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Determinants of Banks Liquidity: In Case of Commercial Banks in Ethiopia

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Abstract
This study examined the bank specific, regulatory and macro-economic factors that affect liquidity of Ethiopian commercial banks. The data covered the period from 2010-2019 GC for the sample of selected seven commercial banks. Quantitative research approach and explanatory design adopted in carrying out this research. Secondary data was collected from the selected seven commercial banks using purposive sampling technique. The fixed effect regression technique used by econometric package EViews10. The variables are from three factors that, Bank size, Capital adequacy ratio, Profitability and Deposit growth are from bank specific factors, Reserve requirement and NBE bill purchase are from regulatory factors and GDP is from macro-economic factors is selected by researcher. The results of balanced fixed effect panel data regression analysis showed that deposit growth, capital adequacy, bank size and NBE bill purchase had positive effect on liquidity at different significance level. On the other hand, profitability, reserve requirement and gross domestic product affect liquidity of commercial banks in Ethiopia negatively.
Keywords: Ethiopian commercial banks, factors of liquidity, fixed effect regression, purposive sampling.
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1. INTRODUCTION

The elementary role of a bank is to link surplus economic units with deficit economic units in channelling funds. Banks also provide an avenue for policy makers to conduct monetary policies that manage the fluctuation of prices and foreign exchange in the market. However, this role often accompanied with some challenges since banks have a fundamental role in the maturity transformation of short-term deposits into long-term loans that naturally exposed to liquidity risk. In such circumstance, banks exposed to liquidity risks that may frustrate their customers and affect the financial sector as a whole. Likewise, holding too much idle liquid assets such as cash and non-interest bearing deposits are also hazardous as this affects profitability. Hence, every bank has to ensure that its operations satisfy its profitability target and at the same time to meet the financial demands of its customers by maintaining optimum level of liquidity. (Lotto, 2017)

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 P. K., 2011)

Generally, banks strive to strike a balance between profitability and liquidity because the provision of sufficient liquidity to customers at all times is an essential feature of banking. (Niresh, 2012) To achieve this goal, banks ensure that sufficient provision of cash and other near cash securities are made available to meet withdrawal obligations and new loan demand by customers in need of liquidity. For aforementioned reason, any bank operating in Ethiopia shall statutorily require to comply with the reserve and liquidity requirement directive of the National Bank of Ethiopia (NBE) as a means of effectively managing the liquidity positions of banks. In fact, the first strategy to liquidity management in Ethiopia is compliance with these statutory reserve requirement and liquidity ratios as stipulated by the NBE directives. As per NBE's lastly replacement liquidity requirement directives No. (NBE, Licensing and supervision of Banking Business Directive No. 57, 2014), "liquid assets" includes cash, deposits with the National Bank and other local and foreign banks having acceptance by the National Bank, and "current liabilities" refers to the sum of demand (current) deposits, savings deposits and time deposits and similar liabilities with less than one-month maturity.

1.2 Statement of the Problem

It is known that the banking sector is the main actor and plays an important role in the economic growth of a country. The fundamental role of banks in the „maturity transformation" of short term deposits into long term loans make banks inherently vulnerable to liquidity risk, both of an institution specific nature and that which affects markets as a whole. This is because of loans are regarded as the most profitable service yet the most risky service provided by banks. It is most risky due to the likeliness of credit risk that may eventually end up in liquidity shortage. This indicated by; as default risk increases, liquidity risk also increases (Ericsson

& Renault 2006).

In fact the banking sector in Ethiopia is currently acts as the link that holds the country's economy together. Hence, keeping their optimal liquidity for banks in Ethiopia is very important to meet the demand by their present and potential customers. To the knowledge of the researcher, there appear to be few researches that make an effort to assess or provide an indication on the determinants of the banks' liquidity that based on bank specific and macro-economic factors in the existing private and publicly owned banks. From those researches:

(Nigist, 2015) Analyzed the determinants of liquidity for only bank specific and macroeconomic variables from year 2007-2013 the result of the study revealed that capital adequacy, profitability, and real GDP growth rate have negative and statistically significant impacts on liquidity of Ethiopian commercial banks while bank size has positive and statistically significant impact on liquidity. Whereas nonperforming loan, loan growth, inflation rate, and interest rate margin were found to be statistically insignificant/ has no any impact on liquidity of Ethiopian commercial banks for the tested period.

