Assessment of Determinants of Deposit Mobilization of Financial Sectorsin Ethiopia: In the Case of Commercial Bank of Ethiopia

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Abstract: The Ethiopian government is implementing mega projects to achieve a five years transformation and growth plan and Commercial Bank of Ethiopia is expected to mobilize a huge amount of deposit and foreign currency for the projects. However, in Ethiopia, banks mobilized small amount of deposit, 11.6%. This initiated for an assessment of determinants of mobilization of deposits in CBE. The study used a cross-sectional design by collecting financial data of the years 1981- 2012 on the independent variables (Income, expense, asset, liability, reserve, loans and advances and consumer price index). Descriptive and econometric analyses are done by using E-views 5and Excel 2007. The study identified that CBE's main source of capital is deposit; demand deposit remained to be dominant; the bank's total deposit is related positively with income, its asset, liability, its loans and advances granted and Consumer Price Index. However, the bank's deposit is negatively related to its reserve requirement and its expense. Also, almost by 25% all the endogenous variables will affect a one year lag in the short run to reach the equilibriums position in the long run. Then, it is recommended that there is a need to remove obstacles on the depositing road by awareness creation efforts tailored to its employees, stakeholders and customers; improving bank service accessibility and consumption.

Key words: Determinants · Deposit mobilization · Commercial banks · Ethiopia

INTRODUCTION

Back Ground of the Study: Depositors keep their money in banks for a motive to undertake some activities in the future. Financial sector is broad which consists of the banking sector and other financial institution (such as insurance corporations and pension funds, brokers, public exchange and securities markets, Micro Finance Institution, etc), however in the context of African continent the banking industry carries the greater share of the financial system [1, 2]. Banks have historically been viewed as playing role in financial markets for two reasons. One is that they perform a critical role in facilitating payments. Commercial banks, as well as other intermediaries, provide services in screening and monitoring borrowers; and by developing expertise as well as diversifying across many borrowers, banks reduce the costs of supplying credit [3]. Thus in their role as lenders, banks are often not merely buying someone's debt, rather they are providing significant financial services associated with extending credit to their customers and to the extent that investors want to hold banks liabilities, banks can fund borrowers directly. The main providers of additional financing are domestic commercial banks [4].

Banks perform various roles in the economy [5], they ameliorate the information problem between investors and borrowers by monitoring the latter and ensuring a proper use of the depositors' fund; they provide inter temporal smoothing of risk that cannot be diversified at a given point in time as well as insurance to depositors against unexpected consumption shocks. Because of the maturity mismatch between their assets and liabilities, however banks are subject to the possibility of runs and systematic risk, and banks contribute to the growth of the economy.

Regarding the banking sector of the country, Ethiopia appears unique compared to its East African neighbors (namely Kenya, Tanzania and Uganda) and many other developing countries because it has not yet opened its banking sector to foreign participation [6]. Ethiopian government launches a five years transformation and growth plan to make middle class country (Commercial Bank of Ethiopia [7]. Moreover, the government strives to attain the Millennium Development Goals [8].

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As of September 2012, the banking sector comprised 18 commercial banks and one state owned development bank [9]. The 18 commercial banks include 2 state-owned banks, with one of them representing about 70 percent of all commercial banks' assets. Rural areas access to finance is limited. At the same time, the population per bank branch was 63,644. Despite the country's population of nearly 90 million, there are only 7.1 million deposit accounts, suggesting that less than 8 percent of Ethiopians have a bank account.

The Commercial Bank of Ethiopia (CBE) plays a great role in economic development of the country for 70 years now. Today, more than ever before, CBE has aggressively expanded its presence in all directions of the country. As on June 2012, total deposits stood at 120.1 billion while total asset and capital of the bank reached birr 158.1 billion and 7.6 billion respectively. Despite the flourishing of private commercial banks, CBE has remained in the lead in terms of assets, deposits, capital, customer base, and branch networks [7].

Commercial banks are profitable financial institutions that give financial service to the body in need of the service. They accept money from the depositors and lend it to the borrowers. Thus, for commercial banks to lend there have to be deposits in their treasury. According to [10],financial resources of banking system are naturally provided from people's deposit. Therefore, it can be said that deposits are the most important resource of commercial banks.

Bank specific factors include liquidity of the bank, profitability of the bank, security of the bank, number of commercial bank's branches, bank size, reserves and transaction cost. The Endogenous factors are awareness of the society for using banks to deposit their money, convenience of Bank's office and service in the banks. Therefore, the specific objectives of the study were;

- To identify the internal factor determinants in the total deposit of Commercial Bank of Ethiopia.
- To identify the external factors determining the total deposits of Commercial Bank of Ethiopia.

