The impact of NBE bills purchase on the profitability of private commercial banks: An Empirical Study on Ethiopian Private Commercial

by Memru Tesfaye

This is to certify that the thesis prepared by Memru Tesfaye, entitled: *The impact of NBE bills purchase on the profitability of private commercial banks: An Empirical Study on Ethiopian Private Commercial Banks* and submitted in partial fulfillment of the requirements for the degree of EMBA with the regulations of the university and meets the accepted standards with respect to originality.

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ABSTRACT

The purpose of this study is to investigate the impact of NBE bills purchase on the profitability of private commercial banks in Ethiopia by using panel data of sixteen private commercial banks with a total of 64 observations from year 2011 to2014.

The study used quantitative research approach and secondary financial data are analyzed by using multiple linear regression models for the three bank profitability measures; Return on Asset (ROA), Return on Equity (ROE), and Net Interest Margin (NIM). Regression model was applied to investigate the impact of Capital adequacy, NBE bills, liquidly & total loans to total asset. Growth rate on major bank profitability measures (i.e., (ROA), (ROE), and (NIM) separately).

The study finds that exposure to government bill has moderate effect on banks profitability in the past years. However if the policy persist without amendment or phase out it will definitely create a significant negative impact on banks performance.

On the other hand the bills seems contributed positively to perform via mopping up the excess liquidity holding of banks or to invest excess funds in earning government securities than the customary practices of holding liquid asset in zero earning account at the NBE. In addition, it instigated banks to some extent provide focus on other fee generating sources. The significant relation of the NIM with performance revealed that banks respond to the policy through adjusting their loan price in a way to compensate for the opportunity they lost. Consequently the banks cost related to bill purchase to some extent seems to be covered by borrowers but the increase in the rate of interest has not resulted in materialized high default risk. In general, the result of the study shows the effect of the policy measure is mitigated by the excess liquidity standing of banks during the policy formulation, the likely possibility to expand to other fee generating services, stable liability price and banks discretion to adjust their asset price. Nevertheless, the decline trend in the share of loans from the total asset could have negative effect on the long run which in fact to some extent will be moderated by the maturity of part (but significant sum) of the bills in few years time. The study focused on the historical impact of the bill measure: hence its long run effect requires further exploration.

Declaration

I Memru Tesfaye declare that this work titled "***The impact of NBE bills purchase on the profitability of private commercial banks"*** is my own effort, study and all sources of materials used for the study have been duly acknowledged. I have produced it independently except for the guidance and suggestion of the thesis advisor.

This study has not been submitted for any degree in this university or any other university. It is offered for the partial fulfillment of a Masters degree in EMBA.

Certification

This is to certify that this project work, ***"The impact of NBE bills purchase on the profitability private commercial"***, undertaken by Memru Tesfaye for the partial fulfillment of EMBA, is an original work and not submitted earlier for any degree either at this University or any other University.

Signature _____

Date _____

Research Advisor Dr. Asmare Emerie

Acknowledgement

I would like to express my first and for most of hearty appreciation, since gratitude and special thanks to my advisor Dr. Asmare Emerie for his tireless intellectual guidance, advice, assistance, valuable comments, constructive criticisms and dedication of his golden time in reading and correcting this research work.

Finally thanks to all my work place staff members.

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LIST OF ACRONYMS

AIB	**Awash International Bank S.C.**
CBE	**Commercial Bank of Ethiopia**
DBE	**Development Bank of Ethiopia**
EBA	**Ethiopian Bankers Association**
GDP	**Gross Domestic Product**
GTP	**Growth and Transformation Plan**
IMF	**International Monetary Fund**
NBE	**National Bank of Ethiopia**
NIB	**Nib International Bank S.C**
NIM	**Net Interest Margin**
PECC	**Pacific Economic Cooperation Council**
SSA	**Sub Sahara Africa**
STID	**Short-Term Investment Deposits**
CAR	**Capital Adequacy**
ROA	**Return on Asset**
ROE	**Return on Equity**

Chapter One

1. Introduction

1.1 Background of the Study

In 1905 Bank of Abyssinia was established as the first bank in Ethiopia (Gidey, 1990). The bank was owned and managed by the National Bank of Egypt, which was owned by the British and also was given a banking monopoly for fifty years, including the right to issue notes and coins. Subsequently, three other banks were established in the following ten years. In 1931, the Bank of Abyssinia was replaced by the Bank of Ethiopia which was wholly owned by the government and members of the Ethiopian aristocracy, becoming the first African-owned bank in the continent. However, it has operated for only a few years, being closed after the Italian invasion. During the Italian occupation, several Italian banks opened branches in Ethiopia (Abdurezak, 2013).

