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Original scientific article

Received: February 6, 2019
Accepted for publishing: February 28, 2019

THE IMPACT OF GLOBALIZATION ON THE ECONOMY OF THE REPUBLIC OF CROATIA

Abstract

Globalization and globalization processes that have been particularly noticeable in the last few decades have made an impact on the transfer of power centres and have significantly changed the geopolitical picture of the world. In order to affect globalization, its impact must be measured, but the first precondition is to understand globalization in order to be able to properly measure it at all. Measuring a complex phenomenon such as globalization requires the inclusion of a number of elements on which measuring will be based, such as measuring the social, economic, political and ecological dimensions of globalization. Certain elements of globalization are harder to measure because the indicators involved in each element are not entirely appropriate. Economic globalization is mostly made up of economic indicators that are unequivocal and comparable, while social or political globalization is determined by indicators that depend on economic strength and state development. Globalization processes have significantly influenced the economy of the Republic of Croatia as well as the state of the environment. The aim of the paper is to provide a comprehensive overview of the globalization trends within the Croatian economy as well as a comparison between the Croatian economy and the economies of neighbouring countries that have had a similar transition path based on the composite globalization index. In this paper, a regression analysis of individual elements within the composite globalization index was conducted.

Keywords: Globalization, composite globalization index, regression analysis, Republic of Croatia

1. Introduction

Globalization as a multidimensional term is contained by all elements of the modern economy. Its development can be followed along with the development of mankind, encompassing all the processes that take place in the world and which serve to eliminate obstacles to the free movement of goods, services, people, information and ideas. Over the last few years, thanks to the advancement of technology, physical distances have ceased to be a limiting factor. Goods and people continue to travel at a limited speed, but the volumes of these flows are increasing from year to year. Unlike them, information and data are spreading almost immediately, and technology enables remote operation and control.

Many theorists have defined the concept of globalization (Al-Rodhan, Stoudmann, 2006), but regardless of the definition of this term, globalization has become a topic that has been subjected to significant controversy lately. The term itself is on its way to becoming a phrase that is often used and which

has become self-explanatory (Kaluđerović, 2009). Over time, two basic currents developed: the proponents of globalization and anti-globalists. The impact of globalization is irrefutable and visible everywhere in the modern world (Lončar, 2005). Its effects can be seen in the improvement of world trade, technological progress, faster knowledge transfer, the increasing influence of multinational companies, the shifting of power centres, increased mobility of persons and the relocation of activities to more suitable areas.

In order to be able to properly manage globalization, it would be necessary to understand its impacts. The qualitative and quantitative analysis of globalization represents the basis for measuring globalization. The qualitative analysis is focused on multidimensional analysis by setting frameworks and concepts, which make it possible to understand globalization, whereby a measuring instrument is not developed, and such a method of analysis carries the risk of unfounded scientific speculation. The quantitative analysis is based on the use of data and statistics. In quantitative analysis, there is a risk of using inappropriate indicators, which can lead to distortion of the final result and the wrong conclusions. Given the complexity of globalization, it is necessary to cover it in broader terms and include the theory and measurement. That is why, for the measurement of globalization, the structure of the composite index is most appropriate (Dreher et al., 2010).

The composite globalization index is a relative measure and can be used to calculate globalization indices and comparisons between states and smaller territorial units such as provinces or cities. When selecting variables for the composite globalization index, the objectivity and coverage of all elements was complied with, in accordance with the OECD Handbook on Constructing Composite Indicators (Nardo, Saisana, 2009). The composite globalization index consists of variables divided into four categories: economic, social, political and ecological globalization.

2. Composite Globalization Index

The assessment of impacts and the causes of globalization has become an essential element of modern society. Globalization is determined through the interaction of social, economic and political elements the expansion of which was greatly influenced by the advancement of technology. Given that globalization manifests through the interaction of these elements, it is possible to monitor the indicators of globalization, which is of outmost importance as this is the only way to influence globalization. There are many indirect indicators of globalization, however, it is very difficult to link them directly to globalization or to mark them as the universal measuring instrument of globalization. Because of its complexity, it is impossible to set up a comprehensive measuring instrument of globalization. The measuring instrument can include more or less indicators and, accordingly, describe some areas of globalization better. Instrument's acceptance depends on the quality of the area covered and the quality of the instrument itself (Caselli, 2008).

Globalization indicators are often associated with economic development, but it is necessary to keep in mind that the globalization index is not just a more complex indicator of economic development (Dreher et al., 2008). The elements of the globalization index should be simple for an easier use and greater applicability. Otherwise, unnecessary complexity is created, and the index is harder to analyse and interpret, and at the same time an error may occur during the calculation of the index. Simplicity leads to an easier applicability and greater usage of the index more easily. Apart from the methodology itself, it is necessary to take into account the accessibility of the data. The data on basis of which the index is calculated and which are publicly available are not primarily set for the global level but are the reflection and indicator of the economic, social or political state of a country.

2.1 Variables for Calculating the Composite Globalization Index

The composite globalization index represents the relative measure of globalization that can be used to calculate the globalization index. The elements used to compute the composite globalization index are set based on the work of AT Kearney/Foreign Policy Globalization Indicators (Lockwood, 2004), KOF Globalization Index (Dreher, 2008), New Globalization Index (Vujaković, 2010), Guide to OECD Measuring Globalization (OECD, 2005) and variables that are unique to the composite globalization index only.

The variables composing the index are divided into four categories: economic, social, political and ecological globalization. All categories consist of several indicators or variables, with the exception of ecological globalization that is made by the Ecological Footprint variable and which is taken over from the global non-profit organization *Global Footprint Network*. The variable itself, according to its characteristics, could be in the category of social globalization, but it was set apart to emphasize the need for sustainable development. The global Ecological Footprint is a composite variable that measures how many of the natural resources a country has, how much it uses them and in which way.

