Determinants of Banks Liquidity: The Case of Private Banks in Ethiopia

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Abstract

The objective of the study was to examine the impacts of both bank specific and macroeconomic factors on banks liquidity of Ethiopian private commercial banks and examine the trends of private banks liquidity. In order to achieve the objectives the researcher used Quantitative research approach and balanced panel data. Fixed effect regression model was used to examine the impacts of independent variables on dependent variables for selected private banks in Ethiopia from 2009-2016. Data was collected from NBE annual report and MOFED. The collected data was analyzed by using descriptive statistic and inferential analysis. The study used bank size, profitability, capital adequacy; cash reserve ratio, interest rate margin, loan growth rate, nonperforming loan, interest rate on loan, real GDP, inflation rate as independent variables and liquid asset to deposit ratio as a dependent variable. The result of the fixed effect model suggested that cash reserve ratio, profitability, nonperforming loans had positive and significant effect on banks liquidity, while bank size, deposit ratio, loan growth rate and interest rate margin had negative and significant impact on banks liquidity. However, variables like capital adequacy ratio, real GDP and inflation found to be insignificant. The study suggested that, all private commercial banks of Ethiopia should give due attention to bank specific factors by providing effective and well structured policies and procedures.

Keywords:Determinants of banks liquidity, Ethiopian Private commercial banks, Fixed Effect Regression model, and Liquid asset total deposit ratio

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1. Introduction

Banks to be effectively discharge their responsibilities of availing funds to customers; they must be in a healthy condition. According to Diamond and Dybvig (1983), the reason why banks may not be in healthy condition is their role in transforming maturity. Hence, when banks transform short term deposits to long term loans, the banks will be exposed to liquidity risk because of maturity mismatch.

Bank for International Settlements/BIS (2008) defines liquidity as the ability of bank to increase its liquid assets and meet obligations as they come due. Liquidity of banks is a measure of its ability to hold cash it need to meet its obligation. Liquidity came from direct cash holding in currency or on account at the Federal Reserve and Central Bank as well as from holding securities that can be sold with minimum loss. In order to maximize their profit and enable to meet their obligation banks have to provide adequate liquidity (Vodova, 2011).

Banking sector in Ethiopia is predominantly private banks. Private Banks play an important primary role as financial intermediaries in the economic development process through channeling funds from savers to borrowers for investment purposes. In order to contribute for the economic developments of the country private banks should have adequate liquidity. However, the average value of liquid asset to total deposit ratio of Ethiopian private banks were showed declining trend over time. Besides, as per the knowledge of the researcher there is only one study conducted by Mekbib(2016) on the determinants of banks liquidity in case of selected private banks in Ethiopia. The researcher also motivated by inconsistency result of prior researcher on the same variables. Therefore, this study tries to examine the impact of determinants on private bank liquidity by adding new variables like cash reserve ratio and deposit ratios which are not investigated not investigated yet in Ethiopia.

Objectives of the Study

The general objective of the study was to identify the determinants of banks liquidity. The specific objectives of the study included:

➢ *To examine the effect of Bank size has on banks liquidity*
➢ *To examine the effect of Capital adequacy has on banks liquidity*
➢ *To examine the effect of Cash reserve ratio has on banks liquidity*
➢ *To examine the effect of Deposits has on banks liquidity*
➢ *To examine the effect of inflation has on banks liquidity*
➢ *To examine the effect of interest rate margin has on banks liquidity*
➢ *To examine the effect o f loan growth rate Bank size has on banks liquidity*
➢ *To examine the effect of nonperforming loan has on banks liquidity*
➢ *To examine the effect of real growth rate has on banks liquidity*
➢ *To examine the effect of profitability has on banks liquidity*

Hypotheses of the Study

In order to examine and identify the determinants the following research hypotheses were tested.

H1: Bank size has positive and significant impact on banks liquidity
H2: Capital adequacy has positive and significant impact on banks liquidity
H3: Cash reserve ratio has positive and significant impact on banks liquidity
H4: Deposits has positive and significant impact on banks liquidity
H5: Inflation has negative and significant impact on banks liquidity
H6: Interest rate margin has negative and statistically significant impact on banks liquidity
H7: Loan growth has negative and significant impact on banks liquidity
H8: Non performing loan has negative and significant impact on banks liquidity
H9: Real GDP has positive and significant impact on banks liquidity
H10: profitability has negative and significant impact on banks liquidity

2. Methods

Therefore, in this study quantitative research approach was used to investigate the causal relationship between the liquidity of private commercial banks and the bank specific and macroeconomic factors affecting banks liquidity in Ethiopia. The study also used explanatory research approach in order to achieve objective. The analysis of the study was made by deductive reasoning. Besides, balanced panel data was employed to examine the impacts of independent variables have on selected private banks liquidity over time.