After liberation in 1942, the State Bank of Ethiopia was established. It became operational in 1943, with 43 employees and two branches, and acted as the country's central bank. The Bank also acted as the country's main commercial bank, while a few much smaller foreign banks continued to operate. The country's first development bank was founded in 1950. In 1963, a new banking law split the functions of the State Bank of Ethiopia into central and commercial banking as the National Bank of Ethiopia and the Commercial Bank of Ethiopia respectively. In addition to the commercial banks, the government established two development banks, both of which were 100% state owned. The Agricultural and Industrial Development Bank (AIDB) was set up in 1970, taking over two earlier development banks: the Development Bank of Ethiopia and the Ethiopian Investment Corporation which had been established in 1963 as the Investment Bank of Ethiopia (Gidey, 1990).

Ethiopia's economy is characterized by low level of economic development requiring enormous financial resources in order to accelerate the pace of its growth and development. Bank service in general is one of the critical inputs for accelerated growth. Despite this fact, Ethiopia is one of the most under banked economies. This situation is a result of the country's long but turbulent history which dictated much greater focus on safety and survival rather

than on socio-economic development. It is also partly because of the dictates of socialist ideology which prevailed in Ethiopia from the mid 70s to the early 90s and preferred a state owned mono commercial banking system (Gidey, 1990).

The rebirth of the private sector, after the new policy shift from centrally planned economic system towards a market economy in early 1990s, has triggered the establishment of private banks in a fully state owned banking sector.

Banks are the critical part of the financial system of a given economy that play pivotal role in contributing to a country's economic development. The importance of banks is more pronounced in developing countries like Ethiopia where the financial markets are underdeveloped, and banks are typically the only major source of finance for the majority of firms and are usually the main depository of economic savings.

There is general agreement that bank performance is a function of internal and external factors. The internal factors refer to the factors originating from bank accounts or micro or bank specific ones while the external determinants are variables that are not related to bank management but reflect the external economic and legal environment or macroeconomic ones that affect their operation and profitability such as real GDP growth, bank concentration, inflation, government regulation, and other variables that represent market characteristics of these macroeconomic factors which can impact the banks performance positively or adversely.

In this regard, the Ethiopian government introduced a directive in April, 2011, ending a two year long credit cap policy in the industry. This directive MFA/NBEBILLS/001/2011, officially declared the establishment and operation of National Bank of Ethiopia (NBE) Bills market. The directive obliges all private commercial banks operating in Ethiopia to purchase 27% of NBE bills for every Loans and Advances they disburse with the exception of two governmental banks, Commercial Bank of Ethiopia and Development Bank of Ethiopia.

According to Simeneh (2012) many private banks were negatively affected with the new directive of the National Bank of Ethiopia. They argue that the condition of allocating 27 percent of their lending to the government with an interest rate of just 3 percent will reduce the profit of the banking sector.

Based on a study undertaken by Ethiopian Bankers Association (EBA) in 2013, the implementation of this directive had drained significant portion of the banks' fund, which adversely affected their liquidity position, lending to the private sector and hence profitability.

Since the issue is quite recent and as far as the researcher's reading is concerned, researches are not much formally undertaken to show the impact of this bills' market on commercial banks performance, the researcher in this paper will endeavour to investigate how this Bills Market affects private commercial banks performance focusing on profitability.

1.2 Statement of the Problem

The principal profit-making activity of any commercial bank is making loans to its customers. The primary objective of bank management is to earn income while serving the credit needs of its community (Reed and Gill 1989). Lending represents the heart of the industry. Loans are the dominant assets and represent 50-75 present of total asset at most banks; loan giving the largest share of operating income and represents the banks greater risk exposure (Mac Donald and Koch 2006).

Interest income from loans and advances is the principal source of earning for all commercial banks in Ethiopia. After the implementation of the NBE bills market directive, a number of entities made a study to show the effect of this bills market on commercial banks performance.

With the use of an in-depth interview, Yodit Kassa (2012) made an exploratory research to investigate the implication of NBE Bills purchase on performance of private commercial banks in Ethiopia and found out that the bills market affects banks' profitability, liquidity and creates asset-liability mismatch. In addition to this, the study found out that the directive is based on preferential treatment hence, resulting in the shift of customers from the private banks to public banks as a result reduce the private banks market share in the industry.

