Bank Concentration and Profitability: Evidence from Albanian Banking System

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Abstract: Bank profitability is considered an essential indicator of financial stability, leading many researchers to focus on its main determinants. Various theoretical and empirical studies imply that the performance of banks and the structure of the banking sector influence bank profitability. The Albanian banking sector has undergone numerous structural changes, characterized by a moderate concentration level in recent years. On the other hand, the banking profitability indicator remained mostly stable despite occasional fluctuations. This research examines the empirical nature of the relationship between market structure and profitability in the Albanian banking sector. The non-structural approaches related to the bank profitability literature on the relationship between competition and performance in the banking sector embrace (i) the structure-conduct performance (SCP) hypothesis and (ii) the efficiency structure (EFS) hypothesis. Despite this, by using a dataset of the Albanian banking sector during 2010 – 2021, this study uses the structure-conduct performance (SCP) hypothesis to prove this relationship. Empirical evidence supports the traditional paradigm that structural features and concentration determine the banking sector's profitability.

1. INTRODUCTION

The banking sector has significantly changed in recent years due to various internal and external factors. Across the globe, the banking sector remains a crucial source of financing for economic activities, thereby driving economic growth. The stability of the financial sector is dependent on a sound banking industry, which is why many researchers are studying bank profitability as a critical indicator of stability. Several theoretical and empirical results highlight that bank profitability depends on market structure and efficiency, not just performance. There are two theoretical approaches in industrial organization literature related to the relationship between competition and performance in the banking sector: the structure-conduct performance (SCP) hypothesis and the efficiency structure (EFS) hypothesis (Berger and Hannan, 1993).

Demirgüç-Kunt and Huizinga (1998) conducted a study that examined the variations in interest margins and bank profitability across different factors. These factors included bank characteristics, macroeconomic conditions, explicit and implicit bank taxation, deposit insurance regulation, overall financial structure, and various legal and institutional indicators. The data for the study was collected from 80 countries and spanned from 1988 to 1995. They have confirmed a positive relationship between capitalization and profitability and a negative relationship between reserves and profitability in banks. However, other significant factors that influence bank

margins and profitability, such as ownership, corporate taxation, financial structure, and the legal and institutional setting, have not been thoroughly examined in the literature. Authors have shown that foreign ownership of banks in developing countries is linked to higher interest margins and greater profitability. Institutional factors like credit rights, law enforcement, corruption levels, and financial structures have a more significant impact on interest margins and bank profitability in developing countries than in developed ones.

Wong et al. (2007) conducted a study using the approach developed by Berger and Hannan in 1995 to determine what factors contribute to a bank's profitability and the overall profitability of the banking market. The study found that market structure in the Hong Kong banking industry, including market concentration and bank market shares, did not significantly impact performance. The cost efficiency of banks is a crucial factor in determining their profitability. This measures how well they can use their resources to produce desired results. Research has shown that larger banks are more cost-efficient than smaller ones. This is because they can offer similar services at lower prices, giving them an advantage over smaller banks and allowing them to achieve higher profits. They conclude that smaller banks are more vulnerable to intense competition in the loan market, especially during price wars. The efficiency structure (EFS) hypothesis suggests that a company's profitability largely depends on its efficiency. If a company is more efficient than its competitors, it has the potential to increase profits, expand its market share, and grow in size.

Understanding the link between market structure and bank profitability is crucial. If the SCP hypothesis is proven, poli-

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cymakers may need to take action to prevent unfair competition through anti-trust laws while keeping a hands-off approach if the market is operating fairly. Additionally, analyzing this relationship can help identify ways to improve the banking sector's performance.

This paper explores the correlation between bank concentration and bank profitability through the structure-conduct performance (SCP) hypothesis. Using time series data from the Albanian banking sector from 2010 to 2021, our findings validate the conventional structure-conduct performance (SCP) paradigm. Moreover, the significance of structural characteristics of the banking industry in determining its profitability is also highlighted.