By an analysis of the scientific papers written so far on the globalization measurements and the categories used to produce the index, it has been established that the index usually consists of the economic, political, and social globalization categories. When considering variables for the index, great attention is also given to the technological elements. Indicators that make up the technological elements are set as part of social globalization because they represent essential elements that can be considered as predetermined because technology is one of the fundamental preconditions of globalization. Technology, whether it is the progress of transport or electronics, which enables rapid exchange and easy access to data and knowledge, is the basis for a faster globalization of society. The selection of variables for the design of the composite globalization index was compiled on the basis of the OECD Handbook on Constructing Composite Indicators (Nardo, Saisana, 2009).

Economic globalization is presented in a series of economic indicators that speak of the strength and openness of the state. States are trying to make the best use of their comparative advantages because no country is self-sufficient. This was particularly evident in the recent decades when the fall of communism led to the creation of a number of new states. The loss of the markets that affected such countries, including Croatia as one of those examples, coupled with the opening up of the market, led to economic difficulties. The new states had to strengthen their economies and many of them had to move from a planned economy towards a market-oriented economy, which led to the disappearance of entire production segments that were considered extremely important prior to the fall of communism. This position has changed in the new economic environment. Indicators such as trade or indebtedness allow an insight into economic power while direct foreign investment or income from duties and taxes provide an insight into the openness of the state. It is safe to assume that countries with a lower amount of foreign direct investment are more closed, just like those countries that have higher income on the basis of the collected duties.

Social globalization is one of the most sensitive elements of globalization. Like in every process - production, service or some other - there are people in the background who are the carriers of this process. Over the centuries, people have travelled, relocated and caused a mixing of cultures that was mostly local or limited. With the emergence of modern mass transportation and the advancement of long-distance telecommunications technology, the great distances stopped being a barrier. In order to gain a better insight into globalization and to understand and measure globalization processes more easily, it is necessary to introduce the notion of global geography that, apart from the physical environment in which society operates, takes into consideration the relational environment, i.e. with whom the society communicates, cooperates, exchanges goods, services and information and against whom it is fighting (Hargittai, Centeno, 2001).

Political globalization is represented by the diplomatic relations that the state has with other states and on basis of which the relationships are built. If a country considers that a relationship with a state is important, it will seek to strengthen its diplomatic relationship with that country. The quality of diplomatic relations affects the amount of information a country disposes of and the protection of individual interests. Information on the number of embassies or representations in individual states is a sign of state power in a political sense. Similarly to embassies, membership in international organizations represents the openness or engagement of the state, and participation in UN peacekeeping missions is one of the indicators of political globalization.

Ecological globalization is the result of the interaction of all elements of globalization i.e. of people on Earth. Resources on Earth are limited, and significant changes started happening only after the Industrial Revolution. The Industrial Revolution has also caused many ecological problems, including overcrowding of large cities, reducing biodiversity, increasing pollution and climate change (Steger, 2003). Sustainable development and management are a necessary prerequisite for further development. It has often been the case that the countries wishing to attract direct foreign investment and achieve economic development, end up neglecting sustainable development and very quickly face water, land and air pollution, which rapidly turns into the aggravating circumstance of further development.

2.2 Method for Computation of the Composite Globalization Index

The composite globalization index consists of 20 variables classified into four categories (subindices). The *Principal Components Analysis,* (PCA) was applied to each of the subindices to obtain the influence (direction and strength) of individual variables on the subindex. Subindices then represented the newly acquired variables for which the same procedure was applied again to produce the influence of the subindex on the composite globalization index. The only exception is ecological globalization because it consists of one variable, so the corresponding subindex method has not been implemented because it was not meaningful, i.e. ecological globalization is equivalent to ecological printing. The method is still known as Karhunen-Loeve Transform or Hotelling Transform.

The method was set up by Karl Person in 1901 based on three variables, assuming that the method can be applied to solving problems with multiple variables. The method of calculating the method was set by Hotelling in 1933. The main component method is one of the basic methods of a multivariate technique. The calculations used by the method are very complex, especially with a larger number of variables, so the method in widespread use came only from the beginning of computer use.

The main component analysis deals with the interpretation of the structure of matrix variables and covariants of a set of original variables by a small number of their linear combinations. The purpose of the method is to compress a smaller number of dimensions emphasizing the main patterns of data variation.

The main component method was described and developed based on the following papers by Pećina (2006)[1], Bahovec (2008)[2], Bogunović and Dalbelo Bašić (2003/2004)[3].

2.3 Calculation of the Composite Globalization Index

The composite globalization index was calculated using the PCA method, so that it was applied to each subindex (economic, political, and social), thus gaining the index value. Ultimately, the method was applied to the subindex as a novel variable, resulting in the values of the main index. The index was calculated for the Republic of Croatia for the period from 1995 to 2015. The year 1995 was taken as the starting year for calculating the index, as only it can be considered as the first year in which the Croatian economy had stabilized. The previous years, since independence, were not taken as representative due to the burden of separation from the former republics' community, war conflicts and refugees and displaced persons. The index was calculated for the aforementioned period also for transitional countries in the wider region, with a view to comparing trends and the present degree of globalization. At the same time, certain individual variables used for the calculation of the index alone are very telling about the state of the economies of individual countries.

2.4 Calculation of Economic Globalization Elements

The first subindex - economic globalization - consists of nine variables that are shown in Table 1. The values inserted for each variable were taken from the period 1995 to 2015 for Croatia and the related transition countries, where data substitution was made if necessary. Based on these data, a matrix is created in which the variables X1, ..., X9 are the columns, and the rows are made up of all the countries for the observed period.

