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COMPARATIVE ANALYSIS OF FINANCIAL INDICATORS OF SMALL AND LARGE BANKS IN REPUBLIC OF CROATIA

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ABSTRACT

In the Croatian professional literature, it is not easy to find comparative analyzes of the financial ratios of the banks operating in the Croatian financial market. The analysis of the Croatian banking system is carried out by the Croatian National Bank (CNB). Since June 30, 2016. the CNB has been publishing key performance indicators (KPI) of credit institutions but only at the aggregate level in the report called *Selected indicators of the structure, concentration, and operations of credit institutions*. However, it should be emphasized that for the last few years, the CNB has been publishing the report *Financial statements of credit institutions*, which contain the balance sheet and profit and loss account of individual credit institutions, as well as a report called *Data on the operations of credit institutions*, in which you can find a few separate comparative financial ratios of individual credit institutions (such as ROAA, ROAE, TCR, leverage ratio, LCR).

Taking into account the specificity of the credit institution's operations, the financial ratios of banks, modeled on the financial ratios of companies, can be divided into six groups of indicators: indicators of liquidity, financial structure, activities, cost efficiency, profitability, and investment indicators.

The importance of bank financial indicators is reflected in the information given to the management, based on which critical business decisions at the strategic and operational levels are made. From a series of financial performance indicators, banks define individually adapted key performance indicators (KPIs) as a tool for realizing strategic and operational goals.

Through a comparative analysis of selected financial indicators, the author will try to point out the differences in the values of individual indicators of small and large banks.

Key words: *bank financial indicators, bank KPIs, small banks, large banks*

1. INTRODUCTION

The specificity of banking operations, compared to non-financial corporate sector operations, entails the need for financial analysis of the performance of banking institutions using specific indicators. Part of the economic indicator analysis of banks is an integral part of mandatory reporting to the central bank, while another part relates to optional analysis that each bank independently conducts to measure performance, often through the individual definition of key performance indicators (KPIs). According to Mijić (2018), due to their specificities, banks introduce specially adapted KPIs that are applied as quantitative expressions of goals but also as a tool for measuring the achievement of goals and the performance of banks.

In Croatian professional literature, the analysis of financial indicators of banks mainly focuses on profitability indicators (Pavković, 2004; Pejić et al., 2009; Učkar & Petrović, 2021). However, this paper attempts to systematize the financial performance indicators of commercial banks into six groups of indicators. The aim of this study is to compare the selected key financial indicators of small and large banks in Croatia without delving into an in-depth analysis of the reasons for the differences in indicator values.

According to the methodology of the Croatian National Bank (CNB), large banks are those whose assets exceed 5% of the total assets of all banks, medium banks are those whose assets are more significant than 1% and less than 5% of the total assets of all banks, and small banks are those whose assets are less than 1% of the total assets of all banks. The analysis used data from eight small banks and six large banks operating in the Croatian financial market.

The paper is structured in a way that provides a theoretical overview of the financial indicators of banks at the beginning. Then, aggregate bank KPIs, reported to the CNB on a quarterly basis, are summarized. Finally, selected key performance indicators are compared between small and large banks.

2. THE FINANCIAL PERFORMANCE INDICATORS OF A BANK

Financial statement analysis of banks (balance sheet, income statement, and cash flow statement) is conducted to perform a detailed quantitative financial analysis of the bank's operations.

The financial performance indicators of a bank, similar to those of companies, are classified into six groups of indicators in this study: liquidity indicators, financial structure indicators, activity indicators, cost efficiency indicators, profitability indicators, and investment indicators. According to Žagar et al. (2020), the financial indicators of banks are divided into four categories: balance sheet ratio indicators (liquidity indicators, indebtedness indicators, and fixed asset investments), income statement ratio indicators (efficiency indicators and non-interest activities of the bank), profitability indicators (profitability indicators, margins, and average interest rates), and investment indicators.

The analysis of financial indicators of Croatian banks in this study is based on the financial statements of banks prepared following the Decision on the Structure and Content of Reports of Credit Institutions (Official Gazette 42/18, 122/20, and 119/21).

2.1. LIQUIDITY INDICATORS

Indicators of bank liquidity measure the relationship between specific positions of assets and liabilities (deposits) in the bank's balance sheet.

No	LIQUIDITY INDICATORS	Numerator	Denominator
1.	Cash to deposits ratio - %	cash + cash equivalent	deposits
2.	Loan to deposit ratio (LDR) - %	loans	deposits
3.	Interest-earning assets to deposits ratio - %	Ø interest-earning assets	deposits

Indicators of bank liquidity measure the relationship between specific positions of assets and liabilities (deposits) in the bank's balance sheet.

The proportion of cash and cash equivalents in the bank's deposits shows the percentage of customer deposits covered by the most liquid assets. The loan-to-deposit ratio (LDR) indicates the percentage of loans compared to deposits in the bank. The proportion of interest-earning assets in deposits indicates the percentage of average interest-earning assets in customer deposits. Interest-earning assets include the following positions: demand deposits, financial assets held for trading, financial assets measured at fair value through profit or loss, financial assets measured at fair value through other comprehensive income, financial assets measured at amortized cost, derivatives - hedge accounting. The average interest-earning assets on an annual basis are calculated by averaging the sum of the positions at the beginning of the period and the sum of the positions at the end.

2.2. FINANCIAL STRUCTURE INDICATORS

Indicators of financial structure indicate the financing structure of the bank by comparing specific positions of assets and liabilities, either among asset positions or liability positions.