2. LITERATURE REVIEW

The non-structural approaches related to the bank profitability literature on the relationship between competition and performance in the banking sector embrace (i) the structure-conduct performance (SCP) hypothesis and (ii) the efficiency structure (EFS) hypothesis.

The structure-conduct performance (SCP) hypothesis indicates that if some firms have a significant market share, they can create collusive agreements, increasing the market share concentrated in a few firms. According to this hypothesis, the higher the market concentration level, the higher the profitability of these firms. So, there is a positive correlation between the level of concentration and the performance of firms. Gilbert (1984) was among the first authors who used the structure-conduct version (SCP) hypothesis to analyze the relationship between banking sector structure and bank profitability. Of the forty-four banks included in the study, only thirty-two reported a significant relationship between the market structure and the bank's performance, thus supporting the structure-performance hypothesis. By using annual data for three years, 1986 – 1988, Lloyd-Williams, Molyneux, and Thornton (1994) confirmed the SCP hypothesis by suggesting that the concentration of Spanish banks had reduced the costs of cooperation, thereby increasing the profits of all banks present in the market. This was one of the reasons why, in that period, the government and the Bank of Spain were encouraged to reduce competition among banks.

In contrast to the SCP hypothesis, according to the efficiency structure (EFS) hypothesis, the relationship between profitability and efficiency is significant. This hypothesis indicates that if a company is more efficient than other companies in the market, it can increase its profits and market share. This hypothesis was initially supported by research done by Smirlock (1985) regarding the American banking system. He confirmed that large banks, with a high degree of product and loan diversification, benefit from economies of scale by increasing their profits in this way. Also, Goldberg and Rai (1996), analyzing a sample of 11 European banks, found evidence supporting this hypothesis. According to them, more efficient banks can increase their profits and market share through lower costs achieved through superior management or production processes. By using cross–sectional data for 44 commercial banks, Samad (2008) proved the existence of a negative relationship between market share and bank profitability. These results reject the structure-conduct

performance (SCP) hypothesis and support the idea that bank profitability depends on its efficiency.

Over the years, further research in this field has reached different conclusions. Using panel data for Greek banks, Athanasoglou et al. (2008) found no evidence supporting the SCP hypothesis, as market share was found insignificant in bank profitability. Athanasoglou et al. (2006) found evidence in favor of the SPC hypothesis while analyzing the factors that affect banks' profitability in the SEE region. They conclude that the banking sector composition directly impacts profitability and the macroeconomic environment. Chirwa (2003), by using time-series data, supported the SPC hypothesis. His study about the Malawi banking industry found a long-run positive relationship between concentration and bank performance.

Berger (1995) explains that banks with higher management and technology can decrease costs and thus increase their profit. Using data from the U.S. dataset, he found support for efficiency structure hypotheses. However, when the study focused on differences in efficiency, the results were mixed. Using data for four years, Goldberg and Rai (1996) found no positive relationship between concentration and profitability for European banks. However, they found support for the efficiency structure hypothesis only for banks in countries with low concentrations. Zhang et al. (2013), using a dataset of the BRIC banks over the period 2003–2010, found a negative relationship between market concentration and performance. According to them, the more concentrated market would decrease efficiency, an adverse result of using the EFS hypothesis. According to them, the more focused market would reduce the banks' efficiency. This result is in contradiction with the EFS hypothesis.

Behname (2012) rejected the market power hypothesis for the OPEC countries, while efficiency gains seem to be the primary determinant of bank profitability. According to Tajgardoon et al. (2012), the efficient structure was an essential element of profitability. They emphasized the importance of the bank's capital ratio and size in explaining profitability for the Islamic banking industry. Kozak, S. and Wierzbowska, A. (2021) analyze the relationship between banking market structure and bank profit efficiency in SECE countries between 2005 and 2019. Their study indicates that bank concentration and profit efficiency are positively related in the EU and non-EU countries. Meanwhile, according to Cifter (2015), based on the data from 10 CEE countries, the relationship between concentration and stability was unclear since concentration, according to the situation, could contribute to improving or deteriorating the loan portfolio quality. Also, Vasiliou and Frangouli (2000) found ambiguous evidence regarding the impact of market structure on bank performance.

