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An assessment of bank profitability: Evidence from Albania

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Abstract

Although the financial sector in Albania follows a fluctuating trend, the average return on assets has significantly improved during the last few years. To boost profitability and ensure long-term survival in this area, banks must concentrate on the factors that affect profitability. Various types of research offer conflicting results on the impact that macroeconomic factors have on bank profitability. Hence, the purpose of this paper is to provide a comprehensive perspective on the theoretical and empirical research of bank profitability in the Albanian banking system, including its components and the variables influencing the choice of how to effectively achieve profitability. More specifically, this study determines how macroeconomics impacts the profitability of Commercial Banks, mainly focusing on the effect of GDP growth, inflation, and real interest rate on the financial performance of second-level banks in Albania between 2011 and 2020. To achieve this goal, a multiple regression is performed on a panel dataset, and the empirical findings reveal that the independent variables, including GDP growth, inflation, and real interest rate are significant factors determining Albanian bank profitability for the period considered. The study's conclusions will be useful for various parties, including management bodies, researchers, policymakers, and the government.

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1. Introduction

Macroeconomics is the study of how the aggregate economy runs. Macroeconomic aspects are relevant to a broad economy since they influence a huge population rather than specific individuals or specific markets. Governments and financial institutions actively monitor macroeconomic parameters that determine economic performance, including economic output, inflation, unemployment, national income, gross domestic product (GDP), investment, and savings (Cooper & John, 2009). When looking for strategies to achieve economic policy objectives and foster economic stability, economists frequently consider macroeconomic factors (Puci, Demi, & Kadiu, 2023). While doing so, they are generally able to anticipate future gross domestic product growth trends, inflation rates, and other crucial macroeconomic variables. These projections have an impact on businesses, consumers, and the government's decisions. To maintain macroeconomic stability and growth, it is vital to ensure the sustainability of financial intermediaries including banks, investment companies, mutual funds, credit unions, and insurance companies. The financial system's components are now contributing to the economy more strongly because of the banking sector's growing share in the financial system (Anic & Davcev, 2018). The financial sector serves as the engine that moves a country's economy forward.

Banks, as part of the financial sector, play a significant role by allocating resources from surplus to deficit economic units (Angelina, 2020). Balancing supply and demand, handling financial instruments, offering payment methods, facilitating financial markets, guaranteeing market transparency, and controlling risk are among the principal duties of financial intermediaries (Alper & Anbar, 2011). According to Athanasoglou,

Brissimis, and Delis (2005), economies with a successful banking industry are better situated to resist adverse shocks and contribute to the stability of the financial system. Hence, it is essential to analyse the factors that affect the banking sector's profitability (Mwelu & Atheru, 2019).

1.1. Macroeconomic Background

Albanian economy continued to drop from the last quarter of 2019 when the earthquake hit the country and continued to decline more in the first 9 months of 2020 due to the spread of the pandemic. The pandemic had a significant negative effect on Albania's economy. Despite the authorities' actions, the decline was more acute for the services industry and private consumption (Republic of Albania Council of Ministers, 2021).

Based on the Financial Stability Report published by the Bank of Albania (2021) it is stated that Albania's economy grew strongly in yearly terms in 2021, reaching 5.53 percent. GDP is now commonly utilized as a yardstick for determining the health of global and national economies. The first quarter of 2022 saw a 5.97% increase in Albania's GDP compared to the same period in 2021 (INSTAT, 2022). The two branches of the economy that have the highest positive contribution to GDP are construction by 1.95 percent and trade and transportation, lodging, and food services by 1.55 percent. Also, professional, and administrative services contributed positively by 0.66 percent, real estate activity by 0.91 percent, industry, electricity, and water by 0.24 percent, and financial and insurance services by 0.26 percent. Agriculture, information, and communication contribution to the growth rate of GDP are positive by 0.03 percent (INSTAT, 2022).

Based on the Republic of Albania council of ministers' report on Albania's economic reform program in 2021, inflation in 2020 averaged 1.62 percent, a 0.21 percentage point increase over the same time the year before. The increase can be attributed to greater inflation for unprocessed goods and services, which more than compensated for the decline in oil prices. The Albanian economy is still recovering quickly and is being supported by a wide range of factors. Increased employment, which is already close to pre-shock levels, and growing wages are indicators of economic growth. The increase in wages has contributed to an increase in household income in Albania and has distributed the benefits of the recovery across a wider base. In contrast to this positive trend, inflation surged in the fourth quarter, reaching 3.7 percent in December 2021 (Bank of Albania, 2022). Future predictions are still optimistic, but the rise in prices on global markets caused a sudden rise in inflation in Albania this year and increased uncertainty about the future. Bank of Albania (2022) claims that in the short term, inflation is anticipated to remain over the central bank's target (3%) before continuing to decline.

