AN EMPIRICAL ANALYSIS OF SOUTH AFRICAN BANK PROFITABILITY

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Abstract The banking sector fulfils a fundamental role within the economy of a country. In South Africa, this sector contributes in excess of 20 percent toward GDP, and is responsible for more than 10 percent of overall employment in the country. This study empirically investigates the most significant determinants of South African bank profitability by examining bank-specific internal and macroeconomic external factors under a panel regression framework. The four largest commercial banks in South Africa as well as South Africa's largest alternative banking institution were examined between 2006 and 2015. Based on the results obtained, this study concludes that both bank-specific internal as well as macroeconomic external variables are statistically significant determinants of South African bank profitability. The variables of asset quality, capital strength, operational efficiency, economic activity (GDP), annual inflation and the real interest rate were found to be statistically significant. Capital strength, economic activity (GDP), annual inflation and the real interest rate respectively displayed positive relationships to bank profitability, whereas asset quality and operational efficiency displayed inverse relationships to bank profitability.

Introduction

The banking sector plays a fundamental role in the economic framework of a country (Demirgüç-Kunt & Huizinga, 1999). A bank may be described as a financial institution whose primary activities include receiving deposits with the aim of providing loans and investment (Wuite, 2009). Fundamentally, banking institutions perform the role of matching surplus and deficit units within an economy (Wuite, 2009).

According to Greenberg and Simbanegavi (2009), the performance of a country's banking sector has been shown to have a direct relationship to the economic well-being of a country. Alper and Anbar (2011) share similar views and further discuss how economies with a robust and profitable banking sector are better equipped to handle adverse economic conditions and financial downturns. Ifeacho and Ngalawa (2014) provide further context for these sentiments by describing how the South African banking sector contributes in excess of 20 percent toward South African GDP, and is responsible for more than 10 percent of overall employment in the country. The banking sector therefore play a vital role within the South African economy.

During the sample period under study, Kumbirai and Webb (2010) have noted that the South African banking sector became increasingly competitive, with expenses rising due to technological and financial innovation, the entry of large international banks to the market, and regulatory requirements that became increasingly stringent. It therefore becomes invaluable for strategic-level bank management to thoroughly understand the factors that affect the profitability of their business in an environment that is not only highly competitive, but where other aspects such as progressively stringent regulation and increasing costs make attaining healthy levels of profitability a challenge.

Within the current sphere of economic and financial literature, numerous studies regarding the determinants of bank profitability in various international markets such as Brazil, Korea, Macau, Nigeria, Pakistan, the Philippines, the Ukraine and Tunisia may be found. The fact that similar research has been conducted and is perceived to make a valuable contribution in numerous other international markets, provides further substantiation for a similar line of research to be pursued for the South African case. In addition, Kumbirai and Webb (2010) have previously discussed how research pertaining to bank performance in South Africa is relatively limited, and have proposed that research by both scholars and industry specialists in the area of bank performance is justified and welcomed in the face of rises in global bank failures, following global financial crises.

Macroeconomic variables that are external to banks are specifically significant, as banks have no control over these factors. The work of Sharma and Mani (2012) illustrates this point by showing how primary banking business associated with the lending and borrowing of funds is significantly affected by a country's macroeconomic

determinants. McLeay, Radia and Thomas (2014) share these views, and further explain how bank profitability depends on the spread between the rate of interest on bank assets and bank liabilities. The rate of interest on these assets and liabilities relies directly on the policy rate set by the central bank, which in turn is influenced by macroeconomic variables (McLeay, Radia & Thomas, 2014). The significance of the effect of macroeconomic variables as a determinant of bank profitability has been further substantiated in many other studies within the current body of financial literature (Acaravci & Calim, 2013; Allen & Saunders, 2004; Sufian & Habibullah, 2009).

