

## **FACTORS AFFECTING BANK PROFITABILITY OF COMMERCIAL BANK OF ETHIOPIA: AN ECONOMETRIC ANALYSIS**

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### **ABSTRACT**

The purpose of this study is to investigate determinants of banks profitability in CBE by using time series data of CBE from year 1983 to 2012. The study used quantitative research approach and secondary financial data are analyzed by using multiple linear regression models for the bank profitability measures: Return on Asset (ROA). OLS method was applied to investigate the impact of bank size, managerial efficiency, liquidity, credit risk, real GDP growth rate, and annual inflation rate on major bank profitability measure i.e., (ROA) separately. The empirical results shows that bank specific factors; bank size, managerial efficiency, credit risk and macro-economic factors; level of GDP and annual inflation rate have a strong influence on the profitability of banks. The empirical study shows that, all explanatory variables in this study have negative effect on the profitability measure except GDP and inflation rate. In addition to this, without liquidity all explanatory variables are statistically significant. Finally, the researcher have made conclusions and recommendations based on the analyzed results.

**Key words: profitability, credit risk, liquidity, performance, & CBE .**

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## 1. INTRODUCTION

The banking sector is essential for the Ethiopian economy and plays an important financial intermediary role; therefore, its health is very critical to the health of the general economy at large. In the last twenty years there has been a rapid increase in the activity of private banks in Ethiopia, and this has fostered rapid competitiveness among banks in Ethiopia. In increasing world of business and finance, the task of each bank operating to make more profit is becoming a challenge with each passing day. In order for an organization like CBE to operate optimally, it has to be able to measure its profitability with regards to its inputs and outputs.

The existence, growth and survival of a business organization mostly depend upon the profit which an organization is able to earn. It is true that when Profitability increases the value of shareholders may increase to considerable extent.

Commercial banks in Ethiopia have over the years depended very much on increasing lending rates in order to maximize profits, without much regard to the efficient use of resources that could be result in cost minimization. Thus, the performance of commercial banks should be measured in respect of total assets, loans, non-interest income, total overhead expenses, and book values of stockholder's equity.

This paper extends prior research presented here, in three ways. First, the empirical part of the current research uses data over the last decade for the Ethiopian banking sector, second this thesis aims to extend the determinants of bank's profitability by examining ROA. Third, this thesis attempt to generalize results found by Habtamu(2012) to the state commercial banking sector.

Generally, there is study conducted on the determinants of bank profitability in commercial bank of Ethiopia so as to suggest improvements in the future. Thus this study attempted to fill this gap by performing the study in the way in which by evaluating the financial determinants of bank profitability on commercial bank of Ethiopia from the year of 1983-2012.

### **1.1. Objective of the study**

- ❖ To examine the profitability of CBE during the last one decade,
- ❖ To examine the key endogenous or company-level value drivers of profitability of Ethiopian banks using CBE,
- ❖ To examine the key exogenous or macro-economic value drivers of profitability of Ethiopian banks using CBE,
- ❖ To find out if any long-run or short-run relationship exists between Profitability variables and its determinants using CBE, and
- ❖ Make policy recommendations regarding the key drivers of profitability at CBE as well as other commercial banks in the country based on the empirical findings.

## **2. LITERATURE REVIEW**

### **2.1. Empirical review**

As per Dietrich, A & Wanzenried, G. (2011), the coefficient on GDP per capita indicates that banks in higher per capita income countries are more efficient in terms of attracting more deposits and generating stronger cash flows than banks in low income countries. This should not be surprising as countries with higher per capita income (i.e., more developed countries) tend to generate more savings, and hence more deposits. The provision to total loans ratio is found to have a significant negative impact on banks' return on assets. Though banks tend to be more profitable when they are able to undertake more lending activities, yet due to the credit quality of lending portfolios and the general practice in Macao, a higher level of provision is needed. Such a high level of provisions against total loans in fact depresses banks' return on assets significantly. The negative sign on bank size suggests that larger banks achieve a lower ROA than smaller ones. This shows that the interbank market is competitive and efficient since banks with a large retail deposit-taking network do not necessarily enjoy a cost advantage against other banks. Therefore, rather than size, efficiency is more important in affecting bank profitability. Among the external determinants, only the inflation rate shows the strongest impact on banks' return on assets. This may imply that bank management may anticipate the rate of inflation and react accordingly. Consequently, banks in Macao tend to be more profitable in inflationary environments. As for the economic growth show no impact on bank profitability (Heffernan, S et al., 2008).