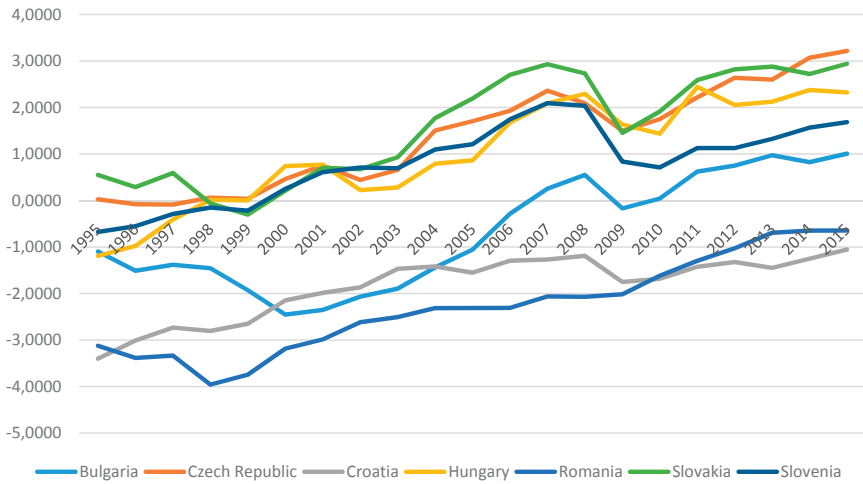
Table 1 Variables for calculation of economic globalization

Category	Variable Name	Variable Explanation	Code
Economic Globalization	Trade Import	Export in % GDP	X1
	Trade Export	Import in % GDP	X2
	Gross Domestic Product (GDP)	GDP Growth (%)	X3
	Savings	Gross Domestic Savings in % GDP	X4
	Foreign Direct Investments	Foreign Direct Investments	X5
	Investments Portfolio	Investments Portfolio % GDP	X6
	Economic Freedom	Economic Freedom Rank	X7
	Patents	No. of Patents by Non-residents	X8
	Electricity Consumption	Electricity Consumption Per Capita	X9

Source: Author

Since the analysis of the main components assumes a correlation between the variables, it is necessary to form a matrix of variables and covariances from which the correlation matrix ensues.

Figure 1 Fluctuation of the Economic Globalization Index



Source: Author

Fluctuation of the economic globalization index in the observed period in all countries is on the rise, however, it is not equal. Figure 1 shows that the Czech Republic, Slovakia and Slovenia have retained primacy in the observed period. Hungary has also made significant progress, while Bulgaria has made the largest progress and although the index has recorded a negative trend in the first few years, the growth that followed after 2001 was very significant. The countries that achieved the lowest index of economic globalization in the observed period were Croatia and Romania. Although Romania had a slightly higher index at the beginning of the year, it was falling until 1998, after which the index for Romania continued to grow, so that in 2010 it exceeded Croatia's index and Croatia remained in last place. The index of economic globalization is a composite index of several variables that can say a lot about the state of the economy on their own. At the same time, it is only possible to confirm that the Slovak, Czech and Slovenian are the leading transition economies, while the Croatian economy

has remained in the worst position, although it was one of the strongest economies at the beginning of the transition period. The situation is even worse considering that both the Romanian and the Bulgarian economy have overtaken Croatia in the key elements.

2.5 Calculation of Social Globalization's Elements

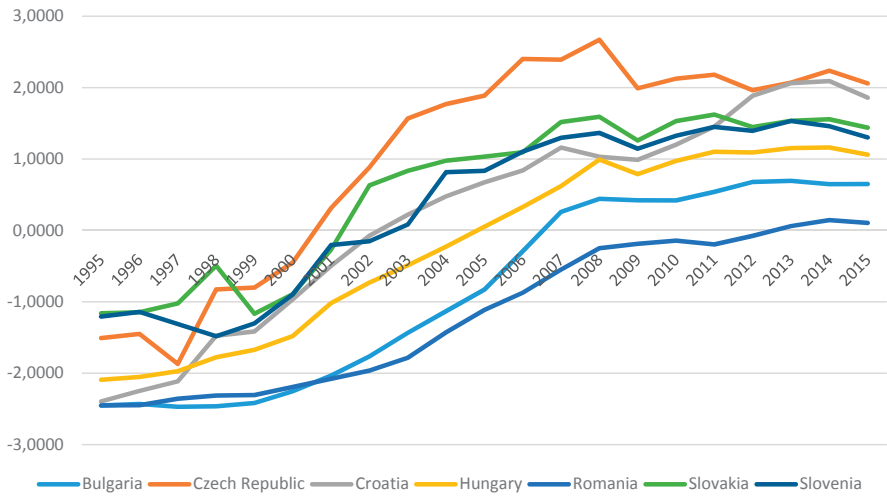
Social globalization is made up of six variables that are shown in Table 2. For the calculation as in the case of economic globalization, data substitution was done where necessary.

Table 2 Variables for the calculation of social globalization

Category	Variable Name	Variable Explanation	Code
Social Globalization	Internet	Internet users per 100 inhabitants	X1
	Mobile Phones	Subscribers on mobile networks per 100 inhabitants	X2
	Tourism	Foreign Tourists' Overnight Stays	X3
	Magazines (printables)	Newspaper Imports % GDP	X4
	Books	Book Imports % GDP	X5
	McDonald's Restaurants	Number of McDonald's Restaurants *per capita*	X6

Source: Author

Figure 2 Fluctuation of the Social Globalization Index



Source: Author

By observing Figure 2, it can be seen that the index of social globalization in all countries recorded a significant growth. The fastest growth occurred in the period from 1999 to the beginning of the world crisis i.e. 2008. As technological advances play a significant role in the social globalization, the growth of the index could be expected. It should be added that the development of technology itself has also had an impact on price reductions and thus increased availability.