Source of Data and Method of Data Collection

In order to conduct this research secondary sources were used. Bank specific data was collected from audited financial statement of each selected private commercial banks of Ethiopia and macroeconomic factors were collected from National Banks of Ethiopia (NBE) annual reports and Ministry of Finance and Economic Development (MOFED). The data were collected from 2009 to 2016 on annual base. The study population was all private commercial banks of Ethiopia that were in operation from the fiscal year 2009 to 2016.

Sample Size and Sampling Techniques

Researcher also used purposive sampling techniques. Therefore, researcher purposively selected 9 banks having at least 8 years working experience so as to have sufficient data for the panel regression analysis.

Study variables

The dependent variable of the study is Bank's liquidity which is measured by Liquid asset to total deposit ratio. Liquid asset to total deposit ratio is calculated as follows:

$$\text{Liquid asset to total deposit ratio (L1)} = \frac{\text{liquid asset}}{\text{Total Deposit}}$$

Independent variables of the study includes Profitability, Capital adequacy ratio, Bank size, Loan growth, Deposits, Nonperforming loans, Real gross domestic products, Inflation, Cash reserve ratio and Interest rate margin.

Methods of Data Analysis and Presentation

The collected panel data was analyzed using descriptive statistics and inferential analysis. Descriptive statistics were analyzed by using Mean values, Maximum, Minimum and Standard Deviations for data from 2009 to 2016 based on the sample of 9 private commercial banks. Correlation was used to examine the relationship between the dependent variable and explanatory variables. Multiple linear regressions were analyzed by using balanced fixed effect regression model. Besides, Classical Linear Regression Model assumptions were tested in order to show the validity of model developed.

Model Specification

The estimated models used in this study was modified and presented as follows;

$$L1 = \beta_0 + \beta_1(BS)it + \beta_2(CAR)it + \beta_3(CRR)it + \beta_4(DR)i + \beta_5(INFR)t + \beta_6(IRM)it + \beta_7(LGR)it + \beta_8(NPLs)it + \beta_9(RGDP)t + \beta_{10}(P)it + \varepsilon it$$

L1; Liquid asset to total deposit

β_0; is an intercept

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8, \beta_9, \beta_{10}, \beta_{11}$ represents estimated coefficient for specific banks i at time t,

P; represent profitability

BS; represent bank size

CRR; Cash reserve ratio

CAR; represent capital adequacy ratio

NPLs; represent Nonperforming loans

LG; represent loan growth

RGDP; represent gross domestic product

INFR; represent inflation rate

IRM; represent interest rate margin

D; represent deposits

εit; represent error terms for intentionally and unintentionally omitted or added

3. Data Analysis and Presentation

In the study, the researcher was used 9 private commercial banks in Ethiopia as a sample. The data were collected from NBE and MOFED. The researcher used the software called EVIEW 8 in order to analyze the collected data. EVIEW 8 software was more reliable in analyzing descriptive statistics, inferential analysis.

Descriptive Analysis

Table 3.1 Descriptive Statistics of Dependent and Independent Variables

Variables	Mean	Maximum	Minimum	Standard deviation	Observation (9 banks x 8 years)
L1	43.91153	71.50000	18.00000	15.32071	72
BS	3.872931	6.050000	2.660000	0.458983	72
CAR	13.93035	20.10000	9.000000	3.102922	72
CRR	18.35863	50.77000	4.940000	10.86108	72
DR	75.90014	84.42000	60.04000	4.916293	72
INFR	12.82500	38.00000	2.700000	10.75669	72
IRM	5.311667	13.00000	0.500000	2.574120	72
LGR	26.64578	84.90000	-10.87000	22.41750	72
NPL	3.440278	14.10000	0.300000	2.386921	72
RGDP	10.29600	13.07000	8.098000	1.728054	72
ROA	3.068056	6.700000	-4.000000	1.384408	72

Source: own computation through EVIEW8

According to the above table the mean value of banks liquidity which is measured by liquid asset to total deposit ratio was 43.9%. the mean value was above the minimum requirement of 15% set by NBE directive No.SBB/57/2014. This indicates that the private banks of Ethiopia have sufficient liquidity position. From the bank specific variables, the mean value of   capital adequacy ratio was 13.93% which was above the minimum requirement of 8% set by national bank of Ethiopia (2011). On the other hand profitability which was measured by return on asset had a mean value and the standard deviation of 3.06% and 1.38% respectively. The standard deviation of profitability indicated that there is small variation of ROA among the selected private banks of Ethiopia.