As per Rasiah,D.(2010),interestingly, however, deposit growth (DG) has a negative relationship with both ROA and ROE; the relationship is not only consistent across different methods. The results appear to indicate that while deposit financing may be an important determinant of profitability, some institutions may have reached their optimum deposit–asset ratios and those seeking to expand their deposit base assertively, with the intention of eventually improving profitability, may have to do so at the cost of rising expenses and falling profitability in the meantime. Moreover, institutions may not be able to convert high growth in deposits into high income generating assets; due perhaps to lack of bankable projects (ADB, 2005).

.According to Santabárbara D et al. (2009) Loan loss provision ratio, Liquidity of assets ratio and Overheads ratio have negative correlation. Whereas size has positive correlation confirms the general accepted idea that bigger banks obtain better results.

Dietrich, A & Wanzenried,G.(2011)find that credit risk has a negative and insignificant effect on profitability. This suggests that risk-averse shareholders target risk adjusted returns and see larger earnings to compensate lower credit risk. The negative and insignificant coefficient of the size variable gives support to the economies of scale market-power hypothesis. Larger banks make efficiency gains that can be captured as lower earnings due to the fact that they do not operate in very competitive way.

In particular, inflation has a positive effect on bank profits, which suggest that banks forecast future changes in inflation correctly and promptly enough to adjust interest rates and margins (ibid)

### **3. METHODOLOGY**

In this study econometric analysis were used to obtain the relevant information about the determinants of the bank profitability of Commercial Bank of Ethiopia (CBE). This research paper employed quantitative research design.

The research paper employed data from secondary sources. Mainly, annual reports of the Commercial bank of Ethiopia over the period 1983 to 2012 on the total assets, total deposits,

total loans, total operating incomes, total loan loss provisions, total operating expenses were used to estimate the ratios and coefficients for the internal determinants. For external determinants, data on Gross Domestic Product (GDP) and inflation were obtained from the Central Statistics Authority (CSA) over the period 1983 to 2012.

For data analysis purpose, ordinary least square (OLS) method were used to investigate the impact of independent variables on major profitability indicators. i.e., return on asset (ROA) separately. Regression analysis were carried out to test hypotheses to find which independent variable(s) individually and collectively provide a meaningful contribution towards the explanation of the dependent variable. A correlation matrix was used to examine the relationship between the dependent variable and explanatory variables to investigate multicollinearity, autocorrelation, heteroscedasticity and stationarity problem between variables. While doing this paper, the researcher employed ordinary least square method. In addition, the following diagnostic tests (i.e., Augmented Dickey-Fuller (ADF) test for **stationarity** ; **Bera-Jarque (BJ) test for Normality**; **VIF test for Multicollinearity** ; **White test for Heteroscedasticity** ; **Durbin-Watson (DW) test for autocorrelation** ) were carried out to ensure that the data fits the basic assumptions of linear regression model. Additionally, STATA(10) is also used to carry out calculations..

The CBE financial statement was used to analyze the profitability of the bank in Ethiopia. The adopted regression models are presented as follows;

$$ROA = \alpha + \beta_1 LTA + \beta_2 MGE + \beta_3 LIQ + \beta_4 CR + \beta_5 INF + \beta_6 GDP + \varepsilon$$

**Where:** ROA – Return on asset

$\alpha$  – Constant term

$\beta$  – Coefficient which represents the slope of variables

LTA – Natural log of bank size

MGE – Managerial efficiency (TOE/TA)

LIQ - liquidity ratio (TL/TD)

CR – Credit risk (LLP/TL)

INF – Inflation rate

GDP – Gross Domestic Products

$\varepsilon$  – Error term.