Three Methodology of the Study
Study Design: Time-series causality was employed; annual data between 1981 and 2012 were collected. This was preferred to consider cross-sectional differences of bank specific factors in the consecutive years.

Study Target groups and variable descriptions in CBE: The study was done by taking Commercial Bank of Ethiopia (CBE) to investigate determinant factors of deposit mobilization. The dependent variable was identified as Deposit in CBE that could be expressed as a function of independent variable as;TD = F (TI TE TA TL TR TLA CPI), Where: TD = Total commercial bank of Ethiopia Deposit, TI = Total Income in commercial bank of Ethiopia, TE = Total expense in commercial bank of Ethiopia, TA= Total asset in commercial bank of Ethiopia, TL= total Liability commercial bank of Ethiopia, TR= Total Reserve in commercial bank of Ethiopia, TLA= total Loan Advance commercial bank of Ethiopia, CPI = consumer price index in Ethiopia.

Total Income and Expense: Operating income which is an independent variable declared annually in Commercial Bank of Ethiopia, it is obvious CBE has declared its profit and loss statement annually and it a profitable organization so far. Therefore, CBE`s Operating Expense has a negative impact on its deposit balance [11].

Total Reserve and Liability: If the Liquidityposition in CBE increases, had a direct impact on CBE deposit balance in Cash Reserve Requirement at Central Bank (CRR), which is a significant determinant for saving mobilization.The total liability of CBE declared on annual basis which is used as an independent variable for this study having and positive impact on Deposit Balance.

Total Asset and Loan Advances: the total asset of Commercial bank of Ethiopia declared on annual basis which is used as an independent variable for this study and having positive impact on Deposit Balance. TLA= the total outstanding Loans and Advances of CBE at the end of each fiscal year affects the bank.

Data Instrument and Consumer Price Index: Inflation Rate, the level of inflation on Commercial Bank Deposit has a direct impact on CBE deposit balance. For instance, if the inflation rate of the Ethiopian Economy increases, peoples may discourage to save their money in the CBE and decreases its deposit balance [12].The study data were fully secondary and consisted of elements of financial statements of CBE.they were collected by reviewing the respective statements from database of the head quarter of Commercial Bank of Ethiopia. The researcher didn't need to develop its own collection format or instruments because the data got standard presentation being financial data. Then, data of the year 1981 to 2012 were collected.

Table 1: Nature and Source data

Variable	Variable	Unit	Source	Remark
TD	saving mobilization in commercial bank of Ethiopia	Million birr	CBE	It is the dependent variable=time+demand+saving deposit
TI	Total income	birr	CBE	Independent variable
TE	Total expense	birr	CBE	Independent variable
TA	Total asset	Birr	CBE	Independent variable
TL	Total liability	birr	CBE	Independent variable
Variable	Variable	Unit	Source	Remark
TR	Total revenue	birr	CBE	Independent variable
TLA	Total loan advance	birr	CBE	Independent variable
CPI	Consumer price index	rate	NBE	Independent variable

Research Data Analysis: The data analysis was focused on descriptive and econometric dimensions which were computed and done by E-views 5 and Excel 2007. Descriptive analysis was employed to see the trend of the variables analysis over the years 1981-2012, so that the respective changes over time would be clearly seen by econometric analysis. VAR was considered as an instrument for estimating the model, secondly, the appropriate lag length and co integration test accordingly, the following econometrics model:

Graphical Tests of Stationary: This was the first step in any time series econometrics analysis whichwas incorporated stationary data series. As we know there are three types of time series in financial econometrics: stationary I(0), trend stationary and non-stationary I(1) most of the time series are non-stationary.

Augmented Dickey–Fuller Test: This test is an extension of the Dickey–Fuller (DF) test called the augmented Dickey-Fuller test (ADF), which removes all the structural effects (autocorrelation) in the time series and then tests according to the methodology.

Co integration model Analysis: To examine the extent to saving mobilizations instruments are correlated TD, the theory of co integration and Error Correction Models (ECM) is applied. Lag length selection is one of the most important steps after stationary test and before co integration test. Hence, we employed the information criteria methods like information criterion information criterion, and Hannan- Quinn information criterion (HQIC) showed the optimal lag length.