(Shumet, 2016) He also analyzed the determinant factors of liquidity both for bank specific and macroeconomic variables from year 2000 to 2015 for the sampled private commercial banks only which stated that, from the bank specific factors banks size, loan growth, non-performing loan and profitability have a significant impact on banks liquidity and among the macro economic variables only inflation had statically significant impact on liquidity it would have been better if the study considers the other factors like regulatory factors.

Therefore as described in the above paragraph, the existing local studies did not considered the regulatory factors such as reserve requirement and NBE bill purchase that have direct impact on banks liquidity positions. Moreover, the researcher motivated by inconsistency result of prior researcher on the same variables. So the objectives of this paper are:

- To measure the bank specific factors of bank's liquidity in selected commercial banks of Ethiopian.
- To measure the regulatory factors of bank's liquidity in selected commercial banks of Ethiopian.
- To measure the macro-economic factors of bank's liquidity in selected commercial banks of Ethiopian.

2. REVIEW OF RELATED LITERATURE

What is liquidity at a bank?

Liquidity can be define as the ability of a financial institution to meet all legitimate demands for funds. According to (Zewadi, 2013) Liquidity indicates the ability of the bank to meet its financial obligations in a timely and effective manner. There should be adequacy of liquidity sources compared to present and future needs, and availability of assets readily convertible to cash without undue loss.

As per (Douglas, 2014) liquidity at a bank is a measure of its ability to readily find the cash it may need to meet demands upon it. Liquidity can come from direct cash holdings in currency or on account at the Federal Reserve or other central bank. More commonly, it comes from holding securities that can be sold quickly with minimal loss. This typically means highly creditworthy securities, including government bills, which have short-term maturities. In the portfolios of commercial banks, liquid assets play a very vital role since the banks operate mainly with the funds borrowed from depositors in either forms of demand and time deposits.

McCracken and Mckinney, (1974), argued that the problem of bank liquidity is essentially that of being able to raise sufficient amounts of cash quickly and easily at going market rates of interest. They suggested reserves of short-term assets as traditional sources of liquidity which can be run off when credit is needed (asset liquidity) and the ability to purchase funds directly in the money market (liability liquidity).

Why do we care about it? (Douglas, 2014)**,** we care about bank liquidity levels because banks are important to the financial system and they are inherently fragile if they do not have sufficient safety margins. The financial crisis demonstrated in extreme form the harm that an economy can suffer when credit dries up in a crisis. Capital is arguably the most important safety buffer, since it provides the resources to recover from substantial losses of any nature and also gives those dealing with the bank confidence in its safety.

Saidu and Tumin ,(2011) suggested that revising the determinants factors of the liquidity of banks is an essential subject matter which could help in banks' appreciation of the contemporary conditions of the banking industry and the critical factors to be considered in fashioning out plans and policies towards improvement, profitability and growth. Before, liquidity risk is not the focus of banking regulation. However, the 2007-2009 financial crises showed how rapidly market condition can change exposing several liquidity risks in institution, many times unrelated to capital level. Until February 2008, though the Basel Committee (1998) had set out regulatory standards for the management of both Credit and market risks in the Basel I Accord and that for operational risk in the Basel II Accord in 2004, regulatory standards for liquidity risk are seldom mentioned.

Goodhart, (1987) stated that there is no difference between illiquid bank and insolvent bank. Essentially, banks that need liquidity from the lender of the last resort could be suspected in the process of insolvency. Accordingly, banking industry in Ethiopia has its own unique features that distinguish them from other countries financial market. One of the feature is the regulation of the country is not allowed foreign nations or

organization to fully or partially acquire share of Ethiopian banks.

