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EMPIRICAL ANALYSIS OF THE IMPACT OF ECONOMIC FREEDOM ON ECONOMIC GROWTH IN THE SLOVAK REPUBLIC, THE CZECH REPUBLIC AND SINGAPORE

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Abstract. A quality business environment is considered a key factor that affects the competitiveness and growth of the market economy. The article provides an evaluation of the development of the business environment in the Slovak Republic and its comparison with selected countries using the Index of Economic Freedom from the Heritage Foundation. The aim is to verify the influence of individual sub-indexes of the Index of Economic Freedom on the economic growth of the Slovak Republic, the Czech Republic and Singapore, measured by the GDP per capita growth (%), through a panel analysis. By choosing these three countries over a period of 20 years, the article brings new knowledge that appropriately complements already conducted empirical studies in the researched area. As a result, two of the twelve sub-indexes of the economic freedom index, namely the labor freedom sub-index and the monetary freedom sub-index, demonstrated an impact on the economic growth of the surveyed countries. In addition to them, the dependent variable is also influenced by the control variables foreign direct investment and gross capital formation. However, economic freedom is a complex indicator, so importance should also be attributed to other sub-indexes of the Index of Economic Freedom as a manifestation of the synergy of all its basic elements in the creation of macroeconomic policy.

Keywords: Index of Economic Freedom; GDP per capita growth; business environment

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JEL Classifications: A13, O11, O43, O47, P48

1. Introduction

Nowadays we live in difficult times. The coronavirus crisis, which was the main risk for the economy and the financial sector for two years, was replaced by new challenges – high inflation and rising interest rates, a war in a neighboring country and deteriorating economic prospects. These facts are also the reason why the creation of a favorable business environment, which is considered a significant condition for healthy economic growth, is gaining more and more importance today. One of the characteristic features of a quality business environment is a high degree of economic freedom in the country.

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Already in 1776, Adam Smith concluded that a free institutional environment, i.e. without excessive control by governments, is a determinant of economic growth. In contrast, there have been periods in the history when the hand of salvation of the state, instead of invisible, was demanded. In professional circles, there is still a debate about whether economic freedom is the reason not only of economic growth, but also of economic crises, or whether crises did not arise as a result of insufficient liberalization in all areas of the economy. There have also been many empirical studies investigating the relationship between economic freedom and the economic growth of the country, respectively, groups of countries, realized, but even these could not unequivocally confirm this relationship as significant.

In most of these studies, a holistic approach to economic growth was applied, and the authors used the GDP growth rate, or GDP per capita (p.c.) as a measure of economic performance.

To determine the impact of economic freedom on economic growth, economic freedom is also required to be a measurable category. However, economic freedom is more qualitative than quantitative in its nature. As a result, some degree of subjectivity and imprecision is an inseparable element in any attempt to measure it (Hanke and Walters, 1997).

In this regard, the so-called competitiveness rankings, which are compiled on the basis of indexes, can be useful. The most sophisticated indexes of economic freedom that have been designed and used in scientific circles are: 1. The Freedom House Index 2. The Index of Scully and Slottje (1991) 3. The Index of Economic Freedom from the Fraser Institute 4. The Index of Economic Freedom from the Heritage Foundation. Of these four indexes of economic freedom, which are applied by scientists, policy makers, as well as international organizations, the last two named are the most important.

The article compares the quality of the business environment of selected countries through the Index of Economic Freedom (IEF) from the Heritage Foundation. The authors decided to apply this index mainly due to its annual periodicity and the availability of data for individual sub-indexes for the period under study. Cebula et al., 2013; Kovačević and Borović, 2014; Brkić, 2020 and others followed a similar approach.

The Heritage Foundation was founded in February 1973 and is headquartered in Washington, D.C., USA. Together with The Wall Street Journal, since 1995, they have compiled and published an analytical study called the Index of Economic Freedom every year. In Slovakia, the partner of this study is the F. A. Hayek Foundation, which is based in Bratislava.

The Heritage Foundation measures economic freedom based on twelve qualitative and quantitative factors, which are divided into 4 broad pillars of economic freedom: rule of law, government size, regulatory efficiency, and open markets (the IEF factors are stated in Table 2). Each of the economic freedoms is assigned a rating from 0 to 100, with 100 being the best possible rating representing maximum freedom. Averaging these twelve freedoms, which are assigned equal weight, the country's total point score is obtained.

The Czech Republic (CR), a neighboring country with similar starting conditions, and Singapore as one of the best rated countries were chosen as a benchmark in the comparison. The Slovak Republic (SR) and the Czech Republic have achieved scores above the world and European average in this assessment for several years. Singapore is an exemplary country in this regard and has held the first place in the ranking for several years. By choosing these countries, the authors also respect the recommendation that when comparing countries, city states, such as Singapore, should not be included in the regression along with large countries because city-states can gain economic freedom at a lower cost (Cebula et al., 2013).

