



## DIFFERENTIATION OF FINANCIALIZATION PROCESS IN CENTRAL AND EASTERN EUROPEAN COUNTRIES – CLUSTER ANALYSIS

Aleksandra Ostrowska, Kamil Gulczyński

### Abstract

**Purpose** - Financialization, which refers to the growing importance of the financial sector in the economy, is evident in both developed and developing countries. The least attention is paid to the study of its manifestations in Central and Eastern European countries. The study aimed to identify similarities and differences in the manifestations of financialization across in 11 selected Central and Eastern European countries in 2014, 2020, and 2024. The research hypothesis was that the countries of Central and Eastern Europe did not form a homogeneous group in terms of the manifestations and intensity of the financialization process in the years under study.

**Methodology** - The research methods used included critical analysis of the literature on the subject, statistical data analysis, and comparative analysis. These methods enabled the identification of areas where financialization occurs. Ward's method enabled the identification of clusters of countries where similar manifestations of financialization occurred.

**Findings** - In 2014, the CEE countries were divided into three relatively diverse clusters, indicating clear differences among the analyzed states. In 2020, most countries were grouped into a single cluster, suggesting increased similarity and greater homogenization within the region, while Hungary remained distinct. In 2024, further changes in the cluster structure were observed. Romania formed a separate single-country cluster, whereas the Czech Republic, Estonia, and Hungary were classified together. Overall, the results indicate a gradual increase in similarity among Central and Eastern European countries, although this process was not uniform and significant differences between some countries were still visible.

**Keywords:** financialization, Central and Eastern European countries, Ward's method

**JEL classification:** E44, O16, P27, O52, C38

## Introduction

The contemporary financial system is characterized by rapid development, as evidenced by changes in financial markets. This is primarily due to the ongoing processes deregulation and liberalization of individual markets, as well as the globalization of the world economy that began in the 1970s (Rudny, 2018). Under such conditions, the process of financialization, which has gained prominence following the global financial crisis of 2008, assumes particular importance.

Financialization refers to a related set of structural and institutional changes, broadly linked to the growing influence of financial markets and market participants on the economy. For many researchers, these changes are the most important determinant of global economic transformation (Rabinovich, Reddy, 2025). Financialization is a fundamental process changing both the perception and the functioning of the financial system. This evolution results in changes in individual behaviour patterns, for example, through a gradual shift from generating income in the traditional, productive manner to using financial instruments offered by the financial system, often involving speculation. With the right foundations established by the system, i.e., growing capital and low interest rates, accumulated capital is shifted from banks to financial instruments. This process occurs in both developed and developing countries. It is therefore essential to study its manifestations not only in countries such as the United States or Western European countries, most of whose financial systems are market-oriented. This process may develop differently in countries whose financial systems are based on bank financing. Examples of such countries include those in Central and Eastern Europe. Due to historical, social, and political conditions, these economies are characterized by much stricter rules in the financial system. This is one of the reasons why this group of countries experienced the financial crisis “more lightly” than their Western neighbours. The above considerations motivated us to undertake research into the manifestations of the financialization process in selected Central and Eastern European countries.

The study aimed to identify similarities and differences in the manifestations of the financialization process in selected Central and Eastern European countries in 2014, 2020, and 2024 using Ward's method. The research hypothesis assumed that the countries of Central and Eastern Europe did not constitute a homogeneous group in terms of the manifestations and intensity of the financialization process during the analyzed period.

This article contributes to the literature on the subject by using Ward's method to identify similarities and differences in the development of financialization across Central and Eastern European countries. Interest in these countries in the context of financialization appears relatively rarely in the literature on the subject. The similarities and differences between countries make it possible to identify potential recommendations for economic policy.

The article's structure is as follows. Section 1 provides an overview of scientific literature of financialization, outlining its definitions, causes, measures, and effects. Section 2 characterizes the research methods used, including, in particular, Ward's methods and the measures of financialization used. Section 3 presents the research results.

