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EUROPEAN INTEGRATION AND CHANGES IN PUBLIC REGULATION SPHERE

European integration affects different areas of economies. The paper focuses on the public regulation sphere. The EU has a common policy in some areas, whereas there are still different models of capitalism among the EU countries. The aim of the paper is to examine if the EU are converging in terms of economic freedom (measured by Index of Economic Freedom). The analysis is based on the data for the EU countries from 2001 to 2010. The research methods adopted are Euclidean distance and other methods of statistical description.

*Keywords: economic freedom, capitalism models, welfare state, public regulation, the EU.
JEL Classification: O10, O57, O52.*

Малгожата Зелєнкєвіч

ЄВРОПЕЙСЬКА ІНТЕГРАЦІЯ ТА ЗМІНИ У СИСТЕМІ ДЕРЖАВНОГО РЕГУЛЮВАННЯ

У статті зроблено акцент на впливі європейської інтеграції на державне регулювання. Щодо низки питань ЄС має спільну для всіх країн-членів позицію, але у деяких країнах існують свої, специфічні моделі капіталізму. Оцінено показники економічної свободи з 2001 по 2010 роки. При аналізі використовувались методи Евклідової відстані та статистичного опису.

Ключові слова: економічна свобода, моделі капіталізму, держава загального достатку, державне регулювання, ЄС.

Рис. 1. Форм. 1. Табл. 5. Літ. 19.

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ЕВРОПЕЙСКАЯ ИНТЕГРАЦИЯ И ИЗМЕНЕНИЯ В СИСТЕМЕ ГОСУДАРСТВЕННОГО РЕГУЛИРОВАНИЯ

В статье акцент сделан на влиянии европейской интеграции именно на госрегулирование. По ряду вопросов ЕС имеет общую для всех стран-членов позицию, однако в некоторых странах существуют свои, особенные модели капитализма. Оценено показатели экономической свободы по странам ЕС. При анализе использовались метод Эвклидоваго расстояния и статистического описания.

Ключевые слова: экономическая свобода, модели капитализма, государство общего благосостояния, государственное регулирование, ЕС.

Introduction.

The concept of the paper is connected with larger research on changes in the real sphere, regulation sphere and the level of social welfare in the EU countries. This part of the research focuses on the degree of economic freedom in the EU countries and the main issue considered is the direction of changes in new EU members. Most of the new EU countries are "economies in transition", still looking for their path to social welfare. Most classifications of capitalism models make the distinction between coordinated market economies (or CMEs) and liberal market economies (or LMEs) (Casey, 2004). The dominant model in old EU countries is CME. However, countries differ according to the degree of economic freedom in

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different areas, and some more detailed classifications characterize their regulatory systems as Anglo-Saxon capitalism (the United Kingdom, Ireland), Rihne capitalism (social market economy; e.g. Germany, Austria), Nordic capitalism (social democratic model) and state capitalism (France). Some classifications also distinguish the Mediterranean model (Wludyka, Smaga, 2012). The aim of the research is to examine the degree of similarity in terms of economic freedom among the EU countries. The research hypothesis is the statement that differences between EU-12 and EU-15 have decreased but still are large. The analysis was conducted for the period 2001–2010. The paper includes a short overview of the research on economic freedom and the analysis of similarity of the EU countries using Index of Economic Freedom. The research methods used in the analysis are Euclidean distance and other methods of statistical description.

Role of economic freedom in socioeconomic development.

Discussions on state intervention in economy has a long history and goes back to Adam Smith. Phenomena such as rapid increase of income inequality after the industrial revolution, observation that income growth often isn't accompanied by a sufficient increase in new workplaces and increasing areas of poverty (Piasecki, 2011) raised in the early 1980s discussion on economic development and the role of public institutions in its stimulation. At the end of the 1980s J. Williamson (1990) formulated recommendations for economic policy (Washington Consensus), which contained 10 recommendations for state policy to promote economic development. The Washington Consensus has been criticized and modified. Criticism intensified in the 1990s due to currency and financial crises and the limited effectiveness of the proposed methods in developing and post-socialist countries and new recommendations (Post-Washington Consensus) were set, with a stronger focus on reducing the differences not only in physical capital, but also human resources (by fighting poverty, helping less developed countries, focusing on global public goods).

Measurement of economic freedom is not a simple task, but such attempts were made in the 1980s by L. Wright (1982). Since then many indicators have been constructed and research on impact of economic freedom on social welfare has developed significantly. Most studies are based on correlation, but W. K. Far, L. A. Lord and Wolfenbarger (1998) used the Granger causality test in their research. They concluded that economic freedom causes economic growth (measured by GDP growth rate). M. Vega-Gordillo and J. L. Alvarez-Arce (2003), who analysed the dynamic relationships, confirmed this observation.

The studies conducted by J. E. Sturm and J. De Haan (1998, 2000) show that greater economic freedom fosters economic growth, but the level of economic freedom is not directly related to growth, and for some indicators of economic freedom there appears a robust direct relationship, whilst for others there is no such relationship. Also F. Carlsson and S. Lundstrom (2002) concludes that economic freedom does matter for growth, but some of the categories of economic freedom are insignificant and some of the significant variables have negative effects. E. B. Ayal and G. Karras (1998) outlined 6 elements of economic freedom which are significant for multifactor productivity and capital accumulation (which are: low money growth rate; small role played by government enterprises; rare negative real interest rates;

small difference between the official and the black market exchange rates; large size of the trade sector; and freedom of citizens to engage in capital transactions with foreigners).