According to the creators of the Index, the IEF refers to the connection between the prosperity of economies and the degree of their economic freedom. All of the measured aspects of economic freedom have a significant impact on the country's economic growth. The freer a country is, the more it tries to stimulate its growth. Economic growth has a significant impact on the emergence of new opportunities and economic progress, thereby contributing to permanent prosperity and reducing poverty in the country (The Heritage Foundation, 2023).

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The aim of the article is to verify the impact of individual sub-indexes of the Index of Economic Freedom on the economic growth of the Slovak Republic, the Czech Republic and Singapore, measured by the GDP per capita growth (annual %), through a panel analysis. According to the findings, two of the twelve sub-indexes of the IEF, namely the labor freedom sub-index and the monetary freedom sub-index, showed an impact on the economic growth of countries. In addition to them, the dependent variable is also influenced by the control variables foreign direct investment and gross capital formation.

The results of the panel analysis are valid for a selected sample of countries and they are connected with a defined time period. In this regard, they cannot be expected to be consistent with the findings of other authors, nor with the general scientific view. From the comparison, a conclusion can be made what aspects of economic freedom equally influence the surveyed countries and what are their characteristic features.

The rest of the article is structured as follows. The following part summarizes the empirical literature that discusses the relationship between economic freedom and economic growth. Section 3 states research objective, methodology and data. Section 4 provides the results of the research divided into two parts: a comparative analysis of the quality of the business environment of selected countries through the IEF and results from panel analysis. The last part presents the conclusions.

2. Theoretical background

Surveying the determination of economic growth by economic freedom is a relatively new field. Economic freedom has only gained significant attention in recent decades. As already the founders of modern economics recommended to release economic flows from government intervention, this is a little bit surprising.

Nevertheless, by 2011, a total of 402 scientific papers had been published in 211 renowned international journals on economic freedom (Hall and Lawson, 2014).

Empirical studies surveyed the relationship between economic freedom and economic growth of the country, measured by the GDP growth rate, resp. GDP per capita through simple correlation and regression analysis to more sophisticated dynamic panel data analysis, or using causality à la Granger.

Erdal (2004) states that economic freedom has a positive impact on economic growth, but some aspects affect economies differently. N'Zue (2011) concluded that economic freedom has positive, but not significant impact on GDP p.c. On the other hand, Bayar and Aytemez (2015) argue that economic freedom has positive, statistically significant impact on GDP p.c. growth. According to Cebula and Mixon (2012) fiscal freedom, decrease of government spending, trade freedom, personal rights protection have positive and statistically significant impact on GDP per capita growth (annual %). Kovačević and Borović (2014) tested 11 European countries and found out that the IEF is positive, but not statistically significant.

As documented, various, sometimes contradictory or inconsistent conclusions about the relationship between economic freedom and economic growth have come from the realized empirical studies conducted so far. Some of them state there is no robust link, while others show a connection between economic growth and selected aspects of economic freedom. Therefore, it is very difficult to determine the quality and credibility of each study.

Consequently, Doucouliagos and Ulubasoglu (2006) sought to prove the hypothesis of a link between economic growth and economic freedom using meta-analysis as a quantitative synthesis of empirical research based on the available literature. Their results confirm a positive direct connection between economic freedom and economic growth.

Latest studies concentrated mainly on selected region (i.e. Dia, and Ondoa, 2023; Henri and Mveng, 2023; Ahmed et al., 2023; Cloyne et al., 2023 and many others) or specific group of countries (i.e. Yang et al., 2023;

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Lach and Malaga, 2023; Murphy, 2023; Espich et al., 2023), resp. they surveyed certain aspect of economic freedom on economic growth (e.g. Ang and Patalinghung, 2021; Sirbu et al., 2023; Khyareh and Zamani, 2023).

Inspirational for this research is the work of Brkić, 2020, which tried to demonstrate the relationship between economic freedom and economic growth in EU countries. The results showed a positive, but statistically insignificant effect, and therefore the alternative hypothesis that economic freedom has no effect on economic growth in EU countries was accepted. She also examined the impact of individual IEF sub-indexes and demonstrated that two of them (monetary and investment freedom) have an impact on the economic growth of EU countries, while monetary freedom has a positive effect and investment freedom has a negative effect.

Following this study, as well as according to the opinions of many authors (e.g. Kovačević and Borović, 2014; Heckelman and Stroup, 2000) that the aggregate IEF may not be an accurate indicator of the economic growth of certain countries, the authors decided to analyze the relationship between the individual components of economic freedom and economic growth.

3. Research objective, methodology and data

In accordance with the objective of the empirical study, i.e. to determine the impact of sub-indexes of economic freedom on the economic growth measured by GDP per capita growth (annual %), specific and individual hypotheses were defined:

Specific hypotheses:
1. H0: Some aspects of economic freedom have a positive effect on economic growth in the Slovak Republic, the Czech Republic and Singapore.
H1: Some aspects of economic freedom have a negative or no effect on economic growth in the Slovak Republic, the Czech Republic and Singapore.