Yoseph Getachew (2013) made another study to look into the NBE bill purchase policy on commercial banks. The researcher, by considering 7 commercial banks for a period covering 2007/08-2011/12 and with the use of a mixed approach, found out that the policy negatively affects profitability, liquidity and lending capacity of commercial banks.

An exploratory research conducted by Ethiopian Bankers Association (2013) regarding NBE's Directive on Amendment of Bills Purchase[1] revealed that the amendment will have the impact of accelerated draining liquidity position, deteriorate lending capacity, profitability, investment financing, finance need of some important sectors which do have direct link with priority sectors, and overall growth of private banking industry.

The studies mentioned above focused on analysing the effect of the bills market on profitability and liquidity of commercial banks and it's crowding out effect on the private sector lending. However, this paper will be different from earlier studies in two ways: sample coverage and methodology. It assumes all the sixteen private commercial banks and the period of study cover the time from June 30, 2011 to June 30, 2014.

1.3 Objective of the Study

The general objective of this study will be investigating the effect of NBE bills purchase on the performance of private commercial banks. In line with this general objective the research will also try to address the following specific objectives: -

- → To investigate the impact of NBE bills market on shareholders equity;
- → To investigate the impact of NBE bills market on private commercial bank return on asset
- → To analyse how NBE bills market affect private commercial banks net interest margin.

1.4 Research Question

The requirement on private banks to purchase NBE bills equivalent to 27 percent of any new loans appears to have a sizable negative impact on private banks' intermediation activities. There is a risk that this directive reduces the profitability of private banks on account of less intermediation further impacting negatively on the private sector lending. Hence, the impact of this bills market requires further study.

Accordingly, this paper will try to investigate and will attempt to answer the following research questions:-

i. To what extent does the bills market affect the return on asset of private commercial banks?
ii. To what extent does the bills market affect shareholders equity of private commercial banks?
iii. Does the bill market have any effect on the lending capacity of private commercial banks?

1.5 Hypotheses of the study

The main hypothesis that this study is interested to test is as follows: A purchase of NBE bills has negative impact on bank's profitability.

1.6 Definition of Terms

For the purpose of this paper unless otherwise stated differently,

- **NBE bills** are long term obligation of the National Bank of Ethiopia having a maturity period of 5 years, an interest rate of 3 percent per annum and interest accrued on the bills payable on an annual basis (NBE directive#. MFA/NBEBILLS/001/2011).

1.7 Significance of the Study

Access to finance is becoming one of the bottlenecks for private sector development in Ethiopia. Even if there are a number of reasons for such a challenge, one major explanation is the reduced ability of commercial banks to provide loans to private businesses. Coupled with this, most of the private commercial banks quite recently are facing the difficulty of increasing their profit as before the implementation of NBE bills purchase directive. Some are even recording a reduced profit as compared to their previous year performance. Hence, this study focuses on and will address the most recent and current challenge of all private commercial banks in Ethiopia. It is expected that the findings of the study will primarily give an answer to these current issues. Not only this, the study will also serve as reference for those people interested in advancing the knowledge pool towards the study topic.

1.8 Scope and Delimitation of the Study

Even though the directive implemented on the 4th of April, 2011, the central bank demanded the issuance of NBE bills to each bank retroactively from the previous eight months starting from the 1st of July, 2010. Therefore, the study analyzes the impact of NBE bills purchase on Profitability since the implementation of the directive on all private commercial banks for the period from June 2011 to June 30, 2014.

1.9 Organization of the Paper

The final project report will have five chapters. The first chapter will discuss the introductory issues like background of the study, statement of the problem, objective of the study, hypothesis of the study, definition of terms, significance of the study, scope and delimitation of the study. The second chapter will deal with review of literature. The third chapter shall focus on the methodology part while the fourth chapter willinclude the data presentation, analysis and findings. Finally, the last chapter will present summary of major findings as well as the conclusions and recommendations.

Chapter Two

The focus of this chapter is to give theoretical and conceptual foundation of the study. This chapter presents a review of literatures focusing on the empirical evidence on government bonds.

2.1 Literature Review

A central bank, reserve bank, or monetary authority is an institution that manages a state currency, money supply, and interest rates. Central banks also usually oversee the commercial banking system of their respective countries. In contrast to a commercial bank, a central bank possesses a monopoly on increasing the amount of money in the nation, and usually also prints the national currency, which usually serves as the nation's legal tender.

The primary function of a central bank is to manage the nation's money supply (monetary policy), through active duties such as managing interest rates, setting the reserve requirement, and acting as a lender of last resort to the banking sector during times of bank insolvency or financial crisis.

