

# Can Financialisation Counteract Banking Exclusion? A Study on the Example of the European Union Member States

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## ABSTRACT

The purpose of the article is to assess the relationship between financialization and banking exclusion. The research hypothesis that financialization contributes to the reduction of financial exclusion was also verified. The research was based on an analysis of the variables describing financialization and banking exclusion of 27 European Union countries in the 2014–2021 period. The zero-unitarization method and Pearson’s correlation coefficient were used. The results of the study indicate that a high degree of financialization is found in Croatia, Greece, Cyprus and Portugal. In contrast, the level of banking exclusion is the highest in Finland, Sweden, the Netherlands and Latvia. An examination of the correlation between the indicators for each year from research period is negative, but the research of correlations of the mentioned indicators for each country is not unambiguous. For some countries the relationship is negative, for other it is positive.

**JEL classification:** G21; G23; G50

**Keywords:** financialization, banking exclusion, EU member states.

## 1. INTRODUCTION

Financialization is the process of growth of the financial sector in the economy. The process occurs in developed and developing countries whose economies operate as interconnected vessels. The course of the 2007–2008 financial crisis confirmed the way of functioning of the financial sectors of the early 21st century. Instability of the

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financial sector in the US, which was subject to the first phase of the financial crisis in 2007, began to spill over to European countries. Signs of the crisis in the countries could already be seen in the second half of 2007. The literature describes the collapse of Lehman Brothers (October 2008) as the beginning of the second phase of the financial crisis. The phase was characterized by the visibility of the negative impact of the financial sector crisis on the economy (Stachurska-Waga, 2012). Since the crisis was described, the literature has increasing attention to the process of financialization and its negative consequences for the economy and the actors within it.

The growth of the financial sector is affecting various sectors of the economy. The process is primarily visible in the non-financial corporate and household sectors. Financialization is the cause of changes taking place in the sectors, and the literature on the subject indicates negative consequences.

In the case of the non-financial corporate sector, financialization includes changes in investment strategy (Tomaskovic-Devey et al., 2015). It is possible to observe the primacy of increasing the value of the enterprise as the main goal of the business, as is important for shareholders. However, the share of other interested groups (e.g. employees) in the distribution of the generated profit is decreasing (Wrzesiński, 2014). So far, profits from business have been invested in the development of the company. However, the process of financialization meant that funds from activities of non-financial companies began to be invested in financial assets. As a result, the non-financial enterprise sector developed slower in terms of employment and wages, but began to reduce the differences in profits from financial and non-financial activities (Davis & Kim, 2015). Running the economy according to neoclassical and Keynesian ideas, combined with the process of financialization, enabled the emergence of global corporations, whose market dominance became visible in the 21st century.

Financialization of the household sector is associated with increased consumption (Lai, 2016). Excessive consumption is most often financed using credit money (Hein, 2009). The reasons for the increased amount of credit money should be sought in easier access to credit and the possibility of taking out debt (Hein & Van Treeck, 2008). It is a result of the deregulation of the financial sector (Hein, 2009). Financialization promotes household debt, but in the long run it serves to redistribute financial resources in the society (Bibow, 2010). Wealthy citizens receive interest on funds invested in instruments based on the claims of ordinary employees (Van Treeck, 2009) who must repay the debt increased by a predetermined interest rate (Bibow, 2010).

A consequence of financialization is also the stagnation of wages in developed countries caused by the transfer of work to the markets of developing countries. At the same time, in the societies of developed countries of the 21st century, the purchasing power of the middle class is decreasing. Thus, the increasing role of consumer and mortgage loans replacing wage increases (Wrzesiński, 2014).

Referring to the household sector, financialization has many negative effects. The above-mentioned consequences result from the impact of financialization on many sectors of the economy. However, it is not possible to indicate only negative consequences of the increasing importance of the financial sector for households. Increased demand for banking products and services results in the development of new technologies and increased access to them for a larger number of recipients. It means that the effects of the financialization process on the household sector may be ambiguous. On the one hand, there are negative effects related to the greater use of credit money replacing salary increases. On the other hand, the process increases interest in financial services and makes it necessary to increase financial knowledge in the society.

Referring to the above, the growing role of the financial sector, especially the banking sector, highlights the problem of banking exclusion. The banking exclusion may be related to both access to banking services and products and the level of public knowledge about the products. Banking exclusion in the context of financialization should decrease. Therefore, it is important to undertake research on the impact of financialization on reducing the phenomenon of banking exclusion. It is difficult to find research combining the two issues in the literature on the subject. The aim of the article is to assess the relationship between financialization and banking exclusion. During the research on the described relationship, a research hypothesis was put forward stating that financialization contributes to reducing banking exclusion.

The following are parts of the article: review of literature on the financialization and of the banking sector and the relationship between financialization and banking exclusion. Then, the parameters of the study are indicated and the methodology of research is described. The results of the study are presented, the results of other researchers are referred to and conclusions are formulated.

## 2. LITERATURE REVIEW

The literature review section is divided into two parts. The first introduces the concept of financialization and its role in the banking sector. The second takes a closer look at banking exclusion and its relationship with financialization.

