An empirical analysis of internal factors affecting bank performance in Albanian case

Dr. Teuta ÇERPJA
Department of Economics & Finance,
European University of Tirana, Tirana, Albania
teuta.cerpja@uet.edu.al

Rosela BAJRAKTARI
Department of Economics & Finance,
European University of Tirana, Tirana, Albania
rbajraktari@uet.edu.al

Abstract

Purpose: *Commercial banks play a crucial and dynamic role in driving a country's economic development. An efficient, effective, and well-regulated banking sector contributes to accelerated growth in multiple sectors of the economy. This paper analyzes the impact of internal factors on the performance of banks in Albania. Return on assets (ROA) is used as a proxy to measure the performance of commercial banks in Albania. Additionally, evaluates the impact of the COVID-19 pandemic on the performance of Albanian commercial banks.*

Methodology: *This study combines two primary lines of data research. Initially, descriptive statistics are provided for both independent and dependent variables. The regression model utilized in the analysis relies on panel data, specifically quantitative data that explains the performance of commercial banks through the explanatory*

variables. Focusing on nine commercial banks in Albania from 2017 to 2021, the fixed effects model assesses the relevance of specific bank-related factors affecting their performance. Furthermore, this research paper investigates the impact of a COVID-19 dummy variable included in the analysis, hypothesizing that strong banking systems help economies survive adverse shocks and maintain the financial system's stability.

Findings: *The findings show that all internal factors such as bank size, efficiency ratio, and liquidity risk, are statistically significant, while the COVID-19 pandemic dummy variable did not have a statistically significant impact on bank performance in the case of Albanian banks.*

Value: *This study makes a significant contribution by examining the performance of banks in Albania over recent years, utilizing the latest publicly available data. Additionally, it enhances the existing literature by introducing a focus on the COVID-19 dummy variable, a subject that has received limited attention from other researchers to its impact on banking performance. This investigation is expected to motivate a variety of stakeholders, including bankers, banking regulatory authorities, and the broader financial system, to engage with its findings.*

Keywords: *Bank performance, commercial banking, Covid-19, ROA, internal factors, banking system.*

Introduction

The financial system's importance in any country's economy is essential and quite critical since it is positively related to a country's development and economic progress. Commercial banks are an important part of the financial system because they connect capital sources and offer a wide range of financial services. Furthermore, a profitable banking sector enables economies to withstand adverse shocks and support the stability of the financial system (Athanasoglou et al., 2005). Bank profitability serves as a measurement of their financial performance, which is crucial for maintaining public confidence (Widyastutie et al., 2017). Consequently, it is essential to comprehend the factors that affect banks' profitability, particularly internal aspects, as they are related to banks and other economic entities.

In the context of Albania, banks are the foundation of our financial system since they account for around 1800 billion ALL, or 90% of the financial sector's total assets (Bank of Albania, 2022). The role of the banking industry in the Albanian economy is even more crucial than in more developed ones due to the lack of capital markets. According Central Bank of Albania (2023), despite the developments that this sector has undergone, the years 2017-2022 are considered a consolidation period of the banking sector in Albania. However, considering the crucial role

they have we should pay particular attention to Albania's commercial banks if we wish to grasp the health of our financial system and throw light on it. Therefore, this study aims to answer the following first research questions: How do internal factors affect the profitability of commercial banks?

Furthermore, a robust banking system can withstand adverse shocks and support the stability of the financial system so we have tried to evaluate the effect of the COVID-19 pandemic on the bank performance of our banking system. Hence this paper aims to answer the following second research question: Did the COVID-19 pandemic, affect banking performance in Albania case?

To achieve this, bank performance was operationalized as the dependent variable and assessed through the return on assets (ROA) metric. The independent variables examined included bank size, efficiency ratio, and liquidity level. Additionally, the impact of the COVID-19 pandemic was incorporated as an independent variable to investigate the external shocks' influence on bank performance.

This research paper is significant because it can help regulators and policymakers better understand the variables that may impact bank performance and offer useful advice in light of the COVID-19 pandemic economy's unprecedented instability.