Theories of bank liquidity

Bank liquidity creation

According to the theory of financial intermediation, an important role of banks in the economy is to provide liquidity by funding long term, illiquid assets with short term, liquid liabilities. Through this function of liquidity providers, banks create liquidity as they hold illiquid assets and provide cash and demand deposits to the rest of the economy.

Diamond and Dybvig, (1983) Emphasize the "preference for liquidity" under uncertainty of economic agents to justify the existence of banks: banks exist because they provide better liquidity insurance than financial markets. However, as banks are liquidity insurers, they face transformation risk and are exposed to the risk of run on deposits. More generally, the higher is liquidity creation to the external public, the higher is the risk for banks to face losses from having to dispose of illiquid assets to meet the liquidity demands of customers.

Sources of bank's liquidity

Financial institution can mobilizes resources through new deposits, maturing assets, borrowed funds and/or using the discount window (borrowing from the central bank). However, financial institution may encounter liquidity risk. According to (Rochet, 2008)), the three sources of liquidity risk are; on the liability side, there is a large uncertainty on the volume of withdrawals of deposits or the rolled-over of inter-bank loans, on the asset side, there is an uncertainty on the volume of new requests for loans that a bank receive in the future, and off-balance sheet items, like credit lines and other commitments taken by the bank.

The two most widely used approaches to measure liquidity of banks are by liquidity gap approach (flow perspective) or liquidity ratio approach (stock perspective). The liquidity gap/flow approach treats liquidity reserves as a reservoir which the bank assesses its liquidity risk by comparing the variability in inflows and outflows to determine the amount of reserves that are needed during the period.

The liquidity gap approach adapts the variation between assets and liabilities both current and future period. A positive liquidity gap means for deficit, requiring for liabilities to be increased (Bessis, 2009). The liquidity ratio/stock approach, in contrast, employs various balance sheet ratios to identify liquidity trends. The various ratios label for immediate viable source of funding. This indeed entitles portfolio of assets that can be sold off without any fuss and also adequate amounts of stable liabilities.

Empirical Evidence

Shamas, Zainol, & Zainol (2018) aimed to identify the association between liquidity risk proxies by cash to total assets and specific determinants in Bahraini Islamic Banks (IBs) in order to better mitigate and manage this critical financial risk. Panel data analysis was used on a sample of seven Bahraini IBs, which represent the Bahraini Islamic banking sector over the period of 2007 to 2011. The econometric results illustrate that the liquidity risk of Bahraini IBs is dependent on idiosyncratic factors. It was found that liquidity risk is positively related to return on average assets (ROA). On the other hand, non-performing loans (NPLs) and capital adequacy ratio (CAR) affect liquidity risk negatively and significantly. Lastly, bank size and the financial crisis show a negative and insignificant association with liquidity risk.

Umar and Sun (2016) analyzed the impact of nonperforming loans (NPLs) on bank liquidity creation to investigate the existence of moral hazard problem in Chinese banks. It used data from 197 listed and unlisted Chinese banks, spanning the period 2005 to 2014. Generalized method of moments (GMM) estimation, fixed and random effect model, and pool data techniques was used for analysis. The study found that liquidity creation by Chinese banks does not depend on NPLs ratio.

El Khoury (2015) has studied the determinants of liquidity in the Lebanese banking sector using data from 23 commercial banks between 2005 and 2013. She confirmed the risk absorption hypothesis and found that capital level has a positive and statistically significant impact on both liquid assets to total assets ratio and liquid assets to customers' deposits ratio.

