEECs cluster since 2008.

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[27] Bulgaria was excluded from this part of analysis due to deficient data availability.

Low heterogeneity and persisting convergence tendencies are expected in the Single market and openness dimension, consisting of indicators of Trade Intensity, Intra-Industry Trade, FDI Intensity and Labour Migration. The whole EU, including the core, periphery and CEE countries, is very homogenous till the end of 2007. In 2008 a sharp increase in the average distance in core countries is observed. The detailed analysis pointed out that Belgium and partly Austria moved heterogeneously mainly due to a sharp increase in FDI measure. In 2008 the American company Anheuser Busch took over the Belgian Stichting Interbrew for more than 50 billion USD, which was the biggest investment world transaction in that year, amounting to more than 10% of Belgian GDP. The FDI Intensity measure reached 40.9% in 2008 in Belgium compared to the EU average of 3.9% in 2000-2011. In Austria the measure increased mainly due to few substantial acquisitions done by e.g. Bank Austria Creditanstalt or CA Immobilien Anlagen. Since 2009 the influence of periphery countries upon EU heterogeneity increased mainly due to the FDI Intensity and Labour Migration measures. The FDI Intensity declined more in the periphery countries compared to the core. The number of European employees in the percentage of the total increased more in the periphery countries at the end of the analysed period. This might be interpreted carefully since the total employment level decreased in periphery countries more than in the rest of the EU. On the contrary, the CEE countries contribute to reducing heterogeneity when assessed as a joint cluster with the core countries after 2009.

The Symmetry and Convergence dimension captures indicators of Business Cycle Similarity. Regarding the OCA theory, the rolling correlations of GDP, Industrial Production and HICP growth cycles using data from 1996 were used to asses clustering in the EU. The results presented in figures 8 and 9 provide evidence of dynamic integration processes of the past two decades in the EU. The Business Cycle Similarity increased rapidly after the EU enlargement in 2004. Although the gap between the homogeneity level of country group made of core and the group comprising the core and CEE countries is apparent, over the analysed period the average distance is steadily decreasing. Whereas the convergence tendencies of CEECs continue even after the crisis years of 2008 and 2009, the periphery countries diverge from the core remarkably in that period. The influence upon heterogeneity by periphery countries is so strong that the heterogeneity level approximated with the average distance in the cluster of the core with periphery countries is even higher than in the EU as a whole at the end of analysed period. The uneven impact of the crisis upon particular countries is obvious when examining the dimension of business cycle similarity and convergence. Also variance of distances in the cluster made of core and periphery countries exceeds those of all other remaining country groups proposed ex-ante.

The Competitiveness dimension was established to provide some evidence of structural similarities in the EU economy. Similarly to the hypothesis of the enlarging gap between the core and periphery or north and south of Europe, as described in current literature, we aim to assess the position of CEECs in terms of competitiveness indicators. Let's recall that traditional indicators, including Labour Productivity and REER, also selected knowledge based economy indicators, were used in the cluster analysis. The persisting gap between core and periphery is apparent. The gap between core and CEECs is even bigger. Whereas the slightly reducing level of homogeneity, meaning slow convergence between the core and periphery countries is observed, the gap between core and CEECs seems to be persisting without any remarkable change in trend. Taking into account the data of used indicators and also the results of sensitivity analysis, we should interpret these results carefully. Although the results show continuing

stagnation, the convergence process is obvious when dropping out the REER indicator in the sensitivity analysis, as shown in figure 11. However, the remaining gap is still remarkable. Looking at the data the reason for such a gap is the persisting difference in the majority of competitiveness indicators. The average GERD of the core countries in period 2008-2011 amounts to 2.58% whereas the CEECs reach 1.07% of GDP. Taking into account the averages of the whole analysed period of 2000-2011, the gap is even deeper. Despite continuing convergence in productivity, the difference from the core is still large. The average real labour productivity for the core countries amounts to 125% of the EU compared to 63% of CEECs in 2008-2011. The educational attainment measures reach similar levels of 75% of the population achieving upper secondary or tertiary education in CEECs and core countries in that period.

To complete the dynamic analysis and provide some overall picture we analysed the development of clustering over an analysed period capturing all indicators (18) and dimensions together. The general level of heterogeneity is considerably higher, which is attributed to the much higher number of indicators involved in the analysis[28]. Remarkable reducing gaps in average distances give evidence of continuing integration and convergence of the CEECs towards the core since 2004, evidence of integration in the EU is as shown in figure 8. Contribution of CEECs to heterogeneity in the EU is similar to periphery countries since that year given the larger scale of the chart. Despite slow convergence, the gap between the core and the rest of the EU appears to be rather persistent till the end of analysed period.