Analyzing data from Latin American banks, Williams (2012) explains that through economies of scale, banks reduce operating costs, thus increasing their efficiency. So, his findings prove a positive relationship between concentration and bank profitability, supporting the EFS hypothesis. Seelanatha (2010), based on Berger and Hannan's approach, found that in Sri Lanka, the bank's performance is independent of both market concentration and market power but of the level of efficiency of the banking units.

Table 1. Albanian Banking Sector.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Number of banks	16	16	16	16	16	16	16	16	14	12	12	12
Number of branches	529	534	538	529	499	500	493	472	447	429	425	421

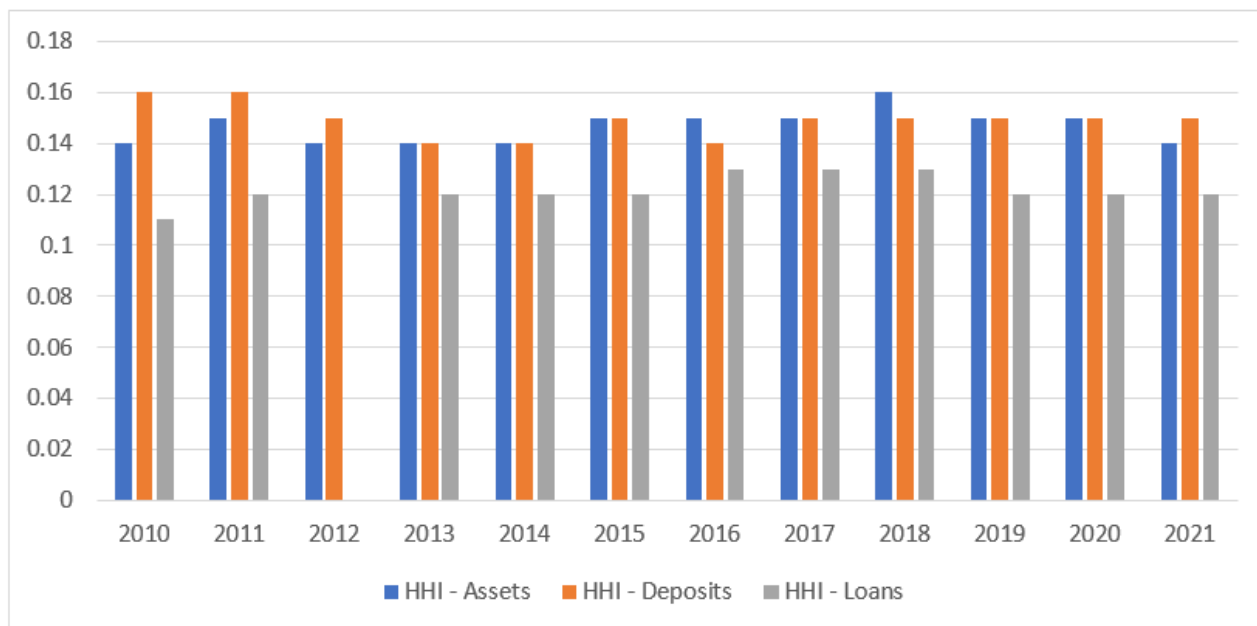Source: Annual Monitoring Report, 2021.

Fig. (1). Herfindahl – Hirschman Index according to banking assets, deposits, and loans.

Source: Annual Supervision Report, Bank of Albania.