Real interest rate analysis indicates that several factors, including demographic changes, a rise in the demand for financial instruments to invest in population savings, and a slowing of the economy's long-term potential development, have affected Albania's monetary policy over the past ten years. The real interest rate in Albania reached its peak in 2011, equalling 9.9% and decreasing to 6.3% in 2014. A sharp drop happened from 2020 to 2021, with rates going from 5.4 to 0.1 percent. This drop is a result of the higher inflation values during this period (Bank of Albania, 2021).

1.2. Banking sector in Albania

Banks, which make up most of the financial industry in Albania, hold nearly 90% of all financial sector assets. There are now 12 banks operating in Albania, with non-Albanians owning most of them. Domestic investors own about 30% of the assets in the banking industry. Ownership of the remaining 70% is held by non-residents, of whom approximately 50% are citizens of EU nations and the remaining 20% are not. Moreover, the Albanian financial system consists of, 30 non-bank financial institutions (NBFIs), 538 foreign exchange bureaus, and fourteen savings and loan associations (SLAs) based on the article of Albania Association of Banks (2021). When compared to the previous year, the banking sector's assets climbed by around 8% (Bank of Albania, 2021b). Most of the increase in assets was due to an increase in lending activity of around ALL 16 billion and an increase in investments in securities of about ALL 43 billion (Bank of Albania, 2021). In the sector, 93 percent of total liabilities are still predominantly supported by deposits and own funds, and this structure was unchanged over the period. Therefore, the period showed a slight improvement in the bank's soundness index when compared to the prior year (Bank of Albania, 2021b). Improvements in profitability, efficiency, and liquidity indicators, as well as asset quality and capitalization indication, had a major impact on banks' performance. The banking industry sector ended 2021 with a good net financial result of around ALL10.5 billion, or a profit that was roughly 47% greater than in the previous year. The average profitability indicators of the banking sector have also increased, which reflects the sector's growing profit. Return on Assets and Return on Equity increased from 0.9 percent and 9.1 percent, respectively, a year earlier to 1.3 percent and 12.8 percent (Bank of Albania, 2021).

1.3. Problem Statement and Research Question

Various types of research offer conflicting results on the impact that macroeconomic factors have on bank profitability. Hence, the purpose of this paper is to provide a comprehensive perspective on the theoretical and empirical research of bank profitability in the Albanian banking system, its components, and the variables influencing the choice of how to effectively achieve profitability. In developing countries like Albania, where commercial banks are seen as the foundation of the economy, a strong banking system is crucial for a country's

development. Therefore, academic researchers, analysts, bankers, policymakers, and regulators are interested in the factors that affect profitability because all commercial banks strive to grow their participation in the financial system. Few studies have studied how macroeconomic conditions affect profitability in Albania, and the findings obtained mixed reactions.

The research question of this study is: *"What is the impact of macroeconomic variables on the profitability of commercial banks operating in Albania?"*

In line with the research question, the objective of the study is to determine how macroeconomic conditions impacted the profitability of Commercial Banks and assess the impact of GDP growth, inflation, and real interest rate on the profitability of second-level banks in Albania between 2011 and 2020. To achieve this purpose multiple regression will be performed. The study's conclusions will be useful to various parties such as management bodies, researchers, policymakers, and the government.

1.4. Study Significance and Structure

The study's conclusions will be useful to various parties. Management will know how to adjust their investment portfolio and be able to identify how macroeconomic factors affect returns. Stakeholders will be able to assess their equity holdings and support them make wise choices based on macroeconomic factors. Researchers will use this study to close research gaps and gain new perspectives on topics that still need to be investigated. The study may also be an important source for their literature review. Policymakers and the government will gain knowledge that will be valuable for assisting them in making decisions and developing national interest rate plans, as well as inflation-adjusted measures that reflect the worth of all products and services (Demi, Xhaferri, Uku, Shahini, & Lushi, 2021).

The study is structured as follows. In the introduction section, some theories about the relationship between macroeconomic variables and bank profitability are discussed. Section 2 presents some findings and opinions of professionals and academics in the field, taken from books and research studies related to the current research topic. The opinions presented are related to their findings on factors that affect commercial banks' profitability. Section 3 provides information regarding the research methodology that is going to be used in gathering and analyzing data, as well as the reasons for the data being collected. In section 4, the analysis of the gathered data is presented, focusing on the relation of ROA (which represents the banks' profitability in this study) and its influences, such as GDP growth, inflation, and real interest rate. The conclusions will summarize the entire study, and provide recommendations based on the empirical research output.

