CONCENTRATION LEVEL IN THE BANKING INDUSTRY: SERBIA, CROATIA AND MONTENEGRO

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Abstract:
In the last few years there have been significant changes in financial sector on the global level. The aim of this paper is to analyze banking sectors and make a comparative analysis between Serbia, Montenegro and Croatia, given that the banking sector takes up the biggest part of financial sector in these countries. The covered period of the analysis is 2017-2021 and selected ratios of concentration were calculated to define market structures in these countries. Market changes are also reflected in the reduced number of banks due to mergers and acquisitions in the last few years. The results of the static and dynamic analysis of concentration indicate that Serbia's banking sector is slightly less concentrated than Croatia's and Montenegro's banking sector. The decrease in the number of the banks had a significant impact on market structure and it will draw attention to further research.

Keywords:
concentration, competitiveness, market power, bank sector.

1. INTRODUCTION

In transition economies, the capital market is still not as developed as in the developed countries. Banks play a vital role in the economy of each country and their importance is emphasized in developing countries, where the financial system is characterized as a bank-based system (Fotova Čiković & Cvetkoska, 2022). In the last 15 years the transfer of European countries' capital to the region's banking sector has been accelerated. One of the most significant steps in the transition process has been the introduction of market competition, including the demonopolization of highly concentrated economies and expansion of the private sector in the economic activity (Đuranović & Filipović, 2021).

The decrease in the number of banks, especially those with domestic capital, has initiated changes in the structure of the region's banking sectors, which affect market concentration and the level of competitiveness. A great number of factors can be included in the analysis of the market structure but most important are the number of the competitors operating in the market and dispersion of the market share among competitors. Sometimes, when sector includes numerous competitors, it can be difficult to cover them all in the analysis. As long as the number of banks that operate in the regional banking sectors is not large, it is easy to include all market participants in the following analysis.

The rest of the paper is organized as follows. Section 2 summarizes the related literature. Section 3 explains the methodology and measurement of variables. In section 4 we discuss the empirical results and section 5 concludes the paper.

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2. LITERATURE REVIEW

In the last few decades market concentration, along with competition policy, has been the subject of many research studies. Most of the empirical studies that analyze banking sector include measuring the level of concentration, market power, efficiency of the banks and the relationship between them and profitability.

The concentration indices represent an essential element of the competitiveness analysis of a particular sector and the level of competitiveness determines the market structure as well as the market power of a certain sector. The widespread trend of the consolidation of banks and an increased concentration indicates a changed market structure of the economy (Anđelinović, Milec & Dumičić, 2022). Bubanić (2021) highlighted that the basic measures for assessing the concentration are the concentration ratio (CRk) and the Herfindahl-Hirschman index (HHI). Most of the central banks include these measures of concentration in their official reports. Considering empirical research, it can be concluded that authors use different balance positions such as assets, loans, deposits and interest revenue.

Barjaktarović, Filipović & Dimić (2013) analyzed the concentration of the banking sector of 9 Central and Eastern European countries in the period from 2007 to 2012 in terms of the banking sector data such as assets, approved loans, and collected deposits. Their results suggest moderate to highly concentrated market according to CR5 and no market concentration to moderate concentration according to HHI.

Galetić & Obradović (2018) measured concentration of the banking market of the Republic of Croatia in 2017 using a great number of concentration index such as: the Herfindahl-Hirschman's index, the Hall-Tideman's, the Rosenbluth's index, the extensive industrial concentration index, the Hannah-Kay's index, the Index U, the Hause's index and the entropy measure. They concluded that monopoly competition exists on the market, but also that oligopoly operates in the market as eight banks control almost 90% of the market.

Đuranović & Filipović (2021) analyzed the impact of market concentration on competitiveness of the banking sector in Serbia using total assets, total collected deposits and total approved loans from 2018 to the third quarter of 2020. They concluded that competition among banks in Serbia is without threats of monopoly and, although there were plenty of participants in 2020, the market structure is not oligopolistic - it has more of a so-called loose oligopoly.

Grubišić, Kamenković & Kaličanin (2021) made a comparative analysis of the banking sector concentration in Serbia and Montenegro covering the period 2015-2019. It is concluded that compared to Serbia, the banking sector of Montenegro is characterized by a smaller number of banks, a higher level of market concentration, and weaker competition.