2.6 Calculation of Political Globalization's Elements

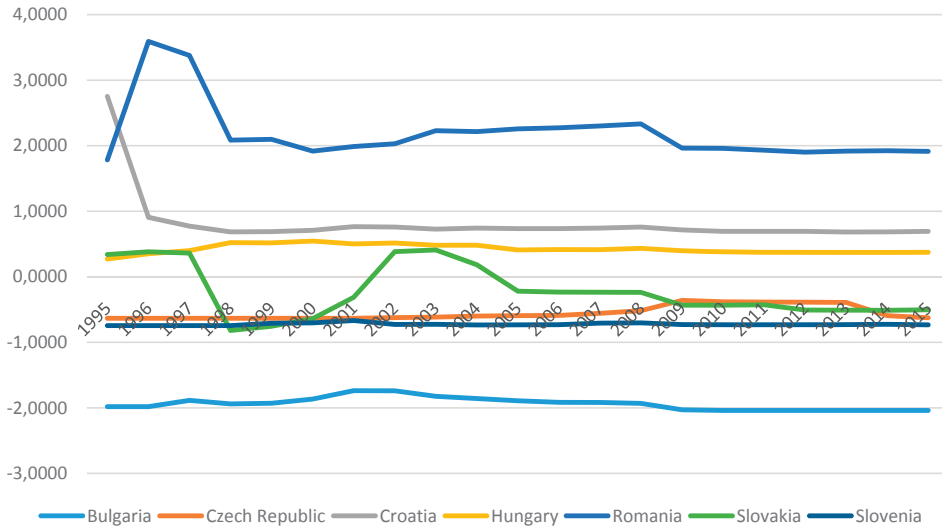
Political globalization is composed of four variables shown in Table 3. The variables used for the calculation differ from the variables of the first two categories because the data available were for one year only (except for the variable X1) hence substitution was made so that it was equal for all years.

Table 3 Variables for Calculation of the Political Globalization

Category	Variable Name	Variable Explanation	Code
Political Globalization	Participation in the UN Peacekeeping Missions	Number of Participants in the UN Peacekeeping Missions	X1
	International Agreements	Number of International Agreements Signed	X2
	International Organisations	Membership in Different Significant International Organizations	X3
	Foreign Representative Offices	Number of Embassies and Consulates	X4

Source: Author

Figure 3 Fluctuation of the Political Globalization Index



Source: Author

Political globalization is one of the categories of the composite globalization index, which is indirectly associated with other categories. Fluctuation of the index of political globalization in the observed period is mostly influenced by the variables of the number of participants in the UN peacekeeping missions. Historical data on the number of participants were available for the whole observed period, while the current number was used for the number of signed international agreements and membership in the various international significant organizations, as well as the number of embassies and consulates. Data that were not available for the observed period have been supplemented. The assumption is that other variables can be linked in a similar way, which can be one of the directions for further study of the index of political globalization.

2.7 Calculation of the Elements of the Composite Globalization Index

The composite globalization index consists of four categories (Table 4). In the first step, the analysis of the main components was applied to the categories (subindex) to show how some variables affect the subindices. In the next processing step, the categories become variables to which the said method will be applied again to determine how far and in what direction the categories affect the composite index.

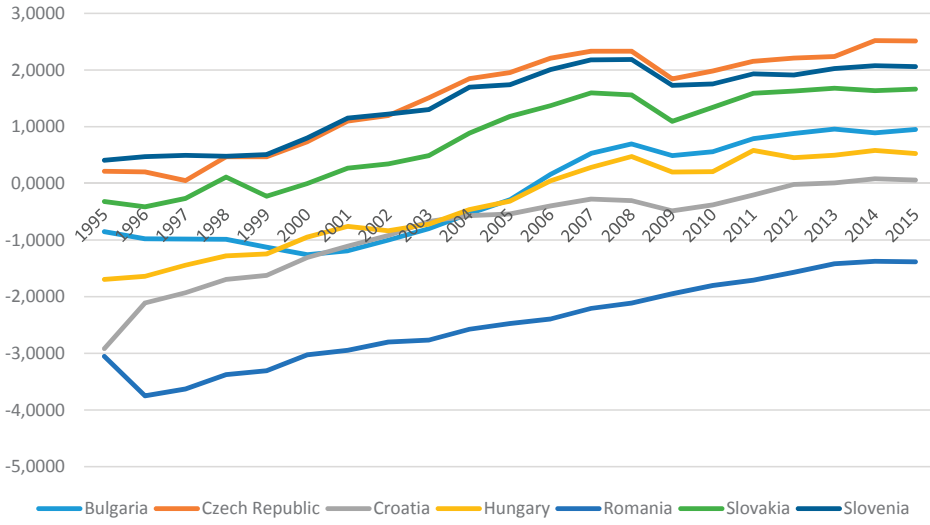
Matrix variables and covariances were equally calculated, along with the correlation matrix for variables in the original amounts, i.e. for the corresponding standardized variables.

Table 4 Variables for Calculation of the Composite Globalization Index

Category	Code
Economic Globalization	X1
Social Globalization	X2
Political Globalization	X3
Ecologic Globalization	X4

Source: Author

Figure 4 Fluctuation of the Composite Globalization Index



Source: Author

By observing Figure 4, we can notice that the Czech Republic and Slovenia are the only countries whose globalization index at the beginning of the observed period had a positive value. Although the growth of the index is recorded in all countries in the observed period, the only country whose index remained negative for the observed period was Romania. On the other hand, only Romania has recorded an almost continuous growth of the indiscriminate index under the influence of the world economic crisis, which occurred in a larger or smaller volume in all observed states. It is also a country which, despite the negative indices, has recorded its highest average growth.

3. The Regression and Correlation Analysis by Countries

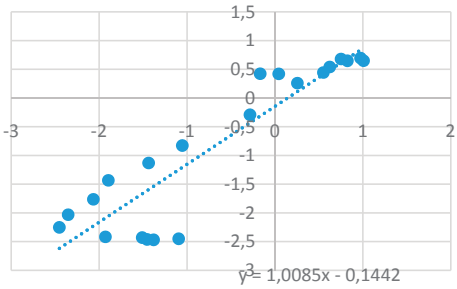
The regression and correlation analysis by countries has been made to show how globalization categories (subindices) affect each other. It is assumed that economic globalization is the most significant of all categories and that it contributes to the composite globalization index to the greatest extent.

