

## RELATIONSHIPS IN TRENDS IN THE DEVELOPMENT OF ECONOMIC FREEDOM AND ECONOMIC GROWTH IN EU COUNTRIES

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**Abstract:** *Several published opinions consider economic growth as one of the conditions for economic freedom. At the same time, economic freedom is seen as a condition for the future growth of the economy. The Heritage Foundation, on the basis of the quantification of economic freedom, classifies countries as free - mostly free - moderately free - mostly unfree - repressed. It argues that in a group of countries classified as free, economic growth will be faster than in less-free economies. It can be assumed that the presented opinion is the result of empirical observations, according to which there is a positive relationship between the two characteristics.*

*Within the article, we analyse the possibility of generalizing the conclusion about the character and the closeness of the relation of the indicator of economic freedom with the indicators considered as a prerequisite for economic independence and the ability of self-development.*

*The first part examines the relationship between economic freedom and economic growth. We analyse the possibilities of using historical data on the economic freedom of the country to predict its economic growth. The objective is to obtain evidence to support the theory of the positive relationship between economic freedom and economic growth.*

*Subsequent verification of the nature and strength of the relationship between an economic freedom indicator and a set of factors of independence, development assumptions and resilience is based on the quantification of the degree of their dependence through correlation and regression analysis of economic freedom characteristics. The sources of the analysed data are Fraser Institute and The Heritage Foundation databanks, as well as Eurostat and World Bank data.*

*The results of the analysis reveal the differences in the closeness of the assessed economic variables with the indicator of economic freedom. The regression model concludes that economic freedom has no equally significant impact on economic growth in all groups of countries.*

**Key words:** *economic freedom, economic growth, factors of economic freedom, fiscal freedom, investment freedom, trade freedom*

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### INTRODUCTION

Determinants of economic growth are the focus of economic policy makers and academics. According to many, economic freedom is an important factor in economic growth. At the same

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time, it is assumed that economic growth creates an environment for the economically free behaviour of individuals and the social system.

The reason for identifying the interrelation of economic freedom and economic growth is the identification of the notion of economic freedom with the ability of the socio-economic system to create and use the resources necessary for its economic and social goals. [1] - [3] consider following the conditions for economic freedom: economic independence, self-development capacity, institutional conditions and guarantees and relations with the external environment that do not threaten the autonomy of the country. Similarly, [4] refer the main elements of economic freedom to freedom of decision, competitiveness of environment and protection of the rights of persons and their property. According to [5] more than two-thirds of published studies show faster economic growth, a better standard of living and happiness as the source of economic freedom, less than 4% of economic freedom associated with increased income inequality and 28% of the results were mixed. There is a predominance of consensus on the negative impact of regulatory measures on economic freedom. Contrary to the above-mentioned [6], based on his findings, he notes only slightly better results of freedom and prosperity in wealthy, low-regulated countries than rich countries with average regulation. He requires a more rigorous identification of "undesirable" regulations.

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The approach presented by the Heritage Foundation and the Fraser Institute appears as a response to the presented differences of opinion. In both cases, economic freedom is explained as a multidimensional characteristic, which is the result of the simultaneous operation of economic (economic) and non-economic (institutional and social factors). According to the Heritage Foundation, freedom of enterprise includes freedom of enterprise, freedom of trade, fiscal freedom, public sector, monetary freedom, freedom of investment, financial freedom, protection of property rights, freedom from corruption and freedom of labour [7]. Similarly, Fraser Institute considers the size of government spending, taxes and investments, the structure of the legal system and safeguarding of property rights, a non-inflationary environment; freedom of trade in international markets, regulation of the credit market, labour markets and business, and the scope of the regulatory framework as the main factors of economic freedom [8].

Different approaches between the two institutions in choosing or naming the factors of economic freedom, as well as the different ways of its quantification result in a different assessment of its level [9]. The question arises as to whether economic freedom ratings can be used to draw conclusions and adopt economic policy instruments. Alternatively, whether there is a variable that has a direct impact on economic freedom. Different authors deal with the

problem in their work. [10] - [13] conducted research to identify the existence and strength of the relationship between economic freedom and some economic characteristics, most often the rate of economic growth. They have confirmed the relationship between economic growth and economic freedom. Confirm this result did not [14]. They have only confirmed the positive impact of economic freedom on economic growth.