4.3 Contribution of CEECs to increasing heterogeneity in the EU and EMU

The third part of the cluster analysis is related to previous analysis of dynamics. The radar graphs (Figure 10) are used to provide some evidence of the changing impact of the CEECs and periphery countries upon the heterogeneity in the EU from the perspective of selected socio-economic dimensions. The country groups capturing the core, periphery, CEE countries and the whole EU27 are used in this part. Apart from examining the changing impact of CEECs and periphery countries upon the EU heterogeneity over time, the radar graphs also provide information of the internal homogeneity within particular clusters. Theoretical absolute homogeneity corresponding to the possible minimum distance in the dimension is illustrated at the edge points of the radar graphs. Therefore the internal homogeneity of the country groups proposed ex-ante for each dimension is evaluated with respect to their position in the radar graphs in particular years.

In 2000 the contribution of CEECs to the overall heterogeneity in the EU is relatively high in all dimensions. It is most obvious in the dimensions of Institutions and Governance, Symmetry and Convergence and also Competitiveness. Regarding the Macroeconomic Policy dimension, the contribution of CEECs and the periphery countries to increasing heterogeneity are almost equal. The "old EU" made of core countries and periphery reveal a high level of homogeneity in the Governance and Institutions and also in the area of Symmetry and Convergence. This refers to high political stability and business cycle similarity in those countries at the beginning of the analysed period. Moving to the year of the EU enlargement in 2004, one might observe a

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[28] The results are commented on taking into account the larger scale of this summarising dimension compared to the particular ones.

comparable role of CEECs and periphery countries in terms of heterogeneity in the Symmetry and Convergence as well as Macroeconomic Policy dimensions.

Regarding the Openness dimension, the influence of CEECs is negligible since all country groups proposed ex-ante, including the whole EU, reveal similar average distances. Looking at the dendrograms in the first part of the analysis (fig.5) related to that period, no stable clusters corresponding to that ex-ante division (core, periphery or CEECs), are observed. The business cycles of periphery countries became less similar to the core of EU in 2004, which moves them closer to the CEECs. The gaps between the homogeneity level of clusters made of core countries and enlarged with the CEECs tend to be persistent in areas of Macroeconomic Policy, Institutions and Governance, and Competitiveness.

Figure 10: Radar graphs: contribution of clusters to changing level of heterogeneity in the EU
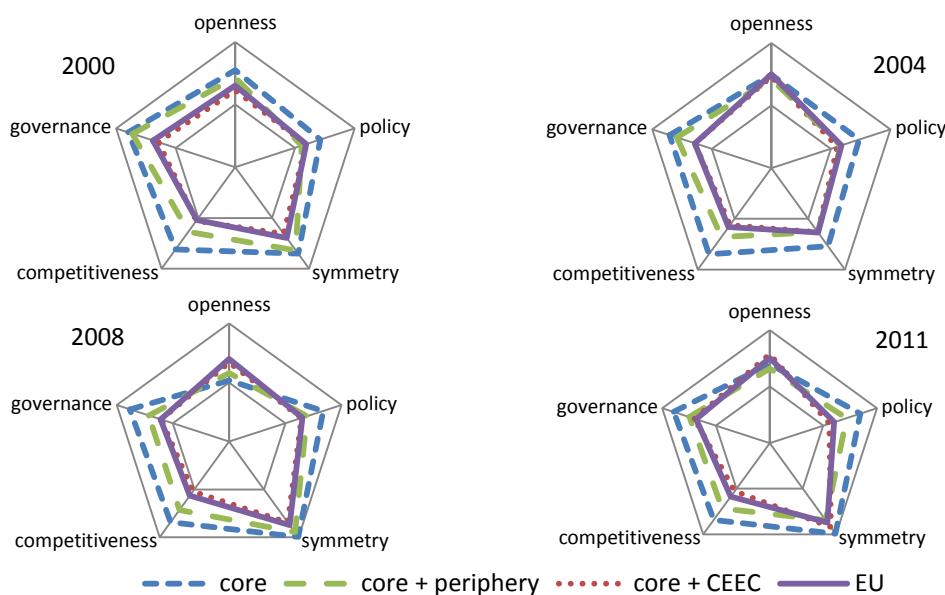
Source: Author´s calculations