Bank-specific internal variables are equally important to enable the efficient management of risk associated with a bank's primary business activities of lending and borrowing, and have been found to be key drivers of bank failure (Athanasoglou et al., 2008). The significance of bank- specific internal variables as a determinant of bank profitability has been further substantiated in many other studies within the current body of financial literature (Francis, 2013; Gul, Irshad & Zaman, 2011; Sufian & Habibullah, 2009). Internal determinants of bank profitability commonly include measures of capital adequacy, measures of operational efficiency, measures of liquidity, measures of asset quality and measures of size of the respective bank (Acaravci & Calim, 2013; Alper & Anbar, 2011).

Vong and Chan (2009) further discuss that these bank-specific internal determinants are directly influenced by management decisions. Therefore, a comprehensive understanding of how macroeconomic external and bank-specific internal determinants affect the profitability of banks within the banking sector of South Africa is critical in enabling strategic-level bank management to respond to these factors as swiftly and efficiently as possible. In addition, a comprehensive understanding of these determinants may serve to mitigate the risk of poor financial performance and potential bank failure in the future.

Previous research that has been conducted in South Africa pertaining to determinants of bank profitability has utilised various methodologies, such as the work of Ifeacho and Ngalawa (2014) and Kumbirai and Webb (2010). This research has focused on financial performance of the South African commercial banking sector by investigating bank-specific internal factors, industry-specific factors, and macroeconomic determinants. However, in concentrating solely on the commercial banking sector of South Africa, prior research has ignored other significant South African banking sectors such as the alternative banking sector, which has enjoyed increasing popularity among the low-income demographic within South Africa. Alternative banks may be described as banking institutions that target entry-level or lower income markets, such as Capitec Bank (Bankseta, 2013).

The study aims to determine what are the internal and external determinants of profitability within the banking sector of South Africa? The study further aims to determine which bank-specific internal and macroeconomic external factors and the relationships observed (either positive or negative) between the statistically significant determinants of South African bank profitability by means of a panel regression analysis in order to better enable bank management to respond to these identified factors, thereby mitigating the risk of poor financial performance and potential bank failure in the future.

Data and Methodology

This research aimed to identify the bank-specific internal and macroeconomic external determinants of profitability within the commercial banking sector of South Africa. A quantitative research design was developed under a positivist research paradigm. The four largest commercial banks in South Africa (Absa, FirstRand Bank, Nedbank and Standard Bank) and one alternative banking institutions (Capitec Bank) was included in the analysis. A panel regression framework was followed with ROAA serving as the dependent variable, while independent variables included the bank-specific internal and macroeconomic external variables in the model.

The panel data technique has been selected for use in this study due to the techniques ability to capture the dynamic behaviour of the specific model parameters (Brooks, 2008). Data pertaining to bank-specific internal factors for the specified sample period was obtained from the Bankscope database for all banks observed (Bankscope, 2016). Independent variables pertaining to the macroeconomic external variables were obtained from the World Bank database (World Bank, 2015). Only secondary data were utilised in this study, with annual data observations from December 2006 to December 2015.

The dependent and independent variables utilised in this study are now discussed. Profitability as measured by the return on average assets (ROAA) of the respective banks, served as the dependent variable in this research study. Return on assets is an indicator of how effectively a bank utilises its assets to generate income (Davydenko, 2010).

The independent variable is understood as the variable predicted to influence the dependent variable (Zikmund, 2003). The macroeconomic external and bank-specific internal determinants included in the study served as independent variables in the regression equations, and were included based on the financial literature in other international banking sectors that have indicated these variables to be significant determinants of profitability.