3. METHODOLOGY

The concentration ratio is often used as a first step when analyzing the level of concentration because it is very simple to calculate. This indicator obtained represents the sum of market shares of the banks which are previously grouped from the biggest to the smallest one, i.e. from the bank with the largest share to the bank with the smallest share in the market. Summing only over the market shares of the k largest banks in the market, it takes the form:

$$CR_k = \sum_{i=1}^{k} s_i \tag{1}$$

giving equal emphasis to the *k* leading banks, but neglecting the many small banks in the market. There is no rule for the determination of the value of *k*, so that the number of banks included in the concentration index is a rather arbitrary decision (Bikker & Haaf, 2002). In equation 1S_i stands for the market share of the *i* bank and *k* stands for the number of banks we use when calculating the ratio.

The Herfindahl–Hirschman Index is one of the most commonly used indicators to detect anticompetitive behavior in industries. In fact, an increase in the value of the index is usually interpreted as an indicator of actions which may lessen competition or even create a monopoly (Matsumoto, Merlone & Szidarovszky, 2012). If we consider a market where n companies are operating, and the market share of the *i*-th company is S_i, the HHI is defined as the sum of the squares of all market shares (Naldi & Flamini, 2014):

$$HHI = \sum_{i=1}^{n} s_i^2 \tag{2}$$

Hirshman-Herfindahl index taking values up to 100 marks competitive banking industry; up to 1,500 – unconcentrated industry; between 1,500 and 2,500 indicates moderate concentration, while HHI above 2,500 indicates highly concentrated industry (Vujanović & Fabris, 2021). In this paper the total balance sheet assets are used for calculating concentration ratio and Hirshman -Herfindahl index.

4. RESULTS AND DISCUSSION

Significant changes took place in the analyzed period 2017-2021 regarding the banking sector of the observed countries. There is a decrease in the number of the banks year on year, which is shown in Figure 1. In the banking sector of the Republic of Serbia in 2017, 29 bank operated in the market and in 2021 there were 23 banks, i.e.:

- At the end of December 2017, the banking sector of Serbia consisted of 29 banks with a license to operate, i.e. one bank less than at the end of September 2017. Jubanka Belgrade was merged with AIK Bank Belgrade.
- At the end of December 2018, the banking sector of Serbia consisted of 27 banks, which is one bank less than at the end of September 2018. The decrease in the number of banks, business units and the number of employees is primarily the result of the merger of Piraeus bank Belgrade with Direktna bank Kragujevac in October 2018. The Executive Board of the National Bank of Serbia made a decision to revoke the license for Jugobanka Kosovska Mitrovica.
- At the end of December 2019, the banking sector of Serbia consisted of 26 banks, which is one bank less than at the end of December 2018. OTP bank at the end of April 2019 became the 100% owner of Vojvođanska bank Novi Sad and changed its name to Vojvođanska bank. Novi Sad.
- At the end of June 2021, MTS bank was merged to Banka Poštanska Štedionica Belgrade. At the end of December 2021 Direktna bank and Eurobank Belgrade merged and continued to operate as Eurobank Direktna, so the banking sector of Serbia consisted of 24 banks at the end of 2021.

The banking sector of Montenegro consisted of 15 banks in 2017 and the number of the banks also decreased in the observed period, i.e.:

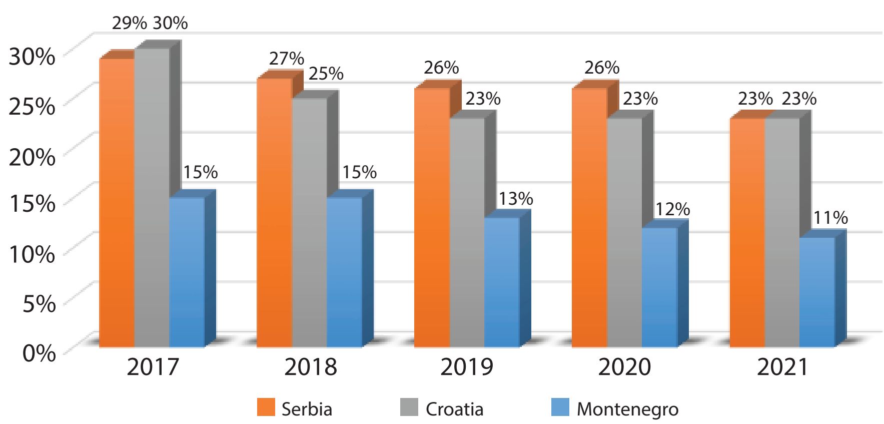
- In 2019 Central bank of Montenegro declared Invest bank Montenegro Podgorica and Atlas bank Podgorica bankrupt and started insolvency proceedings.
- In December 2020 Podgorička bank Podgorica was merged with Crnogorska komercijalna bank Podgorica so the banking sector of Montenegro consisted of 12 banks at the end of 2020.
- At the end of 2021 11 banks operated in the market until November 2021, when Komercijalna bank Podgorica was merged with NLB bank Podgorica.