No	FINANCIAL STRUCTURE INDICATORS	Numerator	Denominator
1.	Equity multiplier	average assets	average equity
2.	Leverage ratio - %	average equity	average assets
3.	Interest-earning assets to total assets ratio	interest-earning assets	total assets
4.	Long-term assets to total assets ratio - %	long-term assets	total assets
5.	Liabilities to total assets ratio	total liabilities	total assets
6.	Debt-to-equity ratio	total liabilities	equity
7.	Loan to total assets ratio	loans	total assets
8.	Deposits to total assets ratio	deposits	total assets

The equity multiplier indicates how often the total assets exceed the equity or the average value of assets per unit of average equity. The leverage ratio is the percentage representation of the reciprocal value of the equity multiplier and indicates the percentage share of equity instruments in total assets. Both of these indicators indicate the level of capitalization of the bank.

Interest-earning assets as a proportion of total assets indicate the share of average interest-earning assets in the bank's total assets or the extent to which the bank's assets generate interest income.

Long-term assets as a proportion of total assets indicate the percentage share of long-term assets (tangible and intangible) in the bank's total assets and serve as a comparative indicator of the bank's "equipment."

Liabilities as a proportion of total assets indicate the share of total liabilities in the bank's assets.

The debt-to-equity ratio indicates the ratio of total liabilities to total equity instruments.

The proportion of loans in assets measures the share of gross loans in the bank's assets. In contrast, the proportion of deposits in liabilities measures the share of total deposit liabilities in the bank's liabilities.

2.3. ACTIVITY INDICATORS

Activity indicators measure the extent of business activities that generate revenue, the degree of asset utilization in revenue generation, and the average realization per employee.

No	ACTIVITY INDICATORS	Numerator	Denominator
1.	Assets per employee	total assets	number of employees
2.	Gross profit per employee	gross profit	number of employees
3.	Net operative income to total assets ratio - %	total operative income	average assets
4.	Interest income to total assets ratio - %	interest revenue	total assets
5.	Non-interest income to total assets ratio - %	non-interest revenue	total assets
6.	Total assets turnover	total revenue	total assets

Total asset turnover measures how many units of operating revenue are generated per unit of utilized assets. Banks' Operating revenue includes interest, non-interest, dividends, and other operating income.

Net operating income in assets measures how many units of net operating income (the difference between interest and non-interest income and interest and non-interest expenses) are generated per unit of utilized assets.

Interest and non-interest income in assets measures how many units of interest or non-interest income are generated per unit of the bank's total assets.

2.4. COST EFFICIENCY INDICATORS

Cost efficiency indicators highlight the relationship between operating costs and specific positions in the balance sheet and income statement.

No	COST EFFICIENCY INDICATORS	Numerator	Denominator
1.	Cost to assets ratio (C/A) - %	operating costs	total assets
2.	Cost income ratio(CIR) - %	operating costs	total net operating income

The Cost-to-Asset Ratio (C/A) measures the proportion of operating costs (employee expenses + other administrative expenses + depreciation costs) to total assets. It indicates the share of operating costs in the total asset base.

The Cost-Income Ratio (CIR) measures the proportion of operating costs to total net operating income (net operating income from operations). It indicates the share of operating costs in total net operating income.

Both indicators serve as proper comparative measures of cost efficiency for banks.

2.5. PROFITABILITY INDICATORS

Profitability indicators can be divided into two groups: return on investment indicators which measure the return on invested assets or capital, and profitability indicators, which measure the return on realized revenues.

No	PROFITABILITY INDICATORS	Numerator	Denominator
1.	Return on average assets (ROAA) - %	net income before taxes	average assets
2.	Return on average equity (ROAE) - %	net inocome	average equity
3.	Gross profit margin - %	gross profit	total operating income
4.	Net interest margin - %	net interest income	Ø interest-earning assets
5.	Interest spread	(interest revenue/ Ø interest-earning assets) - (interest costs/ Ø interest-earning liabilities)	
6.	Operating leverage	the growth rate of net income – the growth rate of operating expenses	

Return on Average Assets (ROAA) measures the percentage return on average total assets. The measure of return is the net income before taxes. Average assets are calculated as the arithmetic average of the asset amounts at the end of the reporting period and the end of the previous year.

Return on Average Equity (ROAE) measures the percentage return on average shareholders' equity and serves as a measure of return for shareholders. The measure of return is the net income. Average equity is calculated as the arithmetic average of the equity instrument amounts at the end of the reporting period and the end of the previous year.

Gross profit margin is a fundamental measure of profitability. It indicates the percentage of gross profit (income before taxes) realized from total operating revenue (sum of interest and non-interest income). Net interest margin is the ratio of net interest income (the difference between interest income and interest expenses) to average interest-earning assets. Interest spread represents the difference between the share of interest income in interest-earning assets and the share of interest expenses in interest-earning liabilities. Interest-earning liabilities consist of deposit balances in the bank's liabilities. The liability structure and the proportion of interest-earning liabilities in total liabilities influence the difference between net interest margin and interest spread.

Operating leverage is calculated as the difference between net income's annual growth rate and operating expenses' annual growth rate. A negative value of this indicator indicates that the bank is accumulating expenses faster than income, which warns of a potential problem or inefficiency in operations.

2.6. INVESTMENT INDICATORS

Investment indicators point to the profitability of investing in regular bank stocks. Some investment indicators are the basis for assessing future earnings per share. The key investment indicators include earnings per share (EPS), dividend per share (DPS), dividend payout ratio (DPR), price-earnings ratio (P/E), and the ratio of market price to book value per share.

No	INVESTMENT INDICATORS	Numerator	Denominator
1.	Earnings per share (EPS)	net profit	average number of shares
2.	Dividends per share (DPS)	dividends	average number of shares
3.	Dividend payout ratio (DPR)	DPS	EPS
4.	Price earning ratio (P/E)	price per share (PPS)	EPS
5.	Total return on equity	EPS	PPS
6.	Dividend return on equity	DPS	PPS
7.	Book value per share (BVPS)	equity	average number of shares
8.	PPS to BVPS ratio	PPS	BVPS

Earnings per share (EPS) indicates how much net profit the bank has earned per ordinary share after deducting a portion of the net profit allocated to preferred shareholders (if the bank has both ordinary and preferred shares).

