# BANKING INSTITUTIONS AND AGGREGATED INDICATORS FOR FINANCIAL STABILITY ON THE ROMANIAN BANKING MARKET

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**Abstract**
In times of crisis, the behaviour of the participants in the economic process changes, they being forced to adapt to new times, at a rapid pace. It reflects prudence and a reorganization from all points of view regarding the activities of companies. The scientific research aims to analyse the behaviour of banking institutions in times of crisis, but also in periods of economic growth based on aggregate indicators that reflect the evolution of banking financial institutions over a period of 15 years, starting from the economic crisis from 2008 and ending with 2022. At the same time, the scientific approach makes a brief presentation of Romanian banking sector at the end of 2022 from the perspective of shareholding and market share for the main banks in Romania in order to better understand their position these in the market.

**Key Words:**
Solvency Indicator, Leverage, Return on assets, Return on equity

**JEL Classification:**
F23, G21, M41, G32

## Introduction

The evolution of international financial markets during 2020 - 2022 has experienced great disturbances leading to unprecedented measures by central banks and nation governments, their objective being to reduce panic and maintain economic activities in a stable way.

Despite the not-so-favourable conjecture, due to the increase in security uncertainty in the European Union, the banking system has proved to be stable and strong. Banking groups in Europe have taken a cautious stance. However, a number of disruptive events, such as the escalation of the conflict in Ukraine, have been reported. They could simultaneously generate a series of risks that could interact with each other and increase the impact on the economy.

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The possibility for these scenarios to materialize increased in 2022, along with the increase in energy prices, with difficulties in supply, with the increase in inflation above expectations, which led to the tightening of credit conditions and a heightened stress in the financial sector.

The rapid deterioration of economic flows could again lead to an increase in credit risk, at a time not particularly favourable for banking institutions. The European Commission (EC) has yet to solve asset quality problems generated by the COVID 19 pandemic and which have so far not felt their effects due to extensive support measures for companies and the population. The severe risks generated by the sudden fall in asset prices can threaten financial stability.

## 1. Review of the scientific literature

After the financial crisis of 2008, generated by the breaking of the real estate bubble in the United States, which resulted in the bankruptcy of Lehman Bothers, countries of the world faced the COVID 19 pandemic in 2020, but also the beginning of the war in Ukraine in 2022. All these factors generated an economic crisis that affected all sectors of activity in the economy. In the context of these events, energy prices have seen exponential increases, deepening the crisis in which the world's states are located. The European Union is going through an unprecedented period, the shocks to which is subjected are testing its capacity to support the economies of the member countries.

The complicated and tense global context brings in the plan economic and security consequences of the war in Ukraine, the energy crisis (involving a dramatic rise in the relative energy price – with massive distributional effects between and within states), persistent high inflation, tightening of financial conditions, strikes business and citizens, a food crisis that is felt especially acutely in poor countries, the fragmentation of the global economic system and the regionalization of supply chains and, not least, the effects of climate change that are devastating for citizens and economies" (Daianu et al., 2022).

The involvement of banks in real economies is very important, as they have the ability to help domestic capital through public-private partnerships. However, banks reflect prudence in times of crisis.

Banking crises are not assimilated to banking problems, defined as "significant interventions to minimize the effects of local or non-systemic crises". (Carl-Johan et al., 1996), followed by, in short periods of time, the major decline in the economy and a significant increase in unemployment among the population (Reinhart and Rogoff, 2009, 2013). At the same time or in the immediate period, over the ages there have been sovereign crises and/or currency crises (Laeven and Valencia, 2018). An IMF statistic showed that between 1970-2017 there were 151 banking crises, with most countries struggling with at least one systemic banking crisis (Laeven and Valencia, 2009,2013, 2018). In most cases, the shock wave generated by a crisis spreads to other countries, generating real contamination due to economic exchanges and trade relations existing in the market.

In Romania, there have been three systemic crises in the last four decades, but only one was considered a banking crisis: January 1996-December 2000, during that period the National Bank of Romania withdrawing the operating licenses for Dacia Felix Bank and Credit Bank. At the same time, it has taken measures to correct the behavior of banks by freeing from functions the founding members, administrators, directors and group of auditors (Bankcoop, Bancorex and Columna). ”The main cause of the triggering of the banking crisis was the carrying out of improper activities in previous years, Consequence of unsustainable risk policies, with an impact on the soundness of the financial positions of the banks concerned” (Mihai et al., 2021).