## 1. Literature review

Despite growing interest in the process of financialization, no clear and generally accepted definition has yet been established within the academic community (Tsaliki, Tsoulfidis, 2023). The most frequently cited and broadest definition is that proposed by Epstein (2005), which refers to the growing role of financial motives, markets, entities, and institutions in transactions occurring within the domestic and international economy. Urban (2020) defines financialization as the transition of the economy from industrial capitalism to financial capitalism. This means that

the previously known capitalism, based on the development of enterprises through increased employment, technological development, or scientific advancements, is shifting to one based on the development of enterprises through increasingly accessible financial instruments. Financialization is therefore a new regime of accumulation (Hoppania et al., 2024), in which profits are accumulated through financial channels rather than through traditional production (Krippner, 2005).

Ratajczak (2014) assumes that financialization can be expressed in two ways, i.e., in broad and narrow terms. The broad approach assumes that it is “a factor of the financial sector's autonomy in comparison with the real sector, where the financial sector becomes better than the real sector,” and the narrow approach assumes that financial institutions increasingly influence the working methods and decision-making processes of non-financial institutions. This means that entities whose activities have been based exclusively on production or the provision of specific services must, to achieve optimal profits and remain competitive on the market, consider what the financial industry has to offer and often utilise instruments previously used only by financial institutions. Sowińska (2014) recognizes financialization as an evolution and an increase in the share of financial activities in individuals' lives. Żyżyński (2010) defines financialization as the widespread growth of the financial sphere, disproportionate to the development of other economic spheres. Palley (2007) noted that financialization should be described as a process through which markets, institutions, and financial elites exert increasing influence over the economy's functioning.

Financialization is therefore a multidimensional process linked to the above-average growth of the financial sector in the economy. It is determined by several factors, a summary of which is presented in Table 1.

**Table 1.** Causes of financialization

General causes	Specific causes
Changes in the structure and functioning of financial markets	<ul style="list-style-type: none"> <li>- development of financial instruments (e.g., structured products or derivatives)</li> <li>- increasing number of new financial intermediaries not subject to financial supervision</li> <li>- deregulation of financial activities</li> <li>- globalization of financial markets</li> </ul>
Socio-economic policy solutions	<ul style="list-style-type: none"> <li>- the declining role of the state in economic interventionism</li> <li>- the state's efforts to maintain stable prices, i.e., efforts to reduce inflation, e.g., by setting high interest rates</li> <li>- measures to ensure a flexible labour market</li> </ul>
Changes in the behavior of non-financial enterprises	<ul style="list-style-type: none"> <li>- investors' desire to generate ever higher profits</li> <li>- owners' excessive focus on maximizing shareholder value</li> </ul>

Source: Author's own work based on Ważna 2019, p. 160, following Marszałek 2012, pp. 223–225.

The causes of financialization, therefore, lie in various areas, including changes in financial markets, decisions made by governments and central banks, and by non-financial companies, such as manufacturing companies (Sui, Yao, 2023). They are mainly sought in the functioning of financial market players, including the offering of increasingly complex financial products and services, such as derivatives and securitization, as well as speculative activities. The state has also played a role in the development of this process. Measures such as limiting the state's role in basic areas like housing and healthcare, or inconveniences within pension systems, lead members of individual societies to seek alternative financing options. The behaviour of owners of non-financial companies that operate according to the principle of shareholder value is also important (Guschanski, Onaran, 2025). The theory of shareholder value maximization assumes that companies prioritize maximizing returns for shareholders, often at the expense of long-term investments (Gemzik-Salwach, 2023).