3.1 The Influence of Economic Globalization on the Social Globalization

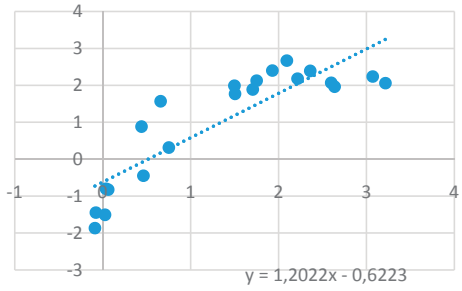
Given that scattering (dispersion) diagrams form the basis of variable dependence analysis, the following scattering (dispersion) diagrams by observed countries are shown below.

Figure 5 Scattering (Dispersion) Diagram – Economic and Social Globalization

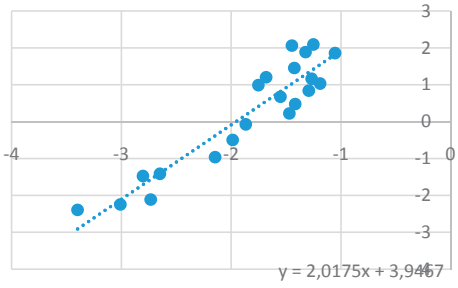
Bulgaria



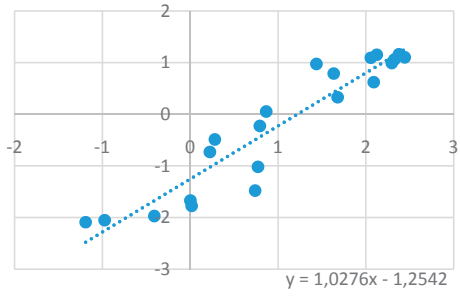
Czech Republic



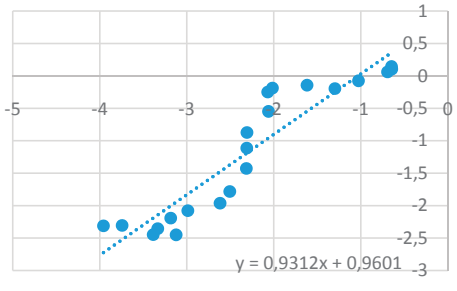
Croatia



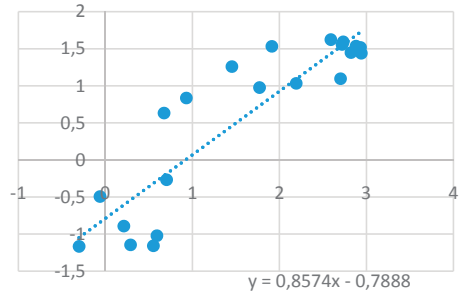
Hungary



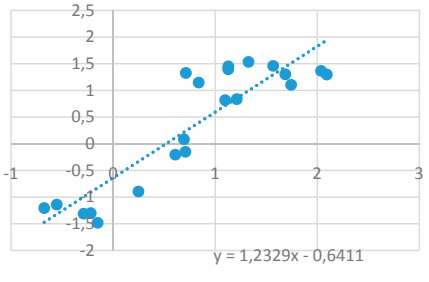
Romania



Slovakia



Slovenia



Source: Author

The diagrams point to a positive statistical link between variables X (economic globalization) and Y (social globalization), which is expected. The situation in the economy has a situation in society as a direct implication. Namely, countries with higher economic growth have a higher standard, reflecting the greater use of technology and technology solutions, greater electricity consumption and many other elements. For most countries the data is, roughly, grouped around the line. Whether such an approximation is correct will be seen on the basis of representativeness indicators and results of the hypotheses testing. The least squares method yields a constant member and the regression coefficient of the straight line equation.

Table 5 Regression Lines by Countries – Economic and Social Globalization

Country	Regression Lines
Bulgaria	$y = -0.1442 + 1.0085x$
Czech Republic	$y = -0.6223 + 1.2022x$
Croatia	$y = 3.9467 + 2.0175x$
Hungary	$y = -1.2542 + 1.0276x$
Romania	$y = 0.9601 + 0.9312x$
Slovakia	$y = -0.7888 + 0.8574x$
Slovenia	$y = -0.6411 + 1.2329x$

Source: Author

The regression coefficient shows the average change in social globalization when economic globalization grows by unit. In the case of Croatia this means: if economic globalization grows by one unit, then the global socialization will grow on average by 2.0175 units.

For representativity indicators it is necessary to make a variance analysis (Table 6) which relies on the decomposition of the squares sum of the deviation of the value of the dependent variable from its arithmetic mean.

Table 6 Variance analysis for a simple linear regression model – economic and social globalization

Country	SP	SR	ST
Bulgaria	28.9569	5.9939	34.9508
Czech Republic	35.1688	11.2512	46.4150
Croatia	38.0002	5.5572	43.5574
Hungary	27.4051	3.4978	30.9029
Romania	17.7658	2.8107	20.5765
Slovakia	19.2517	4.8226	24.0743
Slovenia	20.8498	5.2026	26.0524

Source: Author

The sum of the squares of total deviations (ST) of the social globalization values from the arithmetic mean is equal to the sum of the squares of the interpreted part (SP) of the deviation of the value of social globalization from the arithmetic mean and the sum of squares of the uninterpreted part (SR) of the deviation of the value of social globalization from the arithmetic mean.

Based on Table 6, representativity indicators can be calculated (Table 7):

Table 7 Representativity Indicators – Economic and Social Globalization

Country	Standard Deviation σ	Variation Coefficient V	Determination Coefficient r^2
Bulgaria	0.5617	-0.6857	0.8285
Czech Republic	0.7695	0.7474	0.7576
Croatia	0.5408	2.3782	0.8724
Hungary	0.4291	-2.1581	0.8868
Romania	0.3846	-0.3312	0.8634
Slovakia	0.5038	0.8864	0.7997
Slovenia	0.5233	1.4797	0.8003

Source: Author

Reaching the conclusion with the help of a variation coefficient is ignored in this case because it has certain deficiencies. For certain countries, the arithmetic mean of a series of data is close to zero and the coefficient grows up to high values, which does not necessarily mean that the linear models are bad, while for certain countries the arithmetic

mean is negative, which implies the negative value of the coefficient itself. Since by definition its values are higher than zero, the ensuing result is its uselessness.