2. Literature Review

The early research on European banks done by Short (1979), Bourke (1989), and Molyneux and Thornton (1992) identified the factors that affect the banking industry's profitability. Since then, several researchers have examined banking profitability in both developed and developing nations. One of the primary drivers of business initiatives is profitability, and businesses can survive and grow by generating profits. Thus, a bank's profitability performance demonstrates the management's success (Hallunovi, 2018). Profitability reflects how banks are managed, considering the conditions under which they operate. It displays the capabilities of risk management, strategic planning, stakeholder behavior, and bank management effectiveness (Aburime, 2008).

Profitability fluctuations are important for the expansion of the economy since they have a significant impact on how much money businesses decide to invest and save (Hallunovi, 2018). Easy access to financing enables higher levels of investment, which improves productivity, competitiveness, and employment (Aburime, 2008). Economies and financial systems are going through challenging times as the global financial system is moving rapidly. Technology and globalization are progressing steadily, and new financial goods and services are opening in new markets (Guntz, 2011). To survive in a rapidly changing environment, nations must have strong banking systems and corporate governance for their institutions. (Guntz, 2011).

The development of the banking system in central and eastern European banks was significantly influenced by the liberalization of prices, the flow of goods, services, and capital, the liberalization of financial systems, globalization, and changes in the economic, social, and political environment. Through the establishment of a strong and efficient financial system, banks can benefit the economy by playing a significant role in funding economic activity (Athanasoglou et al., 2005).

The process of evaluating the performance of banks consists of the analysis of numerous variables that impact on both macroeconomic and microeconomic levels. Most banking studies have demonstrated that the organization's internal and external environments have a significant impact on its profitability. A corporate entity (whether public or private), needs relatively stable revenues to expand and grow over time. Along with its income level, the external environment also needs to be properly comprehended and accurately predicted. Therefore, in this research, the main focus is on the impact of macroeconomic factors on commercial banks in Albania. The macroeconomic determinants of bank profitability are elements beyond the control of banking management. Krakah and Ameyaw (2010) in their study claim that external forces are primarily determined by features of the macroeconomic and financial structure.