3. OVERVIEW OF THE ALBANIAN BANKING SECTOR

The Albanian banking sector, over the years, has undergone significant structural changes. In 1992, only three banks were operating in Albania with the total state capital, while today, the Albanian banking system consists of 12 banks with entirely private capital. Among the main factors contributing to a dynamic environment in the banking sector are the privatization process and the entry of foreign banks by acquiring existing ones. The privatization process started with the National Commercial Bank in 2000, changing the banking system's ownership structure in favor of banks with private capital.

Based on Table **1**, in two years, 2018 – 2019, the number of banks was significantly reduced due to mergers with the absorption of three existing banks and the revocation of a license based on the bank's request. These structural changes over the years have caused the banking system, depending on product differentiation, to be characterized by a moderate level of concentration where HHI values are smaller than 0.18. Based on Fig. (1), we can say that the Albanian banking system converges with monopolistic competition. It is also noted that the lending activity is the one that presents the lowest level of concentration.

Regarding the profitability indicators presented in Fig. (**2**), what is noticed is that both ROA and ROE present continu-

ous fluctuations. What stands out the most is the significant decrease in 2016. During this period, the reduction of the net result and the increase in reserve funds for credit risk impacted the decline of bank profitability. The rise in loan provision expenses has reflected the growth in non-performing loans. Unlike a year ago, in 2017, an increase in financial performance is observed due to the decrease in provisions for loan risk. These trends reflect the sensitivity of the financial sector to this process. In recent years, we can say that the Albanian banking system has been stable, reflecting the stability in profitability indicators.

Based on Table **2**, the banking sector at the end of 2021 is characterized by a slight increase in the efficiency of using funds.

As per Table **2**, during the last year, the banking sector was characterized by a slight decrease in the ratio of average interest-earning assets to average assets while interest-paying liabilities to average assets increased. In 2019, based on income-earning instruments, banking activity slightly decreased compared to the previous year. During the last two years, the net interest margin has remained unchanged after slightly increasing at the end of 2019. Although interest rate expenses did not change, this trend prevented the decrease in interest income due to the reduction of the loan interest rate and the slowdown in lending activity. During 2014-2018, the banking activity based on interest-earning instruments was continuously in decline due to the increase of interest ex-
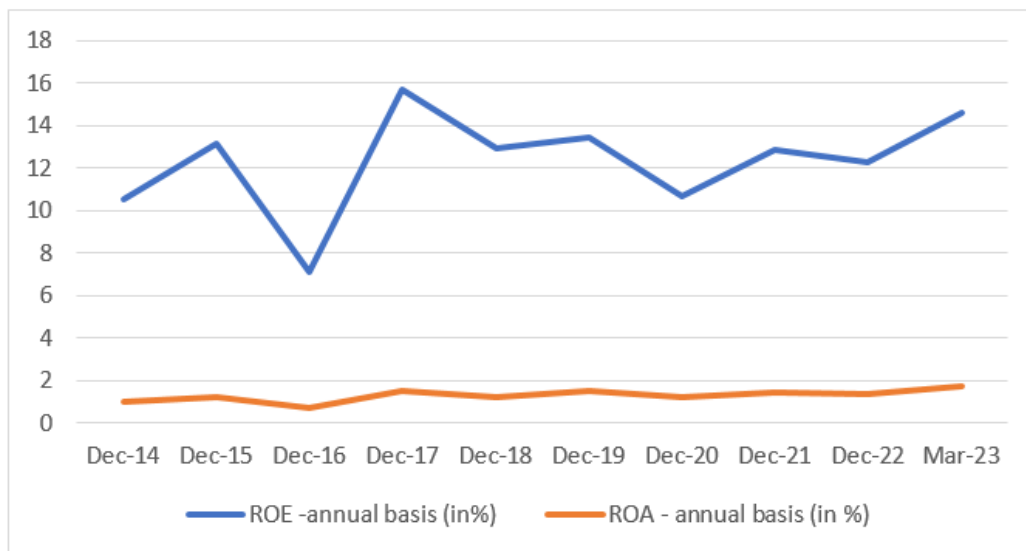
Fig. (2). Banking profitability indicators.

