Determinants of Commercial Banks Profitability: The Case of Commercial Banks in Ethiopia

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Abstract
Banks are the most crucial financial intermediaries in our country and the economy that have profitable banking industry are better able to withstand negative shock and contribute to the stability of the whole economy. Both internal and external determinants of Bank profitability affect the profitability of Commercial Banks in Ethiopia. The purpose of this study is to investigate determinants of commercial banks profitability in Ethiopia by using panel data of eleven commercial banks from year 2009 to 2018. The bank's Audited financial statement, National Bank of Ethiopia and Ministry of finance and Economic Cooperation has been the main source for the study. The study had a population of 18 commercial banks in Ethiopia and out of the total population only 11 commercial banks were included by using judgmental sampling technique. The study used quantitative research approach and secondary financial data were analyzed by using panel regressions models for the bank profitability measure, Return on Asset (ROA). Random effect regression model was applied by using stata13 software. The findings of the study show that bank size, capital adequacy, liquidity risk, operational efficiency, gross domestic product and income diversification have statistically significant and positive effect on bank's profitability. On the other hand, variables like liquidity risk and operational efficiency, banking sector development have a negative and statistically effect on banks' profitability .However, funding cost, inflation, and foreign exchange rate are found to be statistically insignificant. The study suggests that focusing and reengineering the banks alongside the key internal and external drivers could enhance the profitability as well as the performance of the commercial banks in Ethiopia
Keywords: profitability, Return on Asset, Bank size, Capital Adequacy, Liquidity risk, operational efficiency, Funding cost, RGDP, Inflation rate , Foreign exchange rate, income diversification, and commercial banks.
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1.1. Background of the study

The financial industry is an important economic sector that significantly helps in economic growth and economic development in our country. Particularly the banks are the primary sources of finance for government, firms and households in the economy. In modern economy, the financial sector is growing rapidly and gaining importance in the global financial development (Christine & Beverly, 2001).

According to Arora (2014), the importance of banks originates from their role as main channels of savings and allocators of credit in an economy. emerging economies depend on an efficient banking sector to grow fast. In less monetized countries, like Ethiopia, whilst financial sector is dominated by banking industry, effective and efficient functioning of the Banks has significant role in accelerating economic growth (Berhanu, 2015).

The bank sector is expected to generate profit in order to sustain in the market for long, which is termed as profitability. Lartey et al., (2013) cited in Anafi, Abakah, and Boateng, (2016), defined bank profitability as the ability of a bank to generate revenue in excess of cost, in relation to the bank's capital base. Abel and Roux (2016) observe, the banking sector does nothing but consume its own capital and risks its existence. This undermines the banks' ability to serve as a major means of national development. However, bank profits are not the results of a single factor. The factors, as pointed out in a variety of literature, are commonly divided into two major categories. The first category looks at the bank specific or internal factors that are controllable by the management of a given bank. The second category, on the other hand, looks at factors that are beyond the control of the management and usually referred to as external or macro-economic factors (Ermias, 2016). Hence, the current research has attempted to examine the factors that determine the commercial banks profitability in Ethiopia

1.2. Statements of the Problem

When a financial system is efficient, it shows increasing the volume of money flowing from savers to borrowers, improvements in profitability, and quality services for consumers (Levine, Loayza, & Beck, 2000).

Profit in the banking industry fluctuates overtime having its ripple effect on economic growth, this calls attention to profitability variables (return on capital employed, return on asset, and return on equity) in banks and their effect on economic growth (Adekola, 2016). But, It is widely believed that financial system plays a vital role in the economic growth and development of a country.

Until the 1974 popular revolution all privately owned financial institutions including three commercial banks, thirteen insurance companies and two non-bank financial intermediaries were nationalized on 1 January 1975 but their performance was not satisfactory in terms of profitability, customer service and overall performance (NBE, 2009/2010).