Based on prior research, the researchers have highlighted some significant variables that can impact bank profitability, namely GDP, inflation, and real interest rate. Beckman (2007) examines the effects of variables like GDP growth and interest rate volatility, as well as bank-specific variables, such as the ratio of credit to total assets and leverage, on bank return on assets to understand why German banks had such low levels of profitability in the previous ten years. The researcher discovered that while GDP growth has a positive effect on bank profitability, interest rates have a negative impact. Although GDP and inflation rates have shown insignificant relation with bank profitability, real interest rates as a macroeconomic factor have a positive effect. The study by Duraj and Moci (2015) on Albanian banks discovered a connection between bank profitability and deposits as a share of total assets as well as a positive influence on profitability from GDP growth; whereas the rate of inflation hurts bank profitability. On the other hand, the study on South Asian commercial banks by Islam and Nishiyama (2016) found that bank-specific determinants had a significant impact on the profitability of the bank. Also, inflation is positively correlated with bank profit while a negative correlation is found to be between bank profit and economic growth rate. The influence of real interest rates is harming bank profitability in Albanian commercial banks (Duraj & Moci, 2015). While real interest rates, according to a different study that looked at the macroeconomic element have a significant positive impact on bank profitability (Demirgüç-Kunt & Huizinga, 1999). Ongore and Kusa (2013) showed that while the correlation between ROA and GDP was negligible (-0.046), there was a substantial negative correlation between inflation and the financial performance of Kenyan commercial banks. Albertazzi and Gambacorta (2009) study on the factors influencing the profitability of the Tunisian banking sector, and two macroeconomic variables, inflation, and GDP growth were used. The empirical evidence shows that inflation has little to no effect on bank profitability in Tunisia. The evidence indicates that banks in Tunisia are neither considerably making nor losing money because of inflation. In their study, Yong and Christos (2012) used an unbalanced panel of data to investigate the drivers of 101 Chinese banks from 2003 to 2009. The results demonstrate that when taxes are lower and costs are lower, Chinese banks tend to be more profitable. Furthermore, the increased profitability of Chinese banks can be attributed to the country's more advanced banking and stock markets. Sufian and Kamarudin (2012) used a sample of 31 commercial banks in Bangladesh to identify bank-specific features and macroeconomic causes of profitability in the banking sector over the years 2000 to 2010. The coefficient of inflation was significant and positive, whereas the relationship between economic growth and bank performance was negative and significant. According to a study by Albertazzi and Gambacorta (2009), inflation harms banks. This effect can be attributed to the fact that a high rate of inflation makes consumers less confident, which lowers the demand for bank lending. Inflation also has negative effects if the bank does not immediately anticipate the situation. For instance, banks that do not immediately raise interest rates will face the biggest risk, which is that bank fees will rise more quickly than bank revenues, which will have a significant impact on decreased bank profits. The impact of inflation on bank profitability was first examined by Perry (1992) and it depends on whether operating costs rise faster than inflation. According to him, the degree to which a bank's management anticipates inflation affects the relationship between inflation and a bank's performance. Utul (2018) claims in his study that GDP is related to saving in the banking sector. Therefore, investment profit will be a component of bank profitability. This research shows that GDP hurts ROA, which means that a higher GDP will result in a lower ROA. This may be due to the general public's tendency to invest their money so that future growth in the GDP won't be able to reduce bank profits. Tan and Floros (2012) used a sample of 101 Chinese banks to examine the relationship between bank profitability and economic development from 2003 to 2009. The use of the generalized method of moments shows that there is a negative correlation between GDP growth and bank profitability, expressed as ROA. From a different perspective, increased competition may result in lower bank profits; as a result, one could anticipate a negative relationship between bank profits and GDP. Numerous types of research found a link between profitability and GDP growth that was negative (Al-Harbi, 2019). The real interest rates and the growth of the GDP, both have a significant negative impact (Staikouras & Wood, 2003). The long-term decline in bank profits is caused by the increase in interest rates, which discourages businesses and individuals from borrowing (Al-Harbi, 2019). Despite these differences, many researchers have discovered a positive relationship between profitability and inflation. The profitability of European banks, however, is shown to be negatively correlated with the pace of inflation, according to Abreu and Mendes (2001). Inflation harmed Tunisian bank profitability between 1995 and 2005, according to Ben-Ameur and Mhiri (2013). Similarly, Demirgüç-Kunt and Huizinga (1999) argue that banks in developing countries with high capital ratios often face lower profitability during inflationary periods. Between the years 2002 and 2010, Alper and Anbar (2011) examined the impact of macroeconomic factors and bank-specific factors on the profitability of 10 listed commercial banks on the Istanbul Stock Exchange in Turkey. The results showed that asset size, non-interest income to total assets, and ROA all had positive relationships. Real interest rates and the size of the credit and loan portfolio both harm Turkish banks' profitability. Al-Jafari and Alchami (2014) examined the Syrian banking industry's profitability. They concluded that the inflation rate has an impact on bank profitability. Additionally, Demirgüç-Kunt and Huizinga (1999) examined the banking industry in 80 distinct nations. They established a positive relationship between the rate of inflation and bank profitability. However, Saeed (2014) concluded that the UK's banks' profitability is negatively impacted by the rate of inflation. The impact of interest rates on profitability is uncertain. Studies have found a significant and positive correlation between

these two variables because banks profit more when interest rates are higher (Saeed, 2014). However, other studies emphasize that the interest rate hurts banks' profitability (Noman, Chowdhury, Chowdhury, Kabir, & Pervin, 2015). The primary cause of this issue is due to bank loans have longer maturity than bank deposits. Due to this situation, the impact of an increase in interest rates on deposits occurs much earlier than it does on loans, which lowers profitability. Additionally, whether or not the inflation rate can be anticipated determines whether it will have an impact on profitability. Banks can easily alter their interest rate to reflect this projected inflation rate when it is anticipated. Consequently, this circumstance has a positive effect on profitability (Islam & Nishiyama, 2016; Molyneux & Thornton, 1992).

On the other hand, a negative correlation between interest rate and profitability can occur if interest rates unexpectedly fluctuate (Noman et al., 2015). In contrast, economic growth demonstrates economic improvement, which generally has a positive impact on profitability (Ahmad, Koh, & Shaharuddin, 2016; Kanwal & Nadeem, 2013; Saeed, 2014). While the real GDP growth rate has little effect on NIM according to Noman et al. (2015), it significantly and negatively affects ROA, indicating that the GDP growth rate has a major impact on how profitable Bangladesh's banks are. The negative growth coefficient of the GDP rate further demonstrates that high productivity is not negative for Bangladeshi banking profitability when we use ROA as a measure of profitability. This circumstance demonstrates the instability of the Bangladeshi banking sector and is comparable with the findings of Choon, Thim, and Kyzy (2012) about the Malaysian scenario. The findings of Kosmidou, Tanna, and Pasiouras (2005) for the UK case are consistent with the findings of Noman et al. (2015) in that the effect of inflation based on the consumer price index is positive and significant for ROA but negligible for Net Interest Margin. The positive correlation between inflation and profitability provides an opportunity for banks to adjust interest rates, thus generating income and enhancing bank profitability. However, the findings also suggest that the profitability of banks is negatively impacted by the real interest rate. Return on assets is also influenced by macroeconomic variables like inflation and economic growth in the country where a bank is currently doing business (Utul, 2018). The studies by Khurshid and Piesse (2016); Kok, Móré, and Pancaro (2015) give empirical analyses of macroeconomic influences on ROA and demonstrate that rising GDP can improve banking ROA. On the other hand, rising inflation rates will lead to higher bank interest rates. High-interest rates will reduce capital owners' incentive to create productive industries. When it comes to bank performance, high inflation will increase capital expenses, which will lead to real sector investments to reduce bank debt, lowering the level of bank profitability (Muhammed, 2016).