The multifaceted nature of the financialization of the economy also contributes to the lack of a precise measurement of it. Different indicators are used depending on the author and

the purpose of the research. An example is the study by Gołębiowski and Szczepankowski (2015), who used the share of FIRE (*finance, insurance, and real estate*) value added in the added value of the economy, the share of employees in this sector in total employment, private sector debt to GDP, public debt to GDP, market capitalization to GDP, capital market turnover in relation to GDP, M2 money supply to GDP, inflation rate, and stock price index for the CEE countries. Florczak (2018) used the following ratios: public debt to GDP, financial sector assets to GDP, credit to the private sector to GDP, and the assets of the three and five largest banks in the banking sector for the US. For the founding EU member states and the Visegrad Group countries, Florczak (2019) took into account public debt and the budget balance relative to GDP, the share of investment in GDP, the share of the five largest banks in banking sector assets, and the share of employment in the financial sector relative to total employment. Marszałek (2022) used financial system assets to GDP, assets of the main types of financial intermediaries, employment in the financial sector, stock market capitalization, and debt of the public finance sector for Poland. In turn, Gemzik-Salwach (2023) used the financial assets of non-financial companies relative to GDP, the financial leverage of the financial sector, household financial transactions, the value added of the FIRE sector, the share of household debt in net disposable income, and the share of non-financial companies in total surplus to measure financialization. Gemzik-Salwach & Perz (2025) used value added created by the finance and insurance sector, % of value added, financial sector leverage (%), financial assets of non-financial companies, % of GDP, debt of non-financial enterprises in relation to total surplus, household financial transactions, % of net disposable income, and household debt as a % of net disposable income.

The process of financialization affects every area of life where money is present. It can be concluded that its effects are evident both at the national level and in smaller sectors of the economy. Examples of these effects are presented in Table 2.

**Table 2.** Effects of the financialization process

Macroeconomic effects	Microeconomic effects
- difficulties in conducting monetary policy by the central banks	- difficulties in conducting business activities
- growing public debt	- dependence of entities on trends in financial markets
- difficulties in enforcing the law against financial institutions under prudential standards	- problems in choosing forms of capital investment
- increased likelihood of financial abuse	- business activities are characterized by increasing risk
- assistance to failing financial institutions	- growing sense of uncertainty among individuals

Source: Author's own work based on Ważna 2019, p. 160, following Marszałek 2012, pp. 226–227.

The consequences of financialization are also multidimensional, affecting both the macroeconomic and microeconomic spheres. It should be emphasized that, regardless of the perspective considered, they are mainly negative. However, financialization can be positive in the context of increasing access to capital and opportunities to multiply wealth. This, however, depends on having financial knowledge and effectively using of financial instruments. People with greater financial knowledge than others make more effective decisions about savings, investments, pensions, debt, and risk management (Rosciano, Starita, 2025).

In summary, financialization is a multifaceted process observed across various parts of the economy, as well as at the macroeconomic, international, and global levels. This is due to both the multitude of its causes and the consequences it generates. This is also reflected in the lack of an unambiguous measurement method.

## 2. Methodology

The scope of the study covered 11 countries in Central and Eastern Europe, namely: the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Slovenia, which joined the European Union in 2004, as well as Bulgaria, Romania, and Croatia, which joined the EU in 2007 and 2013, respectively. The availability and completeness of statistical data determined the selection of countries and the research period.

The Ward's method was used to conduct a multidimensional assessment of the financialization process in selected Central and Eastern European countries. It belongs to the group of taxonomic methods. It is one of the cluster analysis methods that makes it possible to divide the economies under study in terms of the characteristic changes taking place within them in the context of the development of the financialization process. The use of this method enabled the identification of countries where similar manifestations occurred during the study period, while also distinguishing differences between economies in this respect. The calculations were performed using GRETL and Statistica 13.1.

The application of the method began with the selection of appropriate diagnostic variables, as incorrectly selected indicators may distort the final result and hinder its adequate interpretation. These variables must meet both substantive and statistical criteria. Furthermore, their availability and completeness are also important.

The statistical criteria primarily include ensuring adequate differentiation of variables, which affects their informational value. This was assessed using the coefficient of variation, with a threshold value of 0.10 (Panek, Zwierzchowski, 2013). The following calculation formula was used to calculate the coefficient of variation (Smolik, 2021):

$$V = \frac{S}{\bar{x}} * 100\%, \quad (1)$$

where:

$V$  – coefficient of variation,

$S$  – standard deviation from the sample,

$\bar{x}$  – arithmetic mean from the sample.