### 2.1. Financialization of the Banking Sector

Changes in the banking sector are due to the operation of four occurring phenomena: disintermediation, deregulation, globalization and financialization (Fierla, 2019). Of them, financialization is the only unabated phenomenon. In the literature, financialization is defined as the rise of the financial sector in the economy (Marshall, 2012). The process has become more prominent since the financial crisis referred to as the subprime crisis (Fierla, 2020). However, the word financialization first appeared in the early 1990s. (Vercelli, 2013). Financialization has become part of the neoliberal framing (Correia & Barradas, 2021). In the view, the financial market is perfectly competitive, efficient, stable and self-regulating (Urban, 2019). As a result, it plays an important role in the economy.

Financialization is difficult to define unambiguously. The definitions can be divided according to a narrow (referring to individual financial sector entities) or broad (referring to the growth of the importance of the financial sector in the economy) approach (Ratajczak, 2012). The narrow approach can be divided according to the part of the financial sector under research. Two definitions found in the literature are indicated below.

J. Bibow (Bibow, 2010) points out that financialization is a process of structural change in the financial sector, which includes an increase in the importance of securities and derivatives markets relative to traditional banking intermediation. Changes introduced by deregulation, competition and innovation in the financial market together with an increase in the importance of the financial sector are relative to the non-financial sector (in terms of: value added, employment, profits, political influence, etc.).

In turn, S. Dallyn (Dallyn, 2011) defines financialization as the spread of credit money to an increasing part of the population and the process of processing and assuming the loans and credits in the form of financial derivatives, i.e. securitization or derivatives.

When looking for reasons for the emergence and development of the financialization process, it is important to note a number of phenomena favoring the rise of the financial sector (Gostomski, 2014). The phenomena include the deregulation of the financial sector, the concentration process in the financial sector, the increasing number of institutional investors and their participation in the financial market.

The financial sector has an important role in the economy due to its intermediation of the exchange of funds between entities with a financial surplus and those characterized by a lack of funds. Two groups of operations can be distinguished here. Firstly, real sphere finance focusing on increasing the financial resources allocated to increase purchasing power. Secondly, autonomous finance related to the expansion of assets and the generation of profit. The operations are often speculative in nature (Ciuman, 2014).

Financialization has also been fostered by securitization (Fierla, 2017), the modus operandi of which can be indicated by example of mortgages. The loan granted could be converted into securities backed by instalment repayments. It allowed the bank to raise funds to make further loans and the investor holding the security was guaranteed repayment by the bank (Davis & Kim, 2015). Securitization has contributed to the emergence of the derivatives market, the development of which has resulted in an increased role for instruments with a less transparent design.

Measures reducing control over the financial sector have led to a decrease in self-regulation of the banking sector. Among the changes caused by the actions there are (Florczak, 2022):

- the emergence of many new financial instruments that have no reference in funds held by banks,
- the proliferation of the banking market on a global scale,
- the enabling of new institutions that can operate in the market,
- a change in the role of traditional banking institutions which are intermediaries in both domestic and international capital markets.

### 2.2. Financialization and Banking Exclusion

Initially, financial exclusion was considered in the context of geographical difficulties in accessing financial services, but over time the term began to be considered from the perspective of all possible restrictions (Kuchciak et al., 2014; Marcinkowska, 2013). A review of the literature indicates that financial exclusion is defined primarily

from the perspective of low income as the most important limitations in access to financial services (Leyshon & Thrift, 1995; Carbo et al., 2005; Anderloni, 2007; Mohan, 2006). There are many types of financial exclusion levels in different countries, the common denominator is the specificity of excluded people: with low income or negative credit history and excessive debt. There are many reasons for the situation, and the basic ones include poor budget management and carelessness in spending funds. When it comes to opening a bank account, the main reasons for exclusion are identity requirements, account opening conditions, fees, physical access issues and psychological barriers. Also, knowledge about preventing financial exclusion is becoming more and more common, e.g. by organizing various educational programs, undertaking actions by banks initiating financial cooperation, etc.

The definition is often supplemented with the aspect of being socially disadvantaged, which makes it difficult to use financial services (Anderloni, 2007). Financial exclusion is both the cause and effect of social exclusion defined as *“all the mechanisms of breakdown, both in symbolic terms (stigma or negative attributes) and from the viewpoint of social relations (a break in the various social links which bind people together). Exclusion is both a process and a state which enshrines a lack of integration.”* (Loisy, 2000).

It is also worth paying attention to the official definition of the European Commission (European Commission 2008), used in reports and legal acts. According to it, financial exclusion is *“the process by which citizens experience difficulties in accessing and/or using financial products and services in the mainstream market that are suitable for their needs and enable them to lead a normal life in society.”* The approach is a reference point for subsequent definitions.

A different approach to financial exclusion considers improper financial education of the society as its cause (Gloukviezoff, 2004). Consumers who do not know how to use financial products often resign from using them, which results in excluding them.

A narrower perspective takes into account financial exclusion due to specific financial services (called essential services) and difficulties in accessing them. They are services that are not necessary for the household budget, but on the other hand may be important for the consumer due to their profitability, long-term security and the possibility of social and economic inclusion (Kuchciak, 2013). The analysis of financial exclusion can be carried out through the prism of various aspects of an individual's life. Multifacetedness of the issue applies to the payment, credit, savings and investment area, pension and insurance (Kozłiński, 2010). Referring to the exclusion of consumers due to excessive indebtedness, it is worth noting that the cause may be excessive consumption, which makes it impossible to take out a loan, or a low income that blocks the chances of getting a loan in the sector banking (Czarnecka, 2018; Kempson et. al., 2000). Due to the fact that banks play a key role in the financial system, the research will focus solely on banking exclusion. In addition, it should be pointed out that access to banking services is considered a universal need in most developed societies.