Dividend per share (DPS) measures the portion of net profit allocated for dividend payments to ordinary shareholders relative to the number of ordinary shares. The dividend payout ratio (DPR) indicates the proportion of total net profit paid as dividends on ordinary shares.

The price-earnings ratio (P/E) shows how many times the current market price per share (PPS) is greater than the earnings per share (EPS). Empirically, a P/E ratio between 1 and 20 suggests that investing in the stock is worthwhile; a ratio between 20 and 40 indicates the need for cautious investment, while a ratio above 40 suggests avoiding investment in such stocks (Belak, 2014). The P/E ratio can be interpreted as the years needed to accumulate enough funds from earnings per share to purchase one share (assuming unchanged conditions).

The ratio of market price to book value per share demonstrates the relationship between the current market price per share (PPS) and its book value per share (BVPS), indicating the market's added value to the stock. The book value per share is derived by dividing the total equity instruments by the number of shares.

In order to complement the analyzed financial performance indicators with specific banking indicators, the following section lists and explains the key performance indicators (KPIs) of credit institutions, as reported by the Croatian National Bank (CNB).

3. CROATIAN NATIONAL BANK REPORTING: KEY PERFORMANCE INDICATORS (KPIS) OF CREDIT INSTITUTIONS

The Croatian National Bank (CNB) reports quarterly on key performance indicators (KPIs) of credit institutions operating in the Republic of Croatia, starting from June 30, 2016. The reported KPIs at the aggregate level include return on assets (ROA), return on equity (ROE), cost-to-income ratio (CIR), non-performing exposures (NPE) ratio, non-performing loans (NPL) ratio, coverage ratio of non-performing loans, capital ratios (total, tier 1, and regular), leverage ratio, and liquidity coverage ratio (LCR).

At the individual credit institution level, CNB reports on the following KPIs: ROA, ROE, total capital ratio, tier 1 capital ratio, regular capital ratio, leverage ratio, and LCR.

The following are the aggregate KPIs of credit institutions operating in Croatia for the past three years (reports as of December 31, 2019, December 31, 2020, and December 31, 2021). Throughout this period, CNB's reporting covers 23 credit institutions, including 20 banks and three housing savings banks. Out of the total banks, 12 are categorized as small, two as medium-sized, and six as significant.

Table 1: Key performance indicators (KPIs) of credit institutions (2019 – 2021)

No	Key performance indicators of credit institutions (%)	31.12.2019.	31.12.2020.	31.12.2021.
1.	Return on assets (ROA)	1,37	0,60	1,17
2.	Return on equity (ROE)	9,82	4,40	8,75
3.	Cost-to-income ratio (CIR)	46,32	54,99	48,72
4.	Share of non-performing debt instruments in total debt instruments (NPE ratio)	4,72	4,73	3,74
5.	Share of non-performing loans in total loans (NPL ratio)	5,47	5,42	4,33
6.	Coverage ratio of non-performing loans and advances	68,01	64,05	63,16
7.	Total capital ratio	24,80	25,62	25,85
8.	Tier 1 capital ratio	23,96	25,05	25,38
9.	Common equity tier 1 capital ratio	23,84	24,92	25,13
10.	Leverage ratio	12,57	12,04	11,43
11.	Liquidity coverage ratio (LCR)	173,71	181,94	202,48

Source: CNB

In addition to the aforementioned financial indicators, the KPIs reported by CNB for credit institutions include NPE and NPL indicators, Total tier 1, Regular capital ratios, and LCR indicators. These indicators' calculation methods and significance, which were not previously discussed, are further explained.

The non-performing exposures (NPE) ratio is the ratio of non-performing exposures to total exposures. Exposures include securities-based exposures, loans, and advances, excluding those held for trading or trading. Non-performing exposures include significant exposures that have matured for more than 90 days or are assessed as likely to be fully repaid with the realization of collateral, regardless of past-due amounts or the number of days past the maturity date. A lower value of this ratio is desirable.

The non-performing loans (NPL) ratio is the ratio of non-performing loans to total loans. Loans include debt instruments that are not securities and are recognized as financial assets at amortized cost and financial assets at fair value through other comprehensive income. Non-performing loans include significant loans that have matured for more than 90 days or are assessed as unlikely to be fully repaid without the realization of collateral, regardless of past-due amounts or the number of days past the maturity date. A lower value of this ratio is desirable.

The coverage ratio of non-performing loans and advances is the ratio of accumulated impairments for non-performing loans to total non-performing loans. Accumulated impairment represents the cumulative amount of losses due to impairment for credit losses. A higher ratio indicates a higher level of protection against credit risk.

The total capital ratio (TCR) is regulatory capital to total risk exposure. Total risk exposure includes credit risk (including counterparty credit risk, dilution risk, and free delivery risk), settlement/delivery risk, position risk, foreign exchange risk, commodity risk, operational risk, risk of credit valuation adjustment, and risk related to significant exposures arising from trading book items. Regulatory capital consists of tier 1 capital ratio and tier 2 capital. Tier 2 capital includes hybrid instruments subordinated to deposits and other creditors. The total (regulatory) capital ratio must always be at least 8%.