The mean value of 3.87 was recorded by bank size which is measured by natural log of total assets of banks. The standard deviation of bank size was 0.45 this shows that the variation of bank size among the selected private were very small. The other bank specific variable is loan growth which is measured by annual growth rate of loan and advance. The mean value of loan growth rate was 26.6% and the standard deviation was 22.41%. This show that annual growth rate of selected private banks were almost the same, because of there is little variation of loan growth rate from its mean. Cash reserve ratios have a mean value of 18.35% and standard value of 10.86%. This indicated that there is a little variation of cash reserve ratio among private banks. The maximum and the minimum value of cash reserve ratio were 50.77% and 4.94% respectively. The maximum value of cash reserve ratio shows that more of private banks of Ethiopia have maximum amount of cash reserve more than the minimum requirement of 5% while there are some other banks which had cash reserve ratio less than the minimum requirement.

Besides, the mean value of NPL was 3.44% which are less than 5% of maximum limit set by national bank of Ethiopia (2008) and the standard deviation of NPL was 2.38%. Therefore, there is small variation of NPL among private banks. The mean value and the standard deviation of deposit ratio was 75.9% and 4.91% respectively. The standard deviation of indicates that there is high variation of deposit ratio among the private banks. As shown in the above table the maximum and the minimum value of interest rate margin was 13% and 0.5% respectively. The mean value and the standard deviation of interest rate margin was 5.31% and 2.57% respectively. The dispersion of interest rate margin among banks was very small.

From the macroeconomic variables, real GDP which is measured by annual growth rate of real GDP had a mean value of 10.296%. The standard deviation of real GDP was 1.726% which showed that there is little dispersion of real GDP from its mean. The mean value and the standard deviation of inflation rate was 12.825% and 10.749%. The standard deviation of inflation indicates that there is very small variation from its mean. Inflation rate for the sample period was ranged from 2.7% the minimum value and 38% the maximum value.

Classical Linear Regression Model Assumptions

The first assumption required is that the average value of error term is zero. In fact, if constant term included in the regression equation, this assumption will never be violated (brooks, 2008). The error terms are also normally

distributed. The autocorrelation assumption stated that the covariance between the disturbance terms is zero over time. This means the disturbance terms are uncorrelated each other (Brooks, 2008). For this study Breusch-Godfrey Serial Correlation LM test was applied. Hence, when the p-values of both F-statistic and Obs*R-squared are greater than the significant level of 5% it is said to be the error terms are uncorrelated each other over time.

Table 3.2   Breusch-Godfrey Serial Correlation LM Test

F-statistic	0.685974	Prob. F(2,59)	0.5076
Obs*R-squared	1.636196	Prob. Chi-Square(2)	0.4413

Source: own computation through EVIEW8

Homoscedasticity assumption stated that the probability distribution of error terms is constant for all variables. However, when the probability distributions of disturbance terms are not constant it is said to be heteroskedasticity (Brooks, 2008). In order to detect the problem of heteroskedasticity the white test was used in this study. According to the white test if the p-value of F-statistics is greater than the significant level of 5%, it is concluded that there is no heteroskedasticity problem.

Table 3.3 Heteroskedasticity Test: White

F-statistic	2.214881	Prob. F(65,6)	0.1587

Source: own computation through EVIEW8

Multicollinerity problem is occurred when the independent variables are highly correlated each other (Brooks, 2008). Therefore, in this study there was no that much high correlation between independent variables.

Redundant Fixed Effect Test

Panel data regression models which are fixed effect model or random effect model were used to examine the impact of independent variables on dependent variable. According to Brooks (2008), Verbeck (2004), fixed effect model is more preferable when the sample size is not selected randomly and includes sample frame. Since, the sample of the entities was not selected randomly in this study and it constituted sample frame, the fixed effect regression model was employed. In addition, in order to choose the appropriate model, it is important to use redundant fixed effect test.