Internal determinants of bank profitability denote the respective bank-specific variables examined in this study. Asset quality was included in the study to consider the overall health of the loans issued within a bank's asset portfolio, and can be measured by many financial ratios (Kumbirai & Webb, 2010). For the purpose of this study, asset quality was measured by the loan loss reserve to gross loans ratio (LRGL), as previously used in the work of Kosmidou (2008) and Kumbirai and Webb (2010). The LRGL is calculated as follows:

$$LRGL\ ratio = \frac{loan\ loss\ reserve}{gross\ loans} \qquad [1]$$

Where loan loss reserve refers to the total reserve allocated for potential loan losses and gross loans refers to total loans issued. The work of Ahmad et al. (2007), Athanasoglou et al. (2008) and Miller and Noulas (1997), found a statistically significant negative relationship between asset quality and bank profitability. Conversely, the work of Sufian and Habibullah (2009) found a statistically significant positive relationship between asset quality and bank profitability. This finding is in line with the prior work of Berger and DeYoung (1997). In light of the above discussion, the first proposition of this study is as follows:

   P1: There is either a positive or negative relationship between asset quality and bank profitability.

Capital strength was included in the study to consider the relationship between a bank's capitalisation and its overall profitability. Capital strength has been examined in numerous international bank profitability studies. For the purpose of this study, capital strength was measured by the ratio of equity divided by total assets (EQAS), as previously used in the work of Dietrich and Wanzenried (2011), Gharaibeh (2015), Pasiouras and Kosmidou (2007), Rao and Lakew (2012), and Sufian (2011). The EQAS ratio provides an indication of capital adequacy and overall financial strength with regard to a bank's ability to endure losses and efficiently manage risk exposure (Dietrich and Wanzenried, 2011). The EQAS ratio is calculated as follows:

$$EQAS = \frac{Shareholder\ Equity}{Total\ assets} \qquad [2]$$

Where Equity refers to the book value of shareholder equity and Total Asset refers to the book value of total assets for each bank. Sufian and Habbibullah (2009) argued the importance of capitalisation in explaining bank profitability, and also acknowledged the ambiguity present in the financial literature around the significance of capitalisation on bank profitability. Most of the literature consulted however, indicated a statistically significant positive relationship between capital strength and bank profitability. These included the works of Demirgüç-Kunt and Huizinga (1999), Javaid et al (2011), Pasiouras and Kosmidou (2007) and Staikouras and Wood (2011). The second proposition of this study is therefore specified as follows:

   P2: There is a positive relationship between capital strength and bank profitability.

Operational efficiency was included in this study to examine the effect of operational costs on overall bank profitability. The effect of operational efficiency on bank profitability has been examined in numerous international bank profitability studies. For the purpose of this study, operational efficiency was measured by the cost to income ratio in line with the work of Alexiou and Sofoklis (2009), Dietrich and Wanzenried (2011), and Pasiouras and Kosmidou (2007). The cost to income ratio is calculated as follows:

$$Cost\ to\ Income\ ratio = \frac{Operating\ Expenses}{Total\ Revenue} \qquad [3]$$

Where Operating expenses represents expenditure pertaining to administration, staff salaries and property costs but excludes losses as a result of impaired or non-performing loans, and Total revenue represents total revenue earned for each commercial and alternative bank respectively (Dietrich & Wanzenried, 2011). The work of Alexiou and Sofoklis (2009), Athanasoglou et al. (2008), and Dietrich and Wanzenried (2011) all showed a statistically significant negative relationship between operating expenses and bank profitability. Therefore, the third proposition of this study is:

P3: There is a negative relationship between operating cost and bank profitability.

Liquidity is included in this study to examine the relationship between a bank's ability to timeously satisfy all financial obligations and overall bank profitability. According to the work of Samad (2004:8), the liquidity of a bank can be understood as: 'how quickly a bank can convert its assets into cash at face value to meet the cash demands of the depositors and borrowers.' In the current financial literature, many variables are used to account for liquidity in various international banking studies. For the purpose of this study, liquidity was measured by the net loans to total assets ratio (NLTA), as previously used in the work of Francis (2013), Kumbirai and Webb (2010), Samad (2004), and Rao and Lakew (2012). The NLTA can be calculated as follows:

$$NLTA\ ratio = \frac{Net\ loans}{Total\ Assets} \qquad [4]$$

Where Net Loans represents the total loan value of the bank and Total Assets refers to the book value of total assets for each commercial and alternative bank respectively. The effect of liquidity on bank profitability has been examined in numerous international bank profitability studies, with many studies reporting opposing views regarding the significance of liquidity on bank profitability. The work of Molyneux and Thornton (1992) and Nisar, Susheng, Ahmed and Ke (2015) found a statistically significant negative relationship between liquidity and bank profitability. Conversely, the work of Bourke (1989) and Haron (2004) found a statistically significant positive relationship between liquidity and bank profitability. Therefore, the fourth proposition of this study is:

P4: There is either a positive or negative relationship between liquidity and bank profitability.

