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Financial Performance Determinants of Commercial Banks in Tanzania

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Abstract

The financial performance of commercial banks is of utmost importance for the growth and financial stability of a country. Moreover, the financial performance of commercial banks is influenced by both external factors and internal bank-specific factors. However, the influence of external and bank-specific factors on the financial performance of commercial banks varies across countries and warrants further investigation. Therefore, the purpose of this study is to examine the financial performance determinants of commercial banks in Tanzania. The sample for this study is 18 selected commercial banks in Tanzania with a sample period of nine years ranging from 2012 to 2020. This study used the GMM model to estimate the determinants of the financial performance of commercial banks in Tanzania. The result reveals that bank size and asset quality positively influence the financial performance of commercial banks. However, it was also found that the activity mix has a significant negative effect on financial performance. Moreover, the result uncovers an insignificant negative association between ownership, liquidity management, market share and financial performance. Additionally, the result shows that external factors which are GDP and inflation, have a negative significant impact on the financial performance of commercial banks. The results have significant value to the management of banks and shareholders. Therefore, the management of banks and shareholders of commercial banks should use the results of this paper on their day-to-day managerial operations to enhance the financial performance of commercial banks.

Keywords: *Financial performance, profitability, internal bank-bank-specific factors and external factors*

Introduction

Commercial banks in Tanzania have evolved from the colonial era, the socialist era, and the market-driven era. During the colonial era, Germany established two commercial banks in the 1990s, and subsequently at the time of independence there were 8 commercial banks (Tanzania Mainland ' S 50 Years of Independence, 2011). During the socialist era, the government nationalize all the private commercial banks and formed a single commercial bank (National Bank of Commerce). The market-driven era that commenced in mid-1990, made the commercial banking sectors more competitive after the introduction of the structural adjustment reforms (Lwiza & Nwankwo, 2002). Moreover, the reforms have opened doors for private commercial banks –domestically, and foreign-owned domestically, to operate in Tanzania thus improving the commercial banks' services to customers.

The market-driven reforms have created a competitive environment in Tanzania that has resulted in the increase of the number of commercial banks to 36 as of the financial year ended 2021/2022 (BOT 2022).Moreover, the past five years (2017-2022) have seen the banking sector maintaining a steady growth

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rate between 4.1% and 5.6% (BOT 22). Moreover, the commercial banks operating in Tanzania are classified into three categories large, medium and small commercial banks, thus providing different services and products to customers (EY. 2020, BOT, 2022).

Tanzania is among those countries that recognized the need to regulate commercial banks to enhance the financial stability and performance of commercial banks early. The establishment of the Bank of Tanzania in 1965 reflects such an early recognition. BOT has played a significant role in regulating and supervising commercial banks in Tanzania and thus improving the asset quality and liquidity of commercial banks over time (BOT 2022; BOT 2021).The trend for the asset quality for the commercial banks in Tanzania as proxied by the ratio of non-performing loans (NPLs) to gross loans for the past five years has been 10.3% for 2018, 10.7% for 2019, 7.5% for 2020,9.3% in 2021 and 7.8% in 2022;slightly exceeding the recommended ratio of 5% set by BOT over the past five years (EY,2020, BOT, 2021;BOT 2022). Likewise, the liquidity of commercial bank as calibrated by the ratio of liquid assets to demand liabilities have improved over time. The liquidity ratio for the commercial banks over the past three years has been reported as 34.8% for 2019/2020, 33.4% for 2020/2021 and 33.3% for 2021/2022 thus bypassing the minimum requirement ratio of 20% as set by BOT.

The financial performance of commercial banks is influenced by both inflation and Gross Domestic Product (GDP). The rate of inflation in Tanzania had steadily decreased in the last decade from 12.6% in 2011 to approximately 4% in 2022 (BOT 2022). This steady decline in the inflation rate is usually associated with a decline in commercial banks' operation costs, thus enhancing the financial performance of commercial banks. Moreover, the contribution of the Tanzanian banking sector to the GDP has increased from 8.6% as of the year 2015/1016 to15.53 as of the year 2020/2021(BOT). The increased contribution of the banking sector to GDP signifies the increased role of the banking sector to accelerate economic growth and development in Tanzania.

Prior studies have documented that the financial performance of commercial banks globally is influenced by both bank-specific factors and external factors. Yet there is no consensus as both bank-specific factors and external factors have persistently influenced the financial performance of commercial banks globally (Uralov, 2020; Medyawati et al., 2021; Almaskati, 2022; Saif-Alyousfi, 2022; Isayas, 2022).