Table 3.4 Redundant fixed effect test

Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	2.221352	(8,53)	0.0402
Cross-section Chi-square	20.819144	8	0.0076

Source: own computation through EVIEW8

According to Brooks (2008), when the p-value of F-statistics was significant at 5%, the fixed regression model was appropriate. In accordance with above test the p- value of F- statistics was 4.02% which is less than the significant level of 5%. Therefore, the fixed effect regression model was applied in this study.

Correlation Analysis

Correlation indicates the relationship among two or more variables. The value of correlation coefficient always lies between -1 and +1. The value of correlation coefficient approaches to +1 implies that there is strong positive linear relationship between variables (i.e. one variable increases the other variable also increases). The value closed to -1 indicates that there is strong negative relationship between two variables (i.e. one variable decreases as one variables increases). When the value of correlation coefficient is closed to zero implies that there is no linear relationship between variables.

The sample size is the key element to determine whether or not the correlation coefficient is different from zero. According to Meyers et al (2006), when the sample size of the study closed to 100, the correlation coefficient of 20% and above is significant at 5% significant level. Since, the sample size of the study was 9^*8 of 72 observation which was approaches to 100 the study used the above justification for significant of correlation coefficient.

As shown in the following table 4.6, liquid asset to deposit ratio had negative correlation with bank size, deposit ratio, interest rate margin, loan growth rate with the coefficient value of (0.59), (0.29), (0.37), and (0.25) respectively.

While Capital adequacy ratio, cash reserve ratio, inflation rate, nonperforming loan, real GDP, and return on asset had positive relationship with liquid asset to total deposit ratio with the coefficient value 0.027, 0.79, 0.22, 0.5, 0.41 and 0.15 respectively.

Table 3.5 the Correlation Matrix between Dependant and Independent Variables

	L1	BS	CAR	CRR	DR	INFR	IRM	LGR	NPL	GDP	ROA
L1	1.00	(0.59)	0.027	0.79	(0.29)	(0.22)	(0.37)	0.25	0.5	0.41	0.15

Source: own computation through EVIEW8

Multiple Regression Analysis

In this section the result of regression was discussed. The model used in this study was presented below.

L1it=β0+β1(BS)it+β2(CAR)+β3(DR)it+β4(CRR)it+β5(INFR)t+β6(IRM)it+β7(LGR)it+ β8 (NPL)it+β9(RGDP)t+β10(P)it+(εt)it

Table 3.6 result of fixed effect regression model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	135.3542	28.14411	4.809327	0.0000
BS	-7.328640	3.473468	-2.109891	0.0396**
CAR	-0.512472	0.580716	-0.882483	0.3815
CRR	0.543849	0.111921	4.859232	0.0000*
DR	-0.764897	0.263374	-2.904228	0.0054*
INFR	0.066572	0.086225	0.772073	0.4435
IRM	-3.340400	0.956955	-3.490657	0.0010*
LGR	-0.161786	0.054193	-2.985377	0.0043*
NPL	1.050943	0.422128	2.489627	0.0160*
RGDP	0.326438	0.579520	0.563291	0.5756
ROA	2.077754	0.756314	2.747212	0.0082*

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.865710			
Adjusted R-squared	0.820103			
F-statistic	18.98164	Durbin-Watson stat		1.878416
Prob(F-statistic)	0.000000			

Source: own computation from through EVIEW8

* Significant at 1%, **Significant at 5%

As shown in the above table, the fixed regression model results were presented. Accordingly, the beta coefficient of explanatory variables like bank size, capital adequacy ratio, deposit ratio, interest rate margin, loan growth rate were negative. While the beta coefficient of cash reserves ratio, inflation rate, nonperforming loan, real GDP, ROA were positive. The adjusted R^2 of the regression result was 82%. This implies that the liquid asset to total deposit ratio was 82% explained by the selected variables but the remaining 18% is explained by other variables. The probability of F-statistic was 0.00000 indicating that the dependent variable was influenced by explanatory variables jointly and the overall significant of the model.