External determinants of bank profitability denote the respective macroeconomic variables examined in this study. GDP can be formally defined as 'the total value of all final goods and services produced within the geographic boundaries of a country in a particular period' (Mohr, 2011: 20). According to the work of Sharma and Mani (2012), GDP is a frequently used as a proxy to account for total economic activity in a country. Therefore, GDP was included in this study to examine the relationship between total economic activity and the profitability of commercial and alternative banks in South Africa.

The effect of GDP on bank profitability has been examined in numerous international bank profitability studies. The work of Sufian and Habibullah (2009) suggested that GDP may play a significant role on the aspects that affect the supply and demand of loans and deposits in a country. Sharma and Mani (2012) shared these sentiments and further discussed that the growth and profitability of a bank may be restricted by the GDP of a country.

For the purpose of this study, GDP was measured by the real GDP annual growth rate of South Africa. The work of Acaravci and Calim (2013), Gul et al. (2011), and Sharma and Mani (2012), and found a statistically significant positive relationship between GDP and bank profitability. In light of this, the fifth proposition of this study is:

P5: There is a positive relationship between economic activity and bank profitability

According to the work of Alper and Anbar (2011:145), the annual inflation rate 'measures the overall percentage increase in the Consumer Price Index (CPI) for all goods and services. Inflation affects the real values of costs and revenues'. Therefore, inflation was included in this study to examine the relationship between the rate of increase in the price of goods and services and the profitability of commercial banks in South Africa. Sharma and Mani (2012) further discuss that the relationship between inflation and bank profitability can be explained through the effect of inflation on the interest rate and asset prices in a country.

For the purpose of this study, inflation in South Africa was measured by the total CPI in annual terms, in line with the work of Alper and Anbar (2011), Bourke (1989), and Molyneux and Thornton (1992). The effect of inflation on bank profitability has been examined in numerous international bank profitability studies, with many studies reporting opposing views. The work of Alexiou and Sofoklis (2009) and Gul et al. (2011) indicated the inflation rate to have a positive relationship with bank profitability. Conversely, the work of Ali et al. (2011), Sayilgan and Yildirim (2009), and Sufian and Chong (2008), and showed a negative relationship between the inflation rate and bank profitability. Therefore, the fifth proposition of this study is:

P6: There is either a positive or negative relationship between annual inflation and bank profitability

Brealey, Myers and Allen (2011) describe the real interest as the rate of interest expressed in terms of real goods that have been adjusted to remove the effects of inflation. The real interest rate provides an indication of a bank's general cost of funds (Abreu & Mendes, 2001). As stated in the work of Sharma and Mani (2012), a primary business activity of a bank is the lending of funds in the form of loan provisions to borrowers. Garcia-Herrero et al. (2009) further discuss that the repayment ability of a bank's borrowers is affected by the real interest rate. Therefore, any variation in a borrower's ability to repay bank loans may pose a significant effect to overall bank profitability.

These views are supported in the work of Ifeacho and Ngalawa (2014), who suggest that increasing interest rates are followed by increases in non-performing loans that ultimately decrease bank profitability. Conversely, Alper and Anbar (2011) found a positive relationship between the real interest rate and bank profitability. Therefore, the real interest rate was included in the study to examine this relationship for the commercial and alternative banks of South Africa, in line with the previous work of Alper and Anbar (2011), Garcia-Herrero et al. (2009), Ifeacho and Ngalawa (2014), and Vong and Chan (2009), and. In light of this discussion, the sixth proposition of this study is:

P7: There is either a positive or a negative relationship between the real interest rate and bank profitability.