The findings of this study will contribute to the existing literature since for the management of commercial banks, stakeholders, and other interest groups like the government and central bank, it is essential to comprehend what factors are specific to each bank and how they affect bank performance.

This paper is structured as follows: Following the introduction, section 2 presents a literature that explores the factors influencing banking performance. In section 3, we outline the research methodology employed to empirically investigate the effect of those variables in the context of Albania. Section 4 provides analyzes and empirical results whereas section 5 offers conclusions and recommendations.

Literature Review

Over the years, many researchers have examined various factors that affect bank performance. Based on a large body of research in this area these factors have been divided into two major categories: external factors and internal ones. The environment and contextual factors, the laws and market in which the bank operates, and competitors in the same industry make up the first group, which can be considered completely outside the bank's control. Internal factors, on the other hand, are controlled by the bank's management goals and objectives, which is why they receive a lot of attention in this paper and elsewhere. Several researchers from different nations have delved into how internal and external bank issues affect a bank's performance. However, they do not come to the same conclusion on how each factors influence bank performance.

In their study, Borges and Tavares (2020) examined how the performance of Portuguese commercial banks was affected by a variety of internal factors, including bank capital, liquidity, costs, asset quality, diversification, and bank size, as well as external factors like GDP, unemployment, inflation, and market concentration. The findings showed that, as internal determinants, liquidity, and operational costs were the most effective in explaining the dependent variable ROA, whereas GDP and inflation were the most effective external drivers.

The main determinants of banks' profitability in EU27 over the period 2004-2011 were analyzed by Petria et. al (2015). Considering return on average assets (ROAA) and the return on average equity (ROAE) as proxy for banks profitability, they concluded that economic growth, credit and liquidity risk, management efficiency, the market concentration influence bank profitability. Different from this study, in their analysis of the profitability of the largest banks in the European financial market from 2013 to 2018, Karadžić & Đalović (2021) argued that internal factors, which are under the control of the bank's management, have no statistically significant influence on the profitability of large banks, but macroeconomic factors, such as GDP growth rate, inflation rate, and market concentration, do.

The internal factors influencing the profitability of China's state-owned commercial banks from 2007 to 2019 were examined by Koroleva et al. (2021) using fixed effect, random effect, and pooled regression models. According to the study, internal characteristics like size, liquidity, and credit quality have a positive effect on profitability. In the same vein, Olson et al. (2011) concluded that higher profitability has typically been linked to larger banks, a greater reliance on loans for income, and a higher percentage of equity capital to assets.

According to Pasiouras & Kosmidou (2007) study, there is a positive correlation between the profitability of European banks, specifically domestic banks, as determined by ROA, and the following internal and external factors: capitalization, liquidity, GDP growth, inflation, market capitalization to total bank assets, and the market capitalization to GDP ratio. The following factors are negatively correlated with profitability, according to this study: bank size, operating expenses as a percentage of profit, concentration sector banking, and total bank assets as a percentage of GDP.

Menicucci and Paolucci (2016) used regression analysis to examine how internal factors affected the profitability of 28 European banks between 2006 and 2015. According to the study, asset quality has a large and negative impact on bank profitability, but bank size and capital ratio have significant and positive benefits.

Numerous studies examined the effects of both internal and external factors that can impact banks' performance in the Albanian context. An empirical model was used by Duraj and Moci (2015) to investigate the variables influencing Albanian commercial banks' performance. They examined a total of 16 banks and

used information gathered between 1999 and 2014. The rate of non-performing loans, GDP, inflation, and liquidity risk were all taken into consideration, and the dependent variable, ROE, was used to measure the banks' performance. The empirical analysis's findings demonstrated that all other variables specified and considered in the model, except for the non-performing loan rate, were statistically significant.

Kola, Gjipali, and Syla (2019) conducted another study that provides insight into the bank-specific internal and external factors that can impact the bank's profitability. Based on quarterly data from 16 commercial banks between 2002 and 2015, it was determined that while the ratio of bad loans had a negative effect on the banks' performance, liquidity had a significant positive impact. GDP and inflation, on the other hand, had a positive correlation with the banks' performance.