Source: Bank of Albania.

Table 2. Profitability indicators from the main activity (in % cumulative) and Average profitability ratios.

Indicators	2014	2015	2016	2017	2018	2019	2020	2021
Interest income/ average earning assets	6.28	5.7	5.2	3.8	3.8	3.4	4	3.9
Interest expenses/ average earning assets	2.14	1.3	1	0.6	0.7	0.7	0.5	0.5
Net interest margin	4.18	4.4	4.2	3.2	3.8	2.7	3.4	3.4
Average earning assets/Average assets	85%	84.40%	83.52%	81%	83.10%	84.80%	84.30%	83.47%
Average paying liabilities/Average assets	83.60%	85.29%	86.51%	93.20%	92.80%	93.60%	92.90%	93.86%

Source: Annual Supervision Report, Bank of Albania.

penses to average assets in an economic environment with low-interest rates. The net interest margin is constantly down due to a higher decline in interest income to average assets than in interest expenses to average assets.

Based on Fig. (3), let us compare the Albanian banking system with some European countries. A high profitability level characterizes Albania's banking system. Comparative statistics show that the profitability of Albanian banks converges with Croatia. Based on ROA, the Albanian banking system is positioned better than countries like France, Spain, or Italy.

4. METHODOLOGY

This study, using quarterly data from 2010 to 2021 to analyze the effect of concentration on bank profitability in the Albanian banking sector, is based on the equation:

$$\pi_{it} = \alpha_i + \beta_1 HHI_{it} + \beta_3 LLP_{it} + \beta_4 LDR_{it} + \beta_5 NPL_{it} + \varepsilon_{it}$$

Where:

π_{it} is a profitability ratio calculated as the ratio of net income and total assets (ROA); HHI_{it} is the Herfindahl – Hirschman index for assets that represent bank concentration

ratio; LLP_{it} is loan loss provisions ratio; LDR_{it} measures liquidity as loans to deposits ratio; NLP_{it} are non-performing loans.

The theoretical and empirical analysis indicates a positive relationship between bank concentration and profitability, while the cause–consequence source convergence remains unclear. In some cases, the empirical results have confirmed the structure-conduct performance (SCP) hypothesis; in others, they have confirmed the efficiency structure (EFS) hypothesis.

5. EMPIRICAL RESULTS

Empirical results in Table **3** confirm that bank concentration measured by the HHI index positively impacts bank profitability; this is demonstrated by the positive sign of its coefficient and significance. This implies that banks that own the most significant part of the market have more opportunities for product differentiation and application of prices depending on their strategy, thus increasing their profitability. Meanwhile, LLP and NPL have a negative impact on profitability. Loan loss provisions and non-performing loans are essential indicators for the efficiency of the banking sector. The more stable the banking sector, the
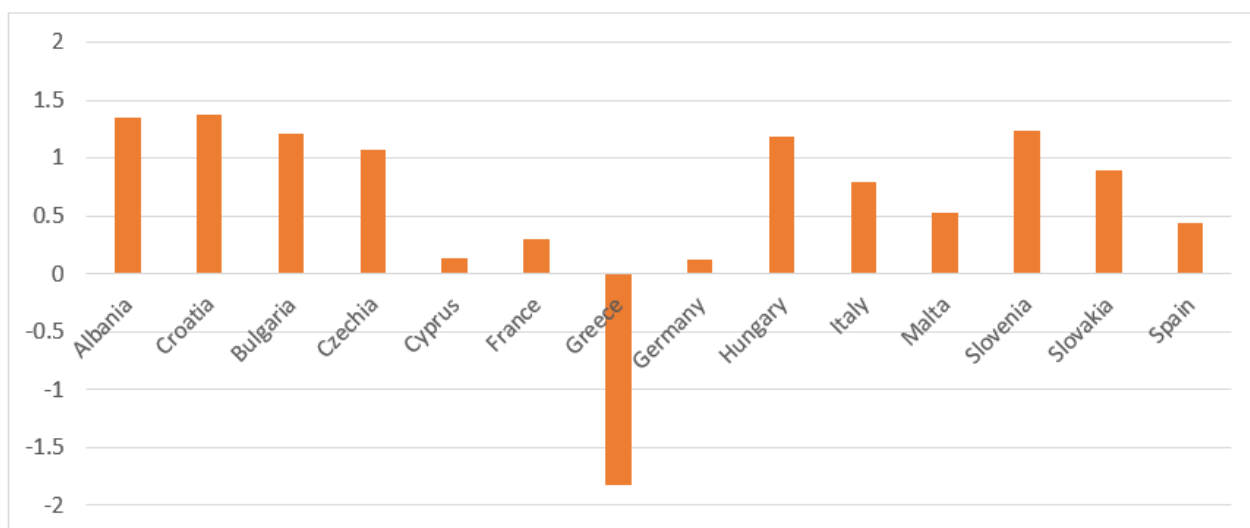
Fig. (3). Return on assets to several European countries and Albania during 2021.