## **4. RESULTS AND DISCUSSION**

### **4.1. Correlation Analysis between Study Variables**

In this section the correlation between profitability measures; return on asset and explanatory variables; bank size, managerial efficiency, liquidity, credit risk, inflation and GDP have been presented and analyzed. A correlation matrix used to ensure the correlation between explanatory variables. Cooper & Schindler (2009) suggested that a correlation coefficient above 0.8 between explanatory variables should be corrected for because it is a sign for multicollinearity problem. Mashotra (2007) argued that the correlation coefficient can be 0.75. Lastly, Hair et al. (2006) argued that also correlation coefficient below 0.9 may not cause serious multicollinearity problem. Thus, one explanatory variables, earning quality have been more than 0.8 correlation coefficient with bank size, the variable was excluded from the regression model to control multicollinearity problem.

#### **4.1.1. Correlation analysis between return on asset and explanatory variables**

The ROA reflects the ability of a bank's management to generate profits from the bank's assets and this profitability measure is correlated with other explanatory variables either positively or negatively. In table 4.1 below, the correlation analysis was undertaken between profitability measures; return on asset and explanatory variables; bank size, managerial efficiency, liquidity, credit risk, inflation and GDP.

As it can be seen from the table below, there was a positive correlation between return on asset and bank size, inflation and GDP. But, there is a negative correlation between profitability measures of managerial efficiency, credit risk and liquidity. That means the more the ratio of loan to deposit ratio of banks, the less the ROA of commercial bank of Ethiopia. This relationship support the statement given by Hempel et al, (1994) a high liquidity ratio indicates a less risky and less profitable bank.

**Table 4.1. Correlation matrix: ROA and explanatory variables**

	ROA	LTA	MGE	LIQ	CR	INF	GDP
ROA	1						
LTA	0.762	1					
MGE	-0.805	-0.443	1				
LIQ	-0.014	0.020	0.009	1			
CR	0.254	0.096	0.358	-0.442	1		
INF	0.372	0.531	-0.336	-0.041	0.165	1	
GDP	0.471	0.331	-0.411	-0.126	0.271	-0.152	1

**Source:** STATA (10) output from CBE financial statements

As per the table above, the correlation coefficient between return on asset and credit risk is 0.254 which is negative coefficient correlation, this mean that credit risk has small association with profitability. This supports argument that commercial bank of Ethiopia have been practicing a weak lending practice within the last decade

But, bank size and return on asset has highest positive correlation coefficient which is 0.76. This result shows that the bank size of Commercial bank of Ethiopia which measured by the natural logarithm of the total bank and has significant relationship with the profitability measured by return on asset but it indicates the sing of multicollinearity according to mashotra(2007)study.

#### 4.1.2. Correlation analysis amongst explanatory variables

The correlation between explanatory variables; bank size, managerial efficiency, liquidity, credit risk, inflation and GDP included in this study are presented and analyzed.

According to table 4.2. below, the managerial efficiency with credit risk and liquidity is highly correlated as compared to other explanatory variables included in this study with the coefficient of 0.4 and 0.636 respectively. Since their coefficient is less than 0.70 we can concluded there is no series multicollinearity problem as supported with empirical evidence; Mashotra (2007) argued that the correlation coefficient can be 0.75. Cooper & Schindler (2009) suggested that a correlation coefficient above 0.8 should be corrected for. Lastly, Hair et al. (2006) argued that

also correlation coefficient below 0.9 may not cause serious multicollinearity problem. Variance inflation factor (VIF) is a measure of the amount of multicollinearity in the set of multiple regression variables. The VIF value used to diagnose whether there exist any multicollinearity problem. If the result of VIF shows that all independent variables values are less than 10 diagnostic indicates that a multicollinearity assumption is not violated.