However, in the study on the effect of only internal determinants on bank performance, Hallunovi (2022) found that credit risk was inversely connected with bank performance, whereas bad loans and capital adequacy had positive impacts. Nevertheless, Cekrezi (2015), who looked at 16 Albanian commercial banks from 2010 to 2013, concluded that capital adequacy and liquidity were statistically significant variables for the model in determining performance. Although bank size and age, two additional model factors, were not significant in predicting the amount of ROA.

Overall, there is disagreement over the findings of every study conducted in different nations, even in the Albanian case. Therefore, this study aims to examine the impact of bank internal factors on the performance of commercial banks in Albania, utilizing the latest publicly available data.

On the other hand, however, few researchers have determined the effects of COVID-19 on the banking sector. In 64 different countries, Duan et al. (2021) looked into the impact of the COVID-19 pandemic on systemic risk. Through government measures and bank default risk pathways, they demonstrated how COVID-19 contributes to systemic fragility in countries. Nevertheless, this adverse effect varies based on the bank and the nation's diversity.

Çolak and Öztekin (2021) use a sample of banks from 125 countries to assess how the pandemic has affected global bank lending. According to their findings, the nations with the strongest and most advanced financial systems have demonstrated the most resistance to the crisis in terms of loan growth. Xiazi and Shabir (2022) investigate how the COVID-19 pandemic has affected the banking industry's performance, taking into account 1,575 banks across 85 nations. The results show that the COVID-19 pandemic has had a major negative impact on bank performance. Furthermore, how negatively COVID-19 affects a bank's performance varies depending on the bank and the nation.

However, from all studies has been widely accepted that the banking sector has been essential in supporting people and companies and effectively channeling

credit into the broader economy, even in the face of the COVID-19 pandemic, so it would be important to assess how it affects Albania's banking sector.

Research Methodology

The main purpose of this paper is to analyze and evaluate the effect of internal factors on the bank performance of commercial banks in Albania. The empirical analysis is based on the data of commercial banks in Albania ranging from 2017 to 2021 with a total of 45 observations and refers to the most commonly used variables in the empirical literature.

This study combines two primary lines of data research. Initially, descriptive statistics are provided for both the independent and dependent variables. The regression model utilized in the analysis relies on panel data, specifically quantitative data that explains the performance of commercial banks through the explanatory variables. After conducting several tests and considering the characteristics of the data, we determined that only the fixed effect model satisfies all necessary assumptions. This econometric model presents a more transparent understanding of the relationships and impacts among the variables.

Theoretical model specification is:

$$ROA_{bt} = \beta_0 + \beta_1 BS_{bt} + \beta_2 ER_{bt} + \beta_3 Ll_{bt} + \beta_4 COVID - 19_{bt} + \mu_t \qquad (1)$$

Where:

ROA – Return on assets, as the dependent variable. It is defined as net profit divided by total assets.

BS – Bank size, as the independent variable. It is defined as total assets.

ER- Efficiency ratio, as the independent variable

LR - Liquidity level, as the independent variable. It is defined as total loans divided by total deposits

COVID-19- dummy variable

"bt"- represents the name of the Albanian commercial bank, in the year "t".

u - represents all other potential exogenous variables

Table 1, shows summary statistics of used variables reporting the mean, median, standard deviation, minimum, and maximum.

TABLE 1: Descriptive statistics of the variables

	ROA	LIQUIDITY	EFFICIENCY...	COVID_19	BANK_SIZE
Mean	0.006068	0.756429	0.794592	0.400000	18.85470
Median	0.007800	0.618700	0.698500	0.000000	18.38563
Maximum	0.026700	2.536600	2.724700	1.000000	22.37816
Minimum	-0.025000	0.155500	0.513300	0.000000	12.45671
Std. Dev.	0.010981	0.450190	0.363492	0.495434	2.596068
Skewness	-1.424451	1.819186	3.603809	0.408248	-0.901018
Kurtosis	4.864122	7.031279	18.94040	1.166667	3.924646
Jarque-Bera	21.73349	55.29179	573.8362	7.552083	7.691812
Probability	0.000019	0.000000	0.000000	0.022913	0.021367
Sum	0.273078	34.03930	35.75664	18.00000	848.4614
Sum Sq. Dev.	0.005306	8.917532	5.813558	10.80000	296.5411
Observations	45	45	45	45	45