Thus banking inclusion (understood as the opposite of financial exclusion, meaning ensuring all consumers access to banking services) can also be considered in the context of financialization. Banking inclusion is related to the financialization of social relations, because consumers living in certain social relations need banking products (and thus financialization) so that people can lead normal social lives. For example, in order to receive salary and social benefits, it is necessary to have a bank account. In turn, bank loans are a way to meet consumer needs, including those related to the life cycle (e.g. a mortgage loan for the purchase of your own apartment). As for the means of payment, they are related to the organization of social relations. In the literature on the subject, one can find studies showing the connection between banking inclusion and financialization. For example, the research of Beck, Demirguc-Kunt and Levine shows that there is clearly positive correlation between the size of the financial sector (measured a simplified range indicator, i.e. the logarithm of the average level of loans to the country's GDP) and the Gini index for the years 1960–2000 (Beck et. al., 2007). For the period 1960–2010, the values were confirmed by studies by Cihak, Demirguc-Kunt, Feyen and Levine (Cihak et. al., 2012). Similarly, Levine's research concludes that *“a well-functioning and mature system of financial means allows access to services of a significant part of the population, and not only restricts access to “empowered officials” or wealthy residents”* (Levine, 2005). Raising the level of access to banking services is associated with a group of so-called supply instruments. The greater the level of access to banking services the greater the chances of banking inclusion of the society (World Bank, 2014). However, literature studies point to the difficulty in examining the connection between financialization and banking inclusion. There is a group of people who for reasons other than economic (e.g. cultural, religious or social) resign from banking services. How the authors point out, it is crucial to measure financial inclusion (Błędowski & Iwanicz-Drozdowska, 2007, 2010; Iwanicz-Drozdowska, 2011; Maciejasz-Świątkiewicz, 2013; World Bank, 2014).

In the literature of subject, there is the research that cover the topic of the relation between the process of financialization and banking exclusion.

The conducted review of the literature on the subject indicates that the study is the basis of financialization and banking exclusion, but it contains one form of examining the correlation between individual indicators. The article uses correlation taking into account financialization and banking exclusion indicators which consist of few indicators of financialization and banking exclusion. The research method allows checking the relationships between variables in the individual countries in which they occur, when they are available over time, but in one country. The method of examining the relationship between variables also allows for an effective approach to financial differences and banking exclusion.

### 3. METHODOLOGY AND DATA

The research was conducted for the 27 European Union Member States from 2014 to 2021. The time span of the research is due to data availability. The aim of the article is to assess the relationship between financialization and banking exclusion. For the reason, two synthetic indicators have been created: the degree of financialization and the degree of banking exclusion. The indicators can be constructed on the basis of variables used in the literature of subject.

The degree of financialization indicates the level of growth of the financial sector of the banking sector and the economy of a country and allows comparison between the countries researched. The indicator is a synthetic measure that takes into account variables describing the financialization process. It takes values from 0 (minimum value) to 1 (maximum value). The higher the degree of financialization, the more present the financialization process is in a country's economy. Five variables from the literature of the subject used to describe financialization were taken to determine the degree of financialization:

- The ratio of the current level of the budget balance to GDP – the budget deficit contributes to an increase in the need for external financing, which promotes financialization. This is the only destimulant in examining the degree of financialization (Müller, 2013).
- Public debt-to-GDP ratio – an increase in the indicator illustrates a higher demand for public sector debt financing (Gołębiowski & Szczepankowski, 2015).
- The ratio of current consumption of households to GDP – the financialization process is made visible by the creation of credit money, which replaces wage growth in the economy (Gołębiowski & Szczepankowski, 2015).
- The ratio of commercial banks' assets to GDP – the indicator illustrates the role of the banking sector in the economy. The higher the ratio of commercial banks' assets to GDP, the more favorable the conditions for the development of financialization (Ciuman, 2014).
- The ratio of private sector debt to GDP – household debt indicates propensity of market participants to go into debt; the higher the value of the indicator, the higher the financialization (Gołębiowski & Szczepankowski, 2015).

The data for variables describing financialization was taken from Eurostat Database.<sup>2</sup> The values of variables are for the end of each year for the period 2014–2021.

Referring to the degree of banking exclusion, it indicates the magnitude of banking exclusion in the individual countries researched. It is a synthetic indicator that takes into account variables describing banking exclusion and takes values from 0 to 1. The higher the value of the indicator, the higher the banking exclusion. Five variables were used to determine the level of banking exclusion, banking exclusion is described by them in the literature (e.g. Sinclair, 2001):

- Outstanding deposits of the household sector with commercial banks (% of GDP) – denotes the total amount of all types of outstanding deposits of individuals from the household sector in commercial banks as a percentage of GDP. For the research, the indicator was used to show the level of consumer savings.
- Number of debit cards per 1 000 adults – denotes the number of credit cards in circulation (excluding the expired and withdrawn cards) of all financial institutions per 1,000 adults in the reporting jurisdiction. In the study, the indicator was used to show the level of consumer credit card debt (selected in the group of loans due to the interest-free period and simpler credit scoring procedures).
- Number of commercial bank branches per 100 000 adults – denotes the number of commercial banks and their branches for every 1,000 square kilometers in the reporting jurisdiction. The indicator shows the availability of outlets for consumers who want to use traditional banking services.