The business cycle symmetry increased significantly at the end of the growth period in 2008. The contribution of CEECs to overall heterogeneity is small in this dimension. Moreover, the whole EU is relatively highly homogenous from the business cycle similarity perspective in that year. Similarly to previous years, the contribution of CEECs and periphery is very similar in the field of macroeconomic policy. Fractional convergence of CEECs towards to the core is observed in dimensions of Government and Institutions, and Governance. In 2008 paradoxically the core countries contribute to the heterogeneity of the EU the most of all ex-ante country groups in the Single Market and Openness dimension. It is mainly by one-off increases in foreign direct investment activity in Belgium and Austria, as described above. The influence of that events disappeared in 2011 and the homogeneity levels of all proposed country groups appear to be equal. However, detailed analysis reveals a higher impact on heterogeneity by periphery countries than CEECs. The general level of homogeneity of the whole EU, irrespective of particular clusters, remains high in the area of business cycle similarity. Still, a detailed picture shows a slightly higher contribution to heterogeneity by periphery countries than by the CEECs. Business cycle similarity of the core countries is very high with correlation varying around 0.95.

The uneven impact of the crisis is obvious in the cluster of periphery countries with outlying Greece.

The contribution of CEECs to rising heterogeneity is clear in the Macroeconomic Policy dimension. Despite this, the periphery countries also contribute to rising heterogeneity when putting them together with the core but the impact of CEECs is remarkably higher. As clear from the sensitivity analysis, at which we analyse monetary and fiscal policy dimensions separately, we can attribute this impact to the non-participation of most of the CEECs in the EMU. Correspondingly with the dynamic charts, there is a gap between the core and CEECs and periphery countries. Although the contribution of periphery and CEECs seems to be similar, from the long-term perspective, the CEECs converge. It is mainly due to long-lasting improvement in the area of political stability,

The remaining gap between the homogeneity level of clusters made of core and core with the CEE countries is obvious regarding the Competitiveness dimension. The gap is also observed in the case of periphery countries. Whereas periphery countries reveal slow convergence to the core in terms of productivity and knowledge based economy measures, CEECs stagnate or even diverge. This implies a significant contribution of CEECs to the heterogeneity of the EU from the competitiveness perspective. However, this finding should be interpreted carefully. Analysing the data and examining the sensitivity analysis results. The divergence of the homogeneity level is caused mainly by REER appreciation. This might be an effect of continuing real and price convergence processes in the CEECs. Dropping out the REER measure from the dimension, the CEECs countries converge towards the core and their contribution to EU heterogeneity is decreasing, as shown in figure 11.

5. Sensitivity analysis

The sensitivity analysis is involved in the study to check the robustness of results related to each particular dimension of our research interest. We aim to examine how the results of clustering and its evolution over time are stable when changing the content of dimensions. The indicators are substituted with alternatives regarding their theoretical relevance and multicolinearity restrictions in the dimensions. Some of the indicators where dropped out to reduce the extent of dimensions. The Macroeconomic Policy dimension was split between the fiscal and monetary dimension to detect the influence of common monetary policy and selected fiscal policy measures conducted independently by EU national governments of the EU countries over time. Summarised results[29] of the average distance evolutions in ad–hoc clusters are presented in figure 11. Similarly to the previous chapter the cluster division was designed in order to test the possible influence of enlargement on the EU and EMU with the CEECs compared to the impact of periphery countries.

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[29] Resulting dendrograms, radar graphs and charts of variances are not included in the paper due to its limited extent. They are available upon request to the authors.