The Tier 1 capital ratio is the ratio of Tier 1 capital to total risk exposure. Total risk exposure consists of exposures to credit risk (including counterparty credit risk, dilution risk, and free delivery risk), settlement/delivery risk, positional risk, currency risk, commodity risk, operational risk, credit valuation adjustment risk, and risk related to significant exposures arising from trading book items. Tier 1 capital is the sum of common equity Tier 1 capital, and additional tier 1 capital. Additional Tier 1 capital comprises hybrid instruments with no maturity date and with the bank's right to cancel any further coupon payments. The Tier 1 capital ratio must always be at least 6%.

The Common equity tier 1 capital ratio is the ratio of Common equity tier 1 capital to total risk exposure. Total risk exposure consists of exposures to credit risk (including counterparty credit risk, dilution risk, and free delivery risk),

settlement/delivery risk, positional risk, currency risk, commodity risk, operational risk, credit valuation adjustment risk, and risk related to large exposures arising from trading book items. The Common equity tier 1 capital ratio must always be at least 4.5% and include common equity, share premium, reserves, and retained earnings.

The leverage ratio is the ratio of tier 1 capital to the measure of total exposure. Total exposure is the sum of the value of asset exposures (unless deducted in the calculation of tier 1 capital), derivative exposures, the credit risk of the counterparty in certain transactions, and off-balance sheet exposures.

The liquidity coverage ratio (LCR) is the ratio of the liquidity buffer (liquid assets) to the net liquidity outflow (the difference between outflows and inflows). Since 2018, the LCR must be at least 100%.

In a brief overview of all the aggregate indicators mentioned, it can be concluded that in 2020, the pandemic year, almost all indicators were less favorable than their values in the previous year, 2019. However, in 2021, capital indicators (TCR, tier 1), liquidity indicators (LCR), and indicators of protection against credit and interest rate risk (NPE and NPL) were above pre-pandemic levels, strengthening the capitalization, liquidity, and degree of protection of the banking sector from core banking risks. A trend of approaching their pre-pandemic values can be observed for other indicators.

4. COMPARATIVE ANALYSIS OF FINANCIAL PERFORMANCE INDICATORS OF SELECTED SMALL AND LARGE BANKS IN THE REPUBLIC OF CROATIA

Below is a comparison of selected financial performance indicators of eight small banks and six large banks operating in the Croatian financial market over the past three years. The analyzed small banks are as follows: Agram banka d.d. (AGRAM), Istarska kreditna banka Umag d.d. (IKB), Banka Kovanica d.d. (KOVAN), Karlovačka banka d.d. (KABA), Kent banka d.d. (KENT), Partner banka d.d. (PARTNER), Podravska banka d.d. (POBA), and Slatinska banka d.d. (SNBA). The analyzed large banks are: Erste&Steiermarkische banka d.d. (ESB), Hrvatska poštanska banka d.d. (HPB), OTP banka d.d. (OTP), Privredna banka Zagreb d.d. (PBZ), Raiffeisenbanka d.d. (RBA), and Zagrebačka banka d.d. (ZABA). The analysis aimed to identify differences and similarities in the values of specific financial indicators arising from the size of the banks.

A total of 10 selected financial indicators (FI) were analyzed from the following indicator groups:

- Financial structure indicators: total capital ratio; leverage ratio

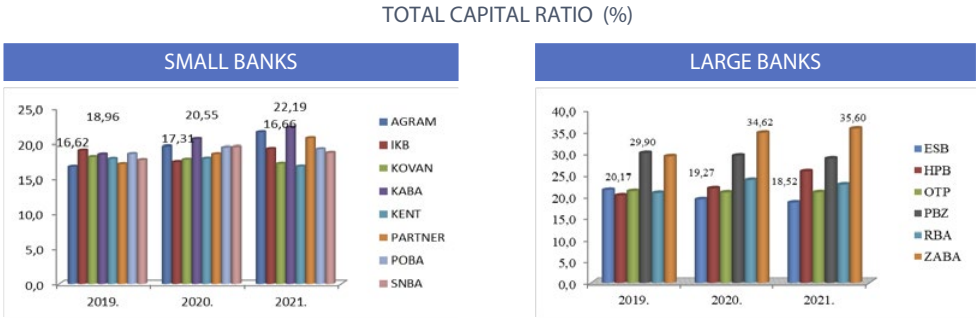
- Liquidity indicators: liquidity coverage ratio (LCR); loan-to-deposit ratio (LDR)
- Cost efficiency indicators: cost-to-income ratio (CIR)
- Profitability indicators: return on average assets (ROAA); return on average equity (ROAE); net interest margin (NIM)
- Activity indicators: assets per employee; gross profit per employee

The comparative analysis involved comparing:

- Individual financial indicators of the selected small and large banks
- Average annual values of financial indicators for small and large banks (the average value was calculated by giving equal weight to each bank in the averaging process)
- Obtained individual and average indicator values with aggregated values for each selected indicator.

4.1. FINANCIAL STRUCTURE INDICATOR: TOTAL CAPITAL RATIO

Graph 1: Comparative analysis: Total capital ratio



The total capital ratio is a measure of capital to weighted assets. This indicator was not obtained from the banks' financial statements but was taken from the CNB (Croatian National Bank) report. The average value of this indicator for the selected small and large banks during the observed period is presented below.