For Okwu et al. (2011) and Adesoye et al. (2012) as cited in EBA (2013), monetary policy refers to a combination of measures designed to regulate the value, supply and cost of money in an economy, in consonance with the expected level of economic activity. For most economies, the objectives of monetary policy include price stability, maintenance of balance of payments equilibrium, promotion of employment and output growth, and sustainable development. And the monetary policy conducted by central banks is believed to be a meaningful policy tool for achieving the above stated objectives. The basic approach is simply to change the size of the money supply. This is usually done through open-market operations, in which short-term government debt is exchanged with the private sector. If a central bank, for example, buys or borrows treasury bills from commercial banks, the central bank will add cash to the accounts, called reserves, that banks are required keep with it. That expands the money supply. By contrast, if the central bank sells or lends treasury securities to banks, the

payment it receives in exchange will reduce the money supply. In addition to open market operations, changes in, a central bank may also affect the money supply by changing required reserves ratios, the discount rate, margin requirements including borrower's equity contribution and loan terms.

In general, monetary policy by central banks has an impact on financing conditions in the economy (not just the costs, but also the availability of credit or banks' willingness to assume specific risks) and also it has influence on expectations about economic activity and inflation. Monetary policy can affect the prices of goods, asset prices, exchange rates as well as consumption and investment.

The central banks in addition to conducting the monetary policy, it does also have the entitlement to issue government bonds by which the federal government borrows money.

2.1.1 Why Bond Market?

There are a number of broader reasons for developing domestic bond markets. Herring and Chatusripitak (2000) and Pacific Economic Cooperation Council (PECC) in 2004 for example, argue that bond markets are central to the development of an efficient economic system, and there would be additional significant benefits if bond markets are developed. They provide greater investment opportunities for both retail investors and financial institutions, and help deepen financial markets.

From a macroeconomic policy perspective, the lack of a bond market places constraint on the financing of fiscal deficits, while bond markets provide useful market signals for macroeconomic policy. Domestic debt is also needed for monetary policy purposes, including for sterilizing inflows of foreign exchange. A study by Yibin, Peter and Janet (2013), indicated that deeper bond markets will enable central banks in SSA to conduct monetary policy more effectively. At present, many banks have few domestic fixed-income instruments to use for sterilization other than short-term government debt. Deeper bond markets would provide a wider, more effective range of instruments for monetary policy implementation.

Bond markets also help to provide interest rates across the maturity spectrum and a more efficient pricing of risk. By providing an alternative source of financing, they reduce concentration of intermediation in banks. Because lending can be hedged in the bond market, banks have the ability to lend longer.

The usefulness of domestic debt markets can also be seen in the context of countries that are dependent on aid flows. International aid is often linked to project financing and can therefore not finance capital projects not supported by the donors. Furthermore, the supply of foreign financing is uncertain, and dependent on the aid agencies' budgets and assessment of economic performance in the recipient country. In many instances, domestic debt has increased because of a need to fill the shortfall caused by the decline in the supply of foreign aid. Rwegasira and Mwega (2003) show that, in general, accumulation of domestic debt has reflected the size of the budget deficit and the extent to which Sub Saharan Africa (SSA) countries have been able to borrow externally.

Larger fiscal deficits are associated with larger government bond markets. They explore robustness to possible endogeneity of inflation, because of the critical interaction between inflation and bond market development. According to Yibin et al. (2013) and Christensen (2004), Ethiopia is among African countries with a historically high government securities market capitalization.

PECC (2004) sets out a number of general requirements for bond market development. The factors stressed include the simultaneous development of market width, market depth and market infrastructure. Other factors include effective coordination among government agencies as well as close public-private sector partnership, regulation focusing on maintaining and enhancing transparency and the treatment of taxation. It is also proposed that special support measures be introduced when market depth is lacking.

2.1.2 Relationship between Bond Market and Credit Service by Banks

Banks accept customer deposits and use those funds to give loans to other customers or invest in other assets that will yield a return higher than the amount bank pays the depositor (McCarthy, Schneider and Tibb 2010). It follows that customers' deposit is the primary source of bank loan and hence, increasing or guaranteeing deposits directly has a positive effect on lending.

According to Zewdu (2010), without lending banks' incomes especially interest income would highly deteriorate and affect the overall performance of banks.

The principal profit- making activity of commercial banks is making loans to its customers. In the allocation of funds to earn the loan portfolio, the primary objective of bank management is

to earn income while serving the credit needs of its community (Reed and Gill 1989). Lending represents the heart of the industry. Loans are the dominant asset and represent 50-75 percent to total amount at most banks, generate the largest share of operating income and represent the banks greater risk exposure (Mac Donald and Koch 2006).