3. Methodology

A research approach improves the study's credibility and produces valid scientific results. The annual reports of each bank have to be examined for this research to be completed. Moreover, the research emphasizes claim confirmation, determining how one item affects another, gathering, testing, and measuring numerical data, and then analyzing the gathered data using statistical analysis and comparisons. Consequently, the research approach will be quantitative and empirical.

The main aim of this study is to determine how macroeconomic conditions have impacted the profitability of Commercial Banks and assess the impact of GDP growth, inflation, and real interest rate on the profitability of second-level banks in Albania between 2011 and 2020. To achieve this purpose multiple regression is performed and empirical findings reveal that the independent determinants, including GDP growth, inflation, and real interest rate are significant factors in determining Albanian bank profitability for the period considered. The study's conclusions will be useful to various parties such as management bodies, researchers, policymakers, and the government.

3.1. Sample, Data Sources, and Model Specifications

For the current study to be conducted the second-level banks in Albania were examined. Albania's second-level banking sector is made up of twelve banks. Banks that operate in the Albanian banking sector are National Commercial Bank, United Bank of Albania, Union Bank, Raiffeisen Bank, Credins Bank, First Investment Bank, OTP (this is the name of the bank) Bank, Alpha Bank, American Bank of Investment, Intesa Sanpaolo Bank, Tirana Bank, and ProCredit Bank. Since the population of these banks is small, there is no need for a sample. Therefore, we could easily reach and study the entire population. Moreover, the information and techniques used in this research are based on the profitability (ROA) of the mentioned twelve second-level banks operating in Albania. The data used in this study was obtained from the National Business Center and official bank websites in Albania. Since 2008, all banks have been required by law to publish their audited annual reports at the National Business Center (NBC). Considering the mentioned fact indicates that all of these data can be used to generate results. The information obtained from their yearly reports is considered accurate and appropriate for calculation. The research sample is made up of some of the most important factors of 12 second-level banks from 2011 to 2020. The independent variables in this research include Inflation, GDP growth, and Real Interest Rate, while the dependent is Return on Asset (ROA), representing bank profitability. The data from annual reports published by banks on their official websites or in the National Center of Businesses was used to analyze the determinants. Regression analysis, through EViews 10, is used to

determine the link between the independent variables of inflation, GDP growth, and real interest with the dependent variable, Return on Asset (ROA). The model can be shown also by this equation:

$$ROA = \beta 0 + \beta 1\ GDPgr + \beta 2\ Infl + \beta 3REAl\ Int + \epsilon$$

To answer the research question, the following hypotheses are raised:

H_1: There is a significant positive relationship between GDP growth and ROA.

H_2: There is a significant negative relation between Inflation and ROA.

H_3: There is a significant negative relation between Real Interest Rate and ROA.

Before running the regression, the model needs to be tested for multicollinearity, serial correlation, and heteroscedasticity. The first assumption is to assess the multicollinearity of the model, which occurs when the independent variables have a very high inter-correlation. Multicollinearity is present in the dataset if the VIF of the variable is larger than 10 or less than 0.2; otherwise, multicollinearity is not a concern in the model (Gujarati, 2004). The second assumption tests for serial correlation between observations of the same variable over time, and is referred to in statistics as serial correlation. For this, the Durbin-Watson test is used to check the validity of the data, with a range of 0 to 4. The last assumption, homoscedasticity (meaning "identical variance"), is a key assumption in linear regression models. The Breusch-Pagan test will be used to test for heteroscedasticity, with a P value less than 0.05 indicating homoscedastic. The models with the highest estimated values using panel data include the poled model, fixed effect model, and random effect model. The intercept is supposed to be constant across banks and years according to the pooled model. Banks can have their intercept due to the fixed effect (which may differ between banks but does not change over time). According to the random effect, banks have a similar mean intercept value. As a result, the Fixed Effect is followed since banks have their intercept. The limitations of a study are its bounds. Restrictions on the research design, methodology, resources, and other factors might lead to study limitations, which have a significant effect on the study's conclusions. A drawback faced while conducting this research is that, since 2008, not all banks have published yearly reports. Because all banks published their audited annual reports in 2011, estimates are therefore made from 2011 to 2020 due to the lack of complete data. Although these limits can be seen as a challenge or a constraint for this research's conclusions, they may also serve as a suggestion or a guide for other researchers looking to conduct similar research.