Generally, the output of the above regression revealed that the bank size, cash reserve ratio, deposit ratio, loan growth rate, interest rate margin, nonperforming loan and profitability had significant impact on banks liquidity. However, capital adequacy ratio

Discussion of Regression Result

Bank Size and Banks Liquidity

Hyphothesis 1: Bank size has positive and significant impact on banks liquidity

According to Runkle et al (1993), Bank size is the total asset of banks which is associated with the concept of economies of scale. As indicated in the above regression model bank size had negative and significant impact on banks liquidity was inconsistent with the prior expectation and finding revealed by Guatam (2016). However, the result was consistent with the finding of previous researchers like Vodova (2013), Singh et al (2016), Cheruto et al (2016), Alemayehu (2016) and Mekbib (2016). Accordingly bank size had negative and significant impact on banks liquidity at 5% significant level. The negative coefficient of bank size shows that 1 unit change in banks size leads change in banks liquidity by 7.32 units in opposite direction by keeping other variables constant. Banks liquidity decreases/increases as the size of banks increase/decreases.

This result was in line with "too big to fail" argument. Accordingly, if big banks considered themselves as "too big to fail", their motivation to hold liquid assets is limited. Then they are going to diversify their liquid asset in the form of loan. In case of that big banks became affected by liquidity problem. However, small banks

should maintain high level of liquidity because they are unable to create funds easily as compared to large banks. Therefore, the expected hypothesis has been rejected.

Capital Adequacy and Banks Liquidity

Hyphothesis 2: Capital adequacy has positive and significant impact on banks liquidity

The result of the study shows capital adequacy ratio had negative and insignificant impact on banks liquidity which is measured by liquid asset to total deposit ratio. The result was not consistent with previous hypothesis (2) and result found by Guatam (2016), Vodova (2013), Singh et al (2016), Chagwiza (2015) and Tseganesh (2012). The negative relationship between banks liquidity and capital adequacy indicated that 1unit increase/decrease capital adequacy of banks leads decrease/increase in banks liquidity by 0.5 units.

As banks hold less amount of capital they pay more attention to control the liquidity risk by optimizing lending money to customers. When banks hold more capital they are interested to strength more loan to customers. In such a case banks can affected by liquidity problems since their highest capital is tied up as illiquid asset. Even if there was negative relationship between capital adequacy ratio and banks liquidity, the variable had insignificant impact on banks liquidity measured by liquid asset to total deposit ratio.

Deposits and Banks Liquidity

Hyphothesis 3: Deposit has positive and significant impact on banks liquidity

The regression results of the above table 4.7 indicated that there was negative and significant impact of deposit ratio on banks liquidity which was inconsistent with the hypothesis developed previously and the finding revealed by Singh et al (2016) and Bonner et al (2013), kashyaph et al (2002), Alger and Alger (1999) and it was consistent with the previous researcher result by Dinger (2009).

The coefficient of deposit ratio in the above fixed effect regression model was -0.76 and the p-value was 0.0054 which was significant at 1% of significant level. This implies that 1 unit change (rise or decline) in deposit ratio changes banks liquidity by 0.76 units in opposite direction by keeping other variables constant. That means as the customer increase their deposit banks can hold more cash on hand. This initiated banks to lend more money to investors in order to generate income. High deposit ratio encourages banks to disburse loan for long term investment. This tends to minimize liquid asset since higher amount of banks could be tied up as illiquid asset for a long period of time. Therefore, the estimated hypothesis has been rejected.

Cash Reserve Ratio and Banks Liquidity

Hyphothesis: 4 Cash reserve ratio has positive and significant impact on banks liquidity

As regression result shows the positive and significant impacts of cash reserve ratio on banks liquidity was consistent with the previous expectation and result found by Bhati et al (2013) and Chikoko. L (2013). Cash reserve ratio had significant at 1% significant level. The coefficient and the p-value were 0.54 and 0.0000 respectively. The coefficient implies that unit change in cash reserve ratio banks liquidity change by 0.54 in similar direction. This indicated that as cash reserve ratio of banks increased, its liquidity can be improved. Hence, banks maintain optimum amount of cash reserve, in order to provide adequate funds when the depositors needs to withdraw money and to run its day to day operation without problem. Therefore, the previous hypothesis has not been rejected.

Inflation Rate and Banks Liquidity

Hyphothesis: 5 Inflation rate has negative and significant impact on banks liquidity

According to the above fixed regression result inferred, inflation rate had positive and insignificant impact on banks liquidity which is measured by liquid asset to total deposit ratio was not in line with the previous expectation. However, it was in line with Moussa (2015), Vodova (2011) and Tseganesh (2012). The coefficient and the p-value of inflation rate was 0.06 and 0.4435 respectively. The value of 0.06 indicated that 1 unit change inflation rate leads banks liquidity change by 0.06 units by keeping other factors constant. The positive coefficient of inflation indicated that inflation rate had positive impact on banks liquidity.