In conditions of economic crisis, correct and prioritized reporting of financial results and the calculation of real-time performance indicators was for most participants in the economic process a necessity and a challenge (Bostan et al., 2021).

The Basel Committee on Banking supervision has developed a series of indicators designed to determine a bank of systemic importance. For banks in this category there are additional supervisory requirements resulting in the mitigation of systemic risk in the financial system (Basel Committee on Banking supervision, 2018). The method of measuring systemic risk based on indicators is shown in the figure below.

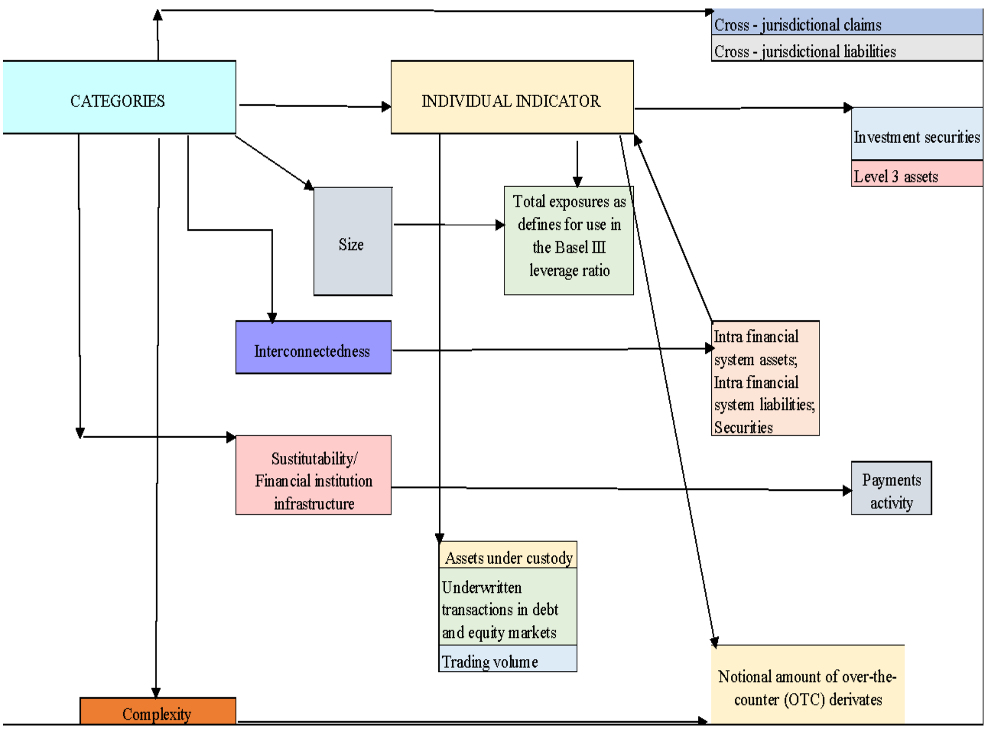


**Figure no. 1: Method of measuring systemic risk based on indicators**
*Source*: The Basel Committee on Banking Supervision, Projection of the author, 2023

## 2. Research methodology

The scientific research analysed the evolution of the main aggregated indicators calculated and reported by the Romanian banking financial institutions using the FINREP and COREP reports, in order to measure the stability of the Romanian banking system.

The statistical sample was obtained by manually collecting data from the statistical data of the National Bank, for a period of 15 years, between 2008 and 2022. The period captures the evolution of indicators in the two financial crises, the one in 2008 (which affected Romania in the following years) and the one from 2020. The research methods used were both quantitative and qualitative in nature.

In determining the market share, the data reported by the banking institutions on their own websites, as well as at the National Bank were analysed.

## 3. Results and discussions

At the end of December 2022, the number of commercial banks in Romania was 32, 25 of them being subsidiaries of other banks in the European Union, 5 being representatives of banks from other countries, and 2 banks had Romanian capital.

The scientific research presents a top of the first six banking groups in Romania that evolve on the Romanian banking market and an analysis from the perspective of the shareholder structure. This ranking consists of Banca Comerciala Romana, Banca Romana de Dezvoltare, Banca Transilvania, ING Bank, Raiffeisen Bank and UniCredit Bank.