B. Heybey and P. Murrell (1999) focused on the effect of speed of liberalization on growth during transition and concluded that initial conditions are much more important than policy changes in determining growth performance in the first years of transition. N. Berggren, (2003) however indicates that policies characterized by economic freedom produce economic growth, but there is a high importance on protection of private property, a well-functioning legal system, free competition and few regulations. Also J. W. Dawson (2003) analysed the causality in the relationship between political and economic freedom indicators and long-run economic growth. The conclusion of the study was that generally economic freedom causes the growth, but there is a special importance of the levels of freedom relating to use of markets and property rights.

The cited research shows that there are areas of economic freedom which foster socioeconomic development. Most of new EU members are post-socialistic countries and had to make a large progress in increasing the level of freedom in their economies. The following research shows their situation before joining the EU, when the countries were in process of preparation to accession and the changes a few years after expansion of the EU.

Economic Freedom in the EU countries.

For description of the public regulation sphere different measures can be used, e.g. "coordination index" by Hall and Gingerich, index of the models of capitalism by Casey (2006), Worldwide Governance Indicators (WGI) consisting of 6 composite indicators of broad dimensions of governance (Kaufmann, Kraay, Mastruzzi, 2010), Freedom House Index measuring global political rights and civil liberties (Freedom House). Among the indices connected with the regulation sphere is Index of Economic Freedom. This index was used in the research because of its complexity in terms of the impact of the public regulation on different areas of the economies.

IEF is an index published by The Wall Street Journal and Heritage Foundation. It is based on the statistics from organizations like the World Bank, the International Monetary Fund, the Economist Intelligence Unit and various government agencies, websites, news reports and journal articles. In the index each country is rated on the scale from 0 to 100 points (where 100 is the maximum of economic freedom) according to the criteria divided into 10 categories. The categories are grouped into 4 main areas connected with economic freedom (Heritage Foundation, 2012):

- I) Rule of Law (property rights, freedom from corruption):
 - Property Rights (PR): measures the ability of individuals to accumulate private property, secured by a country's laws and its enforcement.
 - Freedom from Corruption (FC): measures the level of corruption with Transparency International's Corruption Perceptions Index (CPI) (the higher the level of corruption, the lower the economic freedom score).
- II) Limited Government (fiscal freedom, government spending):
 - Fiscal Freedom (FisF): measures the tax burden imposed by a government (the top tax rates on individual and corporate incomes and the overall amount of tax revenue as % of GDP).

– Government Spending (GS): measures the level of government expenditures (including consumption and transfers) as % of GDP. The higher the level of government expenditures, the lower the level of the index, however 0 does not mean there is no private consumption in the economy. The index is calculated by the formula: $GE_i = 100 - \alpha(\text{Expenditures}_i)^2$, where α is the coefficient to control for variation among scores (set at 0,03), so the zero index of GS means that government expenditures exceeded 57% of GDP.

III) Regulatory Efficiency (business freedom, labour freedom, monetary freedom):

– Business Freedom (BF): measures the ability to start, operate, and close a business according to procedures, time and costs of operations.

– Monetary Freedom (MF): measures price stability (the weighted average inflation rate for the most recent 3 years) and price controls.

– Labour Freedom (LF): measures the level of regulation of a country's labour market. This index has only been calculated since 2004, so it won't be included in the study.

IV) Open Markets (trade freedom, investment freedom, and financial freedom).

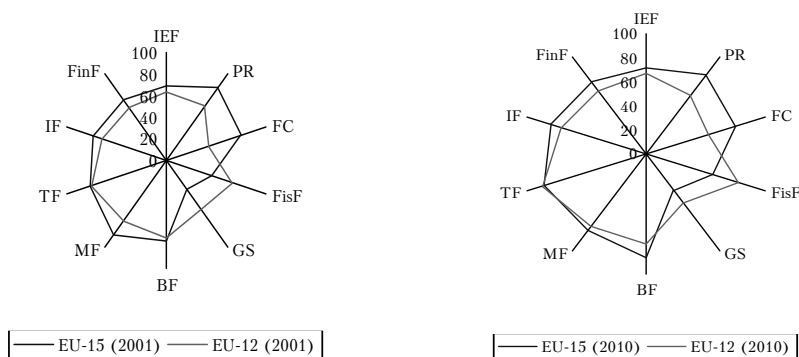
– Trade Freedom (TF): measures the absence of barriers (the trade-weighted average tariff rate and non-tariff barriers) that affect imports and exports of goods and services;

– Investment Freedom (IF): measures the constraints on the flow of investment capital. It includes: national treatment of foreign investment, foreign investment code, restrictions on land ownership, sectoral investment restrictions, expropriation of investments without fair compensation, foreign exchange controls, capital controls.

– Financial Freedom (FinF): measures banking efficiency, independence from government control and interference in the financial sector.

Total IEF is an average of scores obtained in these 10 categories by each country.

Figure 1 shows the level of economic freedom in the EU countries in 2001 and 2010. Table 1 includes more detailed data on the changes of economic freedom during 2001–2010: an average level of IEF and its components calculated for EU-27, EU-15 and EU12, and standard deviation (SD) calculated for the EU-27.



Sources: Own calculations based on the data of Heritage Foundation.