Figure 11: Sensitivity Analysis: Average distance in clusters in adjusted dimensions
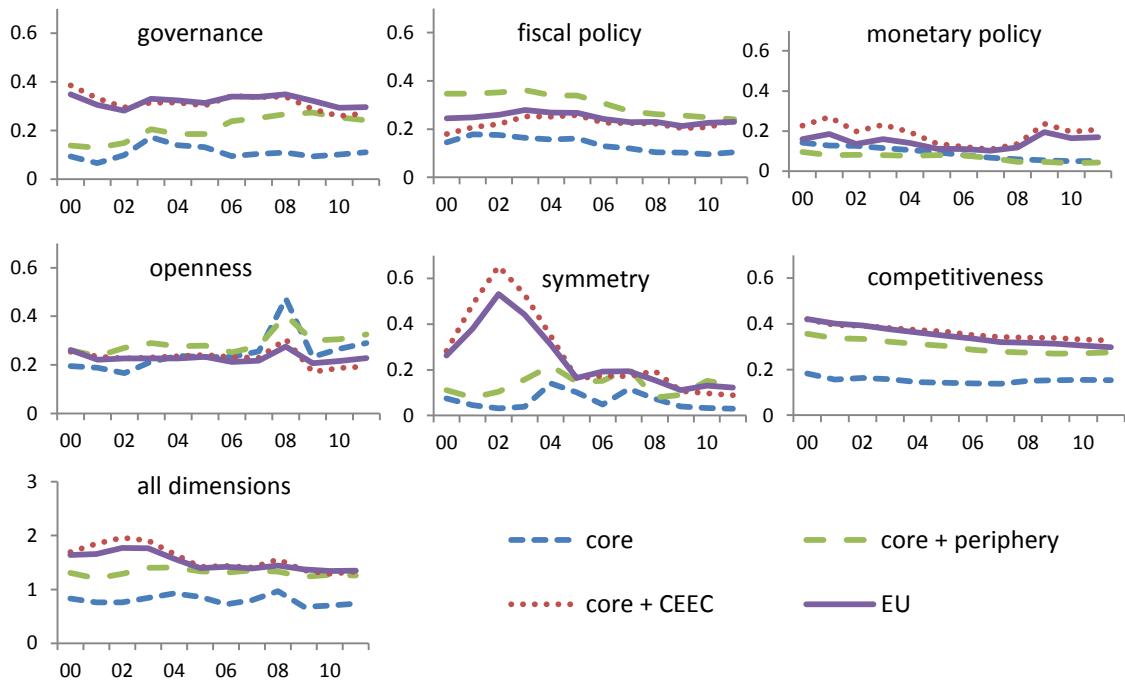
Source: authors' calculations

Beginning with the dimension focused on Governance and Institutions, the Property Rights quality sourced from the Heritage database was substituted with the Rule of Law measure published by the World Bank. The Rule of Law is designed as a broader composite indicator which reflects the perceptions of respondents in having confidence in rules of society including property rights, contract enforcement, police, courts, etc. Therefore the results of the adjusted dimension show practically no change in clusters or trend of average distance measure over time as expected.

The dimension of Macroeconomic Policy was split up between the monetary and fiscal policy dimensions. Regarding the EMU insider-outsider constellation, the level of homogeneity in the Euro area is high for core as well as for core + periphery countries. Moreover, the average distance in the Euro area is decreasing over time steadily. On the contrary, after a period of convergence the CEECs caused increasing heterogeneity in the EU after 2008. The contribution of CEECs to increasing the EU heterogeneity in the dimension of monetary policy is apparent, as clear from figure 11. The fiscal dimension provides a rather different picture. Whereas the core countries become more homogenous overtime, enlargement by CEECs as well as periphery countries increases heterogeneity. Also, assessing the dendrograms the clusters identified in the Monetary Policy dimension are more homogenous and stable over time than in the case of fiscal policy.

Dropping out the Labour Migration measure from the Single Market and Openness dimension, no obvious change compared to the original dimension can be seen. The impact of CEECs and periphery countries upon the heterogeneity in the modified dimension is almost identical as in the original one. Also, the clustering structure in the dendrograms remained almost unchanged.

The Industrial Production was substituted with the Unemployment rate when assessing the checking of the stability of the Similarity and Convergence dimension. As is clear from figure 11, the main trends do not differ so much compared to the dimension without including the

Unemployment rate. Involving the Unemployment rate into the analysis, the impact of periphery countries upon increasing heterogeneity is slightly weaker. In addition to that, the convergence of business cycles in periphery countries towards the core is more intensive. The cycles of CEE countries converge towards the core steadily over the analysed period. Omitting the ex-ante country groups assumptions, the dendrograms of the modified dimension show only a few changes in the clustering structure. In 2008 a group of countries including Hungary, Romania and Slovakia created a homogenous cluster moving out of the rest of the EU. In the final analysed year Greece lies out from the other countries in line with results of the original dimension.