**Table no. 1: The first six banking groups that evolve on the banking market in Romania**

| Name | Banking Group | Country | Short History | Foreign capital/ Romanian capital | The foreign Shareholding (%) |
|---|---|---|---|---|---|
| Banca Comerciala Romana (BCR) | Erste Group Bank AG | Austria | Established in 1990; privatization majority stake sale to EBRD and IFC; 2006 acquired by ERSTE Bank | Foreign Capital | 99,89 |
| Banca Romana de Dezvoltare ( BRD) | Group Societe Generale | France | Founded in 1990; 1998 acquisition of majority stake Societe Generale | Foreign Capital Societe Generale | 60,17 |
| Banca Transilvania (BT) | | Romania | Established in 1993 | Romanian Capital | 100 |

| | | | | | |
|---|---|---|---|---|---|
| ING Bank (ING) | ING Group | Holland | It was launched in 1994 as a niche bank | Foreign Capital | 99,24 |
| Raiffeisen Bank (RZB) | Group Raiffeisen Bank | Austria | In 1994, opened a representative office in Romania | Romanian Capital | 72,16 |
| | | | | Foreign Capital | 27,84 |
| UniCredit Bank (UCB) | Group UniCredit | Italy | Founded in 1991 under the name Ion Tiriac Bank | Capital strain UniCredit S.p.A. | 98,63 |
| | | | In 2015 UniCredit Tiriac Bank becomes UniCredit Bank | | |

*Source*: web sites: BCR, BRD, BT, ING, RZB, UCB, Projection of the author, 2023

In the Romanian financial market, there are financial institutions with foreign capital, but also with domestic capital, which, despite the fact that a war is taking place on the borders of Romania affecting the entire continent, have managed to maintain a stable position in the European financial market

The Romanian banking groups dispute their market shares according to the level of assets and thus the scientific approach presents a disposition of them at the end of December 2022. The first place, with a market share of 21%, is Banca Transilvania (BT), followed by Banca Comerciala Romana (BCR) with a share of 15% and by the Romanian Development Bank (BRD) with a share of 11%. In fourth place is Raiffeisen Bank.

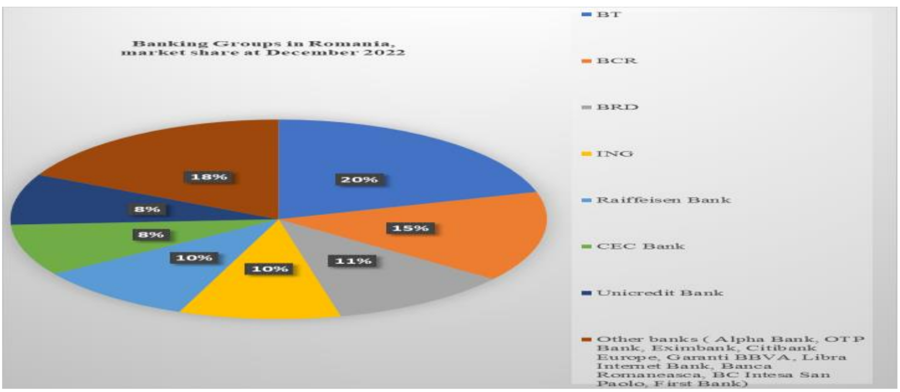


**Figure no.2: Banking groups in Romania - market share December 2022**

*Source*: BNR, Projection of the author 2023

Through the aggregate indicators, comparisons were made for the analyzed periods and the evolution of the financial stability level was observed. Six indicators were analyzed:

Solvency indicator, leverage effect, ROA ROE, non-performing loans ratio and the rate of return on the core activity.

The study presented the value of these indicators in December of each year for the analyzed period.