Individual hypotheses:
1.1 H0: Property rights have a positive effect on economic growth in the Slovak Republic, the Czech Republic and Singapore.
H1: Property rights have a negative or no effect on economic growth in the Slovak Republic, the Czech Republic and Singapore.
1.2 H0: Judicial effectiveness has a positive effect on economic growth in the Slovak Republic, the Czech Republic and Singapore.
H1: Judicial effectiveness has a negative or no effect on economic growth in the Slovak Republic, the Czech Republic and Singapore.
1.3 H0: Government integrity has a positive effect on economic growth in the Slovak Republic, the Czech Republic and Singapore.
H1: The integrity of the government has a negative or no effect on economic growth in the Slovak Republic, the Czech Republic and Singapore.
1.4 H0: Government spending has a positive effect on economic growth in the Slovak Republic, the Czech Republic and Singapore.
H1: Government spending has a negative or no effect on economic growth in the Slovak Republic, the Czech Republic and Singapore.
1.5 H0: Tax burden has a positive effect on economic growth in the Slovak Republic, the Czech Republic and Singapore.
H1: Tax burden has a negative or no effect on economic growth in the Slovak Republic, the Czech Republic and Singapore.
1.6 H0: Fiscal health has a positive effect on economic growth in the Slovak Republic, the Czech Republic and Singapore.
H1: Fiscal health has a negative or no effect on economic growth in the Slovak Republic, the Czech Republic and Singapore.
1.7 H0: Business freedom has a positive effect on economic growth in the Slovak Republic, the Czech Republic and Singapore.

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H1: Business freedom has a negative or no effect on economic growth in the Slovak Republic, the Czech Republic and Singapore.
1.8 H0: Labor freedom has a positive effect on economic growth in the Slovak Republic, the Czech Republic and Singapore.
H1: Labor freedom has a negative or no effect on economic growth in the Slovak Republic, the Czech Republic and Singapore.
1.9 H0: Monetary freedom has a positive effect on economic growth in the Slovak Republic, the Czech Republic and Singapore.
H1: Monetary freedom has a negative or no effect on economic growth in the Slovak Republic, the Czech Republic and Singapore.
1.10 H0: Trade freedom has a positive effect on economic growth in the Slovak Republic, the Czech Republic and Singapore.
H1: Market freedom has a negative or no effect on economic growth in the Slovak Republic, the Czech Republic and Singapore.
1.11 H0: Investment freedom has a positive effect on economic growth in the Slovak Republic, the Czech Republic and Singapore.
H1: Investment freedom has a negative or no effect on economic growth in the Slovak Republic, the Czech Republic and Singapore.
1.12 H0: Financial freedom has a positive effect on economic growth in the Slovak Republic, the Czech Republic and Singapore.
H1: Financial freedom has a negative or no effect on economic growth in the Slovak Republic, the Czech Republic and Singapore.

The influence of individual sub-indexes of the economic freedom index on economic growth in the selected countries (SR, CR, Singapore) was surveyed in the Gretl statistical computer system using the OLS model. Like other authors (N'Zue, 2010; Cebula and Mixon, 2012, 2013; Kovačević and Borović, 2014; Bayar and Aytemiz, 2015; Brkić, 2020 and others), the GDP per capita growth (annual %) as the dependent variable (GROWTH) of individual countries for the entire examined period (20 years) was used. Individual sub-indexes of the economic freedom index as independent (explanatory) variables were chosen.

Data on sub-indexes of economic freedom were obtained from The Heritage Foundation/Wall Street Journal Annual Index of Economic Freedom, which is available for download on their website http://www.heritage.org/index/explore. Data on economic performance come from the World Bank database http://data.worldbank.org/. The control variables in the analysis were selected based on the results of the influence of various variables on economic growth from already conducted empirical studies.

4. Results and discussion

4.1 Comparison of the quality of the business environment through the Index of Economic Freedom from the Heritage Foundation

There were 176 countries of the world evaluated in the latest edition of the Index of Economic Freedom 2023 (IEF 2023). The global economic score reached 59.3, which is a decrease of 0.7 points compared to the previous year (the IEF 2022). Out of the total number of 176 evaluated countries, 4 countries achieved a rating of 80 or more, thus ranking them among free countries. 23 countries scored between 70-79.9, ranking them among the freer countries. 56 countries were included among moderately free countries with a score of 60-69.9. Approximately half (79) of the evaluated countries are thus classified in the IEF 2023 as a country in which individuals and businesses have at least a moderate degree of economic freedom. On the contrary, 93 countries were included in the evaluation among countries with a score of less than 60. Specifically, 65 economies belonged to the rather unfree category, and the remaining 28 evaluated countries were classified as repressive. Table 1 shows the position of selected countries in the IEF 2023 and 2022 rankings.