<sup>2</sup> Eurostat Database, online: <https://ec.europa.eu/eurostat/data/database>, access: 03.07.2023.



- Number of ATMs per 100 000 adults – denotes the total number of ATMs of all financial institutions for every 100,000 adults in the reporting jurisdiction. The indicator shows accessibility to ATMs as devices that facilitate basic payment operations for consumers.

The data for variables describing financial exclusion was taken from IMF DATA Access to macroeconomic & financial data – the Financial Access Survey (FAS).<sup>3</sup> The values of variables are for the end of each year for the period 2014–2021.

An empirical research of relationship between financialization and banking exclusion was conducted in three stages:

1. Determine the level of financialization for each European Union Member State for each year of the 2014–2021 period and mean level of financialization for the whole period 2014–2021.
2. Determine the level of banking exclusion for each European Union Member State for each year of the 2014–2021 period and the mean level of banking exclusion for the whole period 2014–2021.
3. Identify correlation between the degree of financialization and the level of banking exclusion in two ways:
  - a. correlation of values of the degree of financialization and the degree of banking exclusion in each year of the researched period for the whole research period for each country under research,
  - b. correlation of values of the degree of financialization and the degree of banking exclusion in each year (values of the indicators for the whole group of countries were taken into account).

Transformations that allow different variables to be standardized can be made using standardization methods, which include: rank, standardization, unitarization, quotient transformation (Panek, 2009). Definitions of the degree of financialization and the degree of banking exclusion are determined by the standardization method that should be used for the research. Due to the way, the indicators are defined, both synthetic indicators were constructed using the method of zeroed unitarization. For stimulants, normalization is calculated according to the formula (Kukuła & Bogocz, 2014):

$$z_{ijt} = \frac{x_{ijt} - \min_{it} x_{ijt}}{\max_{it} x_{ijt} - \min_{it} x_{ijt}}, \quad \max_{it} x_{ijt} \neq \min_{it} x_{ijt} \quad (1)$$

$z_{ijt} \in [0;1]; i = 1, \dots, r; j = 1, \dots, n; t = 1, \dots, l;$

$x_{ijt}$  – value of the  $i$ -th parameter for the  $j$ -th entity in  $t$ -th year,  $i = 1, \dots, 11; j = 1, \dots, 28; t = 1, \dots, 11;$

$\min_{it} x_{ijt}$  – minimum value of the  $i$ -th parameter;

$\max_{it} x_{ijt}$  – maximum value of the  $i$ -th parameter.

The following formula was used to obtain a synthetic indicator (Starzyńska, 2009):

$$Q_{it} = \frac{\sum_{j=1}^n z_{ijt}}{n} \quad (2)$$

$Q_{it}$  – a synthetic indicator that is the arithmetic mean of the standardised values of the indicators  $i = 1, \dots, r$  during the period  $t$  for  $j$ -th country.

In realizing the objective of assessing the relationship between financialization and banking exclusion, the correlation between the degree of financialization and the level of banking exclusion was determined. The correlation indicates the relationship between the variables under study and is calculated from the formula (Starzyńska, 2009):

$$r_{yx} = \frac{\sum_{i=1}^N (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^N (x_i - \bar{x})^2} \cdot \sqrt{\sum_{i=1}^N (y_i - \bar{y})^2}} \quad (3)$$

The following section presents the results of the research.

<sup>3</sup> IMF DATA Access to macroeconomic & financial data – Financial Access Survey (FAS), online: <https://data.imf.org/?sk=E5DCAB7E-A5CA-4892-A6EA-598B5463A34C&slid=1390030341854>, access: 03.07.2023.

## 4. RESULTS

In the first part of the study, the degree of financialization was determined on the basis of five variables describing financialization. The following table summarizes the results of the research. In order to facilitate the interpretation of the results, a color palette has been applied as follows. The lowest values of the degree of financialization for a given year are marked in red, while the highest values are marked in green. The values between the maximum and minimum degree of financialization are marked in light and dark yellow, orange and light green.