**Tabel no. 2 : Aggregate indicators period 2022-2008**

| NAME OF INDICATOR/ PERIOD | IS (>8) | EL | ROA | ROE | NPLR | RRAB |
|---|---|---|---|---|---|---|
| **31th of December 2022** | 21.73 | 7.8 | 1.52 | 16.59 | 2.65 | 192.65 |
| **31th of December 2021** | 23.32 | 8.62 | 1.36 | 13.28 | 3.35 | 185.48 |
| **31th of December 2020** | 25.14 | 10.3 | 0.95 | 8.66 | 3.83 | 170.31 |
| **31th of December 2019** | 22 | 10.2 | 1.34 | 12.21 | 4.09 | 184.09 |
| **31th of December 2018** | 20.71 | 9.34 | 1.55 | 14.58 | 4.96 | 188.07 |
| **31th of December 2017** | 19.97 | 8.89 | 1.3 | 12.51 | 6.41 | 181.62 |
| **31th of December 2016** | 19.68 | 8.92 | 1.08 | 10.42 | 9.62 | 188.57 |
| **31th of December 2015** | 19.16 | 8.18 | 1.24 | 11.77 | 13.51 | 171.31 |
| **31th of December 2014** | 17.59 | 7.38 | -1.32 | -12.45 | 20.71 | 180.19 |
| **31th of December 2013** | 15.49 | 7.96 | 0.01 | 0.13 | 0 | 176.85 |
| **31th of December 2012** | 14.94 | 8.02 | -0.64 | -2.56 | 0 | 170.31 |
| **31th of December 2011** | 14.87 | 8.07 | -0.23 | -1.73 | 0 | 147.53 |
| **31th of December 2010** | 15.02 | 8.11 | -0.16 | 2.89 | 0 | 154.2 |
| **31th of December 2009** | 14.67 | 7.55 | 0.25 | -2.9 | 0 | 156.53 |
| **31th of December 2008** | 13.61 | 6.81 | -0.25 | -5.92 | 0 | 175.01 |

*Source*: BNR, Projection of the author, 2023

*Note*: IS - Solvency Indicator, EF - Leverage, ROA- Return on assets, ROE - Return on equity, NPLR - Rate of outstanding loans (NPL Ration), RRAB- Rate of return on the corn activity.

The banking system "has entered the pandemic crisis with strong capital position ( ECB, 2021). The resilience of banks was determined so by the public support measures adopted to protect customer solvency, as well as monetary policy and banking supervision measures adopted. "The European Central Bank recommended that banks, in March 2020 not distribute dividends or repurchase its own shares" (ECB, 2021). This recommendation supports banks to strengthen their capital base, given that it was impossible to accurately predict the extent of the adverse effects caused by lending activity.

The study makes a projection of the aggregated indicators for the period 2008-2022, following their evolution during this period. The calculation of the aggregate indicators was done as follows:

- Solvency ratio share of total own funds in risk-weighted assets;
- Leverage the share of own funds in average assets;
- ROA: Net profit/Total active;
- ROE: Profit net /Equity;

A graphic presentation of the evolution of these indicators was shown in Figures 3 and 4. The solvency indicator has evolved from 13.16% in 2008 and stabilised at 21.73% at the end of 2022. Thus, an increase in solvency throughout the analysed period is observed.

The aggregate leverage ratio had the same path as the solvency ratio, starting from a value of 6.81% and reaching a value of 7.80% in 2022. This development has shown that banks have been properly prepared not to have excessive leverage.

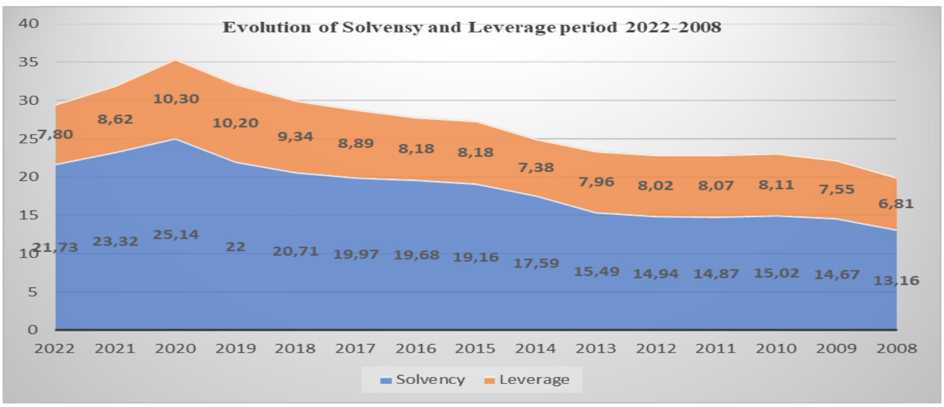


**Figure no. 3 Evolution of Solvency and Leverage period 2022-2008**

Source: BNR, Project of the author, 2023

In 2022, „the new methodology developed for assessing the risk of excessive leverage was applied, aiming to capture the contingent leverage resulting from the widespread use of derivatives, securities financing operations, off-balance sheet items or regulatory arbitrage to identify banks for which qualitative measures for the leverage ratio may be required. It further restricted the accumulation of excessive leverage and thus contributed to the resilience of the euro area banking system." ( ECB, 2021).