Figure 1. The Index of Economic Freedom and its components in the EU countries in 2001 and 2010

The average level of economic freedom in the EU countries increases. In 2001 EU-27 had 66,6 points and in 2010 – 69,6. The level of economic freedom is higher in EU-15 countries. In 2001 Ireland (81,2), Luxemburg (80,1), the United Kingdom (77,6) and Estonia (76,1) had the highest scores. The lowest scores belonged to Romania (50), Bulgaria (51,9) and France (58). In 2010 the average level of economic freedom increased to 71,1 points in EU-15 countries, and to 67,4 points in EU-12. In 2010 Ireland (81,3), Denmark (77,9) and the United Kingdom (76,5) had the higher level of IEF, the lowest – Bulgaria (62,3), Greece (62,7) and Italy (62,7). Differences in general IEF between EU-15 and EU-12 have a decreasing tendency. Standard deviation decreased from 7,3 to 5,1. However, the distance between the old and the new EU varies in different areas of economic freedom.

Table 1. Changes of economic freedom in the EU during 2001–2010

Category of freedom		Year:	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Total IEF	Index of Economic Freedom	EU-27	66,6	67,1	67,2	67,7	67,6	68,8	69,0	69,6	69,6	69,6
		EU-15	69,1	70,0	70,1	70,1	69,7	70,7	71,0	71,5	71,5	71,2
		EU-12	63,5	63,6	63,7	64,7	65,1	66,5	66,6	67,2	67,2	67,4
		SD	7,3	7,5	7,5	7,2	6,6	6,2	6,5	6,2	5,9	5,1
Rules of Law	Property Rights	EU-27	74,4	73,0	73,0	71,5	71,5	70,7	71,1	71,3	72,2	72,0
		EU-15	83,3	82,0	82,0	82,0	82,0	80,7	80,0	80,0	80,7	81,7
		EU-12	63,3	61,7	61,7	58,3	58,3	58,3	60,0	60,4	61,7	60,0
		SD	16,6	17,8	17,8	19,6	19,6	20,0	20,1	19,9	19,6	17,1
	Freedom from Corruption	EU-27	61,1	61,4	61,4	62,4	62,7	63,6	64,4	65,1	65,1	64,8
		EU-15	75,8	75,7	75,5	75,6	77,1	76,9	77,3	77,1	76,5	75,0
		EU-12	42,7	43,5	43,9	45,8	44,8	46,9	48,2	50,1	51,0	52,0
		SD	21,7	21,6	20,8	20,5	20,6	20,2	19,8	18,9	17,4	16,9
Limited Government	Fiscal Freedom	EU-27	55,2	57,0	58,5	60,6	61,8	64,2	64,0	64,8	65,1	65,1
		EU-15	47,1	48,6	49,8	51,4	52,3	54,1	54,2	54,9	55,0	55,5
		EU-12	65,5	67,5	69,4	72,1	73,6	76,8	76,3	77,1	77,6	77,2
		SD	13,2	13,3	13,8	14,4	14,6	15,2	15,5	15,0	14,9	14,3
	Government Spending	EU-27	44,1	40,5	40,2	39,3	37,6	38,6	40,7	40,7	41,7	43,2
		EU-15	34,4	35,6	33,6	32,4	30,4	31,1	33,4	33,8	34,8	37,1
		EU-12	56,3	46,5	48,4	47,9	46,5	47,9	49,9	49,3	50,3	50,9
		SD	20,5	17,2	17,9	19,7	18,5	16,7	17,8	17,3	16,7	13,9
Regulatory Efficiency	Business Freedom	EU-27	73,3	73,3	74,4	74,4	74,4	79,5	79,2	80,1	80,6	81,0
		EU-15	74,0	75,0	76,0	76,0	76,0	85,9	85,8	86,5	86,7	85,9
		EU-12	72,5	71,3	72,5	72,5	72,5	71,4	71,0	72,0	72,9	74,9
		SD	8,5	8,5	9,8	9,8	9,8	10,7	10,5	10,9	10,3	9,4
	Monetary Freedom	EU-27	79,5	81,1	81,3	82,2	83,3	83,5	81,1	80,5	79,8	76,9
		EU-15	86,6	85,1	84,6	84,2	84,7	85,5	82,8	82,1	81,4	78,7
		EU-12	70,6	76,0	77,2	79,8	81,6	81,0	78,9	78,5	77,9	74,6
		SD	14,4	8,7	7,7	6,1	5,3	4,9	4,3	3,8	4,3	3,7
Open Markets	Trade Freedom	EU-27	76,8	78,0	77,3	76,5	79,0	81,3	85,0	85,3	85,1	86,9
		EU-15	78,0	79,6	81,4	79,8	80,2	82,4	85,3	85,0	84,8	86,8
		EU-12	75,4	76,0	72,1	72,3	77,6	79,9	84,7	85,6	85,4	87,1
		SD	4,9	5,0	6,9	6,4	3,5	4,0	3,4	1,8	1,8	1,6
	Investment Freedom	EU-27	70,0	70,7	69,3	69,3	70,0	72,2	71,9	73,0	73,3	75,9
		EU-15	74,0	75,3	75,3	76,7	78,0	76,7	76,7	77,3	78,0	79,7
		EU-12	65,0	65,0	61,7	60,0	60,0	66,7	65,8	67,5	67,5	71,3
		SD	12,2	13,9	14,9	15,9	16,3	13,7	13,6	12,4	12,5	11,9
	Financial Freedom	EU-27	64,8	69,3	70,0	73,0	73,7	71,5	70,0	71,9	71,1	69,6
		EU-15	68,7	72,7	72,7	72,7	72,7	70,0	71,3	74,7	75,3	73,3
		EU-12	60,0	65,0	66,7	73,3	75,0	73,3	68,3	68,3	65,8	65,0
		SD	16,0	16,8	15,4	15,1	15,4	15,3	14,1	12,8	12,6	11,0

SD- standard deviation calculated for EU-27.