The banking sector of Croatia consisted of 29 banks in 2017 and the number of the banks decreased in the observed period to 23 in 2021, i.e.:

- In 2018 there were four mergers in Croatia banking sector: Jadranska bank was merged with Hrvatska savings bank, Splitska bank was merged with OTP bank Hrvatska, Veneto bank was merged with Privredna bank Zagreb and Prva housing savings bank was merged with Zagrebačka bank. At the end of 2018, 25 banks operated in the market.
- In 2019 Jadranska bank and HPB savings bank were merged with Hrvatska savings bank.

Figure 2 shows a dynamic analysis of the market share of the leading banks, i.e. the concentration ratio of the leading banks in the period 2017-2021 measured by total balance sheet assets for Serbia, Montenegro and Croatia. As can be seen in the graph, it is Croatia that has the highest value of CR1 ratio, which was in the range of 26.1-28.4%. The bank with the highest market share measured by total balance sheet assets did not change - Zagrebačka bank. In Serbia's banking sector, the CR1 ratio was in the range of 14.8-16.8%.

Figure 1. Number of the banks, 2017-2021

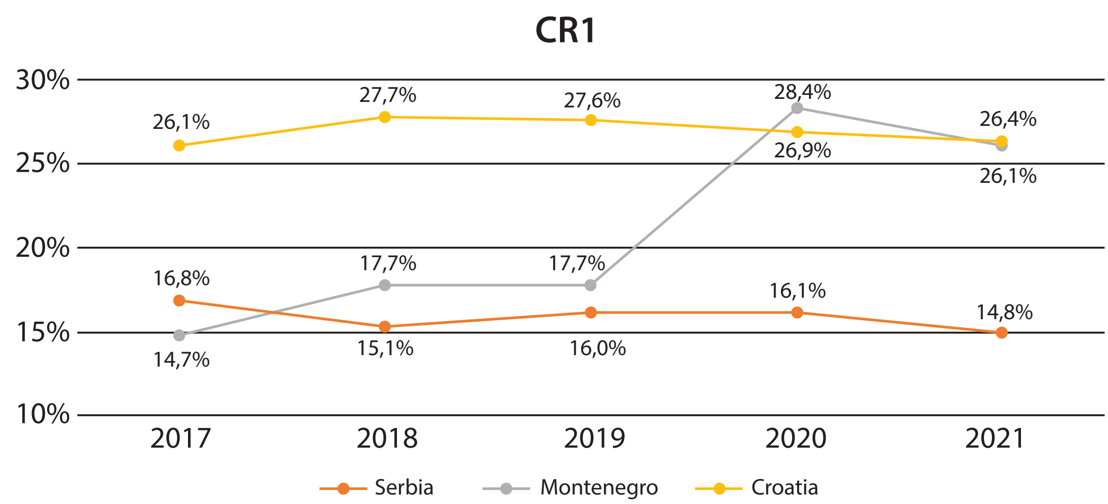


Source: NBS, Central Bank of Montenegro and Croatian National Bank

Banca Intesa, which is the leader on the banking market of Serbia, had the smallest market share in 2021. Dynamic analysis of the CR1 ratio of the banking sector of Montenegro shows a significant change in the ratio value in 2020-2021 compared to the ratio value in 2017-2019. The lowest CR1 value was in 2017 - 14.7%, while the highest value was in 2020 - 28.4%.

The increase in value is the result of the merger of Podgorička bank AD Podgorica with Crnogorska komercijalna bank AD Podgorica, by which Crnogorska komercijalna bank increased its share in the banking sector of Montenegro. It can be concluded that Montenegro and Croatia have significantly higher values of CR1 ratio compared to the Republic of Serbia.