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Recently, several studies country-wise conducted in Ethiopia, the UK, Vietnam and Italy and other emerging countries have arrived at mixed findings, however, these studies have revealed the superiority of the bank-specific factors namely; firm size, liquidity, the tangibility of assets, none performing loans, capital ratio, and funding strategy are key determinants of financial performance of commercial banks (Batten & Xuun Vinh, 2017; Menicucci, 2018; Jilenga and Luanda, 2021,Connell, 2023). Likewise, prior studies conducted across countries have documented that internal factors that are size, capitalization, demand deposit and market share are linked with the financial performance of commercial banks (Almaskati, 2022; Saif-Alyousfi, 2022).

Likewise, prior studies have documented mixed findings on the effect of macroeconomic variables (GDP, interest, and inflation) on the financial performance of commercial banks. For, instance studies done by Jreisatand Bawazir (2021), and Al-Harbi (2019) documented a positive link between macroeconomic variables and the financial performance of commercial banks. However, prior research done by Jilenga and Luanda (2021) uncover that macroeconomic variables do not influence the financial performance of commercial banks, while Garcia and Trindade (2019) uncovered a negative link between macroeconomic variables and the financial performance of commercial banks.

Interestingly, prior studies have shown mixed findings that require further research to uncover determinants of the financial performance of commercial banks in Tanzania.

Research Problem

The commercial bank sector in Tanzania has undergone significant transformation over the three decades after the mid-1990 reforms. The reforms have resulted in a competitive environment that has influenced the financial performance of commercial banks over time (Lwiza & Nwankwo, 2002; Simpasa, 2011). The competitive environment and changing economic cycles have influenced the financial performance of commercial banks in Tanzania.

For instance, the last decade witnessed some commercial banks have undergone rigorous scouting by BOT which has led to some mergers of some commercial banks and some commercial banks licences being revoked due to poor financial performance of the commercial banks. The Bank of Tanzania (BOT) revoked the banking license of FMME Bank due to poor financial performance and fraud (BOT 2017).

Subsequently, the BOT enforced the merger of Twiga Bancorp Limited and Tanzania Women's Bank Plc in 2018. The regulatory measure enforced by the BOT aims at protecting the financial system and enhancing the financial performance of commercial banks.

Despite the pivotal role commercial banks play in the economy, the financial performance determinants of commercial banks that may enhance the financial performances of commercial banks are not well known in the Tanzanian context. Therefore, this study is interested to examine the determinants of the financial performance of commercial banks in Tanzania.

Research Objectives

In examining the performance determinants of commercial banks in Tanzania, this study was guided by six-fold objectives which are detailed as follows;

(a) To examine the effect of bank size on the performance of commercial banks in Tanzania.
(b) To investigate the effect of bank asset quality on the performance of commercial banks in Tanzania.
(c) To assess the effect of ownership type on the performance of commercial banks in Tanzania.
(d) To examine the effect of bank activity mix on the performance of commercial banks in Tanzania.
(e) To investigate the effect of liquidity management on the performance of commercial banks in Tanzania.
(f) To assess the effect of market share on the performance of commercial banks in Tanzania,

Literature Review

This section discusses theories and empirical work related to determinants of the financial performance of banks.

Theoretical Review

This study is underpinned by the Structure Conduit Performance Theory (SCP) in examining the financial determinants of commercial banks.

Structure Conduit Performance Theory

Structure Conduit Performance (SCP) contends that the performance of a firm is influenced by its barrier to entry, market mix, size of the firm, products, capacity of utilization and power of advertising. The

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structure conduit performance theory was propounded by Lerner in a 1934 paperwork and basically postulates that increased power in the market results in monopoly profit.

The structure conduit performance theory has been extensively used in finance, particularly in establishing financial performance determinants of the banking sector. Early, work of Berger, (1995) documented the use of the structure conduit performance theory in ascertaining the relationship between capital and earnings of banks. Subsequently, researchers have used the structure conduit performance theory to examine financial performance determinants of the banking sector specifically country wise and national wise (Anastasios, 2017; Isayas, 2022; Saif-Alyousfi, 2022; Connell, 2023). This study predicts that the level of financial performance of banks is influenced by their structure and conduit.