**Table 4.2. Correlation matrix amongst explanatory variables**

	LTA	MGE	LIQ	CR	INF	GDP
LTA	1					
MGE	-0.443	1				
LIQ	-0.020	0.636	1			
CR	-0.096	0.4	0.253	1		
INF	0.531	-0.336	-0.041	0.165	1	
GDP	0.331	-0.833	-0.801	-0.297	0.165	1

**Source:** STATA (10) Output from CBE financial statements

As per the above table, the size of commercial bank of Ethiopia is positively related with inflation and GDP, but it is negatively related with managerial efficiency, credit risk, and liquidity. Managerial efficiency has a negative correlation coefficient with all explanatory variables except with liquidity and credit risk. Liquidity is negatively correlated with inflation, GDP, and bank size, but it is positively correlated with managerial efficiency and credit risk. Credit risk has a negative correlation coefficient with all explanatory variables except with managerial efficiency and liquidity. As can be seen above, inflation is negatively correlated with all explanatory variables with the exception of bank size and GDP. Lastly, GDP has a positive correlation coefficient with bank size and inflation. But, with the other explanatory variables it is negatively correlated. The result is similar with the findings of Bourke (1989), and Molyneux and Thornton (1992).

**Table 4.3. Regression analysis result of variance inflation factor.**



Variable	VIF	1/VIF
ME	1.63	0.614208
CR	1.49	0.669188
GDP	1.41	0.708604
LQ	1.29	0.773021
INF	1.29	0.774586
Mean VIF	1.42	

**Source:** STATA (10) output from CBE financial statements.

According to Table 4.3 above, VIF result shows that all independent variables values are less than 10. Therefore, diagnostic indicates that a multicollinearity assumption is not violated.

## 4.2. Results and discussions of the regression analysis

Regression analysis is used to determine the values of parameters that cause the function to best fit a set of data observations provided in the model. The model as specified is a combination of both endogenous variables; (natural logarithm of total asset (LTA), managerial efficiency (TOE/TA), liquidity (TL/TA), credit risk (LLP/TL), and exogenous variables; Gross Domestic Product (GDP) and annual inflation rate (INF). In order to establish which of them are key drivers of the banks' profitability, the estimation of the coefficients were done by combining endogenous and exogenous variables. The model assumes that the error terms are homoskedastic and uncorrelated over time-series.

### 4.2.1. Diagnosis tests

The study was testing the Classical Linear Regression Models (CLRM) assumptions, after running regression model for return on asset.

#### Test for Stationarity

The Augmented Dickey-Fuller (ADF) test is employed to test the stationarity of the variables in the model. As summarized in the Table 4.4. below, all the variables stationary at levels (with lag 0) since the critical value is smaller than the computed values for the variables. But, when the lag becomes 1, only ROA, LTA, MGE, and GDP are stationary. The remaining variables; LIQ, CR and INF are non-stationary. For non-stationary variables, the researcher computed stationary at

their first difference characterized by I (1) process, implying they are stationary at their first difference.

**Table 4.4. ADF Tests for unit roots**

Variable/lag	Test on levels		Test on first difference	
	0	1	0	1
ROA	-2.356**	-2.435**	-2.986**	-3.467**
LTA	3.255 *	2.202**	-2.249**	2.247**
MGE	-3.018*	-9.295 *	-3.628*	-16.304*
LIQ	-2.188 **	-1.573	-2.916 **	-2.191**
CR	-2.012**	-1.407	-2.429**	-2.960**
INF	-1.980 **	-1.789	-3.171*	-2.962 **
GDP	-2.018 **	-17.983*	-3.508 *	-9.415*
Critical values	5%= -1.895, 1%= -2.998; constant included	5%= -2.015, 1%= -3.365 ; constant included	5%= -1.943, 1%= -3.143; constant included	5%= -2.132 , 1%= -3.747; constant included

\* Significant 1%

\*\* Significant 5%

#### **Heteroscedasticity test: white test**

The second assumption of CLRM stated that the variance of the errors is constant,  $\sigma^2$  this is known as the assumption of homoscedasticity. If the residuals of the regression have systematically changing variability over the sample, that is a sign of heteroscedasticity. White test was used for general test of heteroscedasticity. Since, table 4.5 below, shows that the test result for ROA regression analysis's p-values are considerably in excess of 0.05, we can say that there is no evidence for the presence of heteroscedasticity.