Source: Own calculations based on the data of Heritage Foundation.

There are relatively significant differences in the group of indicators connected with Rules of Law. This is the most distinguishing area between the old and the new EU (standard deviation in the range from 16,6 to 21,7 points). In 2001 the score of Property Rights Index oscillated between 30 (Romania) and 90 points (Austria, Belgium, Cyprus, Denmark, Finland, Germany, Ireland, Luxemburg, Malta, Sweden, the Netherlands, the United Kingdom). In 2010 the lowest scores belonged to Bulgaria (30), Romania (40) and to Italy, Latvia, Lithuania, Poland, Slovakia (55). In 2010 Sweden had the best guarantee of property rights (95).

The countries with the lowest levels of corruption in the EU are the Nordic countries: Denmark (100 points in 2001, 93 points in 2010), Finland (98/90), Sweden (94/93). Very high level of burden of corruption in 2001 could be observed in Malta (30), Bulgaria (33), Romania (33), Latvia (34), Slovakia (37) and Lithuania (38). In 2010 the last in the rank were: Bulgaria (36), Romania (38), Poland (46), Lithuania (46), Greece (47) and Italy (48). According to Limited Government there can be observed differences in the approach to the welfare state functions. Sweden and Denmark had one of the lowest score of both: fiscal freedom and government spending in all periods considered. In 2001 Denmark had zero points in Government Spending Index and Sweden – 2,5 points. In 2010: Sweden – 17,3 and Denmark – 22. Also France had one of the lowest levels of freedom in this area (18,9 in 2001; 17,9 in 2010). Countries which do not engage their state intensively in the redistribution of national income process are mainly from the EU-12 group. An exception is Ireland with 71,2 points of GS Index in 2001 and 63,5 points in 2010. The highest freedom in GS area in 2001 occurred in Romania (79,7) and Lithuania (73). In 2010 – in Slovakia (64,5), Lithuania (63,5) and Estonia (62,2). Also Fiscal Freedom Index is the highest in new EU countries. In 2001 the highest scores had: 79,6 (Estonia), 75,5 (Latvia), 71,4 (Cyprus), 71 (Lithuania), and in 2010: 86,3 (Bulgaria), 85,8 (Romania), 84,6 (Lithuania), 84 (Slovakia), 82,7 (Latvia), 80,2 (Estonia) and 80,1 (Czech Republic). Standard deviation for Fiscal Freedom Index increased from 13,2 points in 2001 to 15,5 points in 2007, and then decreased to 14,3 points in 2010. Differences in government spending area had a decreasing trend. Standard deviation decreased by almost 7 points (from 20,5 points in 2001 to 13,9 points in 2010).

Monetary Freedom is one of two areas where EU countries do not differ significantly (the second one is trade freedom). However in 2001 these differences were far more noticeable. The indicator in 2001 oscillated between very low levels such as 26,2 points in Bulgaria or 41,4 in Romania and over 90 points in Denmark and Sweden. In 2010 Latvia (67) and Bulgaria (69,5) had the lowest score and the highest – the Netherlands (81) and Cyprus (82,9) with the standard deviation set on the level of about 4 points.

The second indicator for measuring Regulatory Efficiency is the Business Freedom Index, which is an important area in the context of economic development. In this category the convergence between the old and the new EU couldn't be noticed (the standard deviation increased from 8,5 in 2001 to 9,37 in 2010), however it's because of relatively high dynamics of business freedom in EU-15 countries (change from 74 points in 2001 to 85,9 points in 2010; in the same time the average for the EU-12 decreased by 2,4 points). In 2001 running own business was hardest in Romania and Bulgaria (55) and easiest in Slovenia, Denmark, Czech Republic,

Cyprus, Estonia, the United Kingdom, Luxembourg and Ireland (85 points in each). In 2010 the highest barriers for business activity could be noticed in Poland (62,2), Czech Republic (65,5) and Malta (70). In 2010 Nordic countries (Denmark – 97,9; Sweden – 95,5; Finland – 95) had this indicator at the level of almost 100 points. The United Kingdom also had the score over 90, 94,9 to be exact, Ireland (92,8) and Belgium (92,9).

According to the openness of the markets, situation of trade freedom is similar in all the EU countries. In 2010 almost all of the EU countries had the score of 87,5 points. Exceptions were Greece, Cyprus and France (82,5). In 2001 the differences were bigger: values of the indicator were in the range of 57,2 (Bulgaria) – 85 (Estonia). In the category of investment and financial freedom countries differ more noticeably. The lowest level of investment freedom in 2001 was in Romania, Slovenia, Malta, France, Cyprus (50 points in each). Bulgaria and France had the lowest score (again 50 points) also in 2010. In 2001 the highest investment freedom could be observed in Estonia, the Netherlands, Ireland, Luxembourg and Germany (90). In 2010 Luxembourg and Ireland reached 95 points. The United Kingdom also had a high score (90), along with Denmark, the Netherlands and Estonia. In 2001 Romania had the least freedom of financial markets (30). The highest level of Financial Freedom Index was 90 points (Czech Republic, the United Kingdom, the Netherlands, Ireland and Luxembourg). In 2010 only Denmark kept this level, other countries decided to regulate financial markets more. In 2010 Slovenia, Romania and Latvia had the lowest score (50).