Another criterion was the absence of a strong correlation between variables. Pearson's linear correlation coefficient was used to assess this, calculated using the formula below. (Akanayeva, Tishtykbayeva, 2021):

$$r = \frac{\sum(x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum(x_i - \bar{x})^2 \sum(y_i - \bar{y})^2}}, \quad (2)$$

where:

$x_i, y_i$  – values of individual variables,

$\bar{x}, \bar{y}$  – average values of individual variables.

According to substantive premises, the process of financialization can be characterized using eight indicators. The adopted statistical criteria, i.e., a coefficient of variation of at least 0.10 and no strong correlation between variables, were met by the following variables:

$X_1$  – share of added value of the FIRE sector (*finance, insurance, and real estate*) in the added value of the economy,

$X_2$  – financial assets (% of GDP),

$X_3$  – credit for private sector (% of GDP),

$X_4$  – assets of the five largest banks (% of total assets),

$X_5$  – stock market capitalization (% of GDP),

$X_6$  – public debt (% of GDP),

$X_7$  – inflation rate (%).

$X_8$  – house price index (%).

Their descriptive characteristics are presented in Table 3.

**Table 3.** Descriptive characteristics of variables

Variable	Mean	Standard deviation	Min	Max	Coefficient of variation
X <sub>1</sub>	13.29	2.33	8.40	17.40	0.18
X <sub>2</sub>	113.34	60.87	35.80	349.50	0.54
X <sub>3</sub>	76.75	17.93	40.10	125.10	0.23
X <sub>4</sub>	70.16	13.66	47.51	93.73	0.19
X <sub>5</sub>	33.31	65.65	0.97	388.29	1.97
X <sub>6</sub>	48.06	19.80	8.50	86.50	0.41
X <sub>7</sub>	3.58	4.59	-1.60	19.40	1.28
X <sub>8</sub>	3.72	4.47	-9.50	14.80	1.20

Source: Author's own.

Table 4 presents Pearson's linear correlation coefficients for the examined pairs of variables.

**Table 4.** Pearson's linear correlation coefficients for the examined pairs of variables

	X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>	X <sub>4</sub>	X <sub>5</sub>	X <sub>6</sub>	X <sub>7</sub>	X <sub>8</sub>
X <sub>1</sub>	1.00							
X <sub>2</sub>	0.35	1.00						
X <sub>3</sub>	0.64	0.19	1.00					
X <sub>4</sub>	0.03	-0.05	0.04	1.00				
X <sub>5</sub>	0.24	-0.02	0.04	-0.20	1.00			
X <sub>6</sub>	-0.21	0.21	-0.10	-0.36	-0.08	1.00		
X <sub>7</sub>	0.01	0.16	-0.28	0.16	0.06	-0.04	1.00	
X <sub>8</sub>	0.02	0.30	0.09	0.04	0.01	0.01	-0.37	0.30

Source: Author's own.

The next step was the standardization of the variables, which is necessary primarily to harmonize their variability and ensure comparability (Luśtyk, 2022). The variables were standardized using one of the most popular procedures, used, among others, by Kwasek (2015):

$$Z_{ik} = \frac{x_{ik} - \bar{x}_k}{s_k} \quad (3)$$

whereby:

$$\bar{x}_k = \frac{1}{n} \sum_{i=1}^n x_{ik} \quad (4)$$

$$s_k = \left[ \frac{1}{n} \sum_{i=1}^n (x_{ik} - \bar{x}_k)^2 \right]^{\frac{1}{2}} \quad (5)$$

where:

$Z_{ik}$  – standardized value of k-th variable in the i-th object,

$x_{ik}$  – value of k-th variable in the i-th object,

$\bar{x}_k$  – mean of k-th variable,

$s_k$  – standard deviation of k-th variable,

$n$  – number of objects.