**Table 1**  
Degree of financialization in EU Member States 2014-2021

Country	2014	2015	2016	2017	2018	2019	2020	2021
Austria	0.254	0.240	0.236	0.231	0.222	0.218	0.268	0.249
Belgium	0.235	0.230	0.231	0.222	0.223	0.226	0.270	0.246
Bulgaria	0.265	0.236	0.219	0.208	0.205	0.197	0.217	0.217
Croatia	0.572	0.544	0.511	0.486	0.481	0.473	0.525	0.486
Cyprus	0.522	0.468	0.429	0.391	0.373	0.310	0.324	0.296
Czech Republic	0.178	0.164	0.159	0.156	0.158	0.156	0.183	0.180
Denmark	0.255	0.261	0.254	0.240	0.245	0.233	0.256	0.224
Estonia	0.174	0.179	0.180	0.170	0.166	0.160	0.192	0.167
Finland	0.256	0.251	0.243	0.223	0.237	0.236	0.265	0.246
France	0.283	0.280	0.284	0.282	0.280	0.285	0.340	0.319
Germany	0.225	0.217	0.213	0.206	0.201	0.205	0.239	0.230
Greece	0.392	0.396	0.358	0.353	0.350	0.345	0.392	0.361
Hungary	0.194	0.180	0.181	0.181	0.174	0.173	0.206	0.199
Ireland	0.270	0.175	0.165	0.141	0.128	0.120	0.133	0.099
Italy	0.302	0.299	0.293	0.290	0.285	0.279	0.330	0.318
Latvia	0.225	0.216	0.209	0.207	0.194	0.186	0.202	0.213
Lithuania	0.207	0.208	0.208	0.202	0.196	0.190	0.223	0.197
Luxembourg	0.442	0.439	0.443	0.434	0.434	0.455	0.486	0.456
Malta	0.356	0.299	0.275	0.241	0.235	0.224	0.255	0.237
Poland	0.230	0.219	0.220	0.214	0.204	0.200	0.230	0.198
Portugal	0.384	0.359	0.338	0.335	0.315	0.307	0.340	0.319
Romania	0.193	0.188	0.201	0.200	0.201	0.203	0.231	0.227
Slovak Republic	0.202	0.197	0.205	0.202	0.204	0.206	0.236	0.235
Slovenia	0.244	0.223	0.214	0.196	0.186	0.185	0.217	0.203
Spain	0.344	0.324	0.312	0.303	0.293	0.287	0.332	0.312
Sweden	0.231	0.215	0.212	0.213	0.211	0.208	0.231	0.212
The Netherlands	0.252	0.245	0.234	0.218	0.208	0.199	0.230	0.215

Source: Own development based on research conducted by the author using data from the Eurostat database.

During the 2014–2021 study period, seven countries (Croatia, Cyprus, Greece Italy, Luxembourg, Portugal and Spain) were characterized by a high degree of financialization. It should be pointed out that they are mostly Southern European countries, and mainly those belonging to the group of countries characterized by economic problems referred to as GIIPS. The lowest degree of financialization was observed in Estonia, the Czech Republic and Ireland.

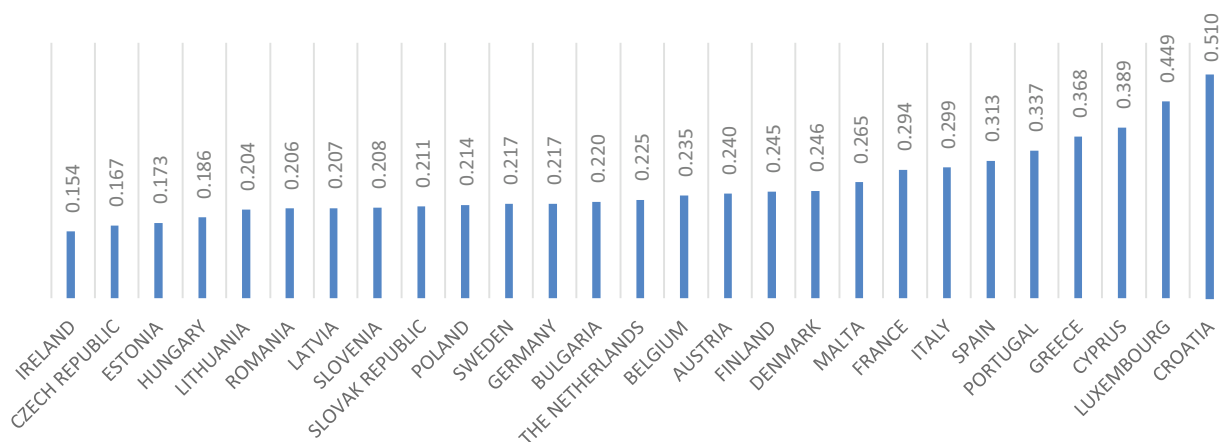
In order to identify the countries with the highest degree of financialization over the entire period under study, an attempt was made to determine the average degree of financialization for the given period.

Considering the change in the degree of financialization from one year to the next, it should be noted that most of the countries under research were characterized by a decrease in the indicator in the following years. Most countries recorded a decrease in the degree of financialization in 2021 (26 countries) and 2017 (25 countries). In the other researched years (except 2020), decrease in the degree of financialization characterized at least 19 of the countries under research. The exception in the researched period is 2020, in which all 27 countries noted an increase in the degree of financialization. Due to the spread of the COVID-19 pandemic, it became necessary for many businesses to increase access to credit money that could temporarily cover the costs of their activities, the effects of which were decreased by the measures that were taken to stop the pandemic. The next researched year (2021), in which the 26 countries were characterized by a decrease in the degree of financialization, shows that 2020 was an exceptional year in the researched period. Referring to the change in the degree of financialization by country, it should be pointed out that four countries recorded an increase in the degree of financialization in four years of the researched period. They were Belgium, Malta, Romania and Slovakia. In contrast, 11 countries noted a decrease in most of the years of the study: Austria, Bulgaria, Croatia, Cyprus, Germany, Ireland, Italy, Lithuania, Portugal, Slovenia and Sweden. Changes in the degree of financialization indicate a restraint of increase in the process in the researched countries, which is in line with the actions introduced after the 2007–2008 financial crisis.

The results of the average degree of financialization for each of the countries studied over the period 2014–2021 are presented in Figure 1.

**Figure 1**

Average degree of financialization in EU Member States in 2014–2021



Source: Own development based on research conducted by the author using data from the Eurostat database.