The researcher has reviewed various researches that examined determinants of commercial banks profitability in Ethiopia.For instance, study conducted by Amdemichael (2012), Gemechu (2016), Birehanu (2012), Samuel and (2015) tried to examined the determinants of Ethiopian commercial banks profitability by using the variable such as bank specific, industry specific and macroeconomic variables.

As noted in Amdemikael (2012) Ethiopian banking industry is characterized by a quite high liquidity, which is well above the statutory requirement of 18 percent, high level of nonperforming loans, and failure to adopt new technologies to improve the efficiency of their services. Among others, which are the direct indicators of low performance when measured in terms of profitability as far as all of the above-mentioned factors, affect profitability negatively. Even though there are a lot of studies conducted in identifying determinants of profitability of commercial banks, they have been debatable because determinants of profit are dynamic through time to time and differ with the nature of the firm from place to place.

In Ethiopia, although there are relatively few studies that have been conducted by Belayneh (2011) and Habtamu (2012) about determinants of profitability of commercial banks by using private banks only but profit market share of these banks is only about 39.31%. These studies identified number of branches as determinant of profitability of banks.

In general, even if Ethiopian banks looks like profitable, lack of competition, limited number of branches, poor asset quality, low efficiency, higher levels of liquidity and others clearly indicate as they are still not performing well and attaining the maximum profit that they can achieve. Thus, this paper was intended to fill the gap by providing full information about the internal and external factors that affects profitability by examining the unincorporated variables, and some of the limitations are: the previous literature covers shorter period that did not show the current performance of banks in the study.

1.3. Research Question

Having the above problems, this study was designed to answer the following basic questions.

1. What are the internal factors (bank size, capital adequacy, liquidity risk, operational efficiency, funding cost, and income diversification) that affect commercial banks profitability?
2. What are the external factors influence (real gross domestic product, inflation rate, and foreign exchange rate) that affect commercial banks profitability, in the case of commercial bank of Ethiopian?

1.4. General Objective

The general objective of this study was to examine factors that influence profitability of Commercial Banks in Ethiopia.

1.5. specific Objectives

II. To explores the effect of bank size on commercial banks profitability in Ethiopia.
III. To examine the effect of capital adequacy on the financial performance of Ethiopian commercial banks
IV. To examine the effect of liquidity risk on the financial performance of Ethiopian commercial banks
V. To analyze the effect of operational efficiency on the financial performance of Ethiopian commercial banks
VI. To scrutinize the effect of funding cost on the financial performance of Ethiopian commercial banks
VII. To examine the effect of real gross domestic product on the financial performance of Ethiopian commercial banks
VIII. To analyze the effect of inflation rate on the financial performance of Ethiopian commercial banks
IX. To investigate the effect of foreign exchange rate on the financial performance of Ethiopian commercial banks
X. To evaluate the effect of income diversification on the financial performance of Ethiopian commercial banks

1.6. Hypothesis of the Study

H1: Bank size has positive and significant effect on bank profitability.
H2: Capital Adequacy has positive and significant effect on bank profitability.
H3: Liquidity risk has negative and significant effect on bank profitability.
H4: operational efficiency has negative and significant effect on bank profitability.

H5: Funding cost has positive and significant effect on bank profitability.
H6: Real gross domestic product has positive and significant effect on bank profitability.
H7: Inflation rate has positive and significant effect on bank profitability.
H8: Foreign exchange rate has positive and significant effect on bank profitability.
H9: income diversification has positive and significant effect on bank profitability.