TOTAL CAPITAL RATIO (average value in %)	SMALL BANKS	LARGE BANKS
2019.	17,85	18,91
2020.	18,75	19,17
2021.	19,38	19,40

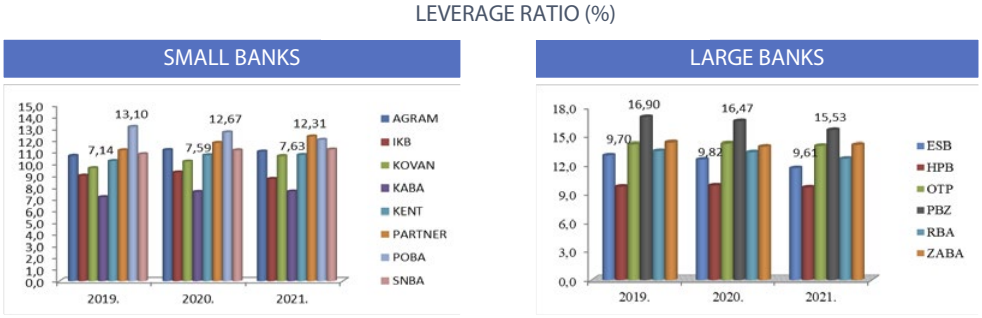
In the previous three-year period, the total capital ratio for the selected small banks ranged from a minimum of 16.62% to a maximum of 22.19%, while for the large banks, it ranged from a minimum of 18.52% to a maximum of 35.60%. The legal minimum total capital ratio is 8%. The analysis indicates a high level of capitalization in the Croatian banking system, with an increase in the total capital ratio observed for both small and large banks during the observed period. There is a notable consistency in this ratio among small banks, while ZABA (Zagrebačka banka) stands out with deviations from the average of large banks, particularly in 2020 and 2021. The aggregated total capital ratio ranges from 24.80% to 25.85% (Table 1).

4.2. FINANCIAL STRUCTURE INDICATOR: LEVERAGE RATIO

The financial leverage ratio compares the average value of equity instruments to the average value of assets. The average value of this indicator for the selected small and large banks during the observed period is presented below.

LEVERAGE RATIO (average value in %)	SMALL BANKS	LARGE BANKS
2019.	10,19	11,16
2020.	10,54	11,03
2021.	10,52	10,54

Graph 2: Comparative analysis: Leverage ratio



Over the past three years, the financial leverage ratio for the selected small banks ranged from a minimum of 7.14% to a maximum of 13.10%, while for the large banks, it ranged from a minimum of 9.61% to a maximum of 16.90%. Analyzed leverage ratios analyze a higher level of capitalization for large banks. Although the average values of the financial leverage ratio for small and large banks fall within the same range during the observed period, a detailed analysis reveals that the difference between the highest and lowest ratios is more

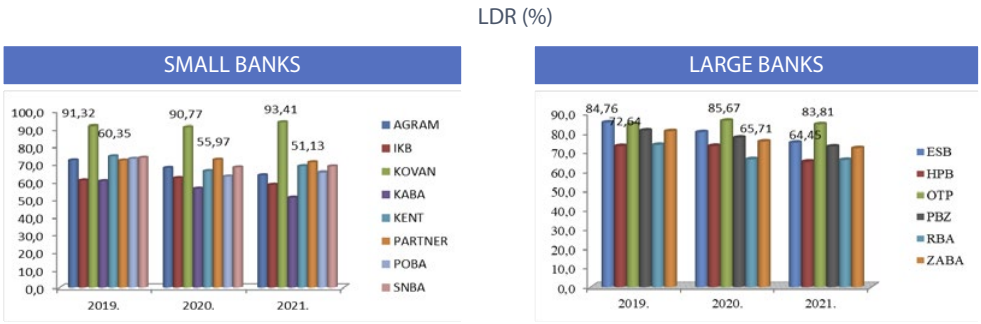
significant for large banks, with PBZ (Privredna banka Zagreb) showing the highest deviation. The aggregated values of the financial leverage ratio range from 11.43% to 12.57% (Table 1).

4.3. LIQUIDITY INDICATOR: LDR

The loan-to-deposit ratio (LDR) is a measure of loans to deposits. The average value of this indicator for the selected small and large banks is shown below.

LDR (average value in %)	SMALL BANKS	LARGE BANKS
2019.	72,15	65,83
2020.	68,21	63,46
2021.	67,48	60,07

Graph 3: Comparative analysis: LDR



Over the past three years, the LDR for the selected small banks ranged from a minimum of 51.13% to a maximum of 93.41%, while for the large banks, it ranged from a minimum of 64.45% to a maximum of 85.67%. A detailed analysis of the banks' financial statements reveals significant differences in the asset and liability structure between small and large banks:

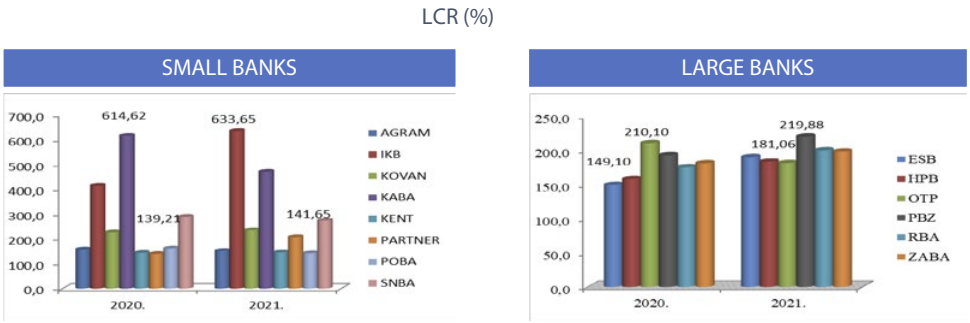
- The share of loans in the assets of small banks (a three-year average of approximately 61%) is significantly higher than large banks (a three-year average of approximately 53%). Large banks allocate a portion of their funds, in addition to loans, to debt securities.
- The share of deposits in the liabilities of small banks averages around 88%, while the exact figure for large banks is around 70%. Large banks obtain funding sources by issuing debt securities and credit facilities, and a significant portion of funding is also accounted for under reserves.

4.4. LIQUIDITY INDICATOR: LCR

he liquidity coverage ratio (LCR) compares high-quality liquid assets to net cash outflows over the next 30 days. This indicator was not obtained from the banks' financial statements but from the CNB (Croatian National Bank) report. The average value of this indicator for the selected small and large banks over the past two years is presented below. From 2018, the LCR must be at least 100%.