**Table 4.5. White tests for result for the regression model**

Ho: Constant variance	
Variables: fitted values of ROA	
chi2 (1)	= 0.03
Prob > chi2	= 0.8576

**Source:** STATA (10) output from CBE financial statements

#### **Autocorrelation test: Durbin-Watson (DW) test**

According to Chris brooks (2008; 240), assumption three said that the CLRM disturbance terms is the covariance between the error terms over time (or cross-sectionally, for that type of data) is zero. In other words, it is assumed that the errors are uncorrelated with one another. In addition he said that if the errors are not uncorrelated with one another, it would be stated that they are 'auto correlated' or that they are 'serially correlated'. To test this assumption the Durbin–Watson (DW) statistical test was applied.

As table 4.6 below indicates that the DW test result is 2.11 for the profitability measure; return on asset. This indicates that there was no serious evidence of autocorrelation in the data since the DW test result is not far from two.

**Table 4.6. Durbin-Watson test result for the regression model**

Test	ROA
Durbin-Watson test	2.11

**Source:** STATA (10) output from CBE financial statements

The fourth CLRM assumption is not violated, Since  $E(u) = 0$ , this expression will be zero and therefore the estimator is still unbiased, even if the regressors are stochastic.

#### **Normality test: Bera-Jarque (BJ) test**

Finally, assumption five require to check whether the disturbances are normally distributed or not. BJ uses the property of a normally distributed random variable that the entire distribution is characterized by the first two moments, the mean and the variance. If the residuals are normally distributed, the histogram should be bell-shaped and the Bera-Jarque statistic would not be significant. This means that the p-value given at the bottom of the normality test screen should be bigger than 0.05 to not reject the null of normality at the 5% level.

**Table 4.7. Bera-Jarque statistics result for the regression model**

	ROA
Probability Jarque-Bera statistic	0.68

**Source:** STATA (10) output from CBE financial statements

Thus, the study was tested for this assumption and as it can be seen from the above table, the Bera-Jarque result was a probability of 0.68 for return on asset regression model, this implies that the inferences we made about the coefficient estimates was appropriate.

#### 4.2.2. Regression analysis between return on asset and explanatory variables

To examine the relationship between profitability measures and explanatory variables OLS regression analysis were run. This regression model was applied:

$$\text{ROA} = -12.13 - 4.2\text{MGE} - 0.068\text{LIQ} - 0.16\text{CR} + 0.035\text{INF} + 0.0036 \text{GDP} + \epsilon$$

In the following table coefficients, standard errors, t-values, and p-values for explanatory variables, and R-squared ( $R^2$ ), Adjusted R-squared, Standard Error of regression, F-statistic, Prob (F-statistic) for the regression, and number of observations included in the study are presented.

**Table 4.8. Regression analysis result between ROA and explanatory variables**

ROA	Coefficients	Standard error	t-value	p-value
C	-12.13	3.218	-3.77	0.001*
Natural log of total bank	3.32	0.618	5.38	0.880
Managerial efficiency	-4.2	0.68	-6.17	0.00*
Credit risk	-0.16	1.567	-0.10	0.919
Liquidity	-0.068	0.218	-0.31	0.757
GDP	0.0036	0.023	0.15	0.001*
Annual inflation	0.035	0.0185	-1.27	0.218
$R^2$	0.8706			
Adjusted R-squared			0.8369	
S.E of regression			0.688	
F-statistic			25.79	
Prob(F-statistic)			0.000	
Number of observation			30	
*Significant at 1%; **Significant at 5%; ***Significant at 10%				

**Source:** STATA (10) output from CBE financial statements

As it can be seen from the above table 4.8, the natural log of total asset (TLA) implies that there is a multicollinearity problem since the mashorta (2007), copper and schindler (2009) and Hair et al. (2006), argued that the correlation coefficient below 0.75, 0.8 and 0.9 respectively may not cause serious multicollinearity problems. But the result of natural log of the bank is greater than the above mentioned studies for this cause we have removed from the model.