In conclusion, new EU members are converging with the EU-15 mainly in the following areas: trade, monetary and financial freedom, government spending and freedom from corruption. In protection of property rights countries had the same direction of changes, but the average indicator in both groups decreased and the distance between the EU-12 and the EU-15 rather deepened. A similar situation can be observed in the category of fiscal freedom – the old and the new EU had the same direction (more freedom), but the distance increased. The category where the old and the new EU seems to have different attitude is business freedom: the old EU makes efforts to reduce the barriers for business, in the new EU the average indicator of business freedom didn't change much (exception is the last year of the analysed period). Regardless the directions of changes, there is still a big distance between the EU-15 and the EU-12 in the Rules of Law and Limited Government categories.

Distance analysis of economic freedom in the EU countries.

Previous analysis may raise the question about the model of regulatory system in new EU members. In the EU there are a couple of models of capitalism. To examine, whom the new members converge to, Euclidean distance for all categories of IEF were calculated. The following formula was used:

$$d(x_i, x_k) = d_{ik} = \sqrt{\sum_{j=1}^p (x_{ij} - x_{kj})^2}. \quad (1)$$

The average distance is the square root of the sum of differences between the value of j characteristic for the objects x_i and x_k and p is the number of characteristics. Because all the categories of IEF are the indices in the range 0–1, there is no need for standardization of characteristics. Tables 2–5 show distance matrixes for the EU countries in 2001 and 2010.

Table 2. Distance matrix for EU-15 in 2001

2001	AT	BE	DK	FI	FR	DE	EL	IE	IT	LU	PT	ES	SE	NL	UK
AT		25,7	39,8	32,0	38,3	29,9	50,7	59,4	35,6	48,9	38,6	39,2	30,7	32,3	42,1
BE	25,7		54,1	54,4	37,3	42,4	47,7	70,1	25,9	63,1	47,0	45,8	45,5	47,0	58,6
DK	39,8	54,1		44,7	54,5	52,3	84,3	86,0	66,9	69,7	69,3	73,0	16,5	42,6	65,0
FI	32,0	54,4	44,7		48,8	29,6	60,1	67,7	59,0	57,4	40,0	50,8	39,5	48,7	50,9
FR	38,3	37,3	54,5	48,8		50,5	47,8	86,8	37,7	79,2	41,2	49,7	47,9	65,1	70,0
DE	29,9	42,4	52,3	29,6	50,5		48,5	59,9	48,3	50,8	36,6	44,5	45,8	42,8	53,8
EL	50,7	47,7	84,3	60,1	47,8	48,5		62,5	34,4	65,4	25,3	26,5	77,4	71,8	61,4
IE	59,4	70,1	86,0	67,7	86,8	59,9	62,5		66,7	19,7	59,9	44,1	83,2	56,0	29,2
IT	35,6	25,9	66,9	59,0	37,7	48,3	34,4	66,7		64,0	34,7	33,7	58,8	56,0	57,8
LU	48,9	63,1	69,7	57,4	79,2	50,8	65,4	19,7	64,0		58,7	44,6	67,8	39,8	23,3
PT	38,6	47,0	69,3	40,0	41,2	36,6	25,3	59,9	34,7	58,7		25,3	62,4	61,3	51,8
ES	39,2	45,8	73,0	50,8	49,7	44,5	26,5	44,1	33,7	44,6	25,3		66,3	53,9	39,0
SE	30,7	45,5	16,5	39,5	47,9	45,8	77,4	83,2	58,8	67,8	62,4	66,3		37,1	62,9
NL	32,3	47,0	42,6	48,7	65,1	42,8	71,8	56,0	56,0	39,8	61,3	53,9	37,1		43,7
UK	42,1	58,6	65,0	50,9	70,0	53,8	61,4	29,2	57,8	23,3	51,8	39,0	62,9	43,7	
BG	102,5	97,9	131,0	108,8	94,5	100,8	65,2	102,7	83,4	109,3	79,7	75,5	124,2	115,0	105,5
CY	56,6	58,8	89,3	67,4	65,5	67,0	43,9	54,3	50,8	61,7	45,8	40,5	84,8	77,9	47,3
CZ	56,3	55,6	87,0	74,9	68,8	68,2	46,6	48,0	39,5	54,4	49,0	35,5	82,6	66,8	45,7
EE	67,5	73,2	98,1	73,0	82,5	63,5	46,2	39,7	58,4	51,8	46,5	39,8	94,2	75,3	51,7
HU	44,6	45,6	78,3	58,5	51,7	52,5	28,4	55,6	27,2	58,5	28,0	23,4	71,2	61,9	49,5
LV	77,5	75,2	111,5	88,9	78,2	80,7	42,2	68,4	52,7	78,4	51,4	45,0	104,7	92,4	72,8
LT	80,7	79,3	114,0	86,6	76,9	77,7	36,6	73,8	59,2	83,1	48,2	47,6	107,5	98,5	79,2
MT	59,3	50,9	93,3	76,9	61,4	72,5	44,4	73,9	42,3	79,2	52,2	49,5	85,9	82,3	66,5
PL	54,6	50,2	87,3	64,3	50,8	54,6	17,6	69,4	33,8	73,1	28,9	35,0	80,3	76,3	66,6
RO	114,8	111,2	142,9	117,1	97,4	112,4	70,3	117,5	94,1	124,2	84,6	84,5	136,4	132,7	118,6
SK	65,7	59,6	94,3	75,9	53,9	66,7	30,1	81,9	37,8	84,7	39,0	44,7	87,7	85,3	78,9
SI	51,1	53,1	76,5	56,2	40,7	56,9	30,6	69,7	43,2	69,7	32,0	35,7	73,2	75,4	58,6
Av	52,9	56,7	77,8	62,8	60,7	58,0	48,7	65,6	50,1	64,6	47,6	45,9	72,1	66,8	59,6

Av. – average distance for a country.