LCR (average value in %)	SMALL BANKS	LARGE BANKS
2020.	268,08	147,41
2021.	282,05	162,27

Graph 4: Comparative analysis: LCR

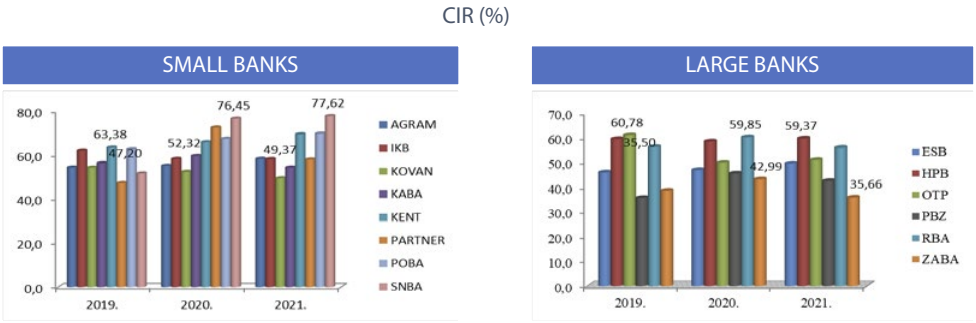


Over the past two years, the LCR for the selected small banks ranged from a minimum of 139.21% to a maximum of 633.65%, while for the large banks, it ranged from a minimum of 149.10% to a maximum of 219.88%. The analysis indicates a significantly higher LCR value for small banks than for large banks, which results from the higher sensitivity of small banks to potential liquidity problems and their retention of a significant portion of assets in the most liquid form. However, an excessively high ratio also suggests the bank's inefficient immobilization of significant liquid assets and insufficient and inadequate deployment of collected deposit funds.

4.5. COST EFFICIENCY INDICATOR: CIR

The CIR ratio compares the operating expenses to the total net operating income; a lower value of the CIR ratio usually indicates higher operational efficiency.

Graph 5: Comparative analysis: CIR



Below is the presentation of the average value of the CIR indicator of selected small and large banks.

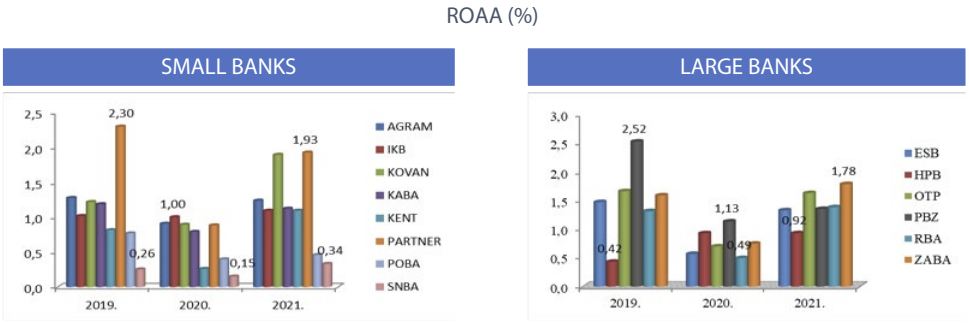
CIR (average value in %)	SMALL BANKS	LARGE BANKS
2019.	56,41	42,86
2020.	63,34	43,30
2021.	61,77	42,94

Over the past three years, the CIR ratio for small banks has ranged from a minimum of 47.20% to a maximum of 77.62%, while for large banks, it has ranged from a minimum of 35.50% to a maximum of 60.78%. The aggregated CIR ratio falls from 46.32% to 48.72% (Table 1). By comparing the average net operating income per Employee in 2021, which is higher for large banks (825.97 thousand HRK) with that of small banks (567.19 thousand HRK), and the average operating expenses per Employee for large banks (396.56 thousand HRK) and small banks (342.91 thousand HRK), it can be observed that the average net operating income per Employee for large banks is 45.6% higher than that of small banks. On the other hand, the average operating expenses per Employee are only 15.6% higher for large banks than small banks. The CIR indicates significantly higher cost efficiency in large banks' operations than in small ones.

4.6. PROFITABILITY INDICATOR: ROAA

The ROAA ratio measures the profitability of operations by comparing the pre-tax profit to the average assets. It indicates the return on average assets.

Graph 6: Comparative analysis: ROAA



Below is the presentation of the average value of this indicator for selected small and large banks.

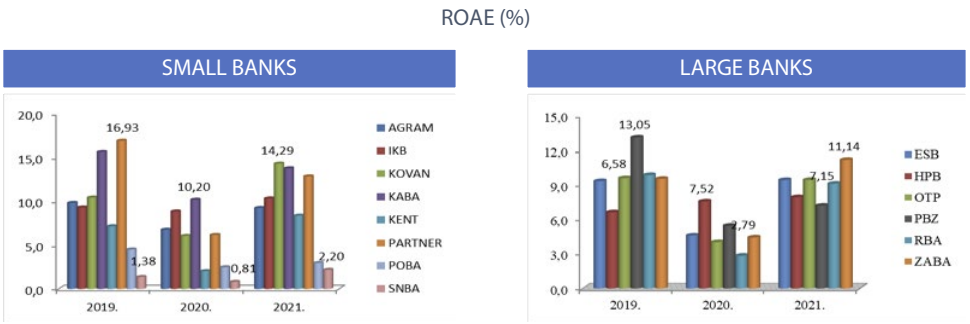
ROAA (average value in %)	SMALL BANKS	LARGE BANKS
2019.	1,11	1,23
2020.	0,66	0,63
2021.	1,15	1,10

Over the past three years, the ROAA ratio for small banks has ranged from a minimum of 0.15% to a maximum of 2.30%, while for large banks, it has ranged from a minimum of 0.42% to a maximum of 2.52%. Both groups of banks show significant differences in their ROAA levels, primarily due to differences in interest rate policies and the implementation of non-interest income strategies by individual small and large banks. Both groups of banks experienced a recovery in their ROAA ratios in 2021 compared to the pandemic year of 2020. The aggregated ROAA ratio falls from 0.60% to 1.37% (Table 1).