The profitability of the banking sector has continued to improve. The evolution of ROE and ROA indicators in figure 4 shows they had a favorable development and increased from negative values (ROE -5.92% in 2008) to positive values (ROE 16.59% in

2022).”The increase in net profit was largely determined by the evolution of net interest income, which benefited from the faster increase in interest rates on financial assets, in the context of the simultaneous acceleration of business volume. The share of net interest income in total operational revenues was 69 percent, constituting the main component.” (NBR, 2022).

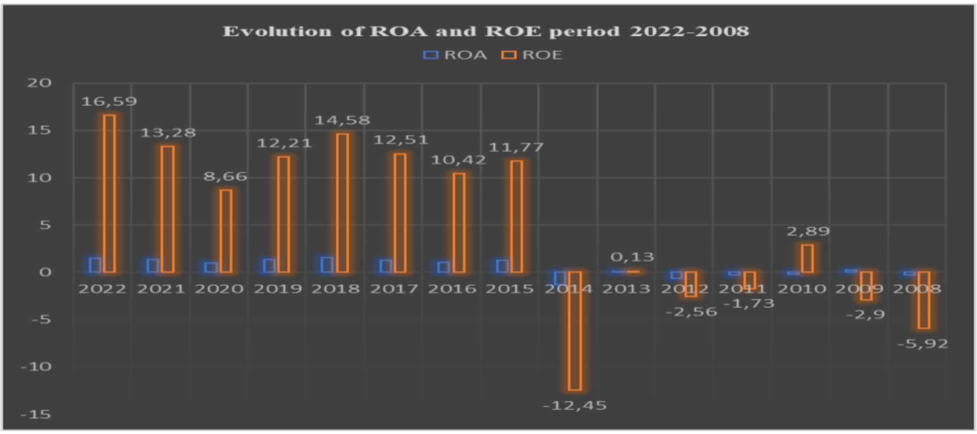


**Figure no. 4 - Evolution of ROA and ROE period 2022-2008**

*Source*: BNR, Projection of the author , 2023

Note: ROA -Return on assets

ROE – Return on Equity

The NPL ratio is ”non-performing exposures from loans and advances/exposures from loans and advances. According to the definition of EBA, implemented within the national framework by the NBR order no. 6/2014, non-performing exposures are those that meet any of the following criteria: 1) are significant exposures with a maturity exceeding 90 days; 2) it is considered that, in the absence of execution of the collateral, it is unlikely that the debtor will fully pay its obligations from the loans, regardless of the existence of any outstanding amount or the number of days of late payment” (NBR, 2022). The rate of outstanding loans decreases in the analyzed period, reaching from 20,71% in 2014 to 2,65 in 2022 ( Figure no. 5).

Banks have supported clients in accessing loans and, at the same time, reducing the rate of outstanding loans. This was from 20.71% in 2014 to 2.65% in 2022.

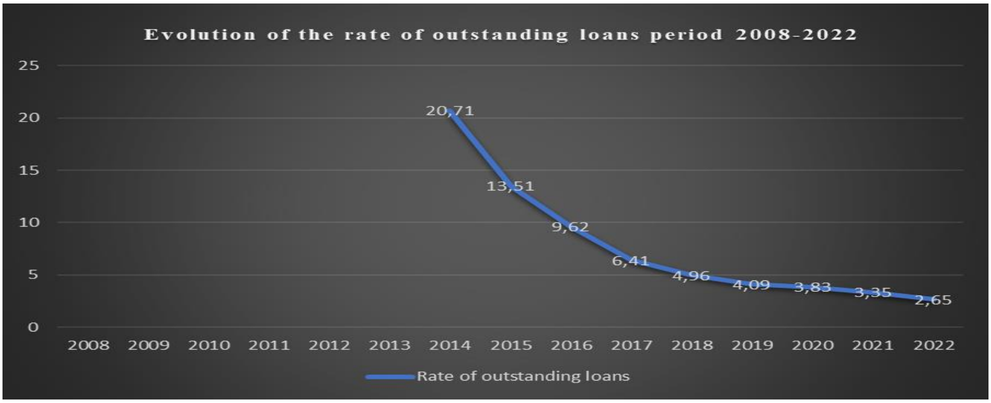


**Figure no. 5 : Evolution of rate of outstanding loans period 2008-2022**
*Source:* Source: BNR, Project of the author, 2023