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Table 1. The IEF 2023 and 2022 rankings of selected countries

Country	The IEF 2023		The IEF 2022		
	Performance relative to EU in 2023	Ranking	Performance relative to EU in 2022	Ranking	Performance change
Singapore	83.9	1	84.4	1	**-0.5**
Switzerland	83.8	2	84.2	2	**-0.4**
Ireland	82	3	82	3	**0.0**
Taiwan	80.7	4	80.1	6	**0.6**
New Zealand	78.9	5	80.6	4	**-1.7**
The Czech Republic	71.9	21	74.4	21	**-2.5**
The Slovak Republic	69.0	33	69.7	36	**-0.7**
Venezuela	25.8	174	24.8	176	**1.0**
Cuba	24.3	175	29.5	175	**-5.2**
North Korea	2.9	176	3.0	177	**-0.1**

Source: own processing according to the Heritage Foundation

Singapore has become the freest economy in the world for the fourth year in a row with a score of 83.9, which has worsened by 0.5 points compared to the previous year. Although the Czech Republic recorded a drop in the IEF by 2.5 points, it still retained 21st place. In the IEF 2023, the Slovak Republic reached the 33rd position with a score of 69.0. This achieved score is above the regional (68.2) and world average (59.3). In the evaluation of forty-four European countries, the Slovak Republic reached 20th place.

Figure 1 shows the development of the IEF values of the Slovak Republic, the Czech Republic, and Singapore for the period 2004 – 2023.

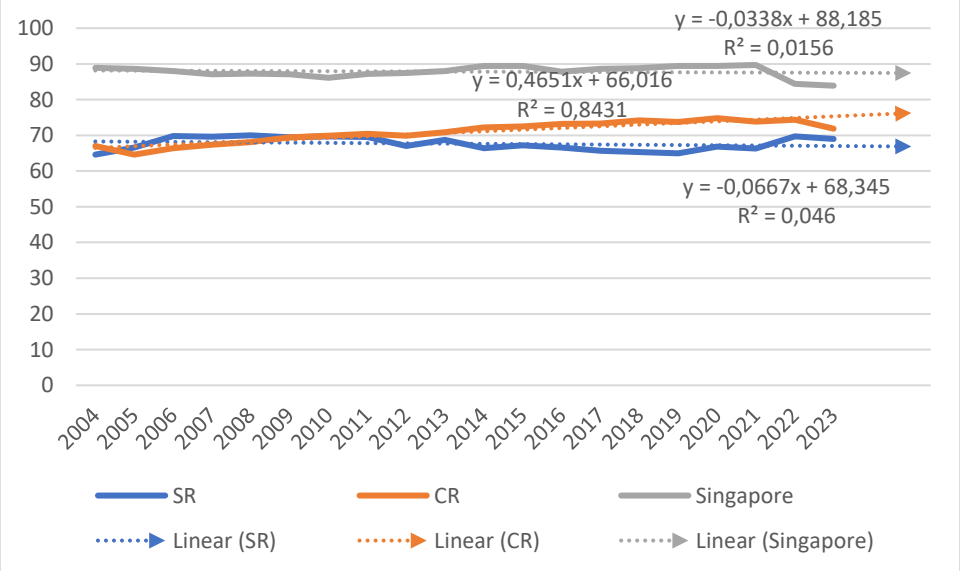

Figure 1. Development of the IEF values of the Slovak Republic, the Czech Republic, and Singapore for the period 2004 – 2023.
Source: own processing according to the Heritage Foundation

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According to the IEF, the Slovak economy has been among the moderately free economies of the world for the last 20 years. The exception was 2008, when it reached the lower limit of the rather free countries category. The Czech Republic ranks among the rather free countries for the eleventh year in a row. Previously, it achieved the rating of a moderately free country with values comparable to the Slovak Republic. Singapore has been among the free countries for the past 20 years.

A simple linear trend estimate was created based on historical data. For observations of the results of economic freedom for the Czech Republic and Singapore, the linear model assumes a growing trend for the next 2 years. For the Slovak Republic, the model predicts a decline in the development of economic freedom. However, this assumption is limited by the ceteris paribus condition.

Table 2 analyzes the achieved scores of the Slovak Republic, the Czech Republic and Singapore in individual IEF 2023 categories.

Table 2. Achieved scores in individual categories of IEF 2023 of the countries Singapore, the Czech Republic and the Slovak Republic.

Pillars of economic freedom	**Category**	**Singapore**	**CR**	**SR**
Rule of Law	Property rights	94.0	88.5	84.2
	Judicial effectiveness	58.3	81.9	70.6
	Government integrity	91.2	60.3	56.8
Government Size	Government spending	90.6	79.3	77.3
	Tax burden	89.0	39.5	41.2
	Fiscal health	78.0	73.5	62.4
Regulatory Efficiency	Business freedom	86.9	76.9	72.2
	Labor freedom	77.3	56.1	64.7
	Monetary freedom	81.9	78.0	74.8
Open Markets	Trade freedom	95.0	78.6	78.6
	Investment freedom	85.0	70.0	75.0
	Financial fredom	80.0	80.0	70.5

Source: own processing according to the Heritage Foundation

As documented by the data in Table 2, the Slovak Republic achieved worse values for most sub-indexes, compared to the two selected countries in the IEF 2023. Compared to the Czech Republic, it had better values for the tax burden, labor freedom and investment freedom sub-indexes. The Judicial effectiveness subindex had a higher value in both the Slovak Republic and the Czech Republic compared to Singapore.