If banks give limited or reduced loans to their customers, their income will be reduced and the overall performance may be negatively affected.Since the major portion of gross profit of the industry is earned from loans; the administration of loan portfolios seriously affects the profitability of banks (Wei-shong and Kuo-chung 2006, cited in Zewdu).

According to Van Zyl, Skerritt and Good speed (2009) in the year 2006 total net interest income made up 56 percent of South African banks income while net non-interest income accounted for 43 percent of their income. This appears to be in line with other countries. For example commercial banks in the U.S which showed that 41 percent of banks total earnings come from non-interest sources in the same year.

Even if interest income is the main source of income for almost all banks which is mostly derived from credit service, there is a negative relationship between a bank's possession of government securities and its ability to render credit services.

According to Blommestein and Horman (2007) local commercial banks tend to be the main holders of domestic securities. This reflects weaknesses in the commercial lending operations and, in some cases, excessive requirements to hold government securities.

If government debt becomes sizable, it can crowd out private sector credit and this will have negative consequences for private sector investment. Adelegan and Radzewicz-Bak (2009), taking 23 SSA counties for the period between 1990 and 2008, they found out that expansion of domestic debt caused a decline in lending to the private sector.

2.1.3 Performance Measures in Banks

The measurement of bank performance particularly commercial banks is well researched and has received increased attention over the past years (Seiford and Zhu 1999). There are two broad approaches used to measure bank performance, the accounting approach, which makes use of financial ratios and econometric techniques.Traditionally accounting methods primarily

based on the use of financial ratios have been employed for assessing bank performance (Ncube 2009).

According to Popa, Mihallescu and Caragea (2009) popular measures of bank performances are return on assets (ROA), return on equity (ROE), and net interest margin (NIM) and the efficiency ratio.

Return on Asset shows the ability of management to acquire deposits at a reasonable cost and invest them in profitable investments (Ahmed 2009). This ratio indicates how much net income is generated per $ of assets. The higher the ROA; the bank generate more profit.

Mostly Return on Equity is used to measure the profitability of banks. It is the rate of return to shareholders or the percentage return on each $ of equity invested in the bank. The efficiency of the banks can be evaluated by applying ROE, since it shows that banks reinvest its earnings to generate future profit.

The growth of ROE may also depend on the capitalization of the banks and operating profit margin. If a bank is highly capitalized through the risk-weighted capital adequacy ratio or Tier 1capital[2] adequacy ratio, the expansion of ROE will be retarded. However, the increase of the operating margin can smoothly enhance the ROE. ROE also hinges on the capital management activities. If the banks use capital more efficiently, they will have a better financial leverage and consequently a higher ROE. Because a higher financial leverage multiplier indicates that banks can leverage on a smaller base of stakeholder‘s fund and produce higher interest bearing assets leading to the optimization of the earnings. On the contrary, a rise in ROE can also reflect increased risks because high risk might bring more profits. This means ROE does not only go up by increasing returns or profit but also grows by taking more debt which brings more risk. Thus, positive ROE does not only represent the financial strength. Risk management becomes more and more significant in order to ensure sustainable profits in banks. (Ara, Bakaeva and Sun 2008)

According to Mac Donald and Koch (2006) a high performing bank is the one that gives an exceptional return to share holders while maintaining an acceptable level of risk. And aggregate bank profitability is measured and compared in terms of ROE and ROA.

Net interest margin, on the other hand, is the cash flow banks receive from loans and investments in securities minus interest payments on deposits and other forms of debt, divided by total average earning assets (Charles and Kristen 2013). It shows how well the bank is earning income on its assets. High net interest income and margin indicates a well managed bank and also indicates future profitability.

As it was clearly explained by (Ara, Bakaeva and Sun 2008) the measurement of bank performance has been developed over time. At the beginning, many banks used a purely accounting-driven approach and focused on the measurement of net income, for example, the calculation of ROA. However, this approach does not consider the risks related to the referred assets, for instance, the underling risks of the transactions, and also with the growth of off-balance sheet activities. Thus the riskiness of underlying assets becomes more and more important. Gradually, the banks notice that equity has become the scarce resource. Therefore, banks turn to focus on the ROE to measure the net profit to the book equity in order to find out the most profitable business and to do the investment. (Gerhard 2002).

2.1.4 Bond

Bond is a debt security that promises to make payments periodically for a specified period of time. The bond market is especially important to economic activity because it enables corporations or governments to borrow to finance their activities and because it is where interest rates are determined (Mishkin 2004 pp.3-4).