The Competitiveness dimension was reduced with the REER measure focusing only on productivity and knowledge based economy indicators. Comparing the new results with the initial dimension we can see no difference till 2004. Since then the convergence of CEECs towards the core cluster is observable. The contribution of CEECs and periphery countries to increasing heterogeneity in the Competitiveness dimension appears to be comparable at the end of analysed period. The results of dynamic analysis are in line with the identified clusters in the dendrograms. Omitting the measure of REER we can see a generally lower average distance among clusters, as well as individual countries. In the first half of the analysed period the countries of the core were completed by Sweden, the United Kingdom, and Denmark delimits to the rest of the EU. A large homogenous cluster is made of CEECs and periphery countries, meaning no fundamental difference between these two country groups. In the second half of the period some of the CEEC countries move closer to the core. At the end in 2011 we can identify the Czech Republic, Estonia and Slovenia as being involved in a cluster together with the core countries. The difference in terms of the average distance between that, groups of countries from the rest of EU, seems to be persisting despite a slightly reduced gap. Thus, REER is considered to have a significant impact of low convergence of CEECs towards the core countries in the initial competitiveness dimension.

Finishing the sensitivity analysis by putting all modified dimensions together, the results seem to be stable. The level of homogeneity increased since 2004 when considering the cluster of core enlarging with the CEE countries. Since then the homogeneity level of the EU is unchanged no matter whether with or without CEE countries. The core countries make a much more homogenous cluster compared to those of the whole EU or enlarged with periphery or CEE countries.

6. Conclusions

In discussing the heterogeneity level in the European Union, we examined two central research questions: 1. What are the factors distinguishing between successful and less successful CEE countries in terms of the EU enlargement? 2. How was heterogeneity in the EU developed in the last decade? Unlike other papers taking a very general point of view on heterogeneity (e.g. Filipetti and Archibugi, 2011; Vasary, 2012 or Wagner, 2013), we used a multi-dimensional approach in cluster analysis, which enabled us to identify substantial convergence in economics but moreover, no or only very slow convergence in institutions, already in the period before the economic crisis.

Focusing on the first central research question, we identify the level of (non-elite) political stability, quality of institutional framework, maturity and compatibility of informal institutions and initial economic level as the key determinants of the success of the transition and integration process in Central and Eastern Europe. Countries having reached positive features within these categories were predestined to become members of the European Union. Moreover, we emphasize the importance of this clear prospect – accession to the EU – for the success of the transition process. On the other hand, the ex-ante strategies of economic transition themselves and individual economic policies in individual stages of transition were, according to our analysis, not essential for the successfulness of the integration process in a long perspective.

Focusing on the second central research question, we found that the EU countries do not make homogeneous clusters. Neither do the CEE countries make a homogenous cluster in most of the dimensions over the whole period analysed. The most homogeneous "Eastern" cluster still exists in the area of institutions, where in 2008 only Estonia joined the Western countries. The polarization North-West vs. South-East is identifiable particularly in the dimensions of Governance and Institutions and Competitiveness, in other dimensions such as Single Market and Openness or Symmetry and Convergence, the CEE countries have already converged considerably. The heterogeneity increases when enlarging the core of the EU/EMU by the CEECs in almost all dimensions. However, their contribution to EU heterogeneity is comparable to the impact of the periphery countries in most of the dimensions.

With these results we contribute to the examination of the fourth research question of the WWW for Europe project: "How can institutions of modern market economies be changed so as to internalise the current social and ecological externalities and decrease volatility and divergence in Europe?" Moreover, we can imply two broad and general policy relevant conclusions.

First of all, based on our analysis of development in the CEECs during the last two decades, we provide an original parallel towards the periphery countries. At present, the situation of periphery countries is widely considered to be the most significant problem of the EU. In order to create a competitive and sustainable economic model, the periphery countries have to implement essential and vast reforms. Therefore, they are in a rather similar position as the CEE countries were in the 1990. What can we thus learn about reforming the South from the transition of the East? In our view, the periphery countries need to find a direction to head for on the horizon of the next 10-15 years. The policy of budgetary savings is inevitable, nevertheless, they should try to formulate a positive vision as well. Analogically, the successful CEECs undertook painful reforms in the early 1990s, however, these were more accepted by people under the clear prospect of a so-called "return to Europe". Furthermore, without a regard to right- or left-

orientation, governments and also elites in successful CEECs consistently supported the integration process with its related consequences. Similarly in the peripheral countries it is crucial for a potential vision to find a broader political and social consensus. On the other hand, it is not so important whether the way to competitiveness should be based on, e.g., knowledge economy, cheap exports or tourism since, in our opinion, there could be more alternative ways to prosperity. Rather than particular forms of economic policies, the existence of a vision itself and its support across the political spectrum are more important for successful transformation of peripheral countries.