The next step was to use the Euclidean distance to determine the distance between the objects under study. The formula presented below was used to determine this value (Dubiec, 2020):

$$d_{ij} = \left[ \sum_{k=1}^m (z_{ik} - z_{jk})^2 \right]^{\frac{1}{2}} \quad (6)$$

where:

$d_{ij}$  – Euclidean distance,

$m$  – number of variables,

$z_{ik}$  – standardized variance of the k-th variable in the i-th object,

$z_{jk}$  – standardized variance of the k-th variable in the j-th object.

The distances calculated using this method allow us to establish a reference point for all variables relative to one another and thus determine the position of a specific variable within the entire set, which in turn allows us to classify them.

In the next stage, clustering coefficients were determined, and then a graph of agglomeration was generated, from which the appropriate distance was read. In the next step, a dendrogram was used to determine the number of clusters of the countries studied at a previously determined distance. Finally, the obtained clusters were characterized by calculating the average values of the obtained indicators.

### 3. Multidimensional assessment of the financialization process in Central and Eastern European countries

First, the beginning of the research period, i.e., 2014, was analyzed, followed by 2020 as a key year in terms of the development of the COVID-19 pandemic, and finally 2024, to verify whether the countries under study constituted a homogeneous group in terms of the financialization process and whether this changed during the research period.

The number of clusters was selected based on the agglomeration pattern graph. The Euclidean distance shown on the graph in 2014 at 5.557 made it possible to identify three clusters of countries. The first group included Bulgaria and Estonia. The second group consisted of countries such as Croatia, Hungary, Poland, and Slovenia. The Czech Republic, Latvia, Lithuania, Slovakia, and Romania formed the third cluster. In 2020, the value of 5.322, as read from the agglomeration graph, indicated the formation of three clusters. The first group included Bulgaria, the Czech Republic, and Estonia. The second cluster included Croatia, Latvia, Lithuania, Poland, Slovakia, Slovenia, and Romania. Hungary did not form a cluster with any other country. In 2024, the value of 5.361, as read from the agglomeration graph, also indicated the formation of three clusters. The first cluster includes Bulgaria, Croatia, Latvia, Lithuania, Poland, Slovakia, and Slovenia. Romania did not form a cluster with any other countries. The third cluster included the Czech Republic, Estonia, and Hungary. The results of the grouping are presented in Table 5.

**Table 5.** Classification of Central and Eastern European countries based on Ward's method

Cluster	Countries		
	2014	2020	2024
1	Bulgaria, Estonia	Bulgaria, the Czech Republic, Estonia	Bulgaria, Croatia, Latvia, Poland, Slovakia, Slovenia
2	Croatia, Hungary, Poland, Slovenia	Croatia, Latvia, Lithuania, Poland, Slovakia, Slovenia,	Romania

		Romania	
3	the Czech Republic, Latvia, Lithuania. Slovakia, Romania,	Hungary	the Czech Republic, Estonia, Hungary

Source: Author's own.

It should be emphasised that the results of the cluster analyses for individual years are not directly comparable with one another, as the numbering of the clusters is arbitrary and refers exclusively to a specific year. Therefore, the interpretation of the results focuses on changes in the structure of the groups and the membership of individual countries over time, rather than on comparing clusters with identical designations across years. Table 6 presents the average indicator values for individual clusters in 2014.

**Table 6.** Average values of output variables across CEE countries groups in 2014

Cluster	X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>	X <sub>4</sub>	X <sub>5</sub>	X <sub>6</sub>	X <sub>7</sub>	X <sub>8</sub>
1	16.10	111.30	120.10	72.44	9.88	19.30	-0.55	6.55
2	11.40	141.50	84.90	48.81	42.28	63.80	0.05	2.15
3	10.70	49.30	59.00	69.95	14.29	39.90	0.80	1.60

Source: Author's own.