Empirical Review

Debate on the determinants of the financial performance of the commercial banks is yet to be resolved in banking research. On one hand, studies have shown that internal determinants matter in determining the financial performance of commercial banks (Isayas, 2022; Lupinga 2014). However, on the other hand, few studies have shown that both external and internal factors matter in determining the financial performance of commercial banks(Supriyono and Herdhayinta, 2019).For instance, Lupinga (2014) conducted a study in Malawi and found that liquidity management, management efficiency and bank size influence positively the performance of commercial banks in Malawi. However, the study found that capital adequacy has an insignificant effect on the financial performance of commercial banks.

Supriyono and Herdhayinta (2019) examined the determinants of financial performance in Indonesia and found that both firm-specific and external factors determine the financial performance of commercial banks in Indonesia. Specifically, the study found that size, inflation rate, interest rate and the ratio of loans to deposits influence positively the performance of commercial banks. Likewise, Jreisat and Bawazir (2021) conducted a study in the Middle East and North African countries and uncover that non-interest income growth in GDP influence positively bank performance.

Recently, a study conducted by Almaskati (2022) for large banks with a capitalization of over 500 USD, revealed that firm-specific factors; market power and size are key determinants of the performance of commercial banks globally. Unlike, Almaskati (2022), Uralov (2020) examined the determinants of firms'

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performance among European banks and found that both firm-specific and external factors influence the performance of banks. Specifically, the study found that non-interest income, capital share, default rate and inflation rate were positively linked with bank performance.

Recently, Connell, (2023) investigated firm-specific determinants of the financial performance of commercial banks in the UK. The study found that funding strategy, capital ratio and size are positively linked with the financial performance of commercial banks in the UK. Also, Menicucci (2018) investigated the determinants of profitability of Italian firms. The study reveals that size, business model and ownership structure influence positively the profitability of firms in Italy. Moreover, Medyawati et al. (2021) examined firm-specific determinants of the performance of the bank in Indonesia and found that Internet banking and size are linked with performance.

Growe, Debruine, Lee, and Maldonado (2014) examined the determinants of profitability of US Regional Banks using Predictive analysis. They found that equity is directly associated with profitability. However, they found that the efficiency ratio and provision for credit loss are negatively associated with profitability. Likewise, Menicucci and Paolucci (2016) assessed the determinant of the profitability of 35 large European banks using data ranging from 2009 to 2013. Their findings reveal that bank size and capital determine the profitability of European banks. However, they find that higher loan losses are negatively associated with profitability.

Fidanoski, et al. (2018) investigated the bank-specific factors that influence the profitability of Croatian banks using the dynamic estimation method. Using data ranging from 2007 to 2014, they found that size, loan portfolio and capital adequacy are positively associated with profitability. Additionally, Ohman and Yazdanfar (2018) conducted a study to examine the organizational-level determinants of the profitability of Swedish banks. Using panel regression and banking data ranging from 2005 to 2014, they found that revenue growth; lagged profitability and capital adequacy are positively linked with the profitability of banking.

Garcia and Guerreiro (2016) investigated the internal and external determinants of profitability in Portugal. Using a sample of 27 banks with data ranging from 2002 to 2011.They found that yearly growth of deposits and household disposable income is positively linked with the profitability of the bank. Moreover, they

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revealed that the difference in growth in total loans between banks and the market is associated with the profitability of banks. However, they found that the cost-income ratio is negatively associated with the profitability of banks.

For instance, Isayas (2022) investigated the determinants of commercial banks' performance in Ethiopia. Using the generalised method of moments in the estimation of the determinants, the study found that liquidity, firm size, product mix, asset tangibility and leverage are positively linked with the performance of commercial banks in Ethiopia. Likewise, Bolarinwa, Obembe, and Olaiyi (2019) conducted a study to reexamine the determinant of the profitability of Nigerian banks with a special focus on managerial cost efficiency. Their results reveal that cost efficiency influence positively profitability of banks.

Le and Ngo (2020) investigated technological firm-specific factors that influence bank performance across 23 countries. They found that number of bank cards, automated teller machines and capital market development are linked with bank performance. Likely, Saif-Alyousfi, (2022) examined firm-specific factors that determine bank performance in 47 Asian countries. The study uncovered that market share, demand deposits and capitalization are key firm-specific factors that influence positively the performance of banks.

Additionally, Ali and Puah (2019) examined internal determinants of the profitability of Pakistan banks using panel regression. Using banking data ranging from 2007 to 2015, they found that bank size, credit risk, funding risk and stability have a significant positive impact on the profitability of banks. Moreover, Ozil (2018) conducted a study to examine the determinants of stability and profitability in Africa using a sample of banks from 48 countries from 1996 to 2015. The study found that bank efficiency, concentration, size, political stability and regulatory quality are key factors that determine the stability and profitability of banks.