Source: Author's Calculations

Initially, the descriptive statistics provide the mean, followed by the median, and the minimum and maximum values, which define the range of our variables. Notably, the variable with the largest range is bank size, with values spanning from 12.45 to a maximum of 22.37, indicating significant variability among the banks in the sample. This range might suggest that bank size could be a crucial factor influencing various financial outcomes. In terms of return on assets (ROA), we observe that the mean is 0.6%, which reflects a modest profitability level across the banks analyzed. However, the range of ROA is noteworthy, with a maximum value of 2.6% and a minimum of -2.5%. The presence of a negative ROA might indicate that some banks are facing challenges in generating returns on their assets, which may be a point of concern for investors and stakeholders. Another important data illustrated in the table is the standard deviation, which gives us an idea of how far the data set of each variable is from the corresponding mean values. It is observed that the standard deviation captures the highest values for the variable that expresses the size of the bank, thus indicating that the data for this variable is much more dispersed than the other variables. This wide dispersion in bank size can lead to varying operational efficiencies, risk profiles, and financial strategies across institutions. On the other hand, the standard deviation for ROA captures a very low value of approximately zero, which explains that the data are close to the mean. Such consistency may imply that despite the differences in bank size, there are common factors affecting profitability that warrant further exploration.

Understanding these dynamics between bank size and ROA can provide valuable insights for policymakers, investors, and banking professionals looking to

enhance performance and strategically position their institutions in a competitive market.

Analyses And Findings

According to the results of our analysis, all the variables taken in the study, except the Covid-19 pandemic variable, affect bank performance for the period under review. This indicates that the traditional measures and factors influencing bank performance remain robust, even in the context of a global health crisis. The results of the regression analysis are presented below:

TABLE 2: Coefficients of Regression

Dependent Variable: ROA
Method: Panel Least Squares
Date: 05/10/24 Time: 20:50
Sample (adjusted): 2018 2021
Periods included: 4
Cross-sections included: 9
Total panel (balanced) observations: 36

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DBANK	0.001572	0.001418	1.108425	0.0162
EFFICIENCY_RATIO	-0.019309	0.003361	-5.744283	0.0000
LIQUIDITY	0.004470	0.002885	1.549682	0.0314
COVID_19	0.000285	0.002414	0.118256	0.9066
C	0.016824	0.004600	3.657526	0.0009

R-squared	0.884441	Mean dependent var	0.005308
Adjusted R-squared	0.824692	S.D. dependent var	0.010723
S.E. of regression	0.007075	Akaike info criterion	-6.936320
Sum squared resid	0.001552	Schwarz criterion	-6.716387
Log likelihood	129.8538	Hannan-Quinn criter.	-6.859558
F-statistic	12.35069	Durbin-Watson stat	0.701155
Prob(F-statistic)	0.000004		

Source: Author's Calculations

Our model is statistically significant. Adjusted R2 accounts for 82% of the variation in bank performance implying that 82 % of the variation of the bank performance is explained by the factors considered in the model. From the data presented in Table 2, we see that the variables, bank size, efficiency ratio, liquidity level were statistically significant with $p=0.0162<0.05$, $p=0.000<0.01$, and $p=0.0314<0.001$ respectively, and with a 1% confidence interval.

The first variable, the size of the bank, is statistically significant in explaining bank performance. For each unit increase in bank size, ROA is expected to increase by 0.0015 units ceteris paribus. This finding after building the model and related tests, was also consistent with some other studies, including Gul et al. (2011) and Yuan et al. (2022).