The first cluster in 2014 was characterized by the highest share of FIRE sector value added in total value added, credit to the private sector in GDP, assets of the five largest banks, and the house price index, as well as the lowest stock market capitalization, public debt, and inflation rate. The second cluster had the highest share of financial assets in GDP, stock market capitalization, and public debt, as well as the lowest share of assets among the five largest banks. The third cluster was characterized by the highest inflation rate and the lowest share of FIRE sector value added in total value added, as well as the lowest levels of financial assets in GDP, credit to the private sector in GDP, and the house price index. The first group consists of economies characterized by a stable macroeconomic situation with a high share of the financial sector. These countries exhibited a model of financialization oriented towards the banking sector, as evidenced by its intense concentration and high share of credit to the private sector. The second group was characterized by greater financialization oriented towards capital markets, but with an unstable public finance situation. The third cluster was characterized by a low level of financialization and relatively high prices.

Table 7 presents the average indicator values for individual clusters in 2020.

**Table 7.** Average values of output variables across CEE countries groups in 2020

Cluster	X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>	X <sub>4</sub>	X <sub>5</sub>	X <sub>6</sub>	X <sub>7</sub>	X <sub>8</sub>
1	16.23	130.27	90.30	75.37	88.41	26.80	1.30	6.00
2	10.80	86.47	65.67	77.01	8.70	50.30	1.80	5.17
3	14.50	346.20	76.50	50.09	16.33	78.70	3.40	2.00

Source: Author's own.

The first cluster in 2020 was characterized by the highest share of FIRE sector value added in total value added, credit to the private sector in GDP, stock market capitalization, and the house price index, as well as the lowest public debt and inflation rates. The second cluster had the highest share of assets among the five largest banks and the lowest share of FIRE sector value added in total value added, as well as in financial assets as a percentage of GDP, credit to the private sector as a percentage of GDP, and stock market capitalization. The third cluster was characterized by the highest share of financial assets in GDP, public debt, and the highest inflation rate, and the lowest share of assets among the five largest banks and the house price index. The first group was therefore characterized by a balanced level of finan-

cialization, involving both the banking sector and the stock market, as well as a stable macroeconomic environment. The second group achieved a low level of financialization despite a consolidated banking sector. Hungary was the only country that did not form a cluster and, unlike any other country, had a large financial sector while exhibiting macroeconomic instability. However, they did not show signs of high consolidation of the banking sector or financialization of the real estate market.

Table 8 presents the average indicator values for individual clusters in 2024.

**Table 8.** Average values of output variables across CEE countries groups in 2024

Cluster	X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>	X <sub>4</sub>	X <sub>5</sub>	X <sub>6</sub>	X <sub>7</sub>	X <sub>8</sub>
1	12.77	133.63	55.10	83.68	8.34	50.67	1.40	4.93
2	11.10	42.80	40.10	64.90	19.83	54.80	5.80	-1.10
3	16.53	182.13	82.67	71.47	97.82	46.90	3.37	4.10

Source: Author's own.

The first cluster in 2024 was characterized by the highest share of assets held by the five largest banks, a high house price index, and the lowest stock market capitalization and inflation rate. The second cluster had the highest public debt and inflation rate, as well as the lowest share of FIRE sector value added in total value added, financial assets in GDP, credit to the private sector in GDP, share of assets of the five largest banks, and house price index. The third cluster was characterized by the highest share of FIRE sector value added in total value added, the most significant financial assets in GDP, the highest credit to the private sector as a percentage of GDP, the highest stock market capitalization, and the lowest public debt. The first group comprises countries with a real estate financialization model characterized by stable prices and a low share of stock market financing. In the case of Romania, a low level of financialization and macroeconomic instability were observed. The third cluster had a highly developed process of financialization and relatively good fiscal stability.