Adelopo, Lloydking, and Tauringana (2018) examined the impact of determinants of profitability of West African banks before, during and after the financial crisis using data from the Economic Community of West African States ranging from 1999 to 2013.They found that bank size, cost management and liquidity, influence profitability before, during and after the financial crisis. Moreover, Al-Harbi (2019) investigated the determinants of conventional banking in Organisation of Islamic Cooperation (OIC) countries. Using

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banking data from 52 OIC countries ranging from 1989 to 2008, the study found that, equity, GDP, foreign ownership and concentration influence positively the profitability of banks.

Salike and Ao (2018) studied the determinants of profitability of Asian banks. Using data extracted from 12 Asian countries ranging from 2001 to 2015, they found that capital adequacy, efficiency, and income diversification are directly linked to the profitability of banks in Asia. Moreover, they found that poor asset quality is negatively associated with profitability. Likewise, Tan, Floros, and Anchor (2017) investigated the determinants of profitability of Chinese banks with a special focus on risk, competition and efficiency. Their results reveal that liquidity risk is positively linked with profitability. However, credit risk and capital risk are negatively associated with profitability. Moreover, higher competition leads to lower profit and cost efficiency is linked to low profitability.

Moreover, Jilenga and Luanda (2021) investigated the factors that influence the performance of CRDB banks in Tanzania. Using the single case, they found that bank deposits and non-performing loan influence significantly positively the profitability of CRDB bank. Moreover, they uncover that macroeconomic variables (interest and inflation) do not influence the profitability of CRDB bank. Unlike, Jilenga and Luanda (2021), Mrindoko,Macha and Gwahula(2020) analysed the impact of bank-specific factors (non-performing loans) on the performance of banks in Tanzania. This study found that non-performing loans are significantly negatively related to bank financial performance.

Garcia and Trindade (2019) investigated the determinants of profitability of Angola's commercial banks. Using a sample of 17 banks with data ranging from 2010 to 2016, they found that ownership type influence positively the profitability of banks. However, the observed GDP, inflation, and exchange rate have a negative impact on profitability. Likewise, Awoand Akotey (2019) studied the financial performance of rural banks in Ghana. Using a sample of 23 rural banks with data ranging from 2000 to 2014, they observed that liquidity management, size, capital, loans advances and inflation influence positively the financial performance of banks.

Boogatef (2017) examined the determinants of bank profitability in Tunisia. Using a sample of 10 banks and a panel regression model, the study found that, bank size and liquidity are positively linked with the profitability of banks. Moreover, Sufian and Kamarudin (2015) studied the factors influencing the

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profitability of Islamic banking in Southeast Asia. They found that bank size, asset quality, capitalization and liquidity are positively associated with banking profitability.

In general, the review of the literature reveals mixed findings regarding the effect of determinants on banking financial performance across counties. Moreover, the review uncovers that few studies have been done to examine performance determinants of commercial banks in Tanzania. This study differs from them in several ways, it differs from that of Jilengaand Luanda (2021) which focused on a single bank, rather this study focused on 18 banks.Moreover, this study differs from that conducted by Mrindoko, et al.,(2020) which focused on one determinant, this study is focused on many determinants, bank-specific as well as macroeconomic factors.Unlike, prior studies by Jilengaand Luanda(2021) and Mrindoko, et al.,(2020) that used Ordinary Least Square (OLS), this study used Generalized Methods of Moments (GMM) which is superior to OLS in dealing with unbalanced data.Therefore, this study is positioned to fill the gaps identified by examining the financial performance determinants of commercial banks in Tanzania.

Research Methodology

This section describes the data used and specifies the research methodology used to investigate the determinants of the financial performance of commercial banks in Tanzania.

Data and Sample Selection

Data for this study have been extracted from the annual reports of the selected commercial banks. Moreover, data on inflation and Gross Domestic Product have been extracted from the website of the National Bureau of Statistics Tanzania. In addition, 36 commercial banks were operating in Tanzania as at the end of the financial year 2020/2021 (BOT 2021). This study focused on medium and small banks based on capitalization as clustered by Ernest and Young-Tanzania (2011) and BOT (2020) Annual Report. Unlike, Jilenga and Luanda's (2021) study that focused on CRDB, the current study focused on all medium and small banks. The study excluded 8 large banks namely CRDB Bank, Barclay Bank, Citi Bank, Exim Bank, Standard Chartered Bank, Stanbic, NMB, and NBC, thus reducing the sample to 28 commercial banks. Moreover, the sample was reduced to 18 commercial banks after excluding banks without financial data and those were established before 2012. Therefore, it resulted in a sample of 18 commercial banks namely; Access Bank, Akiba Commercial Bank, Bank of Baroda, Azania Bank, BOA, BOI, CBA, I&M, DTB, Habib, ICB,KCB, PBZ, FNB, UBA, TPB, DCB, and Mkombozi bank. The sample period for this study is

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nine years ranging from 2012 to 2020.Thus, this study used a sample of 162 firm-year observations in examining the determinants of the financial performance of small and medium commercial banks in Tanzania.