4. Analysis of Results and Discussion

The analysis of the regression model and the corresponding variables shown in the previous sections are elaborated on in this section. Before performing regression analysis, all the assumptions were met. The Variance Inflation Factor did suggest multicollinearity. As a result, independent variables were not correlated. Also, the Durbin Watson score of 1.66 was accepted as a good result. Lastly, the data were homoscedastic, indicating that the model was correct, and that the variance was unaffected by the number of observations. Test results are in the Appendix.

4.1. Regression Model

The findings of the regression analysis performed by the EVIEWS 10 program are provided in the upcoming paragraph of this work including all three independent variables. The results are presented in Table 1.

Table 1. Regression outcome

Dependent variable: Bank profitability				
Sample: 2011- 2020				
Periods included: 10				
Cross-sections included: 12				
Total panel (Balanced) observations: 120				
Variable	**Coefficient**	**Std. error**	**T-statistic**	**Prob.**
C	0.026	0.005	5.562	0.000
GDPGR	-0.001	0.000	-2.174	0.032
Inflation	-0.002	0.001	-3.485	0.000
Realint	-0.002	0.001	-2.563	0.012
	Effects Specification			
Cross-section fixed (Dummy variables)				
	Weighted statistics			
R-squared	0.461	Mean dependent var		0.035
Adjusted R-squared	0.389	S.D. dependent var		0.144
S.E. of regression	0.112	Sum squared resid		1.315
F-statistic	6.401	Durbin-Watson stat		1.660
Prob(F-statistic)	0.000			

The results indicate a coefficient of variation of about 46%. This shows that the independent variables chosen for this study account for about half of the variation in the bank profitability of banks in Albania from 2011 - 2020. Furthermore, the F-Statistic, which is reported at 6.401, and its Prob F – Statistic is lower than α 0.05. This demonstrates that the model is significant and can be used for making conclusions and future predictions. Based on the results, all the independent variables show to be statistically significant.

GDP growth is shown with a p-value of 0.03, which is smaller than 0.05. So, for the years 2011 – 2020, GDP has a negative relation with profitability in Albania; therefore, H_1 is rejected.

As for inflation, it has a p-value lower than α 0.05, being so statistically significant. The results in Table 1 show that inflation has a negative relation with bank profitability. So, if inflation increases, ROA will decrease; therefore, H_2 is accepted.

The real interest rate has a p-value equal to 0.012 lower than α 0.05, hence the variable is statistically significant. Its coefficient shows that one unit increase in the variable will lead to a decrease in the banks' profitability; therefore, H_3 is accepted.

4.2. Discussion

In the analyses of this study, GDP growth, inflation, and real interest rates are found to have a significant and negative relation with bank profitability in Albania for the years 2011 – 2020. In the literature, we see studies that emphasize the negative relationship between interest rates and banks' profitability (Noman et al., 2015). The primary cause of this issue is bank loans having a longer maturity than bank deposits. Due to this situation, it might be the case where the impact of an increase in interest rates on deposits occurs much earlier than it does on loans, which lowers profitability. The influence of real interest rates is hurting profitability in Albanian commercial banks (Duraj & Moci, 2015). Furthermore, based on the study of Al-Harbi (2019) the long-term decline in bank profits is caused by the increase in interest rates, which discourages businesses and individuals from borrowing (Muhammed, 2016).

Whether or not inflation can be anticipated determines whether it will have an impact on profitability. Related to the negative relationship between inflation and bank profitability, this study's finding is aligned with the finding of Noman et al. (2015), where it is claimed that if interest rates unexpectedly fluctuate, there should be a negative correlation between these two variables. Also, according to a study by Albertazzi and Gambacorta (2009), inflation hurts banks. This effect can be attributed to the fact that a high rate of inflation makes consumers less confident, which lowers the demand for bank lending.

Economic growth demonstrates economic improvement and its impact on profitability should be positive based on the findings of Kanwal and Nadeem (2013); Saeed (2014) and Ahmad et al. (2016). Despite the above finding, in their study, Yong and Christos (2012) claimed that China's faster GDP growth is a direct cause of the country's lower bank profitability. Sufian and Kamarudin's (2012) research showed a negative relationship between economic growth and bank performance. Increased competition may result in lower bank profits; as a result, one could anticipate a negative relationship between bank profits and GDP, as stated by Al-Harbi (2019).