The determination coefficient is equal to the ratio of the sum of deviation squares calculated by the regression and the sum of total deviations. Its values are relatively high, which is good and indicates a satisfactory representativity of the model (it is desirable that values are as close as possible to the unit).

The following is a test of the hypotheses about the significance of the regression variable (F-test), i.e. about the significance of the β parameter (t-test). The results are shown in Table 8.

Table 8 Hypotheses Tests – Economic and Social Globalization

Country	Testing of the Hypothesis on the Importance of the Regressor Variable $H_0 \dots y_i = \alpha + e_i$ $H_1 \dots y_i = \alpha + \beta x_i + e_i$		Testing of the Hypothesis on the Importance of the β Parameter $H_0 \dots \beta = 0$ $H_1 \dots \beta \neq 0$	
	$F = \frac{SP/1}{SR/(n-2)}$	p Value	$t = \frac{\hat{\beta}}{\sigma_{\hat{\beta}}}$	p Value
Bulgaria	91.7905	$1.0445*10^{-8}$	9.5807	$1.0445*10^{-8}$
Czech Republic	59.3901	$2.9067*10^{-7}$	7.7065	$2.9067*10^{-7}$
Croatia	129.9213	$6.1458*10^{-10}$	11.3983	$6.1458*10^{-10}$
Hungary	148.8636	$1.9562*10^{-10}$	12.2010	$1.9562*10^{-10}$
Romania	120.0963	$1.1808*10^{-9}$	10.9589	$1.1808*10^{-9}$
Slovakia	75.8480	$4.6423*10^{-8}$	8.7091	$4.6423*10^{-8}$
Slovenia	76.1434	$4.5057*10^{-8}$	8.7260	$4.5057*10^{-8}$

Source: Author

P represents a boundary level of significance, i.e., all the levels of significance α that are less than the p value of the realization of the test statistic do not fall into the critical range, so hypothesis H0 is accepted, and for those that are greater than the p value it is rejected. A small p value goes to the hypothesis of H1, which confirms the representativeness of the model. Table 8 shows that p values for F-test and t-test are equal, which is logical because these tests are equivalent and t2 = F is valid. The relevant p values are small for all countries, and on this basis H0 is discarded/rejected. Let us suppose that the level of significance be equal to 1%, i.e. 0.01. In the case of Croatia, the realization of F statistics is 129.9213. The corresponding F quantile distribution is 1% smaller than 129.9213 and the realization enters into the critical area, so H0 is rejected.

It can be concluded from the above that economic globalization has a social impact and can be described relatively well in a linear way, although it would certainly be desirable to study data in more detail, to take a longer time frame into consideration, observe variables with a time shift to see if there is, for example, the influence of economic globalization in time t-1 on social globalization in time t, etc. Also, it would be desirable to examine whether in some cases more complex models would be a better choice, for example, in the case of the Czech Republic and Croatia, where it can be concluded from the scatter diagrams that the curves would be a better choice for approximation of the data, and the representativeness indicators would probably be more accurate.

Since linear models are relatively good, it makes sense to calculate the Pearson coefficient of correlation. The values are shown in Table 9. The coefficients are significant because they have reached high values and thus point to the correlation of variables (preferably closer to the unit because it is a positive relationship).

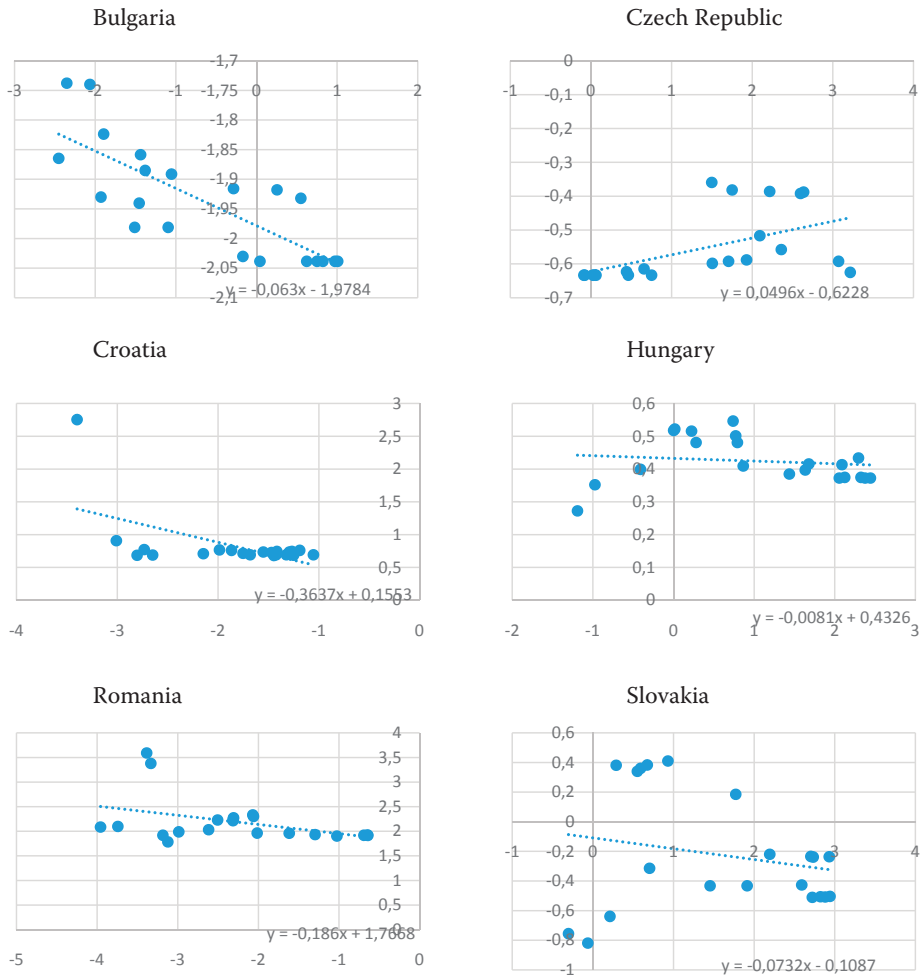
Table 9 The Pearson Correlation Coefficient – Economic and Social Correlation