Research Approach

Concerning the present study, a quantitative research approach has been used to examine the performance determinants of commercial banks in Tanzania. Specifically, panel regression models have been used by the present study to answer the research question in line with prior research that were conducted in other countries (Growe, et al., 2014; Boogatef, 2017; Menicucci 2018).

Model Specification

In examining performance determinants of commercial banks in Tanzania, this study has adopted the dynamic panel data model. The current study uses economic information which is dynamic hence the use of system dynamic panel data fit well. The current study employed Arellano and Bover's (1995) generalized methods of moments (GMM). The Arellano and Bover (1995) GMM model is usually good for controlling the effect of heteroskedasticity and small samples (Awo & Akotey 2019; Isayas, 2022).

In line with other prior studies that studied performance determinants of banks, the study employed equation one to examine the financial determinants of commercial banks in Tanzania (Boogatef, 2017; Garcia, & Trindade, 2019).

$$ROAi_{i,t} = \alpha_0 + \phi ROA_{i,t-1} + \sum_{n=1}^{n} b_n IF_{i,t} + \sum_{m=1}^{m} d_m EF_{i,t} + \varepsilon_{i,t} \quad \text{eq(1)}$$

The above equation may be decomposed into two equations

$$IF_{i,t} = \alpha_0 + b_1 \log(S_{i,t}) + b_2 OW_{i,t} + b_3 AQ_{i,t} + b_4 LM_{i,t} + b_5 AM_{i,t} + b_6 MS_{i,t} + \varepsilon_{i,t} \quad \text{eq(2)}$$

$$EF_{i,t} = \alpha_0 + b_1 \log GDP_{i,t} + b_2 INF_{i,t} + \varepsilon_{i,t} \quad \text{eq(3)}$$

Where: $ROA_{i,t}$ denotes Return on an asset for bank i at time *t*, $IF_{i,t}$ stands for internal factors, $EF_{i,t}$ stands for external factors, $\log(S_{i,t})$ stands for the size of bank i at time *t*, $OW_{i,t}$ stands for ownership of bank i at time *t*, $AQ_{i,t}$ denotes asset quality of bank i at time t, $LM_{i,t}$ stands for liquidity management t of bank i at time t, $AM_{i,t}$ stands for activity mix for bank i at time t, $Ms_{i,t}$ denotes market share for the bank it at time

t, GDP_t stands for Gross Domestic Product at time t, $INF_{i,t}$ denotes average annual inflation at time t, and $\varepsilon_{i,t}$ stands for Error term of bank i at time t.

Variable Measurements

This section provides detailed information on the variables used to examine the performance determinants of commercial banks in Tanzania.

Dependent Variable

Return on asset (ROA) in this study is the dependent variable used to calibrate the performance of commercial banks. Moreover, many prior studies have used ROA to capture the performance of banks (Boogatef, 2017; Menicucci 2018; Garcia, &Trindade, 2019;Adelopo, et al, 2018; Garcia, &Guerreiro, 2016; Almaskati, 2022; Isayas, 2022). In line with these prior studies, this study calibrates ROA as a ratio of net income scaled by total assets.

Independent Variables

Size, ownership, asset quality, ownership type, liquidity management, activity mix, and market share are independent variables that are used to examine the performance determinants of commercial banks in Tanzania.

Size $\log(S_{i,t})$

For years now the size of the bank as measured by the total assets of a bank has been a key factor in determining the financial performance of banks (Awo & Akotey, 2019, Fidanoski, et al., 2018). Many studies have linked bank size and the financial performance of commercial banks over the world (Javaid et al. 2011; Khrawish 2011; Menicucci, &Paolucci, 2016). Moreover, they revealed that banks with greater total assets have more access to the market and diversification of products. In line with thisprior research, this study uses a log of the total assets of commercial banks as a proxy for the size (Awo & Akotey, 2019, Fidanoski, et al., 2018). Moreover, commercial banks with higher total assetsare expected to have better financial performance.