4.7. PROFITABILITY INDICATOR: ROAE

The ROAE ratio measures the profitability of operations by comparing the net profit to the average equity (shareholders' equity).

Graph 7: Comparative analysis: ROAE



The average value of this indicator for selected small banks and large banks is:

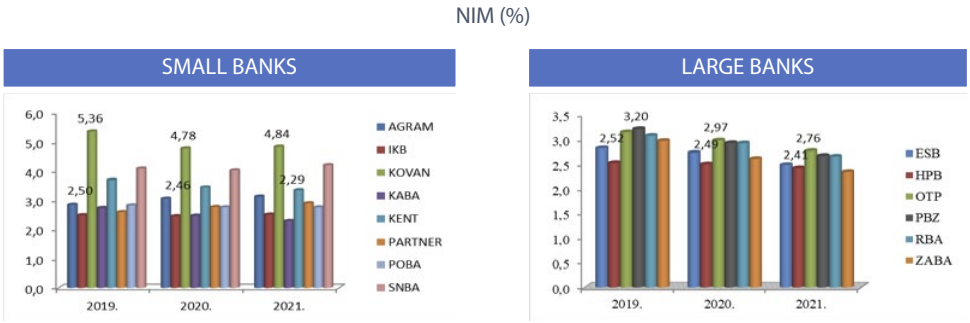
ROAE (average value in %)	SMALL BANKS	LARGE BANKS
2019.	9,40	8,05
2020.	5,42	4,04
2021.	9,25	7,15

Over the past three years, the ROAE ratio for small banks has ranged from a minimum of 0.82% to a maximum of 16.93%, while for large banks, it has ranged from a minimum of 2.79% to a maximum of 13.05%. The most significant differences in achieving returns on equity for both groups of banks were observed in 2020, the year of the Covid-19 pandemic. The average values of the ROAE ratio are higher for small banks, primarily due to their relatively lower capital levels and higher interest margins. According to Pejić Bach, Posedel, and Stojanović (2010), the ROAE ratio should be positively related to the capital-to-assets ratio of a bank. Due to higher financial leverage during successful operations, less capitalized banks are expected to achieve higher values of this ratio. However, they are also more exposed to the risk of insolvency. On the other hand, it is assumed that highly capitalized banks with a higher capital-to-assets ratio should achieve slightly lower ROAE but, to a lesser extent, be exposed to the risk of insolvency, which could ultimately result in lower financing costs for these banks, positively affecting their profitability.

4.8. PROFITABILITY INDICATOR: NET INTEREST MARGIN (NIM)

The Net Interest Margin (NIM) indicator represents the net interest income (the difference between interest income and interest expenses) divided by the average interest-earning assets.

Graph 8: Comparative analysis: NIM



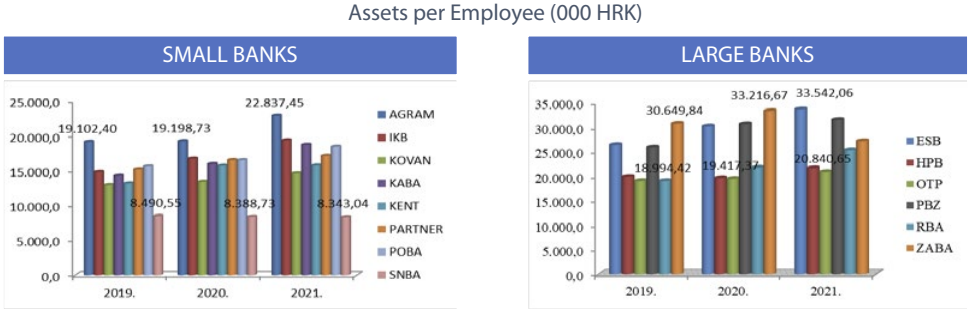
The average value of this indicator for selected small banks and large banks is:

NIM (average value in %)	SMALL BANKS	LARGE BANKS
2019.	3,33	2,45
2020.	3,22	2,33
2021.	3,25	2,16

During the observed period, the NIM indicator for small banks ranged from a minimum of 2.29% to a maximum of 5.36%, while for large banks, it ranged from a minimum of 2.41% to a maximum of 3.20%. From the analysis, it is evident that small banks achieved a higher level of net interest margin over the past three years. This is a result of differences in asset structure (a higher share of credit placements in the asset portfolio of small banks), liability structure (the majority of funding costs for small banks are related to deposits, while large banks partially finance themselves through borrowing and issuing debt securities), loan and deposit maturity structure, and sensitivity to market interest rate movements (Pejić et al., 2010). According to Pavković (2004), "A bank that has a higher share of capital in its funding sources will have a lower cost of financing compared to a bank that relies more on borrowed funds on which it pays interest (assuming other market conditions are identical)."