Nigist Melese and Laximikantham, (2015), analyzed the bank specific factors that affect liquidity of Ethiopian commercial banks from the period 2007-2013 for the sampled commercial banks in Ethiopia. The result of the study revealed that, capital adequacy and profitability have statistically significant impacts on liquidity of Ethiopian commercial banks while bank size has positive and statistically significant impact on liquidity. Nonperforming loan and loan growth are found to be statistically insignificant/ has no any impact on liquidity of Ethiopian commercial banks for the test

The study by (Belete,2015) aimed to identify the bank-specific and macro-economic factors affecting bank liquidity for eight commercial banks in Ethiopia, for the period of 2002-2013 by using balanced fixed effect panel regression. The study adopts a mixed methods research approach by combining documentary analysis and in-depth interviews. The findings of the study showed that capital strength, interest rate margin and inflation had

statistically significant and positive relationship with banks' liquidity. Conversely, loan growth had a negative and statistically significant relationship with banks' liquidity. On the other hand, the relationship for profitability, non-performing loans, bank size and gross domestic product were found to be statistically in significant period.

(Shumet, 2016), studied again both the two factors, bank specific and Macro- economic factors which he had used three equation to calculate the liquidity ratio and the results are as follows among the bank specific factors banks size, loan growth, nonperforming and profitability have a significant impact on banks liquidity. Among the Macro economic variables, only inflation had statically significant impact on liquidity.

3. RESEARCH METHODOLOGY

Research approach is a plan and procedure that consists of the steps of broad assumptions to detailed method of data collection, analysis and interpretation. This study is be used a quantitative research approach to see the relationship between the liquidity positions of selected commercial banks and the bank specific, regulatory and macro-economic factors that affects bank's liquidity by establishing causal relationship. This study also adopted an explanatory approach by using balanced panel research design to meet the research objective. As explained by (Bhattacherjee, 2012), explanatory research attempts to identify causal factors and outcomes of the target phenomenon. The study population/participants are all private as well as public commercial banks that existed in the fiscal year 2019/20. The sampling technique used under this study was non-random purposive or judgmental sampling. In this type of sampling, items for the samples selected deliberately; the researcher choice concerning the items remains supreme. structured document review used for this study to collect required information, which is relevant for addressing the objectives of the study. The panel secondary data is quantitative in nature and encompasses ten years banks audited financial statements (balance sheet and income statement) and macroeconomic reports. Hence, Bank specific data be collect from audited financial statements (balance sheet and income statement) of each commercial bank included in the sample and regulatory and macroeconomic data obtained from NBE and MoFED from 2010 to 2019. The panel is balanced as of all banks in the sample are reported over the whole period. All data collected on the annual base and the figures for the variables are on June 30 of each year under study. The model estimated were as follows;

$$Yit = \alpha + \beta Xit + uit$$

The subscript i denote the cross- section and t represent the time-series dimension. The left hand variable Yit is the dependent variable, α is intercept term, β is coefficient which represents the slope of the explanatory variables and Xit is a vector of the explanatory variables for bank i in time t, t= 1.T; i = 1……., N and uit is the error term.

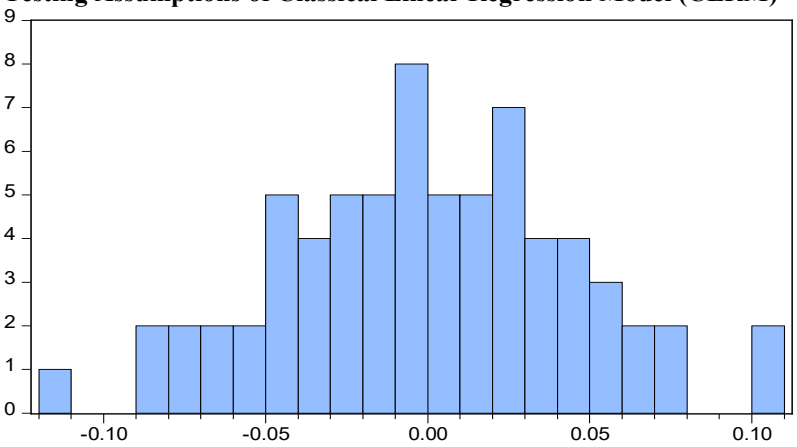
Therefore, the general model, which incorporates all of the variables to test hypotheses of the study, be;

$$LIQi,t = \alpha_i + \beta 1(CAPi,t) + \beta 2(ROAi,t) + \beta 3(BSIZEi,t) + \beta 4(DGFi,t) + \beta 5\ (RRi,t) + \beta 6(BILLt) + \beta 7(GDPt) + \varepsilon_{i,t}$$