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Asset Quality (AQ)

Asset quality is a key determinant of the performance of banks (Garcia, &Trindade, 2019; Adelopo, et al, 2018). Prior studies have used several proxies to measure asset quality, for instance, loan to total asset ratio, non-performing loan to total loans and growth in bank deposits, (Garciaa & Guerreiro, 2016; Floros & Anchor, 2017; Khrawish, 2011). This study used the ratio of loan to total assets as it captures well asset quality and commonly be employed measure. A higher ratio of asset quality ratio indicates good financial performance and a lower ratio reflects poor performance.

Ownership Type (OW)

Ownership type can be classified as domestic vs foreign ownership, and private vs public. Specifically, this study focuses on foreign and domestic ownership due to different strategic management styles that may be pursued by the management of banks. Moreover, studies have shown that foreign banks have more technological and operational efficiency than domestic banks, hence it is expected that foreign banks have an edge overdomestic-owned banks (Garcia & Trindade, 2019). Therefore, foreign banks are expected to have higher financial performance relative to domestic banks. A dummy variable is introduced to capture the influence of ownership on the financial performance of commercial banks (1 for foreign ownership and 0 for domestic ownership).

Activity mix (AM)

Studies have shown that the activity mix is linked to financial performance (Flamini et al., 2009; Isayas, 2022). Activity mix is measured as the ratio of net interest income to total income. A higher ratio indicates bank derives income from key activities lending and a lower ratio shows that the bank makes less money from its key activities.

Liquidity Management (LQ)

Liquidity management is a crucial aspect of banking stability and hence influences profitability. Liquidity management is calibrated as the ratio of total loans scaled by a total deposit (Guru, et al, 1999). A higher ratio signals good liquidity management and a lower ratio reflects poor liquidity. Prior studies have associated good liquidity management and financial performance (Ali & Puah, 2019; Awo & Akotey, 2019).

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Market share (MS)

Market share is among the key determinants that influence the performance of the bank as it gives the bank a comparative advantage over another bank (Isayas, (2022); Flamini et al., 2009). This study calibrates market share as the ratio of bank deposits to the total deposit of all banks in the market (Menicucci & Paolucci, 2016).

External Factors

Prior studies used macroeconomic variables in calibrating determinants of banking performance for single and several commercial banks (Ameur & Mhiri 2013; Ozili 2018; Uralov, 2020). In line with prior studies, the current study has included Inflation (INF) and Gross Domestic Product (GDP) as key control variables. Prior studies have linked inflation with the performance of the banking sector (Ameur & Mhiri 2013;Uralov, (2020). Moreover, inflation reflects changes in price levels which influence interests charged by banks. If inflation is anticipated, banks will charge higher interest hence increasing interest income. Likewise, GDP indicates the economic environment. During the period of higher GPD defaults are expected to be low relative to the period of lower GDP hence higher GDP is linked with better banking performance (Jreisat & Bawazir, 2021;Almaskati, 2022; Uralov, 2020).

Results and Discussions

Descriptive Statistics

Table 1 below reports the descriptive statistics for the current study. The mean value of ROA is 0.696%, with a maximum value of 4.44% and the minimum value of -7.69%. The value reported for the mean value of ROA is lower compared to a mean value of 1.2% reported in Greek by Alexiou, and Sofoklis (2009).This might be based on the reason that the study did not consider larger banks, rather it focuses on medium and small commercial banks in Tanzania. Moreover, the mean value of the size given by log total asset is 5.2 which is much smaller compared to the mean value of 16.9 reported in the Greek banking sector (Alexiou & Sofoklis, 2009). The exclusion of large banks may be the reason for the lower value for size measured by the log of assets. The mean ownership is 57.9% indicating that the selected commercial banks have more investment from domestic shareholders.

Moreover, the mean value of the activity mix is 0.69. Furthermore, the mean value of liquidity management is 0.666 with a maximum value of 1.519 and a minimum value of 0.024. Likewise, Awo and Akotey, (2019)

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found that the mean value of liquidity is 1.08 which is slightly higher than the mean value obtained. Also, the mean value of asset quality is 84.278 and with maximum and minimum values of 5400 and 0.45 respectively.

Furthermore, the mean value of a market share is 0.001523 and with a maximum and minimum value of 0.0067 and 0.000057 respectively.

Finally, the mean value of log (GDP) is 76.87 with a maximum value of 119.44 and a minimum value of 38.48. The mean value inflation (IFN) is 8.68% with a maximum value of 16% and a minimum of 5.2%.