The study's results showed that, regardless of the year analyzed, the countries studied formed three distinct clusters. The number of clusters remained unchanged, but their structure did. Moreover, in 2020, Hungary and in 2024, Romania stood out from the rest, not forming a cluster with any other country. The fact that these countries do not belong to the larger clusters stems from their markedly different financialization profiles compared to the other countries in the region. In the case of Hungary, specific features of the financial structure, the relatively high role of financial assets and the volatility of indicators related to the banking sector and public debt. As a result, their profile was not consistently similar to either countries with high or low financialization, meaning they formed a separate configuration within the clusters. Romania, on the other hand, in 2024 clearly differed from the other countries primarily due to a lower level of credit to the private sector, lower financial assets, and weaker capital market development, whilst simultaneous differing macroeconomic conditions (e.g. higher inflation). Both cases demonstrate asymmetry in the process of financialization of the region. Some countries followed a common path of convergence, whilst Hungary and Romania exhibited more 'outlier' trajectories, which prevented their permanent inclusion in larger groups.

In individual groups of countries and years, the process of financialization progressed at varying rates, exhibiting distinct manifestations. Some economies showed a low level of financialization. Moreover, it was found that countries with relatively high financialization, based on the banking sector or balanced financialization involving the stock market, were characterized by a relatively higher level of macroeconomic stability. Countries with lower levels of financialization experienced problems with public finances and/or price levels.

The above observations for CEE countries lead to the conclusion that it is not possible to identify a single universal model of financialization, which also makes it challenging to develop uniform economic policy recommendations. A universal guideline is the need to

monitor the relationship between the development of the banking and capital sectors and to influence the maintenance of balance between them, as well as their positive impact on macroeconomic stability. In the last research year, it was demonstrated economic policy recommendations with strong participation from the banking sector. Given the risk of speculative bubbles, it is crucial to monitor house prices and market structure to detect any such activity. Another significant negative aspect of financialization is fiscal imbalance. In the absence of a robust financial sector, the economy is threatened with destabilization due to its dependence on foreign financing. This is also important for price levels. In countries where the FIRE sector has a low share of the economy, or of credit and financial assets, it is advisable to implement programs to develop financial institutions and to promote private funds and investments, such as through tax incentives or guarantee funds.

In summary, the countries studied formed three clusters in the three years under study. Their number, therefore, remained unchanged. However, their structure and size did change. More and more CEE countries are becoming similar in the financialization process, indicating that differences between them are blurring and that new risks may arise, such as those related to the financialization of the real estate market. The increased similarity among countries in 2020 stemmed from a parallel rise in the importance of the financial sector, credit to the private sector and financial assets in most of the region's economies, a trend reinforced by the shared context of European integration, the dominance of foreign banks, and similar monetary and fiscal policy responses during the COVID-19 pandemic. As a result, countries exhibited similar levels and structures of financialization, leading to greater convergence. In 2024, however, this process became more varied – differences in credit growth, levels of financial assets and public debt, and differing responses to a period of high inflation and restrictive monetary policy led to renewed divergence. Consequently, financialization in the region ceased to be uniform in nature, and its trajectory became more varied across countries. The Czech Republic and Poland present an interesting case, as they changed their cluster affiliation over the years. In the case of the Czech Republic, this shift in clusters was due to the stronger role of the capital market and financial assets. In 2024, their growth meant that the Czech Republic was assigned to the group of countries with higher financialization intensity, signifying a shift towards a more market-oriented financial model. Overall, the changes in clusters in both countries reflect their relative position in the region rather than sudden structural changes. In the case of Poland, the changes in clusters were mainly due to the maintenance of a moderate level of financialization. In 2014 and 2020, it was closer to countries with more developed financial markets, whereas in 2024 its relatively lower market capitalization and level of financial assets caused a shift towards a more moderate cluster.

## Conclusion

Although financialization primarily concerns transformations in the financial sector, it impacts various areas of modern economies and the daily lives of citizens. Due to the specific conditions of individual countries, it develops at different rates and manifests itself in other ways. This study aimed to identify similarities and differences in the manifestations of the financialization process across eleven selected Central and Eastern European countries in 2014, 2020, and 2024, using Ward's method. Due to the multifaceted nature of the process under study, eight variables representing its various manifestations were used to measure it.