Error Correction Model: It was conducted to examine the dynamic system with the characteristics that the deviation of the current state from its long-run relationship will be fed into its short-run dynamics. A vector error correction model (VECM) adds error correction features to a multi-factor model such as a vector auto regression model'

At the beginning, the variables were transformed into Log data to avoid hetroscedasticity and to show elasticity of the variables. Then, the econometric VAR model is specified as the unstructured VAR model [10].

$$\text{Log (TD)} = \beta_0 + \beta_{i1} \log (TI)_{t-i} + \beta_i 2\log (TE)_{t-i} + \beta_{i3}\log(TA)_{t-i} + \beta_{i4} \log(TL)_{t-i} + \beta_{i5} \log (TR) + \beta_{i6} \log (TLA) + \beta_{i7} \log (CPI) + \varepsilon_{1t}$$

$$\text{equation (3.1)}$$

where; β_i and are coefficients of 1x k matrix to be estimated, $i = 1...., k$ the VAR order, $\varepsilon_{1t} =$ the error term, Log = logarithms of the variables.

RESULTS AND DISCUSSION

In this part, financial performance of CBE was presented by using common and major financial analysis indicators that give direct implication on the bank's deposit mobilization.

Trends of Mobilization of Deposit:The mobilization of deposit by CBE in the pre and post reform period (1991) is that the CBE is the dominant bank that accounts more than 90% of the total deposit mobilized in the country before the reform period. As displayed by Figure 1 (Y-axis represents amount, X-axis represents years), the deposit CBE kept growing in the years. However, the growth rate showed differences over the 20-year period as displayed by Figure 2; in 2011 it reached maximum (54.2) and declined to 41.3 in 2012.

Interest Incomes: As displayed by Figure 2, incomes of the bank have showed positive growth for most of the year in the period considered. Especially in last 8 years, the total income has increased by larger rates except for the year ended June 2010 which was 16%. In the year 2012, it scored an increment of 65.5% (CBE, 2013),This could be explained by net interest margin and non-interest income.
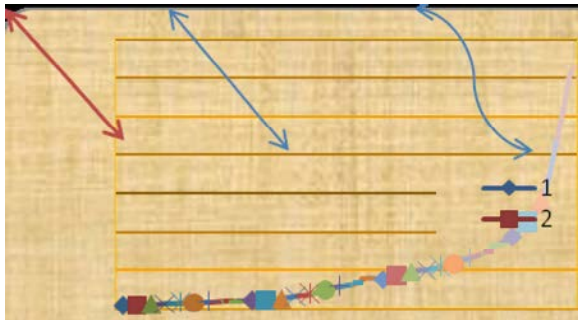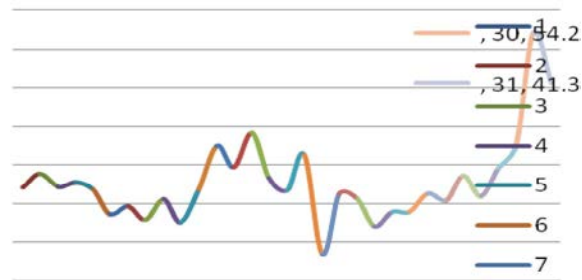
Fig. 1: Trend of Deposit of CBE in Birr ('000)
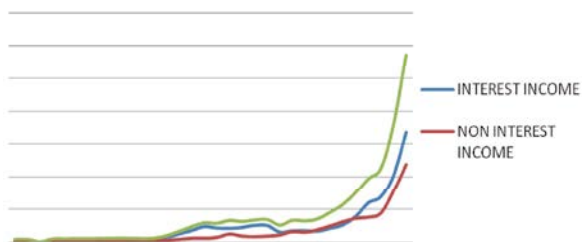

Fig. 2: Trend of Deposit growth rate

Fig. 3: Trends of Incomes

Fig. 4: Trend of profit in Birr

Fig. 5: Trend ofprofit growth in rate

Net Interest Income and Non-Interest Income: thesehad showed positive changes for many of the years under consideration. In the last seven years, it was scored increments which could be attributed to the increase in disbursement of loans and advance. This also showed increments as compared to preceding year in majority years. Till the year ended June 2001, commission and other income have contributed a lot. After that year, it kept increasing except for the year ended June 2004 when it decreased by 7%. For instance, in the year 2012, it accounted for 42% of the total income and depicted a 54% increase from the preceding year. The bank confirmed this change was due to the surge in income from service charges [11]; like gains on disposal of property and equipment and income from service and transaction fees.