The coefficient of the credit risk (LLP/TL) variable in the regression model which is an indicator of credit risk, which measures how much a bank is provisioning in year t relative to its total loans, have a negative impact on profitability and it is insignificant. This implies that higher credit risks results in lower profit, which in line with our expectation..A result which is similar to the results of Miller and Noulas (1997), but is in agreement with Thakor (1987) who were cited by Sufian F. and Chong R.R., (2008), who suggested that the level credit risk is an indication of a bank's asset quality and signals changes in the future performance.

The provision to total loans ratio is found to have insignificant negative impact on banks' return on assets. As discussed in the literature, asset quality is reflected in the ratio. Though banks tend to be more profitable when they are able to undertake more lending activities, yet due to the credit quality of lending portfolios and the general practice in Ethiopia a higher level of provision is needed. Such a high level of provisions against total loans in fact depresses banks' return on assets.

The coefficient of the total operating expense to total expenditure ratio, efficiency measure, is negative and significant for the period as. The more efficient a bank is, the higher is its profitability. This result meets expectation and stands in line with the results of Athanasoglou et al. (2008). The variable is significant at 1 percent level of significance.

The coefficient of the variable representing liquidity ratio (total loans/total assets) is negative and insignificant. This is consistent with theory that liquidity ratio has a negative influence on bank profitability such that high excess liquidity decreases bank profitability and low liquidity improves bank profitability. Excess liquidity is a sign that bank lending is low and banks are holding more money than statutory required for precautionary purposes. While, low liquidity is a

reflection that banks are holding less money in their accounts, an indication of increased lending to the public, and thus implied growth in business and profitability (Saxegaard, 2006). Indeed, excess liquidity of banks negatively influences bank profitability and low levels of bank liquidity improve bank profitability. The result agrees with study conducted by Francis M.E. on Sub Saharan Country (2009).

The impact of gross domestic products (GDP) on profitability was positive and conforms to the a priori restrictions; it is significant driver in the profitability of commercial banks of Ethiopia at 1 percent level of significance. This finding conforms to earlier findings by Sufien et al. (2008), Kosmidou a Pasiouras (2005) and Hassan and Bashir (2003), which agrees on the positive association between GDP growth should exert positive impact on bank profitability and this provides support to the argument of the association between economic growth and the financial sector performance, other research findings such by valentine Flamini et al. (2009) which points to a non existence between size of economy and profitability of banks as they indicated that banks in Sub-Saharan African performed better in 2006 than their counterparts in high income countries. All things being equal, the growth of the economy should have a bearing on not only firms in the financial sector but also firms in the non-financial institutions such as banks.

The results from paper reveals that annual rate of inflation (INF) has a positive impact on profitability, and insignificant driver in the profitability of commercial bank of Ethiopia. The inflation rate shows the strongest impact on banks' return on assets. This may imply that bank management may anticipate the rate of inflation and react accordingly. These results are similar to those results that are obtained by Haron, Sudin (2004), Demerguç-Kunt and Huizingha (1999), Toni Uhomoibhi, (2008), and Ben Naceur and Goaid (2010). In addition Sufian .F (2011) in Korean Banking sector also argues that there is a positive relationship between bank profitability and inflation.

The coefficient determination (R-squared) is measured the goodness of fit of the explanatory variables in explaining the variations in banks profitability measure ROA. In regression, the R-Square coefficient of determination is a statistical measure of how well the regression line approximates the real data points. As clearly described in Table 4.8 R-squared value for the

regression model was 0.8706. This indicates the explanatory variables in this study jointly explain about 87.06 percent of the variation in the profitability measure, return on asset. The remaining 12.94 percent of the variation in the profitability of commercial bank of Ethiopia explained by other variables which are not included the model. Therefore, these explanatory variables together, are good explanatory variables of the profitability of commercial bank in Ethiopia. Beside this F-statistics (25.79) which is the used to measure the overall test of significance of the model was presented.