1.7. Scope of the Study

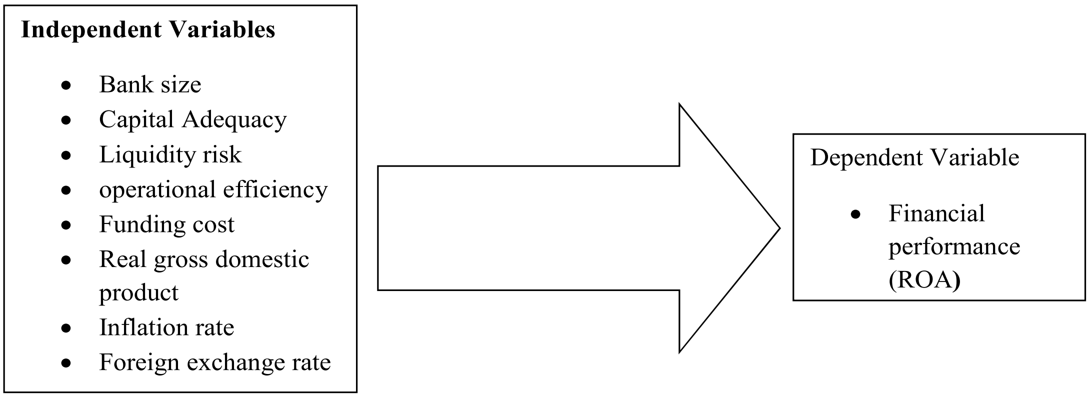
This study is considered both bank specific internal and external determinants of profitability of commercial banks in Ethiopia. The researcher tried to look into their profitability and will be see how these internal and external factors have an impact on the determinants of profitability on commercial banks in Ethiopia that are found in case of Ethiopia.

In terms of time sphere this study confined itself with a time series data of 10 years (2009 - 2018) on the identified financial performance indicators of Return on Asset.

The geographical scope of this study was delimited in to the boundary of eleven Ethiopian commercial banks. Considering the above mentioned circumstances, the results of the study was limited to selected commercial banks as a sample and are generalized to all Ethiopian commercial banks. Finally, the study used the quantitative approach and focus on the description of the outputs from software and give the researcher own explanation.

2. Literature review

Figure 1 : Conceptual framework



3. Research Method

To achieve the research objective explanatory was used to determine the cause-and-effect relationship between the independent variables and financial performance (Dependent variable). The type of research approach employed in this study was quantitative research approach. It employs strategies of inquiry such as experiments and surveys, and collects data on predetermined instruments that yield statistics data (numerical) (John, 2002).

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3.1. Target Population and sample size

The target population for this study is the total registered Commercial Banks in Ethiopia. There are 18 commercial banks in Ethiopia. For a successful study, it is mandatory to select sample that is representative of the population and that fits with the nature of the population, time, cost and other constraints. In order to keep the data balanced and based on the nature of the target population this study adopted the Purposive or Judgmental sampling techniques because.

The researcher wanted to select eleven commercial banks that could provide 10 years audited financial statements. For this reason, the study used these Commercial Banks as sample (Oromia International Bank, Commercial Bank of Ethiopia, Dashen Bank, Wegagen Bank, Bank of Abyssinia, United Bank, Nib International Bank, Cooperative Bank of Oromia, Lion International Bank, Zemen Bank, and Awash International Bank) were included.

3.2. Data Source and Methods of data Collection

The secondary data were collected from the financial statements of the selected banks. The published accounts mainly of the balance sheet and income statements of Commercial Banks for the period 2009-2018 are used. In addition, the various annual and quarterly publications of the NBE, publications (including the annual report) commercial banks were used.

3.3. Methods of Data Analysis

The collected panel data were analyzed using descriptive statistics, correlations and regression analysis. Descriptive statistics has employed to quantitatively describe the important features of the variables using mean, maximum, minimum to analyze the general trends of the and a correlation matrix was used to examine the relationship between the dependent variable and explanatory variables. Thus, Data obtained from secondary data sources was analyzed by using the STATA 13 software program. The quantitative results are presented through regression outcomes and figures.