Net-Interest Margin: The interest income has increased in majority of the year considered. Especially in recent years, it showed large increments.
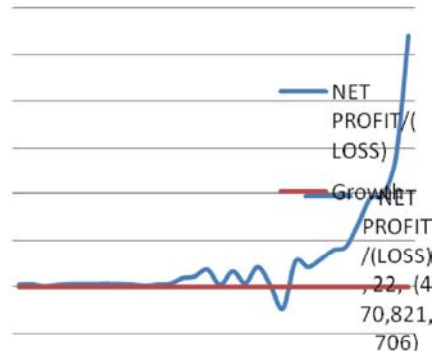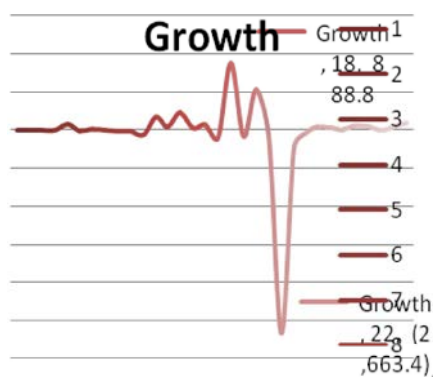
As displayed by Figure 4, it could be observed that the bank's income kept increasing through the period studied. However, as shown by Figure 5, the growth rate was not smooth; the bank has faced different rates. Incomes from commission, service and transaction fees and gains from disposal of property and equipment are presumed to be major reasons for impressive growth in incomes.

Assets' Structure: Throughout the period considered, the total assets of the bank have been grown at different rates except, as shown by Figures 8 and 9, for the year ended June 2002 when it decreased by 5.12% from the preceding year. In 2012, the bank's total asset was more than Birr 158 billion getting 38.47% increment from the preceding year and amazing from the base line year (1981). This showed that the bank is strengthening its asset base. According to the balance sheet analysis, the major account categories that pushed the asset balance up were loan and advance to customers, investments, other assets and property and equipment. Besides, increasing in investment in term bonds and coupon bonds and decreasing in investment in government securities are contributing factors for the bank's assets (CBE, 2011). [12].
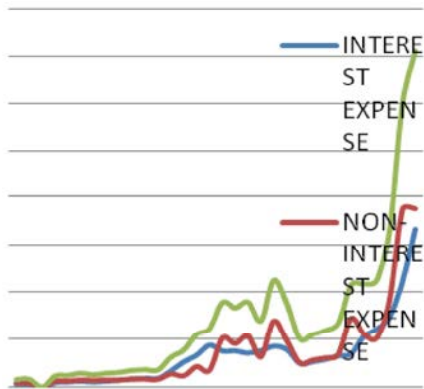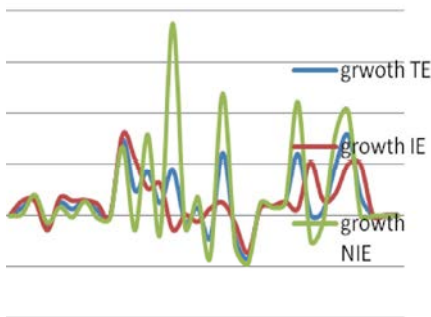
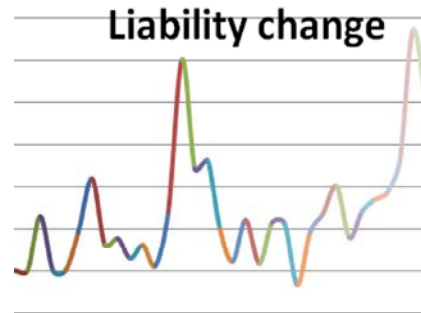Fig. 6: CBE's Expenses

Fig.7: Rates of Changes in expenses

Fig. 8: Total Assets of CBE

Fig. 9: Trend of Asset growth
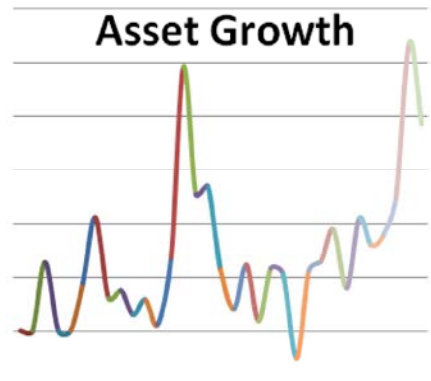

Fig. 4.10: Trend of CBE's Liabilities

Fig. 4.11: Trend of liabilities' change

Liabilities: The total liabilities of the bank have showed changes at different rates as displayed by Figures by 4.10 and 4.11; it ranged from (3%) in the year ended June 2002 to 57% in the year ended June 2011. As the bank's higher officials, the other factor is its achievements in opening branches, networking and winning the public confidence over the years [12]. The other factor favoring deposits would be the bank's strategy to attract and retain customers.