The results of the average degree of financialization make it possible to indicate that high degree of financialization characterized Croatia (degree of financialization equal to 0.522), Greece (0.511), Cyprus (0.447), Portugal (0.441), Italy (0.427) and Spain (0.421). In contrast, Estonia (0.202), Ireland (0.213) and the Czech Republic (0.217) had a low degree of financialization.

The highest degree of financialization was mostly observed in Southern European countries. The countries have temporary economic problems, which may be due to excessive growth of the financial sector. According to the concept of the optimal size of the financial sector, the overgrowth of finance in the economy can have a negative impact on economic growth (Florczak, 2022).

The second part of the research involved determining the level of banking exclusion. The higher was the value of the index, the higher was the banking exclusion. The values of the synthetic bank exclusion index are shown in Table 2.



**Table 2**

Level of banking exclusion in European Union member states from 2014 to 2021

Country	2014	2015	2016	2017	2018	2019	2020	2021
Austria	0.580	0.591	0.638	0.636	0.627	0.621	0.642	0.625
Belgium	0.686	0.692	0.703	0.714	0.733	0.718	0.733	0.760
Bulgaria	0.632	0.632	0.670	0.659	0.657	0.636	0.633	0.632
Croatia	0.596	0.582	0.576	0.552	0.546	0.531	0.560	0.562
Cyprus	0.813	0.823	0.832	0.766	0.809	0.836	0.850	0.861
Czech Republic	0.859	0.858	0.857	0.854	0.850	0.849	0.856	0.849
Denmark	0.829	0.843	0.850	0.863	0.867	0.873	0.883	0.891
Estonia	0.840	0.854	0.862	0.868	0.868	0.877	0.882	0.887
Finland	0.939	0.946	0.954	0.954	0.952	0.946	0.947	0.941
France	0.678	0.682	0.688	0.697	0.710	0.717	0.724	0.734
Germany	0.725	0.729	0.820	0.825	0.831	0.830	0.839	0.839
Greece	0.819	0.825	0.829	0.828	0.832	0.833	0.832	0.836
Hungary	0.883	0.885	0.882	0.878	0.880	0.843	0.844	0.849
Ireland	0.757	0.775	0.779	0.784	0.809	0.821	0.851	0.895
Italy	0.668	0.662	0.673	0.689	0.705	0.711	0.715	0.731
Latvia	0.849	0.858	0.867	0.862	0.870	0.895	0.907	0.909
Lithuania	0.887	0.896	0.902	0.906	0.913	0.937	0.831	0.678
Luxembourg	0.514	0.516	0.512	0.518	0.512	0.510	0.523	0.509
Malta	0.774	0.774	0.785	0.794	0.814	0.834	0.850	0.852
Poland	0.801	0.799	0.788	0.795	0.794	0.796	0.812	0.825
Portugal	0.437	0.513	0.495	0.508	0.525	0.520	0.531	0.549
Romania	0.812	0.811	0.816	0.820	0.828	0.835	0.840	0.843
Slovak Republic	0.829	0.826	0.823	0.828	0.829	0.831	0.831	0.840
Slovenia	0.718	0.719	0.724	0.731	0.745	0.751	0.779	0.787
Spain	0.523	0.535	0.563	0.579	0.599	0.625	0.647	0.693
Sweden	0.891	0.895	0.914	0.927	0.929	0.938	0.942	0.954
The Netherlands	0.866	0.878	0.890	0.898	0.909	0.914	0.929	0.939

Source: Own development based on research conducted by the author using data from the IMF DATA Access to macroeconomic & financial data – Financial Access Survey (FAS) database.

According to the above data, Finland, Sweden, the Netherlands, Denmark, Latvia, Estonia and Hungary had the highest values of the banking exclusion index for most of the 2014–2022 period studied. In the countries, banking exclusion calculated on the basis of the four variables adopted for the study was present to a high degree. In contrast, the lowest banking exclusion was recorded in Croatia.