4.3. Analysis of Research Variables

ROA is the most extensively used indicator to evaluate bank profitability since it measures how efficiently a company uses the assets it owns to make profits. There may be several factors contributing to a bank's low ROA, such as targeting of projects and financial resources toward unproductive areas or low productivity of assets due to depreciation or even extremely high waste and general expenses (Xhaferri & Demi, 2015). Figure 1 illustrates the variations of the variables chosen from 2011 to 2020. In the first years, ROA decreased while fluctuating because of a high percentage of non-performing loans, which led to an increase in the loan loss provision. This lack caused banks to struggle with financial problems, leading to the fluctuating decrease in ROA. From 2015 to 2020, ROA increased banks accumulated the needed capital to overcome the financial problem caused by non–performing loans. During these years, due to the policies and actions taken by the Central Bank of Albania regarding non-performing loans, we see an increase in lending, which directly generates an increase in bank assets.

Due to its accuracy in determining an economy's size, the GDP growth rate is arguably the best predictor of economic growth. Albania experienced a decrease in GDP growth during the period 2010-2013. This decrease is attributed to the euro debt crisis, which affected Greece, Italy, and other countries. Albania has always had strong relations with Italy and Greece in terms of trade, Foreign Direct Investments, and remittances. Because of these relations, the euro debt crisis affected and slowed down the Albanian economy. During this period, there was also a high number of non-performing loans. Since 2013, the economy has been growing steadily, reaching to 2.1% in 2019. However, the economy experienced a downfall at the end of 2019, due to the earthquake that occurred in November of that year. In addition, the Covid-19 pandemic and the restrictions that followed froze the economy and led to a further decrease.

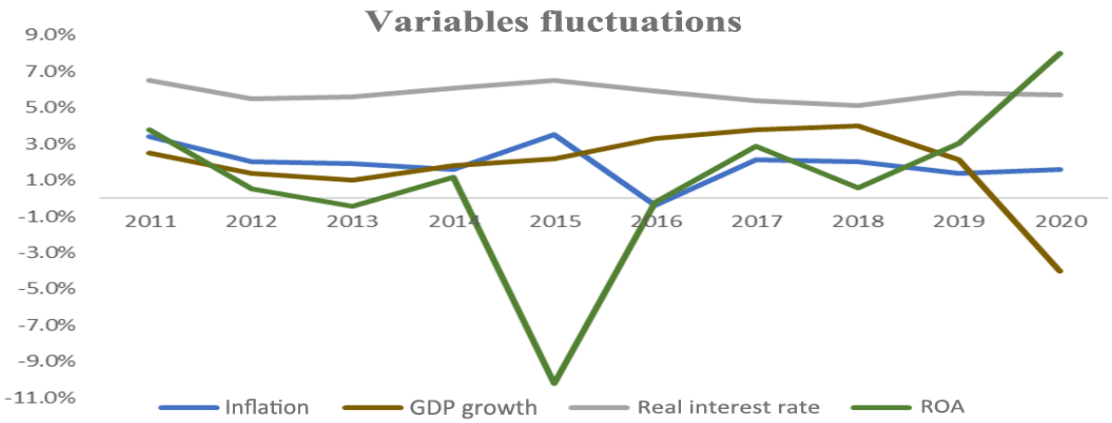

Figure 1. Research variables.

Inflation is one of the primary causes of interest rate fluctuations, which also impacts loans. Interest rates often increase along with inflation, and banks may be required to charge more for funding. As a result, loan interest rates rise, increasing EMIs. If the rate of inflation is increasing while the economy is expanding, central banks may raise interest rates to reduce the pace of inflation. Higher interest rates could cut down borrowing, as fewer loans may be taken out by customers. Unexpected inflation hurts lenders because the money they receive in repayment has lower purchasing power than the money they put out. Inflation has decreased to 1.6% in 2014, due to the economic crises, which led to a decrease in the consumption of goods and services. Inflation increased to 3.5% in 2015. However, in 2016, inflation was decreased due to a supply shock in terms of a decrease in oil prices, which led to a decrease in the prices of other goods. Since 2016, inflation has been steady, ranging from 1.4 to 2.1%.

When evaluating how low-interest rates affect bank profitability, it is critical to consider what would happen if interest rates remained unchanged in the face of a weakening economy. If interest rates remained high as the economy deteriorated, bank profits would suffer because families and businesses would be less able to borrow money and make loan payments. The real interest rate decreased from 2011 to 2014 as a result of expansionary monetary policy of the Bank of Albania. The reason behind the decrease in the interest rates was to relieve the payment of public debt and to boost lending, investment, and the circulation of money in the economy. It is apparent from the below table that the median stands closer to the mean for ROA, real interest rates, and inflation, suggesting the no existence of extreme values. This is also evident from the gap between the minimum and maximum values.