Liquidity and Deposit Ratios: The loan-to-deposit ratio, describing the proportion of the total deposits extended to financing loan demands; as displayed by Figure 4.12 had different rates in the period considered;. It ranged from the maximum of 0.66 in 1981 to the minimum of 0.25 in 1991 and 1992 years. In recent years, it has been fluctuated and reached 0.48 in 2012.

Deposit Ratios: As displayed by Figure 4.13, demand deposit remained to be more than the saving and time deposits; however, it showed slight fluctuation in the study period. It has been between 54% and 63%. Saving and time deposits have been between 30% and 41% and 1% and 13%, respectively.
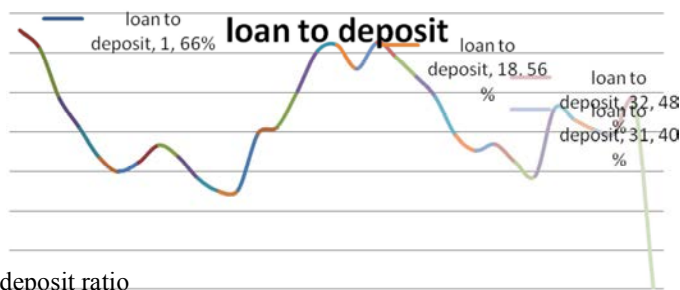
Fig. 4.12: Trend of loan-to deposit ratio
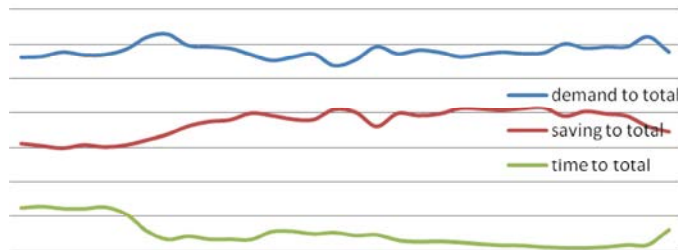

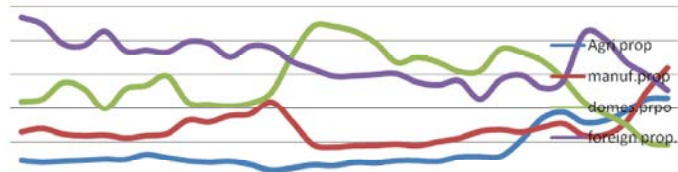Fig. 4.13: Trend of deposits to total deposit ratio

Fig. 4.14: Loan proportions by major sectors
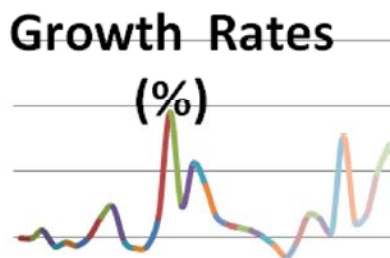

Fig. 15: Trend of Loans and Advances

Fig. 16: Trend of growth rates of loans and advance

Loan Portfolio: The distribution of loans and advances by major economy sectors are displayed by Figure 4.14; in general, loan allocations' trend show varying rates among the sectors. However, the agriculture sector had slight fluctuation and kept increasing , especially in recent years; for instance, in the baseline year (1981), its proportion from the total loans and advances was 5% but in 2012, 23%. The manufacturing sector got 13% and 32% in 1981 and 2012, respectively; it showed remarkable fluctuations as dropping from 22% in 1993 to 9% in 1995 and continued smoothly for few years, then. The results showed that the bank is supplying currency in effectuating government policy direction on agriculture and manufacturing sectors.

The domestic trade and service and foreign trade sectors have larger share of the loans and advances in the baseline year, 22% and 47% respectively; however, they have showed uneven fluctuations over the years considered. As displayed by Figures 4.15 and 4.16, the total loans and advances have increasing trend when examined in Birr terms. However, their growth rates in the consecutive years showed sharp declines and rises [13].