Bonds are issued either by governments, semi-government organizations or corporations (Understanding Bonds 2003).

2.1.4.1 Government bonds

Government bonds are issued directly by a government and are explicitly guaranteed. They are financial instruments used by the federal government to borrow money.

2.1.4.2 Semi-government bonds

These bonds are not issued directly by a government, but might have a direct or implied guarantee. For example, state governments and other entities that have a government

guarantee, like the World Bank, issue bonds to support their financial needs or to finance public projects.

2.1.4.3 Corporate bonds

Large public companies also issue bonds to fund expansion and other major projects. Corporate bonds differ in two important ways to government bonds – yield and credit quality. Generally, corporate bonds are thought to have a higher risk level than government or semi-government bonds, so they typically offer higher interest rates.

2.1.4.4 International bonds

These are foreign country bonds whose stability depends on its country of origin, its issuer and its credit rating. Experience shows that some countries' bonds will be less stable than others.

There are a number of broader reasons for developing domestic bond markets. Herring and Chatusripitak (2000) and Pacific Economic Cooperation Council (PECC) in 2004 for example, argue that bond markets are central to the development of an efficient economic system, and there would be additional significant benefits if bond markets are developed. They provide greater investment opportunities for both retail investors and financial institutions, and help deepen financial markets.

PECC (2004) sets out a number of general requirements for bond market development. The factors stressed include the simultaneous development of market width, market depth and market infrastructure. Other factors include effective coordination among government agencies as well as close public-private sector partnership, regulation focusing on maintaining and enhancing transparency and the treatment of taxation. It is also proposed that special support measures be introduced when market depth is lacking.

Commercial banks dominate the financial system in SSA countries and, given their relatively large size compared with other segments of the financial sector as well as the role that they play as market makers for primary issues, they remain the largest group of investors for government papers, including government bonds (Adelegan and Radzewicz-Bak 2009).

It is a mere fact that the main source of income for almost all banks is interest earning which is mostly derived from credit service. However, there is a negative relationship between a bank's possession of government securities and its ability to render credit services.

If banks give limited or reduced loans to their customers, their income will be reduced and the overall performance may be negatively affected. Since the major portion of gross profit of the industry is earned from loans; the administration of loan portfolios seriously affects the profitability of banks (Wei-shong and Kuo-chung 2006, cited in Zewdu).

Another study by Yibin, Peter and Janet (2013) on the other hand, indicated that deeper bond markets will enable central banks in SSA to conduct monetary policy more effectively. At present, many banks have few domestic fixed-income instruments to use for sterilization other than short-term government debt. Deeper bond markets would provide a wider, more effective range of instruments for monetary policy implementation.

2.2 Empirical Review

Various empirical studies on banks market over different time horizons, pointed out that Central Bank's adopted monetary policy of a country has implications on bank performance. Ikhide and Alawode (2001) indicated that central bank's measures such as setting ceilings on interest rates and credit expansion, selective allocation of credit, and high reserve requirements could result in financial repression which distorts the well-functioning of domestic financial markets.

It is well recognized that the Ethiopian government is taking various policy measures and also implementing different development projects to realize its vision of joining the middle income countries category by 2025's. As part of realizing this vision, it has developed a Growth and Transformation Plan (GTP) that will be fully implemented within three successive five year development plans.

Based on the power vested on it by articles 5 (3, 4) and 27 (2) of the National Bank of Ethiopia Establishment Proclamation No. 591/2008, the National Bank of Ethiopia has recently issued a directive that obliges every commercial banks operating in Ethiopia to purchase 27% of NBE bills for every Loans and Advances they disburse with the exception of the governmental banks (directive MFA/NBE BILLS/001/2011).

One of the ways that private banks are expected to support the successful implementation of the GTP is through the purchase of this NBE bills. Table 2.1 shows NBE bills purchased by private commercial banks in the country. All private banks were considered in this study have spent a total of Birr 25.278 billion as of June 30, 2014 for the purchase of NBE bills.