Source: Own calculations based on the data of Heritage Foundation.

Table 3. Distance matrix for EU-12 in 2001

2001	BG	CY	CZ	EE	HU	LV	LT	MT	PL	RO	SK	SI
AT	102,5	56,6	56,3	67,5	44,6	77,5	80,7	59,3	54,6	114,8	65,7	51,1
BE	97,9	58,8	55,6	73,2	45,6	75,2	79,3	50,9	50,2	111,2	59,6	53,1
DK	131,0	89,3	87,0	98,1	78,3	111,5	114,0	93,3	87,3	142,9	94,3	76,5
FI	108,8	67,4	74,9	73,0	58,5	88,9	86,6	76,9	64,3	117,1	75,9	56,2
FR	94,5	65,5	68,8	82,5	51,7	78,2	76,9	61,4	50,8	97,4	53,9	40,7
DE	100,8	67,0	68,2	63,5	52,5	80,7	77,7	72,5	54,6	112,4	66,7	56,9
EL	65,2	43,9	46,6	46,2	28,4	42,2	36,6	44,4	17,6	70,3	30,1	30,6
IE	102,7	54,3	48,0	39,7	55,6	68,4	73,8	73,9	69,4	117,5	81,9	69,7
IT	83,4	50,8	39,5	58,4	27,2	52,7	59,2	42,3	33,8	94,1	37,8	43,2
LU	109,3	61,7	54,4	51,8	58,5	78,4	83,1	79,2	73,1	124,2	84,7	69,7
PT	79,7	45,8	49,0	46,5	28,0	51,4	48,2	52,2	28,9	84,6	39,0	32,0
ES	75,5	40,5	35,5	39,8	23,4	45,0	47,6	49,5	35,0	84,5	44,7	35,7
SE	124,2	84,8	82,6	94,2	71,2	104,7	107,5	85,9	80,3	136,4	87,7	73,2
NL	115,0	77,9	66,8	75,3	61,9	92,4	98,5	82,3	76,3	132,7	85,3	75,4
UK	105,5	47,3	45,7	51,7	49,5	72,8	79,2	66,5	66,6	118,6	78,9	58,6
BG		88,5	82,1	82,9	68,8	68,6	67,4	77,1	60,4	43,0	59,5	72,2
CY	88,5		36,9	47,8	39,0	50,6	54,8	33,1	45,1	95,0	59,8	40,4
CZ	82,1	36,9		39,1	28,5	39,2	54,4	42,3	45,1	96,2	51,4	50,1
EE	82,9	47,8	39,1		39,9	40,1	43,8	62,9	47,5	92,7	56,0	59,1
HU	68,8	39,0	28,5	39,9		38,3	46,4	36,1	23,1	82,0	32,9	37,3

Continuation of Table 3

LV	68,6	50,6	39,2	40,1	38,3		22,5	52,7	40,7	70,3	38,7	56,6
LT	67,4	54,8	54,4	43,8	46,4	22,5		60,4	39,3	60,4	38,4	53,6
MT	77,1	33,1	42,3	62,9	36,1	52,7	60,4		37,4	89,6	50,5	46,5
PL	60,4	45,1	45,1	47,5	23,1	40,7	39,3	37,4		69,6	21,5	33,8
RO	43,0	95,0	96,2	92,7	82,0	70,3	60,4	89,6	69,6		63,1	76,1
SK	59,5	59,8	51,4	56,0	32,9	38,7	38,4	50,5	21,5	63,1		42,8
SI	72,2	40,4	50,1	59,1	37,3	56,6	53,6	46,5	33,8	76,1	42,8	
Av	87,2	57,8	55,5	60,5	46,4	63,0	65,0	60,7	50,2	96,0	57,7	53,5

Av. – average distance for a country.

Source: Own calculations based on the data of Heritage Foundation.

In comparison with 2001 each country in 2010 had lower average distance to other countries. Average for EU-27 decrease form 60,9 points in 2001 to 49,2 in 2010. What is interesting, not only EU-12 reduced the distance to EU-15, but also countries are converging among their group. The average distance between the old and the new EU decreased from 69,7 to 56,7, among EU-12 – from 53,4 to 39,5, and among EU-15 – from 50,4 to 42,5.