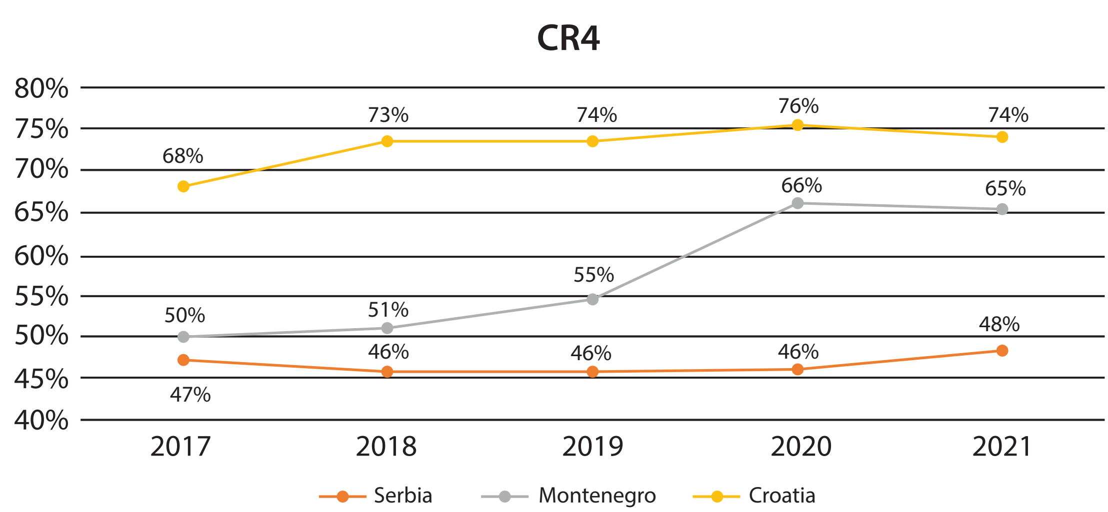
Figure 2. Concentration ratios of the leading banks, 2017-2021



Source: Author's calculations based on Central banks reports

Figure 3 shows a dynamic analysis of the CR4 ratio measured by total balance sheet assets for Croatia, Montenegro and the Republic of Serbia. It is noticeable that Croatia has the highest value of the analyzed ratio, while Serbia has the lowest value. The cumulative share of the first 4 banks on the Croatian banking market ranged from 68 to 76%. Given that in 2021 the first four banks had three quarters of the market, it can be concluded that the remaining 19 banks shared 24% of the market. The aforementioned merger of Podgorička bank with Crnogorska komercijalna bank led to a significant increase in the value of Montenegro CR4 ratio.

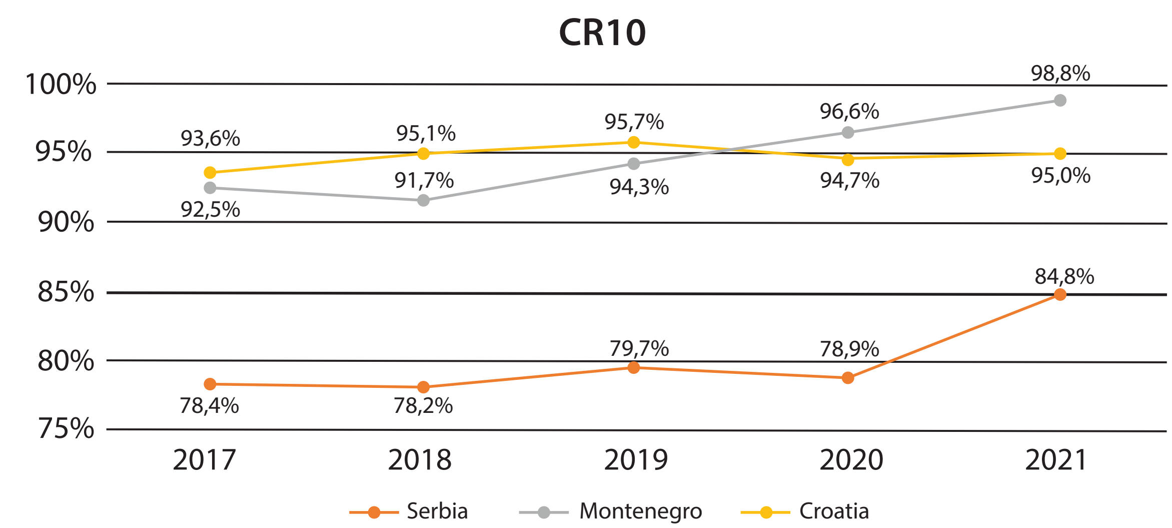
Figure 3. Concentration ratios of the four leading banks, 2017-2021



Source: Author's calculations based on Central banks reports

The value of the concentration ratio of the first four banks in the banking sector of Serbia did not change significantly in the observed period and was within the range of 46-48%. If the value of the cumulative market share of the first four banks is higher than 40%, it can be concluded that such a market is characterized by an oligopoly market structure (Lončar & Rajić, 2012). Considering this, it can be concluded that these market sectors are characterized as oligopoly market structure.