According to the recent theory of asymmetry in the credit market, it concluded that increase in the rate of inflation rate can decrease the rate of return. Reduction of the rate of return can aggravate the credit market in friction. As a result a bank makes fewer loans to customers, the resource allocation is minimized. Banks refraining long term investment due to the decline in the value of their investments that aggravate the credit market rationing and prefer to hold liquid asset to fulfill their short term obligation. However, inflation rate is not important variables for banks liquidity since it had insignificant impact on banks liquidity. Therefore, the previous hypothesis has been rejected.

Interest Rate Margin and Banks Liquidity

Hyphothesis: 6 Interest rate margins has negative and significant impact on banks liquidity

As shown in the above result interest rate margin had negative and significant impact on banks liquidity which is parallel with the previous expectation and Vodova (2013) and Mekbib (2016). Whereas, the result was inconsistent with finding revealed by Tseganesh (2012) and Belete(2015). The coefficient and the p-value of interest rate margin were -3.34 and 0.0010 respectively. Interest rate margin was significant at 1%. The coefficient of the result revealed that interest rate margin had negative and significant impact on banks liquidity.

As interest margin increased banks liquidity decreased and vice versa. Since net interest rate margin is the difference between lending rate and saving rate, when the lending rate becomes higher than saving rate banks initiated to lend money and as a result, the share of liquid assets is decreasing. Therefore, the previous hypothesis has not been rejected.

Loan Growth Rate and Banks Liquidity

Hyphothesis: 7 Loan growth rate has negative and significant impact on banks liquidity

According to the above result of regression loan growth rate have negative and significant impact on banks liquidity at 1% significant level which is consistent with previous hypothesis 7 and the finding revealed by Alemayehu (2016), Mekbib (2016), Belete (2015).The coefficient of loan growth rate was -3.16 and the p-value was 0.0043.

These implied that as loan growth rate of banks rise or decline by one point then banks liquidity decline or rise by 3.16. This implies that as the amount of loans increase illiquid assets in the asset portfolio of a bank increase leads to the reduction in the level of liquid asset held by banks. According to Pilbeam (2005), the amount of liquidity held by bank is highly affected by loan growth. If demand for loan is weak, then the bank tends to hold more liquid assets. Whereas, when demand for loans is high they tends to hold less liquid assets. Therefore, Hypothesis 7 has not been rejected.

Nonperforming Loan and Banks Liquidity

Hyphothesis: 8 Nonperforming loan has negative and significant impact on banks liquidity

The positive and significant impact of nonperforming loan on banks liquidity was inconsistent with hypothesis 8 and the finding revealed by Guatam (2016) and Tseganesh (2012) and consistent with the result founded by Mekbib (2016), Malik and Rafique (2013), Vodova (2011), and Cheruto (2016). Nonperforming loan was significant at 5% significant level with p-value of 0.016. The coefficient of nonperforming loan in above regression result was 1.05 shows that there was positive and significant impact of nonperforming loan on banks liquidity. This indicated that one value change (increase/decrease) of nonperforming loan had 1.05 value changes (increase/decrease) on banks liquidity. This could be a sign of prudent policy of banks that, they offset the higher credit risk with better portfolio quality and careful liquidity risk management. As nonperforming loan increase, banks may not lend money to customers by refraining liquidity risk. However, when default risk is low banks motivated to disburse loan for investment this decrease banks liquidity. Therefore, the expected hypothesis has been rejected.

Real growth domestic product and Banks Liquidity

Hyphothesis: 9 Real GDP has positive and significant impact on banks liquidity

Real GDP had positive and insignificant impact on banks on liquidity. The positive and insignificant impact on banks liquidity was inconsistent with hypothesis 9 and the finding revealed by Guatam (2016), Singh et al (2016), Aspachs et al, (2005), Vodova, (2009) and Bordo et al.(2001) and consistent with result revealed by Tseganesh(2012), Mekbib(2016),Alemayehu (2016), and Belete (2015). According to the above result the coefficient of real GDP was 0.32. This implies that by keeping other variable constant, as one unit change of real GDP leads banks liquidity changes by 0.32 units. This most probably the case because better developed economies are characterized by more diversified and liquid money market (Dinger, 2007). Borrowers reduce their debt during expansionary phases and increase the demand for loans in recessions (Vodova, 2009).