The rate of return of the basic activity is calculated as the ratio between the operational revenues of financial institutions and their operational expenses (NBR, 2022) (Figure no.6). Its representation is the date of operating income - income from provisions) / (operating expenses - expenses with provisions). It has had an upward trend throughout the analyzed period, as shown by the no 6 graphic presentation.

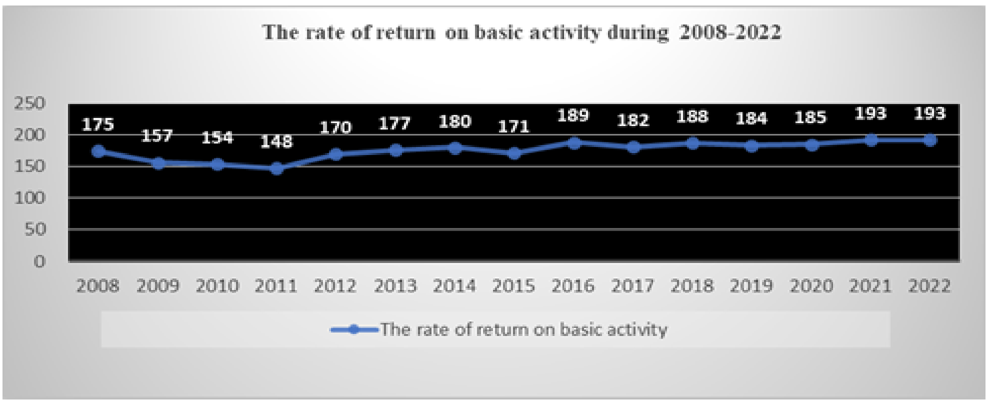


**Figure no. 6 - The rate of return on basic activity during 2008-2022.**
*Source*: BNR, Projection of the author, 2023

Against the background of the current economic and social context governed by uncertainty due to the war on Romania's borders and the consequences of the COVID 19 pandemic, banks continue to be resilient. Together with national decision-makers, they offer support to companies in difficulty, through the programs implemented on medium and long term (The World Bank, 2023).

The financial and prudential indicators specific to the Romanian banking system are within normal limits, although the geopolitical tensions in the area are increasing.

Inflation continues to remain high in 2023, and the interest rates, although they have experienced a stagnation for a short period of time, continue to increase, but the financial and prudential indicators are not the same. “The European systemic risk Board issued in September 2022 a warning on the increase of the likelihood of materialization of scenarios characterized by extremely high adversity and draws attention to the possibility of simultaneous manifestation of risks to financial stability” (BNR, 2022). Thus, the challenges for banks in Romania continue to test the robustness of the banking system, especially aiming at increasing the risk of default due to the deterioration of macroeconomic conditions. The ability of banking financial institutions to create operational flows with positive impact, it is a particularly important asset in increasing the capital base and reducing exogenous shocks.

## Conclusions

A recent study by the European Investment Bank (EIB) showed that multinational banking groups have concluded that, there is potential in Central and Eastern European markets, and especially in Romania. The main reason being that subsidiaries in this part of Europe make higher profits than the mother banks, despite the economic instability generated by the effects of the pandemic and the political dissensions. All those affect economy of the countries in this side of Europe. Therefore, over a longer period of time, the mother banks intend to maintain the current operations and even expand it. (EIB, 2022).

Scientific research has shown the robustness of the Romanian banking system, profitability maintaining high, banking indicators placing it above the average level of banks in Europe. Russia’s aggression against Ukraine has not generated much pressure on bank credit institutions but on long term the side effects will be felt in the market and automatically on banks.

The exposure of banks in Romania in relation to the two countries in conflict has been reduced, thus contributing to maintaining a high confidence in the domestic banking system.

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