Figure 2 shows the development of the GDP per capita growth (annual %) and the IEF in the analyzed period for the Slovak Republic (% annual change). As can be seen, positive or negative changes in IEF are not parallel to growth, or by a decrease in GDP p.c (%). This fact may also be an indication that improvements in IEF may not have a positive effect on economic growth.

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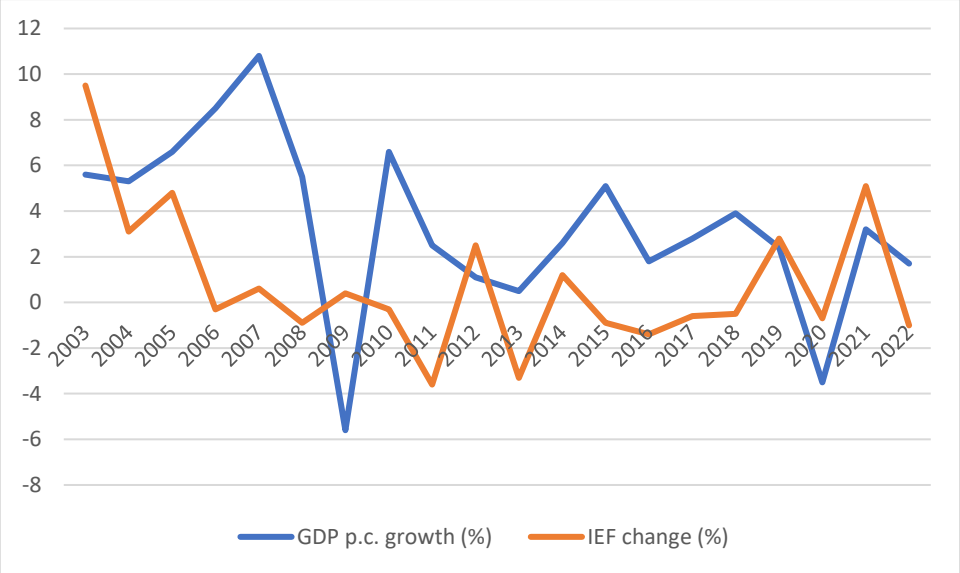

Figure 2. Development of the growth rate of GDP per capita and the IEF (%).
Source: own processing according to the Heritage Foundation and the WB database

4.2 Panel analysis

The basic characteristics of the dependent, independent and control variables using descriptive statistics are presented in Table 3.

Table 3. Descriptive statistics of dependent, independent and control variables

Variable	Average	Median
GROWTH	3,1362	3,0566
P_rights	73,667	70,9
J_effectiveness	63,261	57,35
G_integrity	61,67	50,5
T_burden	82,945	82,75
G_spending	61,67	52,3
F_health	87,344	86,05
B_freedom	77,358	70,4
L_freedom	76,563	77,05
M_freedom	82,082	81,5
T_freedom	86,133	86,95
I_freedom	76,75	75
F_freedom	75,167	80
FD_investment	9,49	5,3985
GC_formation	26,055	26,366
M_openness	220,48	168,25

Source: own processing

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Figure 3 is an output from the Gretl program.

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```
Model 1: Pooled OLS, using 60 observations
Included 3 cross-sectional units
Time-series length = 20
Dependent variable: GROWTH

                    coefficient   std. error   t-ratio   p-value
  ---------------------------------------------------------------
  const             -43,6306      20,8935     -2,088     0,0426  **
  P_rights           -0,0656231    0,0791399  -0,8292    0,4115
  J_effectiveness    -0,669220     1,10692    -0,6046    0,5486
  G_integrity        -0,0779702    0,102419   -0,7613    0,4505
  T_burden            0,181817     0,152597    1,191     0,2398
  G_spending         -0,108291     0,0799179  -1,355     0,1823
  F_health            0,812961     1,19637     0,6795    0,5004
  B_freedom          -0,112564     0,119020   -0,9458    0,3494
  L_freedom          -0,148848     0,0631676  -2,356     0,0230  **
  M_freedom           0,316905     0,141302    2,243     0,0300  **
  T_freedom           0,000797113  0,220528    0,003615  0,9971
  I_freedom           0,141619     0,128548    1,102     0,2766
  F_freedom          -0,00738165   0,0803260  -0,09190   0,9272
  FD_investment       0,311447     0,106423    2,927     0,0054  ***
  GC_formation        0,493284     0,192472    2,563     0,0139  **
  M_openness          0,0334871    0,0211523   1,583     0,1206