The analysis confirmed the hypothesis that Central and Eastern European countries did not form a homogeneous group in terms of the manifestations and intensity of the financialization process in the years under study. Regardless of the year under study, the countries studied formed three clusters. Therefore, it was not the number of clusters that changed, but their structure. In the first year of the study, i.e., 2014, these countries were the most dispersed.

However, since 2020, the size of one of the clusters has increased significantly, indicating that these countries are becoming more similar in the observed manifestations of the financialization process. It is therefore not possible to identify a single universal pattern of financialization for the CEE countries. A universal guideline is the need to monitor the relationship between the development of the banking and capital sectors and to influence the maintenance of balance between them. The last research year also showed that the financialization of the real estate market is progressing, underscoring the need to monitor this area closely and limit speculative activity.

The study had its limitations, for example, the research period. Due to the research method used, the data covered only three years; perhaps a better solution would be to analyze time-series variables. In future studies, it would be advisable to compare the results obtained using other methods. It would also be interesting to construct a synthetic financialization index for the countries studied or to use econometric techniques to identify the determinants of this process.

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## ZRÓŻNICOWANIE PROCESU FINANSYZACJI W KRAJACH EUROPY ŚRODKOWO-WSCHODNIEJ - ANALIZA SKUPIEŃ

### Abstrakt

**Cel.** Finansyzacja jako rosnące znaczenie sektora finansowego w gospodarce identyfikowane jest zarówno w krajach rozwiniętych, jak i rozwijających się. Najmniej uwagi poświęca się badaniu jej przejawów w krajach Europy Środkowo-Wschodniej. Celem badań była identyfikacja podobieństw oraz różnic w przejawach procesu finansyzacji w 11 wybranych krajach Europy Środkowo-Wschodniej w latach 2014, 2020 oraz 2024. W badaniach postawiono hipotezę badawczą, zgodnie z którą kraje Europy Środkowo-Wschodniej nie tworzyły homogenicznej grupy pod względem przejawów oraz stopnia natężenia procesu finansyzacji w badanych latach.

**Metoda.** Jako metody badawcze wykorzystano krytyczną analizę literatury przedmiotu, analizę danych statystycznych oraz analizę porównawczą. Metody te umożliwiły identyfikację obszarów występowania procesu finansyzacji. Metoda Warda umożliwiła wyznaczenie skupień krajów, w których występowały podobne przejawy procesu finansyzacji.

**Wyniki.** W 2014 r. kraje Europy Środkowo-Wschodniej podzielono na trzy zróżnicowane klastry, co wskazywało na wyraźne różnice między analizowanymi państwami. W 2020 r. większość krajów została zgrupowana w jednym klastrze, co sugerowało wzrost podobieństwa i większą homogenizację w regionie, podczas gdy Węgry pozostały odrębne. W 2024 r. zaobserwowano dalsze zmiany w strukturze klastrów. Rumunia utworzyła odrębny klaster, podczas gdy Czechy, Estonia i Węgry zostały sklasyfikowane razem. Na podstawie uzyskanych wyników można wskazać na stopniowy wzrost podobieństwa między krajami Europy Środkowej i Wschodniej, chociaż proces ten nie był jednolity i nadal widoczne były znaczące różnice między niektórymi krajami.

**Słowa kluczowe:** finansyzacja, kraje Europy Środkowo-Wschodniej, metoda Warda

**JEL classification:** E44, O16, P27, O52, C38

Aleksandra Ostrowska  
Wydział Nauk Ekonomicznych  
Uniwersytet Warmińsko-Mazurski w Olsztynie  
ul. M. Oczapowskiego 2, 10-719 Olsztyn  
aleksandra.ostrowska@uwm.edu.pl

Kamil Gulczyński  
Wydział Nauk Ekonomicznych  
Uniwersytet Warmińsko-Mazurski w Olsztynie  
ul. M. Oczapowskiego 2, 10-719 Olsztyn  
166193@student.uwm.edu.pl