The level of unemployment in South Africa is a highly important economic problem that hampers economic growth through the decrease in gross national income and aggregate demand (Ifeacho & Ngalawa, 2014). The relationship between the level of unemployment and bank profitability was included in this analysis based on the prior work of Abreu and Mendes (2001) and Ifeacho and Ngalawa (2014), who found a significant effect of unemployment on bank profitability. The work of Louzis, Vouldis and Metaxas (2012) found that increases in the unemployment rate increase the level of non-performing loans for banks, ultimately decreasing overall bank profitability. These sentiments are shared in the work of Abreu and Mendes (2001), Heffernan and Fu (2008) and Ifeacho and Ngalawa (2014). The level of unemployment was therefore included in this study to examine its effect on the commercial banking sector of South Africa.

The level of unemployment was measured by the annual unemployment rate (the percentage of the total labour force that is without work, but available for and seeking employment) obtained from the World Bank database (World Bank, 2015). The work of Ifeacho and Ngalawa (2014) has shown a negative relationship between the unemployment rate and bank profitability. A similar result was obtained in the work of Abreu and Mendes (2001). Therefore, the eighth proposition of this study is:

P8: There is a negative relationship between bank profitability and the level of unemployment.

Panel data refers to data sets that comprise both cross-sectional and time series components (Koop, 2009). Three panel data models were utilised to analyse the data and achieve the research objectives of this dissertation. These included the Pooled OLS (Ordinary Least Squares) Model, the Fixed Effects Model (FEM) and the Random Effects Model (REM). The empirical steps followed when conducting the analysis are now presented, followed by a description and specification of each panel data model utilised.

The multiple regression equation that underlies the panel data models utilised in this empirical analysis may be specified as follows:

$$ROAA_{it} = \alpha + \beta_1 AQ_{it} + \beta_2 CAP_{it} + \beta_3 OP_{it} + \beta_4 LIQ_{it} + \beta_5 INT_{it} + \beta_6 INF_{it} + \beta_7 GDP_{it} + \beta_8 EMP_{it} + u_{it} \quad [5]$$

where:

$ROAA_{it}$ = Return on Average Assets for commercial and alternative banks
$\beta_1 AQ$ = Asset quality
$\beta_2 CAP$ = Capital strength
$\beta_3 OP$ = Operational efficiency
$\beta_4 LIQ$ = Liquidity
$\beta_5 INT$ = Real interest rate
$\beta_6 INF$ = Inflation rate
$\beta_7 GDP$ = Real annual GDP growth rate
$\beta_8 EMP$ = Unemployment rate
α = constant term
t = time period (years)
u = error term

Empirical Results

The fixed effects model was found to be most appropriate to analyse the data of the South African commercial banks included in this study. The fixed effects model allows for heterogeneity or individuality to be expressed among the cross sections of the data by allowing each cross section to have its own intercept, where the unique attributes of each specific cross section may be revealed (Gujarati, 2011; Ranjan & Agrawal, 2011). Under this model specification, the denial of heterogeneity among cross sections as experienced in the pooled OLS model was overcome. Thus, the individuality and unique attributes associated with each South African bank were made apparent and were not accounted for in the error term of the model. The linear equation for the fixed effects model can be stated as follows:

$$ROAAit = \propto i + \beta 1AQit + \beta 2CAPit + \beta 3OPit + \beta 4LIQit + \beta 5INTit + \beta 6INFit + \beta 7GDPit + \beta 8EMPit + uit$$
[6]

Where $ROAAit$ denotes the dependent variable, β1 to β8 denotes the coefficients of the independent variables as shown; i denotes the intercept value for each cross section, t denotes the time period, μ denotes the error term and $\propto$ denotes the constant term. Table 1 below illustrates the results obtained while following the fixed effects model specification for the five South African banks between the periods 2006 to 2015.