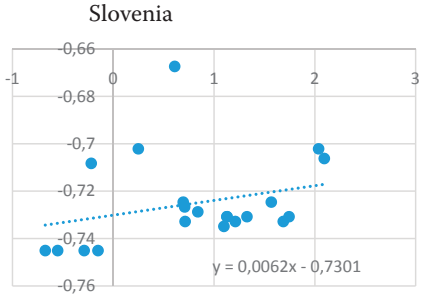
Country	Correlation Coefficient
Bulgaria	0.9102
Czech Republic	0.8704
Croatia	0.9340
Hungary	0.9417
Romania	0.9292
Slovakia	0.8942
Slovenia	0.8946

Source: Author

3.2 Influence of Economic Globalization on Political Globalization

Figure 6 Scattering (Dispersion) Diagrams – Economic and Political Globalization





Source: Author

A positive statistical link between economic and political globalization for the Czech Republic and Slovenia is visible from the scattering diagram (Figure 6), while for the remaining countries it is negative. It will be tested again whether the simple linear regression models are precise enough, although it can be guessed from the diagram that the data is more dispersed from the line than in the case of economic and social globalization. For the purpose of comparability with the remaining relationships, a linear approximation will be calculated and the final conclusions and recommendations for future research will be made.

The equations' parameters have been estimated by the least squares method:

Table 10 Regression Directions by Countries – Economic and Political Globalization

Country	Regression Directions
Bulgaria	$y = -1.9784 - 0.0630x$
Czech Republic	$y = -0.6228 + 0.0496x$
Croatia	$y = 0.1553 - 0.3637x$
Hungary	$y = 0.4326 - 0.0081x$
Romania	$y = 1.7668 - 0.1860x$
Slovakia	$y = -0.1087 - 0.0732x$
Slovenia	$y = -0.7301 + 0.0062x$

Source: Author

Since the regressive coefficients for the Czech Republic and Slovenia are positive, this means that by increasing one unit of economic globalization, the political globalization is increased on average by 0.0496 units (Czech Republic) and 0.0062 units (Slovenia).

The first step in the calculation of representativity indicators is the variance analysis (the so-called ANOVA).

Table 11 Variance Analysis Table for the Simple Linear Regression Model – Economic and Political Globalization

Country	SP	SR	ST
Bulgaria	0.1130	0.0698	0.1828
Czech Republic	0.0598	0.1550	0.2148
Croatia	1.2353	2.7199	3.9552
Hungary	0.0017	0.0969	0.0986
Romania	0.7087	3.5123	4.2210
Slovakia	0.1402	3.0916	3.2318
Slovenia	0.0005	0.0065	0.0070

Source: Author

Table 12 Representativity Indicators – Economic and Political Globalization

Country	Standard Deviation σ	Variation Coefficient V	Determination Coefficient r^2
Bulgaria	0.0606	-0.0313	0.6183
Czech Republic	0.0903	-0.1628	0.2783
Croatia	0.3784	0.4581	0.3123
Hungary	0.0714	0.1683	0.0174
Romania	0.4230	0.1963	0.1679
Slovakia	0.4034	-1.7965	0.0434
Slovenia	0.0185	-0.0255	0.0753

Source: Author

The variation coefficient is negative for four countries because the corresponding arithmetic mean of a series of data is negative and cannot be interpreted. For Hungary, Romania and Croatia, it makes sense to take them into account and they point to the fact that the models are less precise because they are considered to be representative when the coefficient of variation does not exceed 0.1, i.e., 10%.

But it's certainly necessary to conduct a hypotheses test to bring about the ultimate conclusion. Determination coefficients are fairly low (except for Bulgaria), indicating inapplicable models, i.e. the linear approximation of data is not representative.

The realization of the test *F* and *t* statistics with the corresponding *p* values are given in Table 13.

Table 13 Hypotheses Tests - Economic and Political Globalization

Country	Testing the Hypothesis About the Regressor Variable's Significance $H_0 \dots y_i = \alpha + e_i$ $H_1 \dots y_i = \alpha + \beta x_i + e_i$		Testing the Hypothesis About the Significance of Parameter β $H_0 \dots \beta = 0$ $H_1 \dots \beta \neq 0$	
	$F = \frac{SP/1}{SR/(n-2)}$	p Value	$t = \frac{\hat{\beta}}{\sigma_{\hat{\beta}}}$	p Value
Bulgaria	30.7737	$2.3763*10^{-5}$	-5.5474	$2.3763*10^{-5}$
Czech Republic	7.3278	0.0140	2.7070	0.0140
Croatia	8.6288	0.0085	-2.9374	0.0085
Hungary	0.3371	0.5683	-0.5806	0.5683
Romania	3.8338	0.0651	-1.9580	0.0651
Slovakia	0.8613	0.3650	-0.9281	0.3650
Slovenia	1.5478	0.2286	1.2441	0.2286

Source: Author

The P value is small for Bulgaria, the Czech Republic, Croatia and Romania, which is in favour of the H1 hypothesis. The results correspond to the determination coefficients obtained (the highest are for the observed countries). It is concluded from the above that the linear models are average (worse than in the case of economic and social globalization relations). The remaining countries have high p values, which supports the H0 hypothesis; this is also confirmed by small determination coefficients.