Table 2.1: NBE Bill purchased by private commercial banks

S.No	Banks	June 30,2014
1	Dashen	4.16 Billion
2	AIB	4.06 Billion
3	UB	2.86 Billion
4	Wegagen	3.03 Billion
5	NIB	2.68 Billion
6	Abysinia	2.71 Billion
7	Oromia	1.09 Billion
8	CBO	839 Million
9	Lion	716 Million
10	Zemen	947 Million
11	Bunna	604 Million
12	Addis	179 Million
13	Abay	630 Million
14	Birhan	547 Million
15	Debube	95 Million
16	Enat	131 Million
Industry Total		**25.278Billoin**

Source: Annual Report of private commercial Banks

The requirement on private banks to purchase NBE bills equivalent to 27 percent of any new loans appears to have a sizable negative impact on private banks' intermediation activities (*please see Box 1 on next page*). The requirement also has the potential of creating maturity mismatches as private banks collect savings at two to three-year maturity and even shorter in some cases, but have to freeze these resources for five years at rates lower than cost of funds. There is also a risk that as the profitability of private banks reduces on account of less intermediation because of this directive, they could raise noninterest income charges such as fees and commissions to recoup these losses, further impacting negatively on the private sector (International Monetary Fund 2012)

Box 2.2 assessing the impact of the 27 percent NBE Bill requirement on private banks

Ethiopia: Assessing the Impact of the 27 percent NBE Bill Requirement on Private Banks

In April 2011, the Ethiopian authorities issued a directive requiring private banks to purchase NBE bills equivalent to 27 percent of any new loan disbursements. These bills have low-interest earning of 3 percent and a maturity of 5 years.

The 27 percent NBE bill requirement has the potential of crowding out private sector financing. To highlight this possibility, an illustrative numerical scenario is considered where the initial fund available to a bank for its intermediation activities is birr 1.27 million (Box Table 1). Out of this fund, the bank is assumed to disburse a one-year loan in the amount of 1 million birr at the current lending rate of 9 percent and purchase NBE bills of 0.27 million birr as required. After one year when this loan is paid back, the total loanable fund available to the bank (birr 1,098,100) would be the loan repaid plus the interest it generated, plus the interest accrued on the NBE bills. Out of this fund, the bank can extend the maximum of birr 864,676 and is required to purchase additional NBE bills of birr 233, 463, with the stock of NBE bills rising to birr 503,454.

Renewing such an operation every other year over five years would reduce the fund available for lending by the bank to birr 590,677 in the fifth year, while the stock of NBE bills rises sharply to birr 1,045,748 (Box Table 1), suggesting a significant crowding out of private bank lending to the private sector. It is also an indication that the allocative role of private banks is being taken over by the government, raising the issue of the efficiency of such an allocation. If private banks were to try to circumvent this heavy penalty, by issuing one long term (5 years) loan and to comply with the 27 percent only once, it would put the financing of the DBE—which relies on the proceeds of the 27 percent NBE bills—at risk.

The requirement also has the potential of creating maturity mismatches. Private banks collect savings mostly at two to three-year maturity and even shorter in some cases. Fulfilling the 27 percent requirement means that they have to freeze these resources for 5 years, creating a clear maturity mismatch.

Box Table 1. Impact of the 27 percent NBE Bill Requirement on Lending to the Private Sector

Years	1	2	3	4	5
Lending to the private sector	1,000,000	864,646	753,990	663,827	590,677
Stock of NBE bills	270,000	503,454	707,032	886,265	1,045,748

Source: IMF staff calculations.

Source: International Monetary Fund, THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA STAFF REPORT FOR THE 2012 ARTICLE IV CONSULTATION, p-12

Ebisa (2013) while investigating the branch expansion of CBE and the position of private commercial banks, he pointed out the country's banking sector comprises of 18 commercial banks, including a dominant state-owned bank, CBE, whose assets represent about 70 percent of the sector total, as of April 2012. The remaining 17 private banks account for the remainder. Private banks showed a slower increase in their bank branch network, which is a reflection of

their smaller size and ability; the latter is constraint given the 27 percent rule that limits the availability of funds to lend and hence the ability to expand.

Banks would ration loan to borrowers that they think have the capacity to repay. But the introduction of the NBE bills directive would decrease the loans and advances that the banks can provide, thereby limiting their profits and increasing their losses. Many private banks are not happy about the condition attached with the new directive of the National Bank of Ethiopia. They argue that the condition of allocating 27 percent of their lending to the government with an interest rate of just 3 percent will reduce the profit of the banking sector (SimenehTerefe 2012).

Based on a preliminary survey under taken by Nib International Bank (NIB), purchase of NBE bills will have different outcomes in the bank such as the available loanable fund of the bank will go down, Interest income of the bank would not be reduced in the near future however, it will registers a steady growth and most importantly the bank will face liquidity problems (Nib International Bank 2011).