## DATA AND METHODS

The analysis of the possibilities of using quantitative economic freedom in deciding on the use of economic and social policy instruments is based on the assumption that the economic security of the socio-economic system is shaped by the state of the economy and governmental institutions that protect national interests, social policy orientation and sufficient defence potential for given internal and external conditions for development. We prioritize basing the state of economic security on the existence of economic prerequisites for achieving the objectives of the reference subject. For this purpose, the nature and the relationship between the indicator of economic freedom and selected macroeconomic indicators are monitored and evaluated in this material. Analyses are carried out on a set of EU countries. This set of countries (excluding Croatia, which joined the EU in 2013) is divided into 5 groups for needs of the analysis: Founding members (1957), Northern enlargement (1973), Southern enlargement (1981/1986), Enlargement with Neutrals (1995), Eastern enlargement (2004/2007). The spatial distribution of these countries is shown in Chart 1.



Chart 1: Groups of EU countries based on individual EU enlargements

Source: [www.eu.europiuris.sk](http://www.eu.europiuris.sk)

In the first step we observe the linear relationship of economic growth (year-on-year GDP growth) and indicator of economic freedom (Index of Economic Freedom) at country level. Based on the research of multiple author's ([6], [9], [14]), we do not expect it to be confirmed. However, economic growth may be related to the values of sub-indices that depend directly on

indicators that result in economic growth. For this reason, the relationship between the growth of the economy (annual GDP growth) and the sub-indices – Fiscal Freedom, Investment Freedom, Trade Freedom is monitored. The abovementioned relationships between the selected components are monitored using Kendall's sequence correlation coefficient ("Kendall's coefficient").

$$r_K = \frac{n_c - n_d}{n(n-1)/2} \quad (1)$$

where:  $n$  – number of observations of a pair of variables,  $n_c$  – the number of agreeable pairs in a pair,  $n_d$  – the number of non-agreeable pairs in a pair

The EU as a basic grouping of countries, whose objectives also include the creation of a market economy with high competitiveness, in our opinion, affects the assessment of the countries expressed by using the individual indicators mentioned. We anticipate the differences resulting from EU membership between the individual enlargements identified at the beginning of this chapter. As a result of the rejection of the ANOVA analysis assumptions, these differences are tested using the Kruskal-Wallis test.

$$Q = \frac{12}{n(n-1)} \sum_{i=1}^l \frac{T_i^2}{n_i} - 3(n+1) \quad (2)$$

where:  $n$  – number of observations, file range,  $n_i$  – the number of observations in the  $i$ -th group,  $T_i^2$  - the total number of rows in the  $i$ -th group

The above-identified methods are also described and used [15], [16] or [17].

In order to increase the objectivity of the results obtained, the analyses were carried out separately in 2000, 2005, 2010, 2015 and the obtained results were mutually compared. The whole process of statistical analyses is carried out in MS Excel, Statistica 12 and Statgraphics.

## **FACTORS OF RELATIONSHIP BETWEEN ECONOMIC FREEDOM AND ECONOMIC GROWTH**

In the article, we assume that economic freedom is determined by the cumulative effect of many economic and non-economic factors. We rely on the published conclusions of economic growth and economic freedom analyses ([10], [11], [12], [13], [18], [19]).

The choice of indicators to assess the fulfilment of economic freedom criteria is based on the requirement to analyse the real situation and the level of system security, identify the potential and actual hazards, its impact and causes, critical situations and the occurrence of other risks and threats. I.e. through parameters that describe the structure of the system and its subsystems, their relation, status, quality, function, location and role in the system In practice this means selecting indicators that represent sufficiency of resources for economic activities and for the implementation of an effective social policy, the efficiency of financial and capital markets, a degree of economic openness that does not jeopardize its autonomy [20].

For this purpose, our analysis has included:

- a) growth of the economy, expressed in the year-on-year growth of GDP. Economic growth is a complex indicator, representing a real increase in the aggregate economic indicator, such as GDP, points to the dynamics of the economic system and its dynamics. It points to changes

that occur when increasing macroeconomic results expressed not in isolation but in close association with their determinants [21].

- b) economic freedom indicators - according to our empirical findings, both the overall index scores and the variability of the values of its sub-indices has influence on the strength of the relationship between the index and economic growth. The overall index score as well as the variability of its sub index values has significant influence on the possibility of identifying the relationship according to our earlier findings [22]. Among the groupings of countries created by us, there are differences in the value of the economic freedom index.
- Fiscal Freedom - The sub index quantifies the tax burden imposed by the government. It includes direct taxes in terms of the upper boundary tax rates on individual and corporate income and total taxes, including all forms of direct and indirect taxation at all levels of government as a percentage of GDP. In this way, it describes the degree of restriction of the economic activity of the subjects of the social system.
  - Investment Freedom - evaluates the set of limitations that are usually imposed on investments. Investments (the scope and limitations of domestic and foreign direct investment) are assessed to promote prosperity and economic development in home and recipient countries. That's why Investment Freedom is a major factor in economic growth.
  - Trade Freedom - is a complex measure of the absence of tariff and non-tariff barriers that affect the import and export of goods and services, coupled with the restrictions to buy and sell at international level. This will ultimately be reflected both in the volume of exports and in their share within GDP.