The economic globalization has an influence on the political globalization, and it is interesting that this relationship is positive for some countries, while for others it is negative. Linear approximation for the observed states is worse than in the case of economic and social globalization, which is confirmed by the representativeness indicators and the hypothesis tests. The data should be studied in more detail and more complex models should be built that will give better results. It is evident that for a larger number of countries, it would be sensible to form curve-based diagrams and therefore the Pearson coefficient had not been calculated.

4. Conclusion

The advancement of technology has facilitated the exchange of goods and made travelling faster and easier. However, it has exerted its greatest influence on the availability of information. The free streaming of information had the effect of slowly dissolving the old model of closed, self-sustaining countries that were created in the 19th century. The end of the 20th century was a turning point and the era when many sovereign states were forced to redefine their political frameworks or to change borders. Solid borders formed by the states have turned into a framework of political influence only, and what defines the states in the 21st century can be called "4 I" (Ohmae, 1995) – *investment, industry, individuals and information*. The processes of the "4 I"

represent elements that can remove obstacles and facilitate connectivity through their interaction. The synergistic effect of these elements makes the core of globalization.

Graphic representations of globalization indicators are based on the calculated values of the composite globalization index and it is possible to see how the index had been fluctuating between 1995 and 2015. For the Republic of Croatia, the index had recorded an increase throughout the whole observed period. In the first observed year, it was negative, while in the final year it reached a positive value. By observing the individual categories of globalization (economic, social, political and ecological), a continuous growth is visible within all categories, with the exception of political globalization. The regression and correlation analyses also support the abovementioned. Based on the Pearson coefficient, a strong positive relationship is visible between the economic and social globalization, while between the economic and political globalization it is medium-negative. Based on all of the above, it is possible to conclude that globalization has a positive effect on the economy of the Republic of Croatia. Based on the globalization index calculation for the countries surrounding Croatia, it is possible to conclude that globalization has had a positive effect on them too, which is also evident from the growth of the index in the observed period. By comparing the composite globalization index value for the Republic of Croatia and other states for which it is calculated, it is evident that the economic position of the Republic of Croatia was not as favourable as it was often presented in the media. During the entire observed period, the Republic of Croatia remained at the lowest position according to the index value.

By analysing the individual variables on the basis of which a composite globalization index was calculated, primarily foreign direct investments, portfolio investments or variables from the political globalization category, and by taking into account the growth of the composite globalization index, it is possible to conclude that global organizations are the drivers of globalization processes in individual countries. By comparing the data and indicators for the Republic of Croatia and other countries from the region, it is evident that the countries are actively involved in the work of international organizations, and based on foreign direct investments, it is evident that foreign capital has been continuously entering the country. In most countries the investments in the observed period grew in line with the country's opening up, right until the outbreak of the 2008 global economic crisis. In the post-crisis period, a slight increase of direct foreign investments has been registered.

The European Union is an association aimed at transferring the local-level activities to the global level. Within the EU, the concept of free flow of goods and capital is applied, while labour migration is under a more stringent control and is limited to a definite time period for the newcomers. Croatia became a full member of the EU in July 2013, and the significant human capital migration, i.e. workforce leaving to work abroad, has already begun. By the opening up the labour market in countries that have become available to workers from Croatia, due to historical circumstances, a higher standard of living or better working conditions, the more significant migration has begun. Thus, for example, 90,488 Croatian citizens have relocated to Germany in 2014 and 2015[4], and in 2015 about 5,500 Croatian citizens have moved to Ireland[5]. Migrations are part of human history, especially the ones caused by the weather, natural disasters or warfare, but today's migrations are predominantly caused by economic reasons, which is certainly due to globalization. Therefore, it can be claimed that it affects the importance of solid state borders and the migration of human resources.

The composite globalization index is one of the ways of measuring the impact of globalization. By combining different indicators within the index, it is possible to calculate indicators at different levels, such as an enterprise/company, a city, a province or a country. Globalization cannot be viewed as a separate phenomenon, but as the totality of influences, not only on the world economy, but also on global trends in society, politics and ecology.

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UDK: 339.9:338.1](497.5) / **Original scientific article**

Dražen Holmik

Utjecaj globalizacije na gospodarstvo Republike Hrvatske

Sažetak

Globalizacija i globalizacijski procesi, koje je posebno moguće zamijetiti u posljednjih nekoliko desetljeća, utjecali su na prijenos centara moći i značajno promijenili geopolitičku sliku svijeta. Kako bi se utjecalo na globalizaciju potrebno je provesti mjerenje globalizacije, no prvi preduvjet je razumijevanje globalizacije, kako bi se uopće mogla pravilno mjeriti. Mjerenje složene pojave kao što je globalizacija zahtijeva uključivanje velikog broja elemenata kojima će se mjeriti, poput mjerenja društvene, ekonomske, političke i ekološke globalizacije. Određene elemente globalizacije teže je izmjeriti jer pokazatelji uključeni u pojedini element nisu u potpunosti odgovarajući. Ekonomsku globalizaciju uglavnom čine ekonomski pokazatelji koji su nedvosmisleni i usporedivi, dok društvenu ili političku globalizaciju čine pokazatelji koji ovise o gospodarskoj snazi i razvoju države. Procesi globalizacije značajno su utjecali na gospodarstvo Republike Hrvatske i države u okruženju. Cilj rada je pružiti sveobuhvatan pregled globalizacijskih trendova u hrvatskom gospodarstvu i usporediti hrvatsko gospodarstvo s gospodarstvima susjednih zemalja koje su imale sličan tranzicijski put temeljem kompozitnog globalizacijskog indeksa. U radu su prikazani rezultati regresijske analize pojedinih elemenata unutar kompozitnog globalizacijskog indeksa.

Ključne riječi: globalizacija, kompozitni indeks globalizacije, regresijska analiza, Republika Hrvatska