Table 1: Results Obtained From the Fixed Effects Model (FEM) Specification

Explanatory Variable	Coefficient	P-value	Null Hypothesis on a 95% confidence level	Statistical Significance on a 95% confidence level
Asset quality (AQ)	-0.40	0.00	Accept	Statistically significant
Capital strength (CAP)	0.12	0.00	Reject	Statistically significant
Operational efficiency (OP)	-0.04	0.00	Reject	Statistically significant
Liquidity (LIQ)	-0.01	0.12	Reject	Statistically insignificant
Economic activity (GDP)	0.05	0.00	Reject	Statistically significant
Annual inflation (INF)	0.05	0.02	Reject	Statistically significant
Level of unemployment (EMP)	0.06	0.16	Reject	Statistically insignificant
Real Interest rate (INT)	0.09	0.00	Accept	Statistically significant
Adjusted R-squared			0.95	
Prob (F-statistic)			0.00	

Source: Bankscope (2016) and author's deductions

Based on the results obtained from the fixed effects model presented in Table 4.8, it becomes clear that both bank specific internal determinants and macroeconomic external determinants are found to be significant determinants of bank profitability for the commercial banking sector of South Africa. This is in line with the prior work of Alexiou and Sofoklis (2009), Francis (2013), and Gharaibeh (2015).

The explanatory variable asset quality was found to be statistically significant on a 95 percent confidence level and displayed a negative relationship to bank profitability as measured by ROAA. For the purpose of this study, asset quality for the sampled banks was measured by the loan loss reserve to gross loans ratio (LRGL). The LRGL serves as an indication of expected loan losses where greater loan loss reserves provide an indication of poor loan portfolio quality expectations in the future (Ahmad et el., 2007). Based on the analysis conducted, it was determined that as the LRGL ratio increased, bank profitability as measured by ROAA displayed a corresponding decrease for the South African banks under study. Therefore, this finding was significant as it informs strategic-level bank management that bank profitability may be increased by closely monitoring asset quality and ensuring that expected loan losses are minimised.

The explanatory variable capital strength was found to be statistically significant on a 95 percent confidence level and displayed a positive relationship to bank profitability as measured by ROAA. For the purpose of this study, capital strength was measured by the equity to total assets ratio (EQAS) (Gharabei, 2015). The EQAS ratio provides an indication of capital adequacy and overall financial strength with regard to a bank's ability to endure losses and efficiently manage risk exposure (Dietrich and Wanzenried, 2009). Gul et al. (2011) discussed that better capitalised banks with a higher capital ratio can more easily conform to regulatory capital standards so that surplus capital can be lent out and used to increase profitability. Based on the analysis conducted, it was determined that as the EQAS ratio increased, bank profitability as measured by ROAA displayed a corresponding increase for the South African banks under study. Therefore, this finding is significant as it informs strategic-level bank management that profitability may be increased by ensuring that South African banks are well capitalised at all times.

The explanatory variable operational efficiency was found to be statistically significant on a 95 percent confidence level and displayed a negative relationship to bank profitability as measured by ROAA. For the purpose of this study, operational efficiency was measured by the cost to income ratio (Dietrich & Wanzenried, 2009). The cost to income ratio provides an indication of the change in the expenses of a business relative to revenue or income generated (Wuite, 2009). Based on the analysis conducted, it was determined that as the cost to income ratio increased, bank profitability as measured by ROAA displayed a corresponding decrease for the South African banks under study. Therefore, this finding is significant as it informs strategic-level bank management that profitability may be increased by aiming to minimise expenses incurred relative to income produced.