Second of all, based on our cluster analysis, we highlight the contrast among development in particular dimensions. While we can measure a high level of convergence regarding trade and business cycles, we can identify a continuing convergence in the case of institutions and competitiveness. In this context, it is necessary to intensify the discussion as to whether such a heterogeneous development is sustainable, moreover, what the consequences of continuing the current path would be. Unfortunately, in the period of the contemporary crisis, we can observe mostly negative outcomes: because of very high economic interconnections, the crisis quickly spread to almost all EU countries, furthermore, problems in a particular country even of such a size as Cyprus can have a serious negative impact on the whole EU. On the contrary, in the situation of considerably different competitiveness among countries, decentralized institutions and heterogeneous policies, moreover, when monetary policy is unified but not for all countries while fiscal policy is entirely decentralized, it is extremely difficult to find an effective solution to the crisis both in terms of higher competitiveness and elimination of the problem of free riders, whether a real one or only a seeming one. In our opinion, the current hybrid state is not sustainable on a long-term perspective. Hypothetically, there are two relevant directions of the solution: either to partially decrease a level of integration, probably including at least a partial reduction of integration in the monetary area ("Northern" Euro?); or to continue to a more intensive coordination of policies and eventually to a higher centralization of institutions.

To be more specific, another policy relevant conclusion can be based on the results in the Macroeconomic policy dimension. In particular, regarding the fiscal policy area, there is a persisting heterogeneity apparent in the EU. Given that the selection of the criteria is not comprised in the European Fiscal Compact, the results confirm our hypothesis of existing heterogeneity since government spending as well as the tax rate on labour are under national governments' responsibility. On the other hand, we consider a certain level of heterogeneity in the fiscal area as natural because of the considerably varying living standard and different welfare state models across European countries. Moreover, one can hardly choose the most appropriate welfare state model to fit all with the best impact on both economic performance and on fiscal sustainability under current economic conditions in Europe. Therefore, instead of harmonization, we call for better coordination and joint responsibility in the fiscal area, and more generally in terms of policies and institutions in the European Union.

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Annex

Table 6: Shortcuts and abbreviations

CEEC	Central and Eastern European countries
EBRD	European Bank for Reconstruction and Development
EMU	European monetary union
FDI	Foreign direct investment
GDP	Gross domestic product
GNI	Gross national income
GERD	Total intramural R&D expenditure
GLI	Grubel Lloyd index
HICP	Harmonized Indices of Consumer Prices
ILO	International Labour Organization
IP	Industrial production
M2	Money and quasi money
MIP	Macroeconomic Imbalance Procedure
OCA	Optimum Currency Areas Theory
GIIPS	Greece, Italy, Ireland, Portugal, Spain
PPS	Purchase power standard
REER	Real Effective Exchange Rate
TSCG	Treaty on Stability, Coordination and Governance
ULC	Unit labour costs

AT	Austria	**IT**	Italy
BE	Belgium	**LT**	Lithuania
BG	Bulgaria	**LV**	Latvia
CZ	Czech Republic	**NL**	Netherlands
DE	Germany	**PL**	Poland
DK	Denmark	**PT**	Portugal
EE	Estonia	**RO**	Romania
EL	Greece	**SE**	Sweden
ES	Spain	**SI**	Slovenia
FI	Finland	**SK**	Slovakia
FR	France	**UK**	United Kingdom
HU	Hungary	**EA**	Euro area
IE	Ireland	**EU**	European Union

Project Information

Welfare, Wealth and Work for Europe

A European research consortium is working on the analytical foundations for a socio-ecological transition

Abstract

Europe needs a change: The financial crisis has exposed long neglected deficiencies in the present growth path, most visibly in unemployment and public debt. At the same time Europe has to cope with new challenges ranging from globalisation and demographic shifts to new technologies and ecological challenges. Under the title of Welfare, Wealth and Work for Europe – WWWforEurope – a European research consortium is laying the analytical foundations for a new development strategy that enables a socio-ecological transition to high levels of employment, social inclusion, gender equity and environmental sustainability. The four year research project within the 7th Framework Programme funded by the European Commission started in April 2012. The consortium brings together researchers from 33 scientific institutions in 12 European countries and is coordinated by the Austrian Institute of Economic Research (WIFO). Project coordinator is Karl Aiginger, director of WIFO.

For details on WWWforEurope see: www.foreurope.eu

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