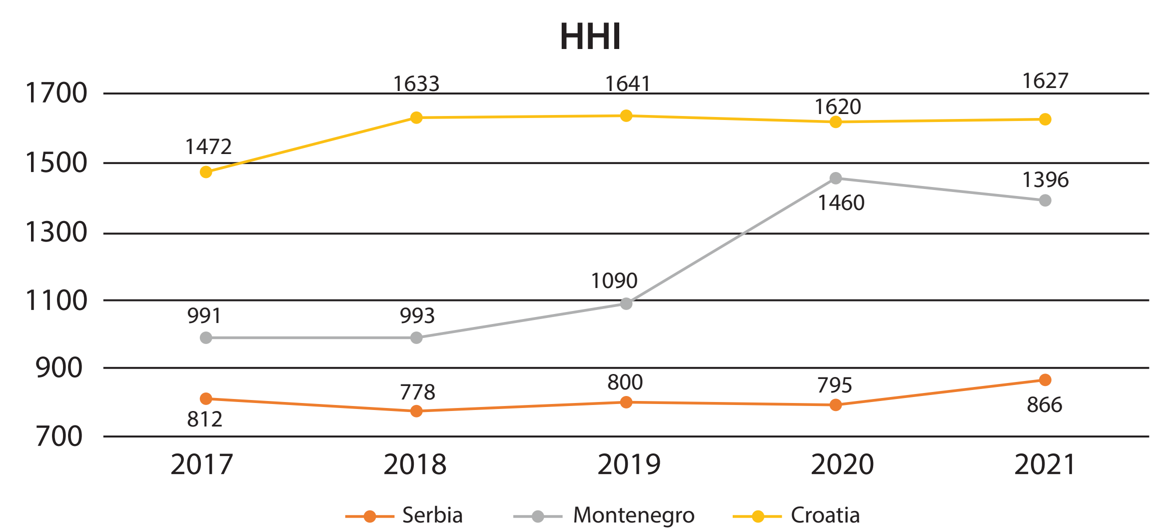
Figure 4. Concentration ratios of the ten leading banks, 2017-2021



Source: Author's calculations based on Central banks reports

Considering the values of the CR10 in Figure 4 it can be concluded that Montenegro and Croatia have higher levels of this concentration compared to Serbia. The highest level was in 2021 for Montenegro's banking sector – 98.8%, which is expected considering that only 11 banks operated in the market. CR10 for Croatia's banking sector was 93.6-95.7% for the period 2017-2021. As the number of the banks operating in Croatia's banking sector in 2021 was 23, it is obvious that there was a great number of banks which had low market share – 15 banks had market share less than 1%. In the banking sector of Serbia there was a significant increase from 78.9% in 2020 to 84.8% in 2021. As 23 banks operated in 2021, 13 banks shared 15% of the market and 8 of them had market share less than 1%.

Figure 5. Comparative analysis of Herfindahl Hirschman index



Source: Author's calculations based on Central banks reports

Figure 5 shows a comparative analysis of Herfindahl Hirschman index for Serbia, Montenegro and Croatia covering the period 2017-2021. There were no significant changes in the value of Herfindahl Hirschman index in the case of Serbia and the range was 778-866. The slight increase in 2021 is due to the decrease in the number of the banks, from 26 in 2020 to 23. In the case of Montenegro, mergers had the impact on the value of Herfindahl Hirschman index which rose from 1090 to 1460. The highest value of Herfindahl Hirschman index is in Croatia's banking sector 1472-1641. Considering the Herfindahl Hirschman index values in Figure 5, it can be concluded that Serbia's banking sector is characterized by an unconcentrated supply and Croatia's and Montenegro's banking sectors are characterized by a moderately concentrated supply.

5. CONCLUSION

This paper has analyzed concentration level in the banking industry of Serbia, Croatia and Montenegro during 2017-2021. For this purpose, different concentration ratios were employed. The countries of the region differ in the degree of concentration and competition in banking. The balance sheet categories of the banking sector in Serbia have HHI Index below 1000. It means that the market is highly fragmented, with many small non-competitive banks that have not reached the volume of deposits and loans which provides sufficient potential for profitable business.

The picture of concentration and competition in the banking market becomes clearer if the market share of the group of the largest banks is considered. If we look at the first four banks by market share, there is a great similarity between Croatia and Montenegro in the distribution of market share, while Serbia has a different market structure. The first four banks in Serbia hold about half of the market. The banking sectors of Croatia and Montenegro have already reached a high level of concentration, where the first four banks have a market share of about 70%. There are also many banks in Croatia with a very small market share. This market structure shows that the process of inevitable concentration of banks in Croatia has progressed further than in the other two observed countries.

Research findings suggest that consolidation of the analyzing banking sectors has not yet been completed. In the coming years, we can expect that there will be consolidation and concentration in the banking sector of Serbia, in which the most competitive banks will take a significantly larger market share and improve profitability and business performance.

6. LITERATURE

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