## RESULTS AND DISCUSSION

The results of the test of the linear correlation between the growth of the economy (expressed in GDP growth) and the economic freedom index as well as the indicators of fiscal freedom, investment freedom and trade freedom are shown in Table 1.

	year	EF	FF	TF	IF	
GDP growth	2000	r <sub>K</sub>	0,1686	0,2486	0,0728	0,1900
		p-value	0,2187	0,0697	0,6168	0,4283
	2005	r <sub>K</sub>	0,0657	0,6066	-0,0564	-0,0748
		p-value	0,6316	0,0000	0,7230	0,6465
	2010	r <sub>K</sub>	0,2206	-0,1660	0,2526	0,0732
		p-value	0,1084	0,2266	0,3376	0,6168
	2015	r <sub>K</sub>	0	0,2454	0,3326	-0,0314
		p-value	1	0,0730	0,3590	0,8349

Table 1: Economic growth relation with indices of economic freedom, fiscal freedom, investment freedom and trade freedom

Source: Own calculations

Based on the above results, we note that the growth of the economy, expressed in the year-on-year growth of GDP with the economic freedom index, does not linearly correlate, i.e. there is not a linear relationship between these two indicators. The only one, confirmed at the level of significance  $\alpha = 0.05$ , is a statistically significant correlation with fiscal freedom in 2005. We therefore take the view that the growth of the EU economy is not determined by its assessment through the indices of economic freedom, fiscal freedom, trade freedom or investment freedom. In terms of the length of EU membership, however, we can observe the following differences.

Group	EF	FF	TF	IF
Founding members				0,883(2015)
Northern enlargement				
Southern enlargement				
Neutral enlargement				
Eastern enlargement		0,679(2000) 0,773(2005)		0,694(2005)

Table 2: Economic growth relation with the index of economic freedom, fiscal freedom, investment freedom, trade freedom

Source: Own calculations

The economic freedom index as well as the trade freedom index are not linearly related with the growth of the economy. The link between the growth of the economy and the fiscal freedom index was statistically significant only in the group of Eastern enlargement of the EU in the years 2000 and 2005. The link with the investment freedom index was also only reflected in two groups of countries (Table 2). As well as assessing all EU countries together, even in their allocation according to the EU approach, we note the linear non-correlation of the indicators in question.

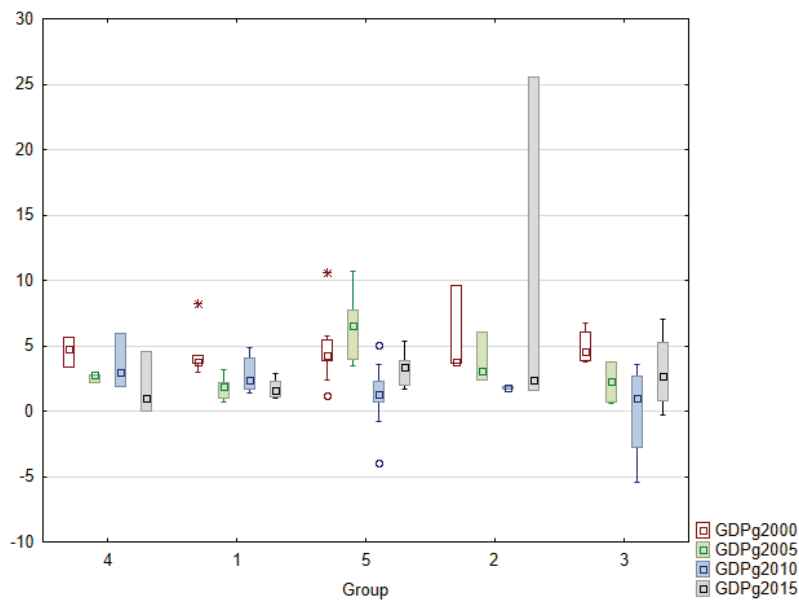


Chart 1: Comparison of economic growth in 2000, 2005, 2010 and 2015

1 – Founding members, 2 – Northern enlargement, 3 – Southern enlargement, 4 – Neutral enlargement, 5 – Eastern enlargement

Source: Own calculations

Comparing the growth of individual economies at the level of the formed clusters (Chart 1), statistically significant differences were found only in 2005 ( $Q = 12,269$ ,  $p \leq 0,01$ ). The fastest growth this year has been shown by the eastern enlargement countries ( $\bar{x} = 6,19\%$ ). In the other years under review, growth in the economy was not determined by EU membership.