Mean dependent var   3,136215   S.D. dependent var   3,811098
Sum squared resid    455,2314   S.E. of regression   3,216546
R-squared            0,468773   Adjusted R-squared   0,287673
F(15, 44)            2,588478   P-value(F)           0,007266
Log-likelihood      -145,9301   Akaike criterion     323,8603
Schwarz criterion    357,3698   Hannan-Quinn         336,9677
rho                 -0,151610   Durbin-Watson        2,005702
```

Figure 3. Gretl output
Source: own processing in Gretl

The model explains 46.88% of the variability of the dependent variable (GDP growth p.c., %) and the model as a whole is statistically significant at the $\alpha = 5\%$ significance level.

Based on the results of the t-statistics, it can be concluded that the constant and the other four explanatory variables included in the model (labor freedom, monetary freedom, foreign direct investment, gross capital formation) are statistically significant at the $\alpha = 5\%$ significance level. The other sub-indexes of the economic freedom index together with the market openness indicator proved to be statistically insignificant in the model, and therefore have no effect on the economic growth of the observed countries (the Slovak Republic, the Czech Republic, Singapore).

The constant turned out to be negative (-43.6), i.e. assuming ceteris paribus, GROWTH will decrease by 43.6 units.

Labor freedom has a negative impact on GROWTH, which can be explained by the inclusion of only three countries in the model.

Monetary freedom is the only one of the IEF sub-indexes to have a positive impact on GROWTH in the countries that have been analyzed. When monetary freedom increases by one unit, assuming ceteris paribus, GROWTH increases by 0.317 units.

Foreign direct investments also affect GROWTH positively. If foreign direct investment increases by one unit, ceteris paribus, GROWTH increases by 0.311 units.

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In the same way, the creation of gross capital has a positive impact on the growth of the economy according in the model. If gross capital formation increases by one unit, ceteris paribus, GROWTH will increase by 0.493 units.

The obtained results indicate that "certain aspects of economic freedom have a positive effect on economic growth in the Slovak Republic, the Czech Republic and Singapore", therefore the special hypothesis 1 (H0) is accepted.

With the help of individual hypotheses, it will be clearly defined which aspects of economic freedom have a positive impact and which ones have a negative impact, i.e. which have no (statistically significant) impact on economic growth.

Property rights did not show a statistically significant effect on the dependent variable economic growth; therefore, Individual Hypothesis 1.1 (H0) - Property rights have a positive effect on economic growth in the Slovak Republic, the Czech Republic and Singapore is rejected, and the alternative hypothesis (H1) - Property rights have a negative or no effect on economic growth in the surveyed countries is accepted.

The panel analysis did not show a positive, statistically significant relationship between the **judicial effectiveness** aspect of the Heritage Foundation's Index of Economic Freedom and economic growth in the sample of the Slovak Republic, the Czech Republic and Singapore, therefore Individual Hypothesis 1.2 Judicial efficiency has a positive effect on economic growth in the surveyed countries is rejected, while the alternative hypothesis (H1) – Judicial efficiency has a negative or no effect on economic growth in the countries under study is accepted.

Government integrity did not show a statistically significant relationship with the dependent variable economic growth in the selected countries, therefore Individual hypothesis 1.3 Government integrity has a positive effect on economic growth in the studied countries - is rejected, while the alternative hypothesis (H1) is accepted - Government integrity has a negative or no effect on economic growth in the Slovak Republic, the Czech Republic and Singapore.

Government spending did not show a statistically significant impact on the dependent variable, therefore Individual Hypothesis 1.4 (H0) – Government spending has a positive impact on economic growth in the Slovak Republic, the Czech Republic and Singapore – is rejected, and the alternative hypothesis (H1) – Government spending has a negative or no impact on economic growth in the surveyed countries – is accepted.

Likewise, another aspect of economic freedom, **the tax burden**, did not show a statistically significant effect on the dependent variable, therefore the Individual Hypothesis 1.5 (H0) – The tax burden has a positive effect on economic growth in the Slovak Republic, the Czech Republic and Singapore – is rejected, and the alternative hypothesis (H1) – The tax burden has a negative or no effect on economic growth in the surveyed countries – is accepted.

The panel analysis did not show a positive, statistically significant relationship between the aspect of **fiscal health** of the Heritage Foundation's Index of Economic Freedom and economic growth in the sample of the Slovak Republic, the Czech Republic and Singapore, therefore the Individual Hypothesis 1.6 Fiscal health has a positive effect on economic growth in the surveyed countries is rejected, while the alternative hypothesis (H1) – Fiscal health has a negative or no effect on economic growth in the countries under study is accepted.