Where;

LIQit : is banks liquidity of i^{th} bank at time t
CAPit: is the capital adequacy of Ethiopia on year t
ROAit: is the return on asset of i^{th} bank on the year t
BSIZEit: Natural logarithm of total assets of i^{th} bank on the year t
DGit: is deposit growth rate at time t
RRit: is the reserve requirement rate at time t
BILLit: is NBE bill Purchaseof i^{th} bank at time t
GDPit: is the gross domestic product growth of Ethiopia on year t
β0: is constant
β1 - --------- β9: are parameters to be estimated.
εit- is error term

Testing Assumptions of Classical Linear Regression Model (CLRM)



Series: Standardized Residuals
Sample 2010 2019
Observations 70

Mean	-3.07e-18
Median	-0.000489
Maximum	0.105534
Minimum	-0.119403
Std. Dev.	0.045605
Skewness	-0.081327
Kurtosis	2.843775
Jarque-Bera	0.148350
Probability	0.928509

According to Brooks (2008), if the residuals are normally distributed, the histogram should be bell shaped, the kurtosis must be no by far large from the 3 and Bera-Jarque probability statistics/P-value is also expected not to be significant. This means that the P-value given at the bottom of the normality test screen should be greater than 0.05 not to reject the null hypothesis of normality at 5% significance level. The test result for the model provides a P value greater than 5% evidencing that residuals are normally distributed and the histogram is bell shape for the model.

Test for Multi-co linearity

The term multi-co linearity indicates the existence of exact linear association among some or all explanatory variables in the regression model. When independent variables are multi collinear, there is overlapping or sharing of predictive power. Thus, if multi co-linearity is perfect, the regression coefficients of the independent variables are undetermined and their standard errors are immeasurable (Gujarati, 2004).

	DG	CAP	BSZE	BILL	ROA	RR	GDP
DG	1						
CAP	0.00393	1					
BSZE	0.27433	0.17030	1				
BILL	0.19868	0.11739	0.70410	1			
ROA	-0.04903	-0.14550	0.16803	0.38573	1		
RR	-0.18874	0.14609	-0.68230	-0.58979	-0.16334	1	
GDP	0.03663	-0.13415	-0.30479	-0.20438	0.07123	0.21085	1

The results in the above correlation matrix show that the highest correlation of 0.704 between bill purchase and bank size and -0.682 between reserve requirement and bank size. Thus, there was no such series pair-wise correlation that exceeds 0.8 which suggests there is no serious problem of multi co-linearity or the results showed that the problem of multi co-linearity did not exist among the explanatory variables in the study model.

Results of Regression Analysis

Dependent Variable: LIQ
Method: Panel Least Squares
Date: 05/11/21 Time: 11:34
Sample: 2010 2019
Periods included: 10
Cross-sections included: 7
Total panel (balanced) observations: 70

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DG	0.028809	0.063629	0.452755	0.6525
CAP	0.059741	0.039471	1.513529	0.1358
BSZE	0.010687	0.041072	0.260206	0.7957
ROA	-1.164314	0.628826	-1.851566	0.0694**
RR	-0.025314	0.013666	-1.852365	0.0692**
BILL	0.076258	0.017309	4.405685	0.0000***
GDP	-0.787356	0.689281	-1.142286	0.2582
C	0.408546	0.209133	1.953527	0.0558

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.757924	Mean dependent var	0.598643
Adjusted R-squared	0.701727	S.D. dependent var	0.092692
S.E. of regression	0.050623	Akaike info criterion	-2.951969
Sum squared resid	0.143510	Schwarz criterion	-2.502270
Log likelihood	117.3189	Hannan-Quinn criter.	-2.773343
F-statistic	13.48708	Durbin-Watson stat	1.611364
Prob(F-statistic)	0.000000		