4.9. ACTIVITY INDICATOR: ASSETS PER EMPLOYEE

Graph 9: Comparative analysis: Assets per Employee



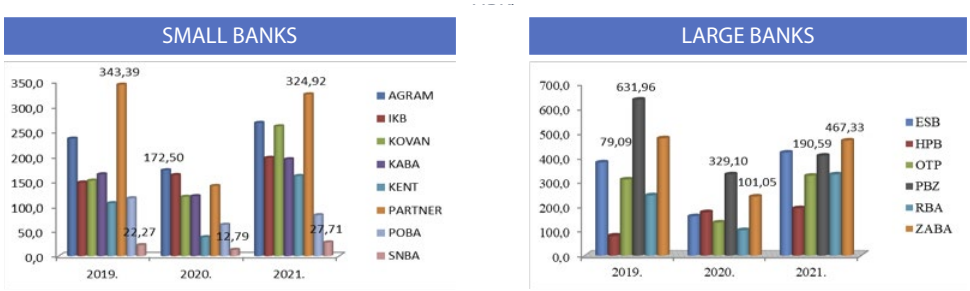
The average value of assets per employee for selected small banks and large banks is:

Assets per employee (average value in 000 HRK)	SMALL BANKS	LARGE BANKS
2019.	14.177,21	18.314,14
2020.	15.283,42	20.222,80
2021.	16.875,18	22.100,90

The average value of assets per employee for small and large banks is as follows: Over the past three years, the assets per employee for small banks ranged from a minimum of 8.34 million HRK to a maximum of 22.84 million HRK, while for large banks, it ranged from a minimum of 18.99 million HRK to a maximum of 33.54 million HRK. The assets per employee are significantly higher in large banks, primarily due to economies of scale.

4.10. ACTIVITY INDICATOR: GROSS PROFIT PER EMPLOYEE

Graph 10: Comparative analysis: Gross Profit per Employee



The average value of gross profit per employee for selected small banks and large banks is:

Gross Profit per Employee (average value in 000 HRK)	SMALL BANKS	LARGE BANKS
2019.	160,80	273,38
2020.	103,69	149,13
2021.	189,54	277,76

During the observed period, the gross profit per employee for small banks ranged from a minimum of 12.79 thousand HRK to a maximum of 343.39 thousand HRK, while for large banks, it ranged from a minimum of 79.09 thousand HRK to a maximum of 631.96 thousand HRK. The higher gross profit per Employee for large banks results from higher cost efficiency and operational leverage (the growth rate of net income minus the growth rate of net operating expenses).

5. CONCLUSION

In this paper, the set objective has been achieved, which involved comparing key financial indicators of selected small and large banks in the Croatian financial market without delving into an in-depth analysis of the reasons for the differences in indicator values. Additionally, the paper provides an overview of a range of financial performance indicators organized into six separate groups.

It is worth noting that in the Croatian professional literature, analysis, and comparisons of individual financial indicators of financial institutions are still very rare, except for a few selected key performance indicators (KPIs) quarterly published by the Croatian National Bank (CNB).

However, each credit institution must analyze its operations and financial indicators as part of mandatory reporting to the central bank. Simultaneously, to ensure information for management and support critical business decision-making at the strategic and operational levels, each bank conducts optional performance analysis, typically by individually defining key performance indicators (KPIs).

Following the conducted comparison of banks' financial indicators, the next step would require a detailed, in-depth analysis to determine the patterns and reasons for deviations in the values of specific indicators related to the financial institution's size. Considering the recent practice of the Croatian National Bank to publish financial statements of all credit institutions and selected financial performance indicators of all credit institutions, the author believes this will provide a valuable foundation for future research within the domestic professional community.

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USPOREDNI PRIKAZ FINANCIJSKIH POKAZATELJA USPJEŠNOSTI POSLOVANJA IZDVOJENIH MALIH I VELIKIH BANAKA U REPUBLICI HRVATSKOJ

SAŽETAK RADA

U hrvatskoj stručnoj literaturi teško je pronaći usporedne analize financijskih-pokazatelja uspješnosti banaka, koje posluju na hrvatskom financijskom tržištu. Analizu poslovanja hrvatskog bankarskog sustava provodi Hrvatska narodna banka (HNB), ali u velikoj mjeri na agregatnoj razini. Ključne pokazatelje uspješnosti (engl. Key Performance Indicators, KPI) kreditnih institucija na agregatnoj razini HNB objavljuje tek od 30.06.2016. godine u izvješću Odabrani pokazatelji strukture, koncentracije i poslovanja kreditnih institucija. Međutim, posljednjih nekoliko godina (od 31.12.2019.) HNB objavljuje izvješće Financijski izvještaji kreditnih institucija u kojem se nalaze usporedni prikazi bilance i računa dobiti i gubitka svih kreditnih institucija te izvješće naziva Podaci o poslovanju kreditnih institucija, u kojem se može pronaći komparativni prikaz nekoliko izdvojenih financijskih pokazatelja svih kreditnih institucija (ROAA, ROAE, stopa kapitala, omjer financijske poluge, LCR). Vodeći računa o specifičnosti poslovanja kreditnih institucija, financijski se pokazatelji banaka po uzoru na financijske pokazatelje poduzeća, mogu podijeliti u šest grupa pokazatelja: pokazatelje likvidnosti, financijske strukture, aktivnosti, troškovne efikasnosti, profitabilnosti i pokazatelje investiranja.

Važnost financijskih pokazatelja uspješnosti banaka ogleda su u osiguravanju informacija menadžmentu, temeljem kojih se donose ključne poslovne odluke na strategijskoj i operativnoj razini. Iz niza financijskih pokazatelja uspješnosti poslovanja, banke definiraju individualno prilagođene ključne pokazatelje uspješnosti (KPI), kao alat provjere realizacije postavljenih strateških i operativnih ciljeva. U ovom će se radu, usporednom analizom izdvojenih financijskih pokazatelja banaka, nastojati ukazati na razlike u vrijednostima pojedinih pokazatelja malih i velikih banaka.

Ključne riječi: *financijski pokazatelji uspješnosti poslovanja banaka, KPI banaka, male banke, velike banke*