3.4. Model Specification

In the study the model would be containing Return on asset (ROA) indictors of commercial banks profitability as the dependent variables. The explanatory variables include real gross domestic product (RGDP), inflation rate (INFR), foreign exchange rate (FER), bank size (LBS), capital adequacy (CAPAD), liquidity risk (LIQR), funding cost (FDC), and operational efficiency (OPE),), and income diversification(INDIV) were the independent variables. Therefore, the researcher used the panel regression model. Characteristics of the model and proposed variables. Accordingly, to examine the determinants of Commercial banks' performance, the researchers has prepared regression model in the following form.

$$〚ROA〛\_it=\beta0+ 〚\beta1LBS〛\_it + 〚\beta2CAPAD〛\_it + 〚\beta3LIQR〛\_it + 〚\beta4OPE〛\_it + 〚\beta5FDC〛\_it+ 〚\beta6RGDP〛\_it+ 〚\beta7INFR〛\_it + 〚\beta8FER〛\_it + 〚\beta9INDIV〛\_it + \varepsilon\_it.$$

Where, ROA= return on asset, LBS= Lan of bank size, CAPAD=, capital adequacy, LIQR= liquidity risk, FDC= funding cost ,OPE= operational efficiency , INDIV= income diversification, FER= foreign exchange rate, INFR= inflation rate and ε=error term.

3.5. Measurements of variables

Type of variable	Name of variable	Measurement
Dependent Variable	Financial Performance of commercial banks	ROA=Net profit after tax/ total assets
Independent Variables	Bank Size	Natural logarithms of total assets
	Liquidity risk	Current Assets/ Current Liabilities
	capital adequacy	equity/Total Assets
	Operating Efficiency	Operating expense / total income
	funding cost	Interest expense/total deposit
	Foreign exchange rate	$ to ETB
	GDP	Annual GDP Rate
	Income diversification	None interest income/total income

4. Data presentation and discussion

Descriptive statistics of Dependent & Independent variables the mean, median, maximum, minimum and standard deviation values of dependent and independent variables for the period of 2009 up to 2018. Discussion about these descriptive results for all study variables.

Correlation analysis

Obs. =110	*ROA*	Bank size	CAPAD	LIQR	OPE	FDC	RGDP	INFR	FER	INCDIV
ROA	1.0000									
Bank size	0.7171	1.0000								
CAPAD	0.5088	0.2183	1.0000							
LIQR	0.5016	0.0502	0.3795	1.0000						
OPE	0.4051	0.2074	0.0779	0.4765	1.0000					
FDC	0.0387	0.4605	-0.1683	-0.4064	-0.1257	1.0000				
RGDP	0.7845	0.5908	0.3935	0.6119	0.3936	-0.1140	1.0000			
INFR	0.1425	-0.1080	0.3642	0.1202	-0.0707	-0.3746	0.1808	1.0000		
FER	0.0891	0.0869	-0.2542	0.0926	0.1503	-0.0920	0.0617	0.0345	1.0000	
INCDIV	0.3035	0.0713	0.2494	0.7063	0.4487	-0.3684	0.5296	0.0507	-0.0080	1.0000

Model Specification Test

Fixed effects and random effects models are commonly used models for the panel data. In order to choose fixed or random effect model a formal test so called hausman specification test was used.

Hence, according to houseman test for this panel data model shown that, the model is better off if random effect model is used since the p-value for the model is 0.0865, which is greater than 0.05(significant).

Hausman test for ROA	
chi2(9) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 37.93 Prob>chi2 = 0.0865	

Radium Effects Regression Result for the dependent and independent Variables

ROA	Coef.	Std. Err.	Z	p>{z}
Bank size	.0279984	.0041533	6.74	**0.000 ***
CAPAD	.0846833	.0228616	3.70	**0.000***
LIQR	-.0544383	.014066	3.87	**0.000***
OPE	-0025586	.0010575	2.42	**0.016 ****
FDC	-.0142139	.0132336	-1.07	**0.283**
RGDP	.5183385	.1644706	3.15	**0.002 ****
INFR	.0282172	.0405465	0.70	**0.486**
FER	.0003751	.0007254	0.52	**0.605**
INCDIV	.0362491	.0106854	3.39	**0.001 ****
_cons.	.6621151	.085669	7.73	**0.000**
Prob > F= 0.0000 R-sq: within = 0.8063 between= 0.9189 overall = 0.8241	the coefficient indicated that a unit increase in banks asset size will result 27.99% increased profitability		*, **, indicates significant at 1% and 5% significant level respectively	