Table 1: Descriptive Statistics

Variable	N	μ	δ	Min	Max
ROA	162	0.696725	2.075082	-7.69	4.44
Log(SI)	162	5.222452	0.3920534	3.737034	6.055773
OW	162	0.578947	0.495178	0	1
AM	162	0.691697	0.1359354	0.289073	1.262305
LM	162	0.665873	0.2039011	0.024291	1.519318
AQ	162	84.27813	409.1375	0.45	5400
MS	162	0.001523	0.0012809	1.57E-05	0.0066764
Log(GDP)	162	76.87073	27.31103	38.4747	119.4382
INF	162	8.677778	3.721476	5.2	16

Notes: N=stands for the number of observations, μ=mean, δ=standard deviation.

Pair-wise Correlation

Table 2 depicts the results pairwise among the variables of the current study.ROA is significantly positively related to size (0.239), liquidity management (0.296) and market share (0.203). Besides, ROA is significantly negatively associated with ownership (-0.198) and insignificantly negatively linked to log (GDP) and inflation. Moreover, size is significantly positively linked with liquidity management (0.358), market share (0.609) and log (GDP) 0.5. However, size is significantly negatively related to inflation (-0.326) and insignificantly negatively linked to activity mix and asset quality.

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Furthermore, ownership is significantly negatively associated with activity mix (-0.216), and liquidity management (-0.254) and insignificantly negatively related to market share. Also, ownership is not associated with both log (GDP) and inflation. Liquidity management is significantly positively linked to market share (0.249) and log (GDP) (0.198) and insignificantly negatively related to inflation. Moreover, market share is significantly positively related to log (GDP) (0.508) and significantly negatively associated with inflation (-0.36). Finally, log (GDP) is significantly negatively linked to inflation (-0.69).

Since the coefficient of association among variables is less than the cut-off 0.8 propounded by Field (2006), therefore, there is no serious problem of multi-collinearity among the variables.

Table 2: Pair-wise Correlation

Variables	ROA	Log(S)	OW	AM	LM	AQ	MS	Log(GDP)	INF
ROA	1								
Log(S)	0.239*	1							
OW	-0.198*	-0.138	1						
AM	0.112	-0.064	-0.216*	1					
LM	0.296*	0.358*	-0.254*	0.366*	1				
AQ	0.099	-0.046	0.058	0.024	0.015	1			
MS	0.203*	0.609*	-0.032	-0.078	0.249*	-0.047	1		
Log(GDP)	-0.019	0.500*	0	0.244*	0.198*	-0.09	0.508*	1	
INF	-0.006	-0.326*	0	-0.130	-0.051	0.068	-0.36*	-0.69*	1

Notes: Table 2 depicts the pair-wise correlation of variables of the study and *indicatesa significant coefficient at 5%.

Results of the Multi-Collinearity Test

To ensure that the dependent variables are free from the problem of multicollinearity, an additional test was done using a variance inflation factor. Table 3 reports the result of the multi-collinearity test among the key variables using the variance inflation factor. The results reported a maximum value of the variance inflation factor of 2.02 for size. Since the maximum of 2.02 for size is far less than the cut-off of 10, the result reveals that there is no problem of multi-collinearity among the independent variables.

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Table 3: Multi-Collinearity Test

Variable	VIF	1/VIF
Log(S)	2.02	0.495635
MS	1.81	0.551055
Log(GDP)	1.76	0.567347
INF	1.55	0.645161
AM	1.49	0.671919
LM	1.46	0.686557
OW	1.13	0.885139
AQ	1.02	0.981174
Mean VIF	1.53	

Heteroskedasticity Results

Table 4 depicts the results of heteroskedasticity. Breusch-Pagan and Cook-Weisberg test was used. The result reveals that the probability which is associated with the chi-value is 0.00. In this regard, the null hypothesis of constant variance is rejected indicating that there is a problem of heteroskedasticity. Thus, Arellano and Bover's (1995) system dynamic panel data model is used to mitigate the problem of heteroskedasticity (Gow et al., 2010).