Econometrics and Unit Root Tests: Econometric tests were used to identify determinant factors of CBE's deposit. Besides, the analyses checked the significance of independent variables. The tests used are suitable to the nature of data, stationary time series, which could show

Table 2. Unit root test at level

Variable	ADF(intercept)	P .value	ADF(intercept and trend)	p-value
Log(TD)	3.600170(1.303689)	0.9981	2.078861(2.078861)	0.5354
Log(CPI)	3.670170(0.454067)	0.8869	2.691696(4.296729)	0.2467
Log(TA)	.699871(1.050306)	0.9959	4.339330(1.472271)	0.8130
Log(TE)	.679322(0.135838)	0.9631	4.309824(1.540449)	0.7914
Log(TI)	3.699871(0.512107)	0.9840	4.339330(1.822722)	0.6655
Log(TL)	3.699871(1.028767)	0.9957	1.552728(4.339330)	0.7849
Log(TLA)	3.670170(0.581453)	0.9867	4.296729(2.105550)	0.5221
Log(TR)	3.679322(0.205155)	0.9682	4.309824(2.084484)	0.5325

Source: Author's Estimation using Eviews 5.0

Table 3: Unit root test at first Difference

Variable	ADF(intercept)	P .value	ADF(intercept and trend)	p-value
Log(TD)	3.670170(2.289947)	0.1815	4.296729(2.608790)	0.2792
Log(CPI)	2.621007(3.464979)	0.0163	3.218382(3.374644)	0.0740
Log(TA)	2.627420(2.653427)	0.0952	3.229230(2.948286)	0.1642
Log(TE)	2.627420(4.751501)	0.0008	3.229230(4.723686)	0.0042
Log(TI)	2.627420(2.825545)	0.0680	3.229230(3.017511)	0.1460
Log(TL)	2.627420(2.553910)	0.0147	3.229230(2.843892)	0.1950
Log(TLA)	2.963972(2.993764)	0.0469	3.218382(3.233453)	0.0972
Log(TR)	3.699871(4.548240)	0.0013	4.339330(4.520519)	0.0066

Source: Author's Estimation using Views 5.0

trending of the bank's performance over years. The unit root property of the series is crucial for co-integration and causality analysis [14]. It is generally known that the results of these tests often depend on the number of lags included; therefore careful attention must be paid to the lag length selection.In the first part of this section standard unit-root tests were used to test the stationary of the series', and subsequently the Johansen technique was used to take account of possible co integration between the total real Growth domestic product and its determinants [15].

Note: The value outside the bracket is t-statistics significance at 1% and 5% level figure with the parenthesis indicate critical values using at level and at first level difference with ADF test critical value for rejection of hypothesis of unit root applied [16].

CONCLUSION

This study was conducted that identify determinants of mobilization of deposits in CBE. The main source of assets or capital for commercial banks is deposit. The loan-to-deposit ratio showed that the bank has still room to enhance its income and then profit. However, especially, the recent year figures showed that the bank would face a problem of liquidity in short run.

Demand deposit remained to be more than the saving and time deposits; however, it showed slight fluctuation in the study period. The Liability of the bank found to be positively related with its Deposit at 1% to 38% in the long-run; the bank's liabilities are deposit by other banks, deposit by customers, taxation, state dividend and other liabilities. Consumer Price Index is found to have a significant a positive effect on CBE's Total Deposit at 1% to 12.3% in the long run. Therefore, the mobilization of financial savings became impaired by low nominal interest rates that were negative in real terms because of high inflation rates.

Expense in Commercial Bank of Ethiopia negatively affects its Deposit by 1% for a 1 % increase the Total Expense incurred in by the bank. Almost by 25% all the endogenous variable will affect a one year lag in the short run to reach the equilibriums position in the long run.

Recommendations: Based on the findings and conclusions, the followings are recommended for Commercial Bank of Ethiopia as a way to mobilize more deposits than before.The bank need to improve bank service accessibility by employing strategies and initiatives suitable to the target customers; it could be increasing number of branches; implementing modern and friendly banking technologies like ATM, e-banking and mobile banking; introducing new deposit account/name like children accounts, education accounts; strengthening local and foreign partnerships. The Bank financing scheme, being aligned with the government policy particularly in a priority sectors, should directly impact on the millennium development goals, increasing productivity and substitutable goods that decreases foreign currency out flow, i.e. manufacturing, agriculture

and export sectors rather financing in domestic trade service. It is better for the bank to invest more in asset as it has a direct result on the deposit; the efforts should be backed up by initiating increased liabilities and promoting the bank's image. In related terms, increasing loans and advances and strengthening partnerships could help increase the deposit level. Also, improving the bank's efficiency can contribute for the deposit.

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