Dependent Variable		ROA	
Independent Variables	Actual r/ship	**significance level**	Null Hypothesis status
Bank size	Positive	**significant at 1%**	Accepted
CAPAD	Positive	**Significant at 1%**	Accepted
LIQR	Negative	**Significant at 1%**	Accepted
OPE	Negative	**significant at 5%**	Accepted
FDC	Negative	**In Significant**	Rejected
RGDP	Positive	**Significant at 5%**	Accepted
INFR	Positive	**In Significant**	Rejected
FER	Positive	**In Significant**	Rejected
INCDIV	Positive	**significant at 5%**	Accepted

5. Conclusion of the Study

This broad objective of this study was to identify the main bank-specific, industry- specific and macro-economic factors that can affect Ethiopian commercial banks profitability.

The internal determinants refer to the factors originate from bank accounts (balance sheets and/or profit and loss accounts) and therefore could be termed bank-specific determinants of profitability.

The external determinants are variables that are not related to bank management but reflect the economic and legal environment that affects the operation and performance of financial institutions.

The empirical findings on the impact of commercial bank profitability in Ethiopia for the sample suggest the following conclusions.

First, the natural logarithm of total assets has a positive impact on ROA with strong significance coefficient. This indicates that as larger banks asset size of the country experience more significant increases in profitability through economies of scale.

Second, as expected, the result showed a positive relationship between capital adequacy and profitability with strong statistical significance, showing that an increase in capital adequacy will result in increased profitability.

Third, as expected the liquidity risk has a negative impact on ROA with strong significance coefficient. This indicates that as banks that hold more liquid asset experience more significant increase in the profitability by reducing the risk.

Fourth, again as expected, the result showed a negative effect of operational efficiency on profitability with strong statistical significance. This shows that as minimizing commercial banks operating costs in Ethiopia would certainly improve the banks performance.

Fifth, again as expected, the result showed a negative relationship between funding cost and profitability with statistical insignificance. This shows that as minimizing commercial banks interest expense in Ethiopia would not certainly improve the banks performance.

Sixth, among macroeconomic variables the (real GDP) has a positive impact on profitability as expected and has been a significant driver in the performance of commercial banks in Ethiopia.

The result for income diversification showed a positive relationship between income diversification and profitability as expected with significance.

The coefficient of the ratio is the highest positive, showing that an increase in other or non-interest income will have positive result in increasing profitability.

Finally, On the other hand, inflation and foreign exchange rate are factors that have little or no impact on the profitability of Ethiopian commercial banks in this model as far both of the variables were not significant at 5% significance level.

Recommendation

Bank size, capital adequacy, liquidity risk, operational efficiency, real GDP, and income diversification are significant key drivers of profitability of commercials banks in Ethiopia. Indeed focusing and reengineering the institutions alongside these indicators could enhance the profitability as well as the performance of the commercial banks in Ethiopia.

There is need for commercial banks to consider raising their capital more as it is found to have influence on profitability. Commercial Banks should look in to reducing the amount they pay to shareholders as dividend, Instead using it to raise the capital in addition to selling shares. The government should also continue to encourage and demand banks to raise their capital.

This is a clear signal to all commercial banks in Ethiopia that they cannot ignore the industry structure and macroeconomic indicators when strategizing to improve on their profits or performance.

Commercial banks in Ethiopia should not only be concerned about internal structures and policies, but they must consider both the internal environment and the macroeconomic environment together in fashioning out strategies to improve their performance or profits.

Commercial banks should also give more consideration to reducing their operating expenses specially their salary and rent expense as it is found to have the highest negative influence on profitability

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