Table 4: Heteroskedasticity Results

Breusch-Pagan / Cook-Weisberg test
Ho: Constant variance
Variables: fitted values of ROA
chi2(2) = 41.13
Prob> chi2 = 0.0000

Regression Results

The result of the system dynamic panel data model propounded by Arellano and Bover (1995) using generalized methods of moments (GMM) are reported in Table 5. The size as measured by total assets is significantly positively linked with performance as scaled by ROA at a 1% level. This indicates that size

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helpsthe banks to increase more banking activities hence serving more business and thus improving profitability. These findings are in line with the market power theory that asserts that large banks with market power have added advantage of creating more profit than those with lower market power. Likewise, the aforementioned result is in line with the result of the study done in Ghana by Awo and Akotey (2019) that found size influences financial performance of commercial banks.

Moreover, the activity mix which is calibrated as a ratio of net interest income to total income is significantly negatively associated with performance. The result signals that banks that derived large income from interest income are associated with poor financial performance which is contrary to the expectation. However, the result may be attributable when banks' lending is not effective, thus leading to defaulters. The results are contrary to the market power theory that argue that the ability to generate more products gives banks a monopoly over other banks thus creating more profit. Moreover, the result is likewise contrary to the result reported by Isayas (2022).

Asset quality as proxied by the ratio of loan to total asset is significantly positively associated with good financial performance as scaled by ROA. The result suggests that managers may strive to increase asset quality to increase financial performance. The findings support the efficiency structure theory that argues that managers may enhance performance by improving the efficiency of banks through increasing asset quality. The results are supported by prior studies that were done by Garcia and Guerreiro (2016) and Anchor (2017) which found a positive link between the asset quality of banks and performance.

However, the results found an insignificant association between banking performance and three internal factors that are ownership, liquidity management and market share.

Moreover, the result reveals that GDP is significantly negatively associated with banking performance. The result implies that as GDP increases the financial performance of commercial banks decreases. The result is contrary tothe expectation that during a period of higher GPD, defaults are expected to be low relative to a period of lower GDP, thus higher GDP is linked with better banking performance. The results are contrary to a study done by Jreisat and Bawazir(2021) in the Middle East and North Africa that reported a significant positive association between GDP and bank financial performance.

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Finally, the result shows that inflation is significantly negatively related to banking performance. This signals that banks did not anticipate an increase in inflation hence they did not realize their interests, thus resulting in costs increasing more than revenue. They are similar to that of a study conducted by Jilenga and Luanda (2021) in Tanzania that reveal a significant negative association between the financial performance of banks and inflation.

Table 5: Determinants of Financial Performance using GMM Estimator

ROA	GMM Estimation	
Internal Factors	Coefficient	P-value
Lag ROA	0.279***	0.007
Size	1.536***	0.002
Ownership	-1.244	0.187
Activity Mix	-2.904**	0.047
Liquidity Management	-1.269	0.464
Asset Quality	0.052*	0.079
Market share	-55.656	0.842
External Factors		
Gross Domestic Product	-0.021**	0.015
Inflation	-0.070*	0.056
Constant	-1.053	0.741

Notes: The result of the GMM model of regressing ROA on both internal and external factors. Values in parentheses indicate p-values attached to the coefficient. *, ** and *** indicate significant coefficient at 10%, 5% and 1% levels respectively.

Conclusions and Recommendations

This paper examines the financial performance determinants of commercial banks in Tanzania by particularly looking at internal and external factors that influence performance. The study calibrate the performance of commercial banks using the commonly employed method the return on asset. This investigation is geared to ascertain which of these factors influence the financial performance of commercial banks.

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This study estimated the system dynamic panel data using a GMM model developed by Arellano and Bover (1995). The result shows that there is a significant association between performance and both internal and external factors. Specifically, it was found that both size and asset quality are significantly positively related to performance as proxied by return on asset. The findings suggest that the size of a bank provides a competitive advantage as propounded in the market power theory. Managers are recommended to increase the size of the commercial banks by going public or using private investors to enhance financial performance.

Moreover, the result reveals a positive link between asset quality and financial performance. The result is in line with the efficiency structure theory and suggests that managers may enhance performance by improving asset quality. However, the result reveals a significant negative link between the activity mix and the financial performance of commercial banks. The result is contrary to the market power theory that argues that increases in product mix usually give a monopoly of increasing profit.

In terms of external factors, it was revealed that both GDP and inflation have a significant negative impact on the financial performance of commercial banks in Tanzania. The result suggests that external factors are not positively related to the performance of commercial banks in Tanzania. Managers of commercial banks are advised not ignore the external factors as they do not influence the financial performance of commercial banks in Tanzania.

The results provide pivotal information to policymakers, stakeholders and banking management on key internal and external factors that impact the financial performance of commercial banks in Tanzania. They may use this information to enhance the financial performance of commercial banks in Tanzania.

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