The second statistically significant factor in explaining bank performance was the efficiency ratio. It is noted that the result was in line with the expectations before we carried out the analysis and also in the same logical line with the researcher Nouaili et al. (2015) who also found a statistically significant negative relationship between efficiency ratio and bank profitability. For each unit increase in the efficiency ratio, ROA is expected to decrease by 0.019 units ceteris paribus.

Also, the level of liquidity was found to be statistically significant in explaining bank performance. It is positively related to ROA. Similar to the existing literature, liquidity has a direct relationship with bank performance, the higher the liquidity, the better the bank will perform if everything else remains constant (Muhammad & Puah, 2019). For each unit increase in liquidity, ROA is expected to increase by 0.004 unit ceteris paribus.

Despite initial expectations of a negative relationship, the empirical results indicate that the COVID-19 dummy variable did not have a statistically significant impact on bank performance. This conclusion is supported by the probability value associated with the variable in the final model. This could suggest that banks were able to adapt and implement measures to mitigate the risks associated with the pandemic, or it could indicate a lag in the response time required to witness a measurable effect. Further analysis is needed to explore these dynamics in greater detail, particularly focusing on the long-term effects of the pandemic as the banking sector evolves in this new landscape

However, the apparent insignificance of the COVID-19 variable in explaining banking performance can be attributed to the fact that many researchers have viewed the pandemic primarily as a psychological phenomenon affecting individuals, rather than as a direct economic disruption to banking institutions. Notably, the increase in deposits during this period suggests that the pandemic did not undermine public confidence in the country's banking sector. This finding is consistent with the statement by the Bank of Albania (2021) that Albania has not experienced a banking or liquidity crisis since 2008. While temporary liquidity shortfalls may have occurred, the evidence indicates that the country did not face a systemic banking crisis.

Our model takes this form:

$$ROA_t = 0.016 + 0.00015 Bank\ size_{bt} - 0.019 Efficency\ ratio_{bt} + 0.044 Liquidity\ ratio_{bt} + u_t$$

The model stability has been proved. Tests for homoscedasticity, normal distribution of residuals, lack of collinearity, and lack of auto-correlation have been done.

These findings demonstrate that all variables included in the study, except the COVID-19 variable affect bank performance in Albania. These suggestions are in line with the empirical data that the fixed effect model and the study's diagnostic tests have to offer.

Conclusions

Internal factors are fundamental to understanding and enhancing the profitability of commercial banks, which in turn plays a crucial role in overall economic growth. The Albanian banking sector is critical for the country's financial system as a whole. Therefore, the way it performs and fluctuates with the change of different factors is a subject of significant interest. This research paper aimed to identify the internal factors affecting the profitability of Albanian banks, also shedding light on a recent external factor – the Covid-19 pandemic – and determining whether or not it had an effect, on financial stability.

It was found that bank size and liquidity level have positively affected bank performance as measured by return on assets (ROA), while the level of efficiency was negatively related to ROA. Larger banks tend to benefit from economies of scale, allowing them to operate more efficiently and generate higher returns on assets (ROA). This phenomenon highlights the importance of strategic asset management and growth for enhancing financial performance.

Interestingly, the study found that while liquidity positively affects bank performance, efficiency ratios had an adverse relationship with ROA. This suggests that banks may need to focus on optimizing their operational efficiency to improve profitability. By minimizing excess expenditures and streamlining operational processes, banks can improve their bottom line, despite the inherent challenges of maintaining high efficiency ratios.

Furthermore, the impact of the Covid-19 pandemic was evaluated within the context of bank performance. The findings indicated that the pandemic, represented by a dummy variable, did not significantly influence the financial performance of Albanian banks during the analyzed period. This resilience could be attributed to internal policies and operational frameworks that enabled banks to weather external shocks without major disruptions to profitability.

Ultimately, the recommendations underscore the interconnectedness of internal bank dynamics, profitability, and larger economic growth. Banks must continuously adapt and refine their internal policies, paying attention to the internal factors that determine the profitability, and practices to navigate the evolving financial landscape effectively. By doing so, they can secure their role as stable pillars of the Albanian economy, driving growth and resilience in times of both stability and uncertainty.

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