On the other hand, the studies made by Bordo et al, (2001) suggested that during recession, it is likely for an increase in the number of loan default. This causes depositors to perceive high solvency risk and immediately tend to withdraw deposits held at financial institutions. However, the finding revealed that real GDP had no significant impact on banks liquidity. Therefore, the previous hyphothesis has been rejected.

Profitability and Banks Liquidity

Hyphothesis: 10 Profitability has negative and significant impact on banks liquidity

Banks profitability is the ability of bank to generate revenue in excess of cost, in relation to the bank's capital base. The proxy of banks profitability for this study was ROA. In the above regression model result profitability had positive and significant on banks liquidity was unfamiliar with the previous expectation and the finding revealed by Guatam (2016), Cheruto (2016) and the result was parallel with Alemayehu (2016), Mekbib (2016),Vodova (2011) and Singh et al (2016). The coefficient and the p-value of ROA were 2.07 and 0.0082 respectively.

The positive sign of coefficient indicated that as the profitability of banks increased the banks liquidity became increased. This indicated that as banks profit ratio increased time to time, commercial banks in Ethiopia prefer to hold more and more liquid assets. On the other hand, higher economic growth encourages banks to lend more and permits them to charge higher profit. (Athanasoglou et al, 2006). Therefore, the hypothesis stated negative and significant impact of profitability on banks of liquidity has been rejected.

Table 4.8 the summary of expected hypotheses and the actual result of the study

Explanatory Variables	Expected hypothesis	Actual result	Decision
Bank size	Positive and significant	Negative and significant	Rejected
Capital adequacy	Positive and significant	Negative and insignificant	Rejected
Cash reserve ratio	Positive and significant	Positive and significant	Not Rejected
Deposit ratio	Positive and significant	Negative and significant	Rejected
Inflation rate	Negative and significant	Positive and insignificant	Rejected
Interest rate on loan	Negative and significant	Negative and insignificant	Rejected
Interest rate margin	Negative and significant	Negative and significant	Not rejected
Loan growth	Negative and significant	Negative and significant	Not rejected
Nonperforming loan	Negative and significant	Positive and significant	Not rejected
Real GDP	Positive and significant	Positive and insignificant	Rejected
Profitability	Negative and significant	Positive and significant	Rejected

4. Conclusion and recommendations

The purpose of the study was to examine the impact of both banks specifics and macroeconomics determinants on banks liquidity and to show the trend analysis of private banks liquidity. In order to achieve the objectives and to identify the determinants which had impact on banks liquidity the study used quantitative research approach and also used balanced panel data which constitute both the cross section and time series data. The balanced panel data was collected from NBE and MOFED for selected private commercial banks from 2009-2016. The data was presented and analyzed by using descriptive statistics, correlation and regression. The study also tested the classical linear regression model assumptions and fixed effect regression model.

The descriptive analysis revealed that the mean value of liquid asset to total deposit ratio was 43.9%. Even if the mean value was far above the minimum requirement of 15% set by NBE directive No.SBB/57/2014, liquid asset to total deposit ratio private banks was consistently decline from 2009 to 2016.

In the preceding chapter the impacts of independent variables on banks liquidity were analyzed and discussed. The finding of regression revealed that bank size, cash reserve ratio, loan growth rate, and deposit ratio, profitability, interest rate margin, and nonperforming loan had significant impact on banks liquidity while capital adequacy ratio, real GDP, and inflation rate had insignificant impact on banks liquidity.

Based on the finding of the study, the researcher suggested that it is advisable to private banks to increase their reserve ratio to be stable, to secure their solvency and to control inflation. It is also better to private banks to disburse optimum amount of loans to balance the gain from loan and the liquidity requirement. Private banks would better to maintain optimum amount of liquidity before disbursing loans. It is advisable to big banks in order to manage liquid asset of their banks to avoid liquidity risk. Besides, private commercial banks would give due attention to maintain optimum loans. Generally, the finding of the study shows that Ethiopian private commercial banks had significantly affected by bank specific factors rather than macroeconomic factors. Therefore, private banks would better to focus on bank specific factors by providing effective and well structured policies and procedures.

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