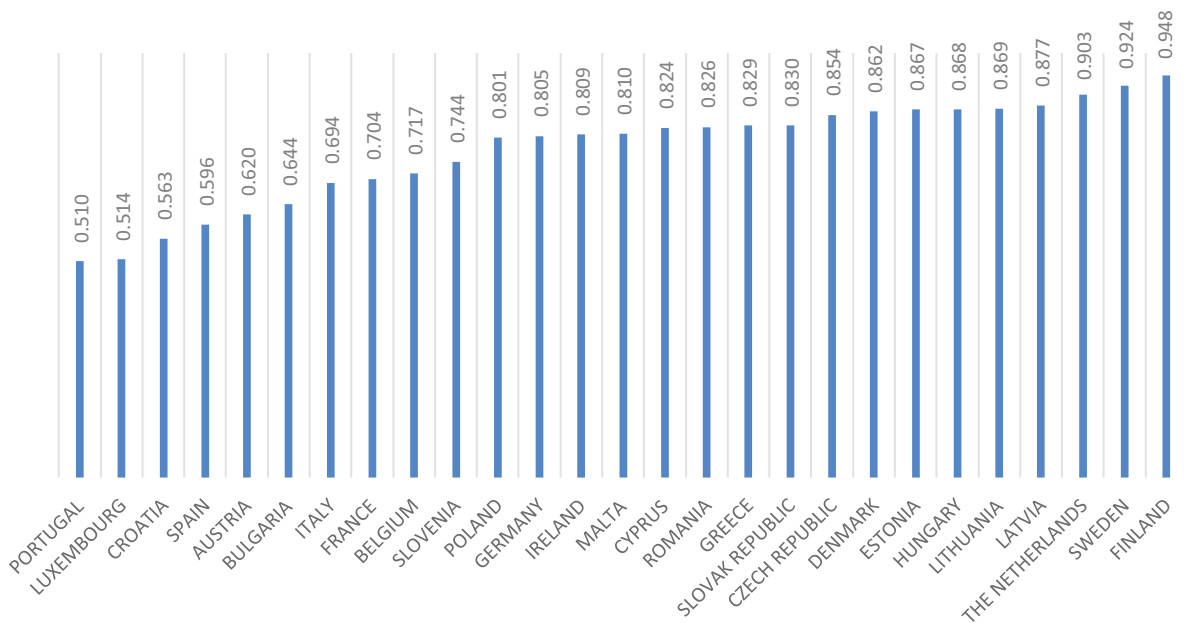
Considering the change in the degree of banking exclusion from one year to the next, it should be noted that most of the countries under research were characterized by an increase in the indicator in the following years. In 2020, an increase was recorded for 24 countries researched. The fewest countries noted an increase in the degree of banking exclusion in 2017 (18 countries) and 2019 (17 countries). In the other researched years, the indicator increased in at least 20 countries. Referring to the evolution of the degree of banking exclusion

by country, it should be pointed out that in each of the researched years 2015–2021, an increase in the degree of banking exclusion was recorded for Denmark, Estonia, France, Ireland, Malta, Slovenia, Spain, Sweden and the Netherlands. The countries are quite diverse and it is difficult to identify a single justification for the annual increase in their degree of financialization. Some countries showed a decrease in the degree of financialization for most of the period studied. They were Bulgaria, Croatia and the Czech Republic.

In order to identify the countries with the lowest level of banking exclusion throughout the study period, an attempt was made to determine the average level of banking exclusion for the entire study period. The results from the study are presented in Figure 2.

**Figure 2**

Average level of banking exclusion in European Union member states from 2014 to 2021



Source: Own development based on research conducted by the author using data from the IMF DATA Access to macroeconomic & financial data – Financial Access Survey (FAS) database.

According to the information in the chart above, the lowest banking exclusion was recorded in Croatia (0.490). In contrast, countries with high banking exclusion were Finland (0.956), Sweden (0.927), the Netherlands (0.904) and Latvia (0.902). In the countries, conditions in the banking sector were conducive to banking exclusion. Conditions for the development of banking, especially among the bank-excluded, were not favorable. When analyzing the results obtained, it is necessary to take into account peculiarities of the countries (a large part of the land is occupied by uninhabited forested areas) – the indicators of banking exclusion used in the study were based mainly on the availability of banking products. Therefore, in the context of countries such as Finland or Sweden, it would make more sense to further interpret the results obtained based on a different set of indicators of banking exclusion, mainly centering on the physical use of banking products.

The third part of the study involved determining the correlation between the obtained values of the synthetic indicators. In the tables below, there are the results of:

1. the correlation of values of the degree of financialization and the degree of banking exclusion in each year of the researched period for whole research period for each country under research (table 3),
2. the correlation of values of the degree of financialization and the degree of banking exclusion in each year (the values of the indicators for the whole group of countries were taken into account) (table 4).

**Table 3**

Correlation coefficients of the degree of financialization and the level of banking exclusion in European Union countries in the 2014–2021 period

Country	Correlation coefficient	Significance (two-sided)
Austria	-0.108	0.799
Belgium	0.382	0.351
Bulgaria	-0.369	0.368
Croatia	0.900**	0.002
Cyprus	-0.438	0.278
Czech Republic	0.216	0.607
Denmark	-0.676	0.066
Estonia	-0.112	0.792
Finland	-0.570	0.141
France	0.712*	0.048
Germany	-0.113	0.790
Greece	-0.587	0.126
Hungary	-0.422	0.297
Ireland	-0.752*	0.031
Italy	0.319	0.441
Latvia	-0.492	0.215
Lithuania	-0.071	0.867
Luxembourg	0.428	0.291
Malta	-0.701	0.053
Poland	-0.117	0.783
Portugal	-0.795*	0.018
Romania	0.896**	0.003
Slovak Republic	0.738*	0.037
Slovenia	-0.364	0.375
Spain	-0.345	0.403
Sweden	-0.314	0.448
The Netherlands	-0.693	0.057

\* Significant correlation at the 0.05 level (two-sided).

\*\* Significant correlation at the 0.01 level (two-sided).

Source: Own study.

The results of the study in Table 3 show that the results obtained are statistically significant for only 6 of the 27 countries studied. They are: Croatia, France, Ireland, Portugal, Romania and Slovakia. In two of the countries (Portugal, Ireland), the correlation of the studied degree of financialization and the degree of bank exclusion is negative. It means that in the countries, an increase in the degree of financialization occurred with a decrease in the degree of bank exclusion. In contrast, for the other four countries, the correlation of the indicators was positive. It means that an increase in the degree of financialization occurred at the same time as an increase in the degree of bank exclusion. A strongly positive correlation was obtained for Croatia, characterized by high degrees

of financialization and low degrees of banking exclusion. In the country, increased financialization may have been one component of increased bank exclusion.