4.4. Descriptive Statistics

It is apparent from the below table that the median stands closer to the mean for ROA, real interest rates, and inflation, suggesting the no existence of extreme values. This is also evident from the gap between the min. and max. values.

Table 2. Descriptive statistics.

Variable	Mean	Median	Standard dev.	Kurtosis	Skew	Min	Max
ROA	0.009	0.015	0.154	19.756	2.011	1.026	0.662
Inflation	2.064	2.000	1.148	1.121	0.523	0.400	3.600
GDP growth	1.982	2.200	2.225	5.709	2.146	4.000	4.000
Real interest rate	5.864	5.800	0.467	1.007	0.080	5.100	6.500

Additionally, the standard deviation for GDP growth is the highest compared to the other variables. This indicates high fluctuations in the economic growth variable throughout the years. As shown, the skewness for ROA is negative, suggesting a higher probability of negative outcomes for investors. It is remarkable as well that the kurtosis is positive for all the variables apart from real interest rates, indicating a peaked distribution and fewer chances for extreme values.

5. Conclusion

Banks are expected to make a significant contribution to financial stability and economic growth by mobilizing financial resources across the economy. A healthy and profitable banking sector is better equipped to improve financial system stability and promote economic growth, as it makes the economy more resilient to negative and external shocks. Conversely, a bankrupt banking system, on the other hand, causes a financial crisis. Understanding the variables that influence profitability is critical for promoting the overall growth and stability of the economy. The performance of commercial banks is be influenced by both macroeconomic indicators and bank-specific characteristics.

The financial sector in Albania has shown a fluctuating trend, although the average return on assets (ROA) has significantly improved during the last four years. The purpose of this paper is to provide a comprehensive perspective on the theoretical and empirical research of bank profitability in the Albanian banking system, its components, and the variables that influence effective profitability. This study focused on how macroeconomic factors outside of the banks' control impacted the profitability of Albanian commercial banks. The research investigated ROA and compares the findings with empirical literature on banks operating in the US, Europe, Asia, and around the world. The sample included 12 second-level banks operating in Albania from 2011 to 2020. The research study examines whether macroeconomic factors such as GDP growth, inflation, and real interest rate have a significant impact on the profitability of banks, as represented by ROA. In the analyses of this study, GDP growth, inflation, and real interest rate were found to have a significant and negative impact on bank profitability in Albania from 2011 to 2020.

Despite the study's significant contributions, there are several limitations and areas that require improvement in future studies. First, the analysis did not cover the entire period from 2008 to 2021 due to incomplete financial information from some banks. Second, future studies should analyze additional variables that impact on banks' profitability. Additionally, it is important to examine internal factors that may have contributed to the rapid increase in ROA after a sharp decline in 2015. These recommendations can inform ongoing research on bank profitability.

Despite these limitations, this thesis presents an important aspect of the banking sector and may be regarded as a pioneer in the examination of the profitability of banks in Albania. The study is useful for bank managers and academic researchers who are interested in identifying the factors that determine bank profitability for their respective future research and profitability initiatives.

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Appendix

Table Appendix1. Ramsey test.

Ramsey RESET test Equation: Untitled Specification: ROA GDPGR inflation reliant Omitted variables: Squares of fitted values			
Indicator	**Value**	**Df**	**Prob.-statistic**
T-statistic	0.978	115	0.330
F-statistic	0.956	(1,115)	0.330
Likely. ratio	0.994	1	0.318

Table Appendix 1 reflects that there are no misspecification errors, omitted variables, and inappropriate functional forms.

Table Appendix 2. Multicollinearity test.

Variance inflation factors Sample: 1, 120 Included observations: 120			
	Coefficient	**Uncentered**	**Centered**
Variable	**Variance**	**VIF**	**VIF**
GDPGR	4.478	1.796	1.052
Inflation	0.000	4.718	1.061
Realint	5.601	15.388	1.110
C	0.003	17.420	NA

Table Appendix 2 reveals that there is no correlation between the independent variables included in the regression model.

Table Appendix 3. Heteroscedasticity test.

Heteroskedasticity test: Breusch-pagan-Godfrey			
Indicator	**Value**	**Indicator**	**Value**
F-statistic	1.289	Prob. F (3,116)	0.282
Obs*R-squared	3.870	Prob. Chi-square (3)	0.276
Scaled explained SS	35.676	Prob. Chi-square (3)	0.000

Note: * Observed R -squared.

Table Appendix 3 reflects that the variance is unaffected by the number of observations.