*** , ** denote significance at 1%, and 10% significance levels respectively.
Source: Eviews output results (2010 -2019)

Deposit growth (DG) on Liquidity

As it is evident in the table, the coefficient of the deposit growth was positive and statistically insignificant. The result shows that a one unit increase in deposit growth, results in a 0.6525 unit increase in banks' liquidity, which means that the growth of deposits has positive effect on the liquidity by the commercial banks in Ethiopia. This result is in line with what is expected and what is found by the previous studies in this field, which indicated that the deposits have a positive impact on the volume of liquidity. In this study, shows that deposits have a positive association with bank liquidity. (Bonner and Zymek, 2013), also had similar findings. However, Alger and Alger (1999); Dinger (2009) and (Kashyap, et. al, 2002), found a negative relationship between deposits and bank liquidity. This finding implies that with an increase in deposits, banks should also increase their liquidity holding so that a bank run can be avoided in case of high deposit withdrawal. So the hypothesis is not rejected; there is positive and insignificant relationship between deposit growth and bank liquidity.

Capital adequacy ratio and liquidity

Capital adequacy, which was measured by the ratio of equity and reserve to total asset, was statistically insignificant variable that affected liquidity of Ethiopian commercial banks significant level with the p-value of 0.1358. And has a positive coefficient value of 0.0597 which indicated that holding other variables constant one unit increase in capital adequacy ratio, results in a 0.0597 unit increase in liquidity of Ethiopian commercial banks and in line with the findings of (Vodova, 2012); Subedi and Neupane (2011); and Laurine (2013). The

first research hypothesis is rejected; there is negative and significant relationship between capital adequacy and bank liquidity.

Size of the bank and liquidity

In this study, natural logarithm of total asset was used as a proxy of bank size, used to know the effect of bank size on liquidity of Ethiopian commercial banks. Bank size found to be a positive and statistically insignificant with a p value of 0.7957. The coefficient value of 0.01068 indicated that one unit increases in the total asset results a 0.01068 unit increase in liquidity of Ethiopian selected commercial banks, holding other variables constant. This finding was consistent with the findings of (Choon, 2013), (Malik, M. F., & Rafique, A., 2013); Vtyurinenetal. (2012); Chagwiza (2011); Subedi and Neupene (2011). Hence, based on this hypothesis large banks tend to hold less liquid assets and invest in riskier assets through implicit guarantee. In case of liquidity shortage, large banks access to Lender of the Last Resort (Central Bank) for advances to overcome the liquidity shortage while central bank also provide loan to small banks but on small scale and higher interest rate Therefore, the hypotheses stated; there was positive and statistically significant relationship between bank size and liquidity failed to accepted.

Profitability and liquidity

The regression result shows that, profitability had negative and statistically insignificant impact on liquidity. This means that a one-unit increase in ROA results in a 1.1643 unit decrease in liquidity of Ethiopian commercial banks. This negative relation shows that, higher profitability leads to decrease banks liquidity. In general, the result of this study was consistent with the findings of (Delechat .C, Henao.C, Mathoora .P and Vtyurina .S., 2012) Valla, Saes-Escorbiac, and (Tiesset, 2006) claimed that profitability had negatively affected bank's liquidity. Therefore, the hypothesis stating positive and significant relationship between profitability and banks liquidity should be not accepted.

National bank bill and liquidity

According to regression result investment in NBE-Bills proxy by logarithm of total NBE bill purchase is positively related with liquidity of the commercial banks in Ethiopia with a coefficient estimate of 0.07625 and the p value of BILL 0.0000 reveals that it is statistically significant at 1 percent level of significance. This is not consistent with the researchers' prior expectation. Hence, the hypothesis stating NBE Bill has negative and significant impact on bank liquidity should be rejected.

Reserve requirement and liquidity

The obligatory reserve coefficient is negative and statically insignificant at 10 percent level, indicating lower liquidity for banks with a higher reserve requirement (RR). Even though, the reserve requirement held by NBE is for reliability issue for depositors but it has negative impact on the banks liquidity. Therefore, the result shows that a one unit increase in obligatory reserve, results in a -0.0253 unit decrease in liquidity of selected commercial banks in Ethiopia. Therefore, the hypothesis stating reserve requirement has negative and significant impact on bank liquidity should rejected.