Table 4. Distance matrix for EU-15 in 2010

2010	AT	BE	DK	FI	FR	DE	EL	IE	IT	LU	PT	ES	SE	NL	UK
AT		25,4	40,5	29,3	34,3	25,9	53,0	48,7	49,5	40,1	33,7	38,9	34,5	23,8	33,7
BE	25,4		33,6	32,7	35,0	25,8	50,4	47,8	42,1	47,1	31,7	37,7	30,8	29,0	28,1
DK	40,5	33,6		36,5	55,8	45,5	81,0	56,8	72,3	54,6	62,3	58,7	13,4	29,7	38,6
FI	29,3	32,7	36,5		42,1	27,8	61,6	38,0	61,5	38,7	43,7	44,2	34,7	24,4	23,2
FR	34,3	35,0	55,8	42,1		46,4	44,0	68,2	45,6	66,5	34,3	51,5	49,7	51,6	51,0
DE	25,9	25,8	45,5	27,8	46,4		52,8	33,1	50,4	32,8	32,5	37,4	41,3	25,0	23,1
EL	53,0	50,4	81,0	61,6	44,0	52,8		64,1	22,5	64,3	22,0	38,5	78,6	65,1	56,5
IE	48,7	47,8	56,8	38,0	68,2	33,1	64,1		65,4	19,7	50,4	35,7	59,6	34,5	23,8
IT	49,5	42,1	72,3	61,5	45,6	50,4	22,5	65,4		64,2	22,2	38,9	70,5	60,2	53,3
LU	40,1	47,1	54,6	38,7	66,5	32,8	64,3	19,7	64,2		49,2	32,0	56,5	26,8	28,2
PT	33,7	31,7	62,3	43,7	34,3	32,5	22,0	50,4	22,2	49,2		29,4	59,0	45,5	39,3
ES	38,9	37,7	58,7	44,2	51,5	37,4	38,5	35,7	38,9	32,0	29,4		60,7	37,9	32,1
SE	34,5	30,8	13,4	34,7	49,7	41,3	78,6	59,6	70,5	56,5	59,0	60,7		30,2	40,6
NL	23,8	29,0	29,7	24,4	51,6	25,0	65,1	34,5	60,2	26,8	45,5	37,9	30,2		22,0
UK	33,7	28,1	38,6	23,2	51,0	23,1	56,5	23,8	53,3	28,2	39,3	32,1	40,6	22,0	
BG	89,9	86,3	114,4	92,7	77,4	88,1	40,8	91,8	52,4	94,1	59,2	68,2	113,7	99,2	87,5
CY	34,9	39,2	63,0	36,8	40,3	31,5	31,3	38,5	39,3	38,6	21,0	26,2	60,9	41,6	33,8
CZ	52,8	57,5	79,9	57,9	55,2	55,4	30,6	54,5	39,2	51,8	34,4	31,2	80,0	59,6	51,4
EE	52,6	53,6	69,2	46,7	67,7	41,5	52,7	22,0	57,0	27,5	44,8	29,0	71,5	45,7	32,3
HU	43,3	41,5	67,6	51,6	40,8	46,4	25,8	58,1	21,0	57,0	21,9	36,1	65,8	53,9	45,1
LV	67,6	66,8	94,8	72,7	71,8	59,1	34,8	61,4	41,7	62,2	40,6	45,7	93,6	73,1	61,9
LT	70,8	67,6	90,4	68,6	71,8	64,3	39,5	54,4	48,9	59,0	47,0	38,4	92,7	71,4	57,0
MT	34,3	40,1	68,3	48,4	42,4	34,5	26,9	48,4	32,8	44,2	17,2	28,0	64,8	46,8	42,9
PL	61,6	64,4	93,0	71,7	57,7	63,2	19,7	70,6	33,3	67,9	34,3	43,8	91,0	73,4	66,7
RO	83,3	80,5	109,3	88,2	82,1	76,2	39,9	77,4	47,3	79,1	52,8	58,1	108,8	89,4	77,9
SK	67,6	67,9	92,9	69,3	69,3	62,3	33,5	57,1	45,8	58,4	42,3	37,8	93,6	71,1	60,4
SI	45,7	42,0	71,9	51,7	46,8	38,5	26,1	54,0	29,1	54,0	18,6	35,7	69,0	54,0	46,8
Av	46,8	46,3	65,2	49,8	53,8	44,6	44,5	51,3	46,4	50,5	38,1	40,5	64,1	49,4	44,5

Av. – average distance for a country.

Source: Own calculations based on the data of Heritage Foundation.

In 2001 the range of results was from 16,5 to 142,9. Most similar (according to the distances in IEF components) were couples: Austria – the Netherlands (16,5)

Denmark-Sweden (16,5), Poland-Greece (17,6) and Ireland-Luxemburg (19,7). Most different from the EU were Bulgaria and Romania. They were closest "companions" for each other, though relatively the similarity even between these two countries wasn't that strong (43 points). The average distance between Romania and other countries was 96 points (110,6 with EU-15 and 76,2 with EU-12) and for Bulgaria – 87,2 points (99,7 with EU-15 and 70 with EU-12). From the old EU the most different country was Denmark with 77,8 points (58,5 with EU-15, 100,3 with EU-12) and Sweden (72,1 with EU-27, 53 with EU-15, 94,4 with EU-12). From EU-15 the most similar to new members was Greece (41,8 points in average distance with EU-12, which is more in comparison to EU-15 where Greece had 54,6 points), Spain (46,4) and Portugal (48,8). Also Italy was more similar (on average) to EU-12 than to EU-15 (48,5/51,9).