In the table 4, there are the results of correlation of values of the degree of financialization and the degree of banking exclusion in each year (values of the indicators for the whole group of countries were taken into account).

**Table 4**

Correlation coefficient of the degree of financialization and the level of banking exclusion 2014–2021

	2014	2015	2016	2017	2018	2019	2020	2021	On the average values of the indicators for each year for the research period 2014–2021
Correlation coefficient	-0.500**	-0.507**	-0.568**	-0.644**	-0.619**	-0.644**	-0.664**	-0.647**	-0.617**
Significance (two-sided)	0.008	0.007	0.002	0.000	0.001	0.000	0.000	0.000	0.001

\*\* Significant correlation at the 0.01 level (two-sided).

Source: Own study.

The results above show that the degree of financialization and the level of banking exclusion are negatively correlated. It means that the relationship between the ratios is negative, i.e. an increase in one variable causes a decrease in the other variable. In the case analyzed, it can be assumed that an increase in the degree of financialization can be one of the components that cause a decrease in the level of banking exclusion.

Referring to the obtained values of the correlation coefficient, it should be pointed out that it was the strongest in 2016–2017 and was lower than -0.610. It seems interesting that, according to the latest data (for 2021), the correlation between the variables was the weakest in the whole studied period 2014–2021. Considering the average value of the studied synthetic indicators, it was -0.615 (the strength of the correlation is moderate).

## 5. DISCUSSION

The financial crisis at the turn of 2007 and 2008 showed that the development of the financial system may result in a higher rate of economic growth, but on the other hand, it may also be a source severe turbulence and instability leading to deepening income inequalities and financial exclusion (Stiglitz, 2010; Shiller, 2012; Woźniak, 2012). The events of that period also showed that the measures used so far to measure the development of the financial system are burdened with numerous limitations (World Bank, 2014, Čihák et. al., 2012).

In the opinion of many researchers, the growing threat is of particular importance financial exclusion that affects people without access to financial services and people with a low level of financial awareness (Flejterski, 2007; Flejterski, 2008; Iwonicz-Drozdowska, 2011; Świecka, 2008; Bogucka-Kisiel, 2012).

The lack of common definitions for the issue of banking exclusion means that there are no clear guidelines on the use of specific indicators of banking exclusion. It is a significant limitation of research, as the possibilities of comparing the situation in individual countries are very limited (the problem was raised, among others, by Anderloni et. al., 2008). There are many indicators of bank exclusion in the literature, but in order to carry out calculations it was necessary to limit them to those representing the primary areas of consumer contact with banks.

Results of our research for each year of the research period and the whole research period (for average values of indicators, which were used to study the correlation for the whole period 2014–2021) are consistent with a stream of research (e.g. Levine, 2010; Čihák et al., 2012; Beck et. al., 2007) that finds a positive correlation between financialization and the fight against bank exclusion. In the context, financialization can be a process that creates conditions conducive to counteracting banking exclusion. However, the basic assumption of the relationship is that financial markets allocate consumers' savings in an efficient manner, as only this will ensure a stable and sustainable financial system (Flejterski, 2007), having a positive impact on leveling opportunities in society's access to banking services (Sachs, 2011; Woźniak, 2012; Scharmer & Kaufer, 2013).

## 6. CONCLUSIONS

Numerous theoretical and empirical studies conducted over the years have shown that proper functioning of the banking sector has a positive impact on the economy of a given country. Access to basic banking services and their proper use is of great social and economic importance for the whole society. Therefore, the proper development of the financial system can have a positive impact on increasing access to banking services for consumers, which should be considered an important tool to reduce banking exclusion. The conducted review of the literature on the subject indicates that the study is the basis of financialization and exclusion, but it contains one form of examining the correlation between indicators. The article uses correlation taking into account financial and banking exclusion indicators which are synthetic measures. The research method allows checking the relationships between variables in the individual countries in which they occur, when they are available over time, but in one country. The method of examining the relationship between variables also allows for an effective approach to financialization and banking exclusion. The research approach allowed filling the research gap in the area and may constitute an interesting starting point for further research.

The purpose of the article, which was to assess the relationship between financialization and banking exclusion, was carried out using the method of zeroed unitarization and the Pearson's correlation coefficient. Based on the research, the hypothesis was partially positively verified. According to the correlation coefficient for each year of research period, the increased degree of financialization shows a negative relationship with the level of banking exclusion. For each researched country the results are unambiguous. Portugal and Ireland are characterized by negative relationship between financialization and banking exclusion. There are countries (Croatia, France, Romania and Slovakia) for which the mentioned relationship is positive. The obtained results mean that the growth of the financial sector can contribute to the reduction of banking exclusion, which is in line with numerous researcher's results in the literature. At the same time, it is important to be aware that the research conducted does not allow for a detailed indication of the studied relationship for each country under research. In the future, the study can be expanded to include the use of parametric methods and to test the results obtained on the basis of different variants of exclusion indicators (for example, the availability of banking services can be supplemented with the use of basic categories of banking products). It would be an interesting research direction to expand the quantitative research conducted to include a case study for individual countries, for example, those with the highest degree of financialization and the lowest level of bank exclusion as inspiration for transformation in countries with weaker performance in the areas.

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### Declaration about the scope of AI utilization

The authors did not use an AI tool in the preparation of the article.



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