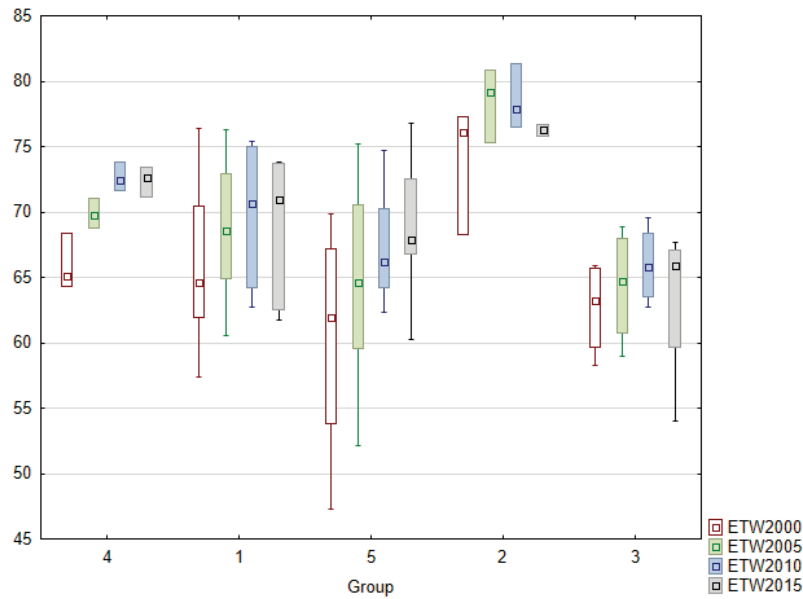


Chart 2: Comparison of economic freedom index in 2000, 2005, 2010 and 2015  
 1 – Founding members, 2 – Northern enlargement, 3 – Southern enlargement, 4 – Neutral enlargement,  
 5 – Eastern enlargement  
 Source: Own calculations

The assessment of the groups of countries using the economic freedom index was statistically different in 2010 ( $Q = 12,530$ ,  $p = 0,014$ ) and in 2015 ( $Q = 11,025$ ,  $p = 0,026$ ). In both years, the differential countries were those of the northern enlargement with an average rating of 78.57 or 75.26 respectively, in 2015. In addition to the differences described above, the countries in each cluster were assessed homogeneously. The differences in the evaluation of the fiscal freedom, trade freedom and investment freedom indices are shown in Table 3.

	FF	TF	IF
2000	12,815*	8,014	1,256
2005	15,812*	1,399	9,156
2010	17,623*	1,463	10,174*
2015	16,554*	3,770	13,650*

\* at a level  $\alpha \leq 0,05$

Table 3: Differences between groupings of countries in individual years  
 Source: Own calculations

EU membership is a significant factor in assessing the fiscal freedom indicator, with a difference in the comparison of the founding countries and countries of eastern enlargement, i.e. countries that have become the last members of the EU. The important fact is that in each of these years the founding countries were rated worse. In 2000, 2005 and 2010, the same difference in favor of the countries of eastern enlargement was demonstrated in the comparison of neutral enlargement countries. Differences compared to the investment freedom indicator have been statistically proven, but there has been no distinction between specific groupings of countries.

## CONCLUSION

The retrospective economic freedom assessments published by the Heritage Foundation document the positive link between economic freedom and the long-term improvement in economic performance and overall developments. This is documented by the fact that out of a total of 180 countries in the index, more than 100 countries have achieved a higher level of economic freedom in the 2018 index than in the previous year. According to the published findings, these countries have generally seen higher rates of gross domestic product growth than countries where the overall index score has fallen.

However, the assessment of the country's performance and economic freedom can be carried out through a number of core macroeconomic indicators as indicators that take several aspects of the economy into account. Further, some partial component of economic policy can be considered a significant source of economic growth. Therefore, when looking for the variable that best expresses the relationship between economic freedom and the economic growth assumptions of countries in this article, year-on-year GDP growth, the EFW indicator as well as its partial indicators of fiscal freedom, trade freedom and investment freedom were chosen.

We note that the growth of the economy, expressed in year-on-year growth of GDP, is not linearly related to the selected indicators of competitiveness. This relationship as well as the growth of the economy are not determined by the membership of the countries in the EU (in terms of the five enlargements under review). Comparing the competitiveness of the countries expressed using the FF indicator; membership is a significant factor influencing the values of this indicator. The eastern enlargement countries, thus the countries that have become EU members as the last, were rated the best in all the years under review. Tracking the differences using trade freedom and investment freedom indicators has not been demonstrated as statistically significant.

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