GDP and liquidity

Business cycles occur in the economy. At times the economy can experience a boom or a recession. These cycles alternate from time to time. Business cycles are measured by the changes in the growth of the gross domestic product of an economy. High GDP levels resemble a boom in the economy and low GDP show that the economy is having trouble at that time. The coefficient on GDP is negative and insignificant, this result is consistent with Valla et al. (2006), Dinger (2009), (Vodova, 2011) and (Aspachs et. al. and Tiesset,2005), which established negative relationships between the two. This implies that in a recession of the economy commercial banks is more liquid than in the boom time. It has also statistically insignificant impact on liquidity. Hence, the hypothesis stating; real GDP growth rate has positive and significant impact on banks liquidity should not be accepted.

Summary of Findings of the Study

The result of this study confirmed that banks liquidity was highly affected by regulatory factor variables if compared to bank specific and macroeconomic variables. The rationality behind was that among macroeconomic variables that chosen for this study, GDP growth rate was the only macroeconomic variable used in this study. Accordingly, Deposit growth, Capital adequacy ,Bank size and NBE Bill Purchase (BILL) has positive and statistically insignificant impact on liquidity while profitability measured by ROA have negative and statistically insignificant impact on liquidity. Reserve Requirement (RR), Capital Adequacy (CAR) have negative and statistically significant impact on the determination of liquidity of Ethiopian selected

commercial banks and it was in line with the hypothesis. Liquidity is negatively influenced also by the interest rate spread. The factors lead to higher lending activity of banks and thus reduce bank liquidity.
Size of the Bank (SB) had negative and statistically significant impact on Ethiopian banks liquidity. GDP Growth rate has negative impact on the liquidity of commercial banks but it is statistically insignificant.

Recommendations
The empirical findings of the research have prompted the researcher to suggest the following policy recommendations:

Improving on bank efficiency

Bank size: Big banks needs to manage their liquidity position and shall give due attention on resource mobilization and liquidity management.

Profitability: commercial banks shall have liquidity management policy to ensure that they are operating to satisfy their profitability target as well as the ability of meeting the financial demands of their customers by maintaining optimum level of liquidity.

Deposit growth: This finding implies that with an increase in deposits, banks should also increase their liquidity holding so that, a bank run can be avoided in case of high deposit withdrawal.

Generally, commercial banks have to consider external factors affecting liquidity in addition to their internal factors in addressing their liquidity strategy.

Regulatory body

Reserve requirement: While issuing new directives or amending the existing policies, NBE shall take into account that the increase of capital and statutory reserve requirements policy has stood pressure on the banks liquidity. Since both capital and reserve requirement have negative and significant impact on banks liquidity.

NBE Bill purchase: Since huge amount of loanable fund from the commercial banks is tied up in NBE with minimal interest rate and as it contributes negatively to the banks liquidity. NBE shall revise the policy by either increasing the interest rate provided on the bill purchase or to decrease the percentage of obligatory bill purchase by the commercial banks.

Improving economic environment
External factors have influence on liquidity of Ethiopian banks so all commercial banks in Ethiopia cannot ignore the regulatory and macroeconomic indicators while targeting to improve their liquidity position. Thus, banks in Ethiopia should not only be concerned about internal structures, policies and procedures, but they must consider both the internal and the external environment together in developing their strategies to efficiently manage their liquidity position. At the regulatory or supervisory level, the result of the study will assist policy makers to understand the impact of the policies regarding market environment for commercial banks and help them to contribute their role as a financial intermediaries.

5.5 Suggestions for Further Studies
Future researchers are recommended to undertake similar study by considering additional variables on the same banks, which will be useful to validate findings of the current study. Furthermore, it is suggested that researchers consider the newly emerging banks in doing the same research.

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