The aspect of **business freedom** did not prove to be statistically significant either. Individual hypothesis 1.7 Business freedom has a positive effect on economic growth in the countries under study is rejected, while the alternative hypothesis (H1) is accepted – Business freedom has a negative or no effect on economic growth in the countries under study.

The aspect of economic freedom devoted to the liberalization of the labor market – **labor freedom** has a negative statistically significant effect on economic growth, therefore Individual Hypothesis 1.8 Labor freedom

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has a positive effect on economic growth in the Slovak Republic, the Czech Republic and Singapore – is rejected. Since this aspect of economic freedom was formed in the Heritage Foundation's Index of Economic Freedom only in later years, it is possible that the lack of the required amount of data contributed to this result, or by including only three countries in the model.

Within the analysis, **monetary freedom** showed a POSITIVE, STATISTICALLY SIGNIFICANT impact on economic growth, i.e. Individual Hypothesis 1.9 Monetary freedom has a positive impact on economic growth in EU countries - is CONFIRMED.

The research did not show a statistically significant relationship between the aspect of **trade freedom** and economic growth in the Slovak Republic, the Czech Republic and Singapore, so Individual Hypothesis 1.10 Market freedom has a positive effect on economic growth in EU countries - is rejected.

Individual hypothesis 1.11 **Investment freedom** has a positive effect on economic growth in the Slovak Republic, the Czech Republic and Singapore is rejected, because the analysis did not reveal a statistically significant effect of the subindex of economic freedom – investment freedom on the variable GROWTH.

Similarly, in the case of the last examined sub-index of economic freedom, Individual Hypothesis 1.12 **Financial freedom** has a positive effect on economic growth in the Slovak Republic, the Czech Republic and Singapore is rejected, because the analysis did not reveal a statistically significant effect of the sub-index of economic freedom - Financial Freedom on the variable GROWTH.

Conclusions

The business environment in its broadest sense reflects the quality of the economic conditions and prerequisites for the economic activity of business entities. A high-quality business environment creating conditions for achieving long-term sustainable economic growth is a basic condition for business development and increasing the competitiveness of the country's economy on an international scale.

Several competitiveness rankings are available to assess the quality of the business environment. The article compares the quality of the business environment of selected countries through the Index of Economic Freedom from The Heritage Foundation.

According to the compilers of the Index of Economic Freedom as long as institutions protect the freedom of the individual, this has a positive effect on the growth of the prosperity of the entire society.

Since according to many authors (e.g. Kovačević and Borović, 2014; Brkić, 2020, Heckelman and Stroup, 2000 and others) the aggregate index of economic freedom may not be an accurate indicator of the economic growth of certain countries, the authors of the article verify this assumption through an empirical analysis of the impact of individual sub-indexes on economic growth. As a result, two of the twelve sub-indexes of the economic freedom index, namely the labor freedom sub-index and the monetary freedom sub-index, showed an impact on the economic growth of countries. Foreign direct investment and gross capital formation, which were also included in the model, also confirmed the impact on GDP growth in the surveyed countries. The positive impact of the subindex of monetary freedom is recorded, for example, in Ahmadpour et al., 2013; Alexandrakis and Livanis, 2013; Cebula et al., 2013; Akin et al., 2014; Brkić, 2020. The negative impact of labor freedom on economic growth is the result of a study by Kovačević and Borović (2014).

Regardless of the model specification, the control variables showed the expected results in that gross capital formation as well as foreign direct investment have a positive, statistically significant effect on economic growth. The trade aspect did not show importance for growth in our sample of countries.

Although the panel model identified the element of economic freedom that contributes the most to economic growth (element of monetary freedom), economic freedom is a complex indicator, therefore, as a manifestation

of the synergy of all its basic elements in the creation of macroeconomic policy, importance should also be attributed to other sub-indexes of the IEF.

By choosing the Slovak Republic, the Czech Republic, Singapore and the observed period of 20 years, the authors bring new results to the studies carried out so far. Looking to the future, it would be appropriate to test, for example, the impact of economic freedom on other indicators such as for investments, which would indirectly demonstrate the impact on economic growth. The conducted empirical study examines the impact of individual sub-indexes of the index of economic freedom on the performance of the economy as a whole. It would be interesting to find out the impact on individual sectors of the economy, i.e. industry, agriculture and services. It could identify which sector is affected by which sub-index and how to transfer potential positives to other sectors.