## **5. CONCLUSION AND RECOMMENDATION**

This chapter presents the conclusions and recommendations that were drawn from the previous chapter of this study.

### **5.1. Conclusion**

The main objective of this study is to investigate the determinants of profitability of CBE in Ethiopia. Specific objectives were to determine and evaluate the effects of bank-specific factors and macroeconomic factors. Time-series data of CBE from 1983 to 2012 was analyzed using multiple linear regressions method. In this study, secondary data was analyzed to investigate the major determinant factors of profitability of CBE. With this data analysis, based on the financial statement of CBE OLS regression methods were used for profitability measure; ROA.

In conclusion one can say that the profitability of the CBE has been increasing over the decade under study, with some years recording high profitability. This profitability compared to the general profitability of banks on the Sub-Saharan African continent which according to an IMF working paper by Flamini et al., (2009) on determinants of commercial bank profitability in Sub-Saharan Africa, Bank profits are high in Sub-Saharan Africa (SSA) compared to other regions. The IMF paper states that this general picture holds true whether profitability is measured as returns on assets, returns on equity, or net interest margins. So Ethiopia is one of the countries in the region where the study is conducted as a result the profitability of CBE is one of the indicator of this result. So from the result of the analysis the following conclusion has been made:

- Managerial efficiency is significant key drivers of profitability of Commercial Bank of Ethiopia. And it affects profitability negatively and statistically significant.
- Credit risk is insignificant key drivers of profitability of commercial bank of Ethiopia. And it affect profitability negatively and statistically insignificant.
- Total loan to total asset is statistically insignificant in explaining the profitability of Commercial Bank of Ethiopia even and it has a negative relationship with return on asset of the bank.
- The statistical insignificant does not mean that the bank is with excess liquidity rather the banks major loan and advances given to government with low interest rate which minimize the profitability of the bank.
- The gross domestic products which measure that size of the Ethiopian economy. According to the regression result, it is significant key drivers of profitability of commercial bank of Ethiopia. And it affects profitability and statistically significant therefore, the current real economic growth of the country makes commercial banks to be more profitable.
- Regarding inflation (INF) empirical studies suggest that if a bank's income rises more rapidly than its costs, inflation is expected to exert a positive effect on profitability. The study also shows a positive relationship between inflation and banks profitability with statistically insignificant.

## **5.2. Recommendations**

In order to hold up risky surprises and maintaining financial stability, it is vital to identify the determinants that mostly influence the overall profitability of commercial bank of Ethiopia. Therefore, based on the study results the researcher would like to forward the following recommendations.

Management bodies of CBE should strive to strengthen the bank specific factors like capital position, managerial efficiency, credit risk, asset quality, and bank size. Because, The




competition become tough since increase in new entrant to the market, banks are increasingly being substituted by the general public as a source of funds by new share companies being established in a variety of sectors, and the micro-finance industry continues to show rapid growth.


Since different study's shows that there is no relationship between profitability and GDP but, in Commercial Bank of Ethiopia it shows there is a positive relationship between the two variables. Since the GDP of the country is increasing so it plays a great roll in the profitability of the bank. As a result the bank should rely more in internal factor than the external ones.

As many literatures supports financial intermediation in Ethiopia is still in its early stages even by the standards of other low-income countries: more than 80 percent of the population is unbanked (versus an average of 60-70 percent elsewhere in Africa); and many other metrics such as the total number of banks, banks contribution to GDP, bank accounts per person, branches per person, and bank credit per person are lower in Ethiopia compared to other African countries. Thus, CBE should focus to reach this unmet demand of finance by adjusting its strategy with the government regulation.


At last, this study investigates the determinants of profitability of commercial bank of Ethiopia. But, the variables included in the study were not exhaustive. Future researchers could include other bank specific and macroeconomic variables such as; market share, government regulation and exchange rates in the regression models.


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