The explanatory variable economic activity (GDP) was found to be statistically significant on a 95 percent confidence level and displayed a positive relationship to bank profitability as measured by ROAA. GDP plays a significant role on the aspects that affect the supply and demand of loans and deposits in a country (Sufian & Habibullah, 2009). During times of economic upswings the demand for lending increases, which in turn increases overall bank profitability as banks experience increases in their number of loans issued (Dietrich & Wanzenried, 2011). Based on the analysis conducted, it was determined that as economic activity increased, bank profitability as measured by ROAA displayed a corresponding increase for the South African banks under study. Therefore, this finding is significant as it informs strategic-level bank management that profitability may be increased in times of greater economic activity or positive economic growth. Constructive economic environments positively affect the demand for and supply of banking services, thereby increasing overall bank profitability (Sufian, 2011).

The explanatory variable annual inflation was found to be statistically significant on a 95 percent confidence level and displayed a positive relationship to bank profitability as measured by ROAA. Inflation as measured by the consumer price index (CPI) was included in this study to examine the relationship between the rate of increase in the price of goods and services and the profitability of the South African banks. Based on the analysis conducted, it was determined that as inflation levels increased, bank profitability as measured by ROAA displayed a corresponding increase for the South African banks under study. Therefore, this finding is significant as it informs strategic-level bank management that profitability may increase in times of rising inflation levels. This finding could be due to the fact that banks are able to forecast more accurately and increase their income generated faster than the corresponding rise in the CPI.

The explanatory variable real interest was found to be statistically significant on a 95 percent confidence level and displayed a positive relationship to bank profitability as measured by ROAA. The real interest rate can be described as the rate of return that has been adjusted for inflation, and measures the growth of the actual purchasing power of money over time (Bodie et al., 2011; Wuite, 2009;). Based on the analysis conducted, it was determined that as the real interest rate increased, bank profitability as measured by ROAA displayed a corresponding increase for the South

African banks under study. Therefore, this finding is significant as it informs strategic-level bank management that profitability may be increased in times where the actual purchasing power of the Rand strengthens relative to prevailing inflation levels in the country.

The explanatory variables liquidity and level of unemployment were found to be statistically insignificant determinants of bank profitability as measured by ROAA for the South African banks under study. These findings were made based on a 95 percent statistical confidence level.

Based on the overall results obtained by this analysis, it becomes apparent that aspects such as asset quality, capital strength, operational efficiency, economic activity, annual inflation, and real interest most significantly affect the profitability of South African banks. It was found that asset quality and operational efficiency exhibited a negative relationship to bank profitability, and that capital strength, economic activity (GDP), annual inflation, and the real interest rate exhibited a positive relationship to bank profitability.

Conclusion and Implications

Based on the results obtained by this analysis, it became apparent that aspects such as asset quality, capital strength, operational efficiency, economic activity, annual inflation and real interest most significantly affect the profitability of South African banks. Specifically, this study found that strategic-level management may increase bank profitability by closely monitoring asset quality and ensuring that expected loan losses are minimised; ensuring that banks are well capitalised at all times, and by aiming to minimise expenses incurred relative to income produced. From a macroeconomic perspective, this study informs strategic-level bank management that bank profitability may increase in times of positive economic growth, rising inflation levels, and an increasing real interest rate.

Therefore, strategic-level bank management may optimise the profitability of South African banks by analysing and responding to these factors as quickly and efficiently as possible. Bank-specific internal variables such as asset quality, capital strength and operational efficiency are directly influenced by management and should therefore be addressed before macroeconomic external variables when attempting to optimise bank profitability.

Industry-specific external factors were omitted from this research study. A further limitation of the study is the omission of the explanatory variable bank size as measured by total assets. This variable has been indicated to be a significant determinant of bank profitability in numerous international bank profitability studies. Bank size has been omitted from this study due to the lack of available data for the alternative banking institutions included in the sample.

This study limited external determinants to macroeconomic variables, and excluded industry- specific factors. Further research could examine the effect of industry-specific determinants on South African bank profitability. A larger sample of South African banks could be utilised to examine the alternative banking institutions or private banking institutions that have been omitted from this research. Furthermore, future research could utilise an alternate measure of bank profitability to examine the determinants for the South African case.

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