References

Ahmadpour, M., JafariSamimi, A., & Refaei, P. (2013). Economic freedom and economic growth: the case of OPEC. *Journal of Human and Social Science Research.* 1(1), 63-71.

Ahmed, S., Mushtaq, M., Fahlevi, M., Aljuaid, M., & Saniuk, S. (2023). Decomposed and composed effects of economic freedom on economic growth in south Asia. *HELIYON*, 9(2) http://doi.org/10.1016/j.heliyon.2023.e13478

Akin, C. S., Aytun, C., & Aktakas, B. G. (2014). The impact of economic freedom upon economic growth: an application on different income groups. *Asian Economic and Financial Review*, 4(8), 1024 -1039.

Alexandrakis, C., & Livanis, G. (2013). Economic Freedom and Economic Performance in Latin America: A Panel Data Analysis. *Review of Development Economics*, 17(1), 34-48. http://doi.org/10.1111/rode.2013.17.issue-1

Ang, J., & Patalinghug, J.C. (2021). Property rights and economic growth: A dynamic GMM analysis. *Economics Bulletin*, 41(3).

Bayar, Y., & Aytemiz, L. (2015). Impact of economic freedom, political stability and economic growth in the USA on emerging Asian economies. *Actual problems of economics*, 6 (168), 62-73.

Brkić, I. (2020). The relationship between economic freedom and economic growth in EU countries: doctoral thesis. Castellón de la Plana: 2020, 106-107.

Cebula, R., & Mixon, F. (2012). The impact of Fiscal and Other Economic Freedoms on Economic Growth: an empirical analysis. *International Advances in Economic Research*, 18, 139-149. http://doi.org/10.1007/s11294-012-9348-1

Cebula, R., Clark, J.R., & Mixon, F. (2013). The Impact of Economic Freedom on Per Capita Real GDP: a study of OECD nations. *Journal of Regional Analysis and Policy* 1(43), 34-41.

Cebula, R. (2013). Which economic freedoms influence per capita real income?. *Applied Economics Letters*, 20(4), 368-372. http://doi.org/10.1080/13504851.2012.707768

Cloyne, J., Dimsdale, N., & Postel-Vinay, N. (2023). Taxes and Growth: New Narrative Evidence from Interwar Britain. *Review Of Economic Studies*, http://doi.org/10.1093/restud/rdad081

Dia, I., & Ondoa, H.A. (2023). Does Economic Freedom Improve FDI Inflows in Sub-Saharan Africa? *Journal of Economic Integration.* 38(3) 383-410 http://doi.org/10.11130/jei.2023.38.3.383

Doucouliagos, C., & Ulubasoglu, M.A. (2006). Economic freedom and economic growth: Does specification make a difference? *European Journal of Political Economy*, 22(1), 60-81. https://doi.org/10.1016/j.ejpoleco.2005.06.003

Erdal, F. (2004). Economic Freedom and Economic Growth: a time series evidence from Italian economy. Retrieved July 9, 2023, from https://www.etsg.org/ETSG2004/Papers/erdal.pdf

Espich, D., Ceretta, P.S., & Von Ende, M. (2023). Impact of economic freedom on economic growth. *Revista De Gestao E Secretariado-Gesec*, 14(6), 9615-963. http://doi.org/10.7769/gesec.v14i6.2317

Hall, J. C., & Lawson, R. A. (2014). Economic freedom of the world: An accounting of the literature. *Contemporary Economic Policy*, 32(1), 1-19. https://doi.org/10.1111/coep.12010

Hanke, S. H., & Walters, S. J. (1997). Economic freedom, prosperity, and equality: A survey. *Cato Journal*, 17(2), 117-146.

Heckelman, J. C., & Stroup, M. D. (2000). Which Economic Freedoms Contribute to Growth?. *Kyklos*, 53(4), 527-544. http://doi.org/10.1111/1467-6435.00132

Henri, A.O., & Mveng, S.A (2023). Economic Freedom and Productivity in Africa. *Journal of The Knowledge Economy* http://doi.org/10.1007/s13132-023-01371-0

Khyareh, M.M., & Zamani, M. (2023). Economic freedom, entrepreneurship and economic growth: evidence from panel data. *Journal of Developmental Entrepreneurship*, 27(4). http://doi.org/10.1142/S1084946722500273

Kovačević, S., & Borović, Z. (2014). Economic freedom and economic performance in former socialist countries-panel approach. Proceedings of the Faculty of Economics in East Sarajevo, 1(9), 19-26. http://doi.org/10.7251/ZREFIS1409019K

Lach, B., & Malaga, K. (2023). Changes on economic freedom in 11 post-socialist countries of Central-Eastern and South-Eastern Europe in 1996-2022. *Ekonomia I Prawo-Economics and Law*, 22(2), 251-274. http://doi.org/10.12775/EiP.2023.015

Murphy, RH (2023). Steady state economic freedom. *Economics and Business Letters*, 12(2),132-136. http://doi.org/10.17811/ebl.12.2.2023.132-136

N'Zue, F. (2011). Economic freedom and performance in ECOWAS countries: A dynamic panel data approach. *Africa Journal of Economic Policy*, 18(2), 28-53.

Scully, G. W., & Slottje, D. J. (1991). Ranking economic liberty across countries. *Public Choice*, 69(2), 121-152. https://doi.org/10.1007/BF00123844

Sirbu, A.C., Iacobuta-Mihaita, A.O., Asandului, M., & Brezuleanu, M.M. (2023). Effects of Economic Freedom on Subjective Well-Being. *Scientific Annals Of Economics And Business*, 70, 85-97. http://doi.org/10.47743/saeb-2023-0015

The Heritage Foundation 2023. Index of Economic Freedom. Retrieved May 17, 2023, from https://www.heritage.org/index/about

Yang, Z.R., Vitenu-Sackey, P.A., Hao, L.Z., & Tao, Y.Q. (2023) Economic freedom, inclusive growth, and financial development: A heterogeneous panel analysis of developing countries. *PLOS ONE*, 18I(7). http://doi.org/10.1371/journal.pone.0288346

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