Source: European Central Bank.

Table 3. The empirical result of banking profitability.

Depended Variable: **ROA**				
Method: Time series random effect				
Sample: 2010 - 2021				
Periods included: 48				
Variable	**Coefficient**	**Std. Error**	**t- Statistic**	**Prob.**
C	7.84321	0.24985	3.93678	0.0001
HHI	0.01657	0.00398	2.17269	0.0367
LLP	-0.03483	0.00955	3.09124	0.0814
LDR	0.04872	0.00638	2.52651	0.0915
NPL	-0.02567	0.00739	3.1652	0.1232
Weighted Statistics				
R - squared	0.82782		Mean dependent var	0.21628
Adjusted R-Squared	0.79498		S.D.depend var	2.86054
S.E.of regression	0.77832		Sum squared resid	122.1762
F- statistic	134.3771		Durbin- Watson stat	1.09743
Prob (F-static)	0.0000			
Unweighted statistics				
R - squared	0.74983		Mean dependent var	0.75856
Sum squared resid	145.0065		Durbin- Watson stat	0.87688

Source: Authors' calculations.

lower the level of LLP and NPL will be and the higher the bank's profitability. However, while non-performing loans are statistically insignificant, loan loss provision can be considered significant at 10%. As expected, the loan-to-deposit ratio positively impacts profitability but appears to be significant in the range of 10%.

CONCLUSIONS

The Albanian banking sector has significantly changed in recent years due to various internal and external factors characterized by a moderate concentration level. On the other hand, the banking profitability indicator remained mostly

stable despite occasional fluctuations. The literature on the relationship between competition and performance in the banking sector has two non-structural approaches: the structure-conduct performance (SCP) hypothesis and the efficiency structure (EFS) hypothesis. The structure-conduct performance (SCP) hypothesis suggests that firms with a significant market share may form collusive agreements, leading to a market share concentration in a few companies. This theory states that the profitability of these firms increases with higher levels of market concentration. Therefore, there is a positive relationship between market concentration and firm performance. According to the efficiency structure (EFS) hypothesis, a company can increase its profits and market share by being more efficient than others.

The study showed that banking sector lending is less concentrated than assets and deposits and tends towards monopolistic competition behavior based on the SCP hypothesis. Also, empirical results support the SCP hypothesis, showing a positive link between bank profitability and each bank's market share in the banking sector. Meanwhile, the effects of loan loss provision and non-performing loans were adverse, although the loan loss provision was not the significant variable in the range of significance at 5%. The model should include efficiency and macroeconomic performance indicators to improve the comprehensive analysis. However, due to their unavailability, the model did not include efficiency indicators and short series.

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