Table 5. Distance matrix for EU-12 in 2010

2010	BG	CY	CZ	EE	HU	LV	LT	MT	PL	RO	SK	SI
AT	89,9	34,9	52,8	52,6	43,3	67,6	70,8	34,3	61,6	83,3	67,6	45,7
BE	86,3	39,2	57,5	53,6	41,5	66,8	67,6	40,1	64,4	80,5	67,9	42,0
DK	114,4	63,0	79,9	69,2	67,6	94,8	90,4	68,3	93,0	109,3	92,9	71,9
FI	92,7	36,8	57,9	46,7	51,6	72,7	68,6	48,4	71,7	88,2	69,3	51,7
FR	77,4	40,3	55,2	67,7	40,8	71,8	71,8	42,4	57,7	82,1	69,3	46,8
DE	88,1	31,5	55,4	41,5	46,4	59,1	64,3	34,5	63,2	76,2	62,3	38,5
EL	40,8	31,3	30,6	52,7	25,8	34,8	39,5	26,9	19,7	39,9	33,5	26,1
IE	91,8	38,5	54,5	22,0	58,1	61,4	54,4	48,4	70,6	77,4	57,1	54,0
IT	52,4	39,3	39,2	57,0	21,0	41,7	48,9	32,8	33,3	47,3	45,8	29,1
LU	94,1	38,6	51,8	27,5	57,0	62,2	59,0	44,2	67,9	79,1	58,4	54,0
PT	59,2	21,0	34,4	44,8	21,9	40,6	47,0	17,2	34,3	52,8	42,3	18,6
ES	68,2	26,2	31,2	29,0	36,1	45,7	38,4	28,0	43,8	58,1	37,8	35,7
SE	113,7	60,9	80,0	71,5	65,8	93,6	92,7	64,8	91,0	108,8	93,6	69,0
NL	99,2	41,6	59,6	45,7	53,9	73,1	71,4	46,8	73,4	89,4	71,1	54,0
UK	87,5	33,8	51,4	32,3	45,1	61,9	57,0	42,9	66,7	77,9	60,4	46,8
BG		64,7	50,2	75,2	54,9	44,1	44,8	64,0	35,7	31,7	41,1	54,2
CY			28,7	32,2	30,1	43,7	41,7	19,9	39,2	57,2	38,0	31,1
CZ				37,8	27,9	37,1	28,2	31,6	26,1	45,1	25,2	41,6
EE					47,7	45,1	35,7	40,9	55,5	60,5	39,5	47,4
HU						42,2	44,0	29,8	34,0	51,6	43,4	34,4
LV							32,8	39,6	30,4	21,2	26,0	32,9
LT								46,9	38,0	36,1	16,9	46,3
MT									32,9	53,8	40,2	27,7
PL										32,1	26,8	35,1
RO											29,0	45,3
SK												39,6
SI												
Av												
	69,9	38,6	45,0	47,4	42,9	51,7	52,0	40,3	49,9	62,1	49,8	43,1

Av. – average distance for a country

Source: Own calculations based on the data of Heritage Foundation.

In 2010 the Nordic countries converged even more (Denmark-Sweden – 13,5; Denmark-Finland – 36,5; Finland-Sweden – 34,7). An interesting change can be observed in the United Kingdom: in 2001 the UK was most similar to Luxemburg (23,3) and Ireland (29,2), and in 2010 – to the Netherlands, Germany and Finland (22–23,2). In the case of new members: Malta, which before joining the EU was most

similar with Cyprus, in 2010 had the least distance to Portugal (17,2), however Cyprus got closer to both of these countries (19,9 with Malta and 21 with Portugal). Some other "closest" countries in 2010 were: Slovakia-Lithuania (16,9), Slovenia-Portugal (18,6), Poland-Greece (19,7). The Czech Republic which had the least distance to Hungary (28,5) and Spain (35,3), after joining the EU was most similar to Slovakia, Poland, Hungary, Lithuania, Cyprus and Greece (from 25,2 to 30,6 points). Also Hungary, Slovenia and Poland were (in both years) most similar with the countries from Southern and Central Europe. Other new members (except for Estonia) got closer among their group: Latvia, which in 2001 had 22,5 points with Lithuania, in 2010 got closer to Romania (21,2), Slovakia (26,0) and Poland (30,4). Lithuania in 2010 was most similar to Slovakia (16,9) and the Czech Republic (28). Romania had the least score along with Latvia, Slovakia, Bulgaria, Poland (21,2–32,1), and Slovakia – with Lithuania, Czech Republic, Latvia, Poland and Romania (16,9–29). An interesting exception is Estonia: in 2001 it was most similar to the Czech Republic, Ireland, Spain and Hungary (39,1–39,9), and in 2010 to Ireland, Luxembourg, Spain, Cyprus, and the United Kingdom (22–32,3).

The countries from Eastern and Central Europe still deviate from Western and Northern Europe. Some similarities can be seen between Central and South Europe. However, this part of the EU has a lower degree of economic freedom and a lower level of social welfare.

Conclusions.

Economic freedom is one descriptor of the public regulation sphere. As a lot of research shows economic freedom is connected with the degree of social welfare. According to the analyses new EU members are generally converging with EU-15. However, there is still a relatively big distance in such areas as freedom from corruption, property rights and functions connected with redistribution of national income. New EU members are still most similar among their group. What can be observed is that some central European countries are getting closer to Southern European countries. Only Estonia went in a direction similar with such countries as Ireland, Luxemburg and the United Kingdom. Because the chosen model of regulation can affect the level of socioeconomic development, the future direction of the research is to examine the impact of changes in the regulation sphere on social welfare in the EU countries.

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