Introduction of credit regulation system to the commercial banks by issuance of Directive MFA/NBEBILLS/001/2011 of the National Bank of Ethiopia (NBE) is believed to entail significant effects on the economy in general and on performance of the private commercial banks in particular. In such an environment, private commercial Banks are in fact the primary victims. Studies conducted in India and other places, where directed credit policies prevailed, show that the policy has generally negative consequences on the overall performance of commercial banks even though it may (sometimes) have a marginal positive effect on the growth of the favoured economic sectors. In the long run, however, the performance of the favoured sectors themselves tends to deteriorate overtime (Awash International Bank 2011).

Based on Awash International Bank (AIB) investigation of the issue, the aggregate impact of the directive, which will manifest itself as an overall reduction in performance of the commercial banks is the effect of poor performance of private commercial banks. Specific performance areas of private commercial banks, such as AIB, that would be affected by the directive are mainly the following:

- Decreased profitability;
- Eroded intermediation role of Commercial banks;

- private commercial banks may face maturity mismatches on the money they spend on purchase of government bills which NBE considers priority area lending; and
- In the long-run, investment on government bills ('priority' sector) increases at an increasing rate and funds available for other sectors decreases at an increasing rate and finally commercial banks may reach a point where they cannot lend money anymore unless they devise a way out.

A study conducted by Ethiopian Bankers Association (2013) regarding NBE's directive on the amendment of bills purchase indicated that the more frequent the loan disbursement is made, the more will be the volume of the Bank's resource going for NBE bill purchase and the more will be the cost incurred either in the form of opportunity cost as well as additional cost of fund by virtue of being less than the deposit rate. In other words, it lowers the interest spread that Banks could get out of financing because there will be a shift of resource from high interest bearing asset to low interest bearing assets resulting in adverse impact on earnings of banks.

According to other sources, purchase of NBE bills not only affects the bank's borrowing performance but it does also affect the bank's ability to engage in other interesting earning activities. This may include purchase of treasury bills for which the bank has a competitive advantage on interest as compared to NBE bills or opening short term investment deposits in other bank at a competitive interest rate.

In response to the new directive, private banks may choose to fully recover the added burden of the new directive by adjusting their lending rates upwards; in this case, borrowers will be hurt most by the new directive as they face higher financing costs, at another extreme, banks may absorb most or all of the cost of this directive themselves by accepting reduced incomes (due to the low 3 percent interest rate) or they may well reduce their involvement in other interest producing activities (opening fixed time deposits at other bank at a competitive rate) and face the consequences that follow from this in terms of lower profits and shareholder returns (Access capital 2011).

The NBE's new directive indicates that funds collected from "NBE Bills" shall be used for priority sector government projects. As such, the bills will not be performing a sterilization function of withdrawing funds from the banking system to control the growth in money supply. Rather, the collected funds are simply being re-allocated from what would have been

spending by the private sector to what will now be spending by the government, with the central bank serving as an intermediary (Access capital 2011).

NBE does not share all the above views that the bills market is aggravating the financial repression but rather believes that the introduction of NBE Bills is helping in shifting credit portfolio from short-term loans to medium and long-term loans. It also pointed out that interest income for commercial banks participating in the NBE bills has increased by some 60 percent in the quarter ending March, 2012 compared to the same quarter last year, suggesting substantial increase in profitability and absence of downside impact on banks profitability (International Monetary Fund 2012).

But the newly amended "NBE-Bills purchase directive No. MFA/NBEBILLS/002/2013 does not support the above NBE claim of the introduction of NBE Bills is helping in shifting credit portfolio from short-term loans to medium and long-term loans. This latest directive places a cap on the loan portfolio of the commercial banks. It demands that the total outstanding balances of short-term loans shall not be less than 40 percent of total outstanding loans and advances of the bank excluding NBE-Bills outstanding balance at any given time.

Ethiopia Economics Association (2013) in investigating the ease of access to finance in Ethiopia revealed that the availability and size of loan finance has been steadily declining over the past years and cannow be considered as the most important financing bottleneck for the private sector. The large majority ofprivate commercial banks surveyed (nine out of eleven) reported that some legislative provisions actuallyplayed an important role behind this negative trend, reducing their ability to effectively provide loans toprivate businesses. Invariably, all consulted private banks indicated the well-known and thoroughlyanalysed NBE-bill directive, requiring commercial banks to invest 27% of their gross loan disbursements inNBE bonds, as the most serious impediment to private sector lending activities. The second most cited obstacle (mentioned by seven private banks) concerns the provisions on Short Term (ST) loans recently introduced by the amended NBE-bill directive (MFA/NBEBills/002/2013). According to this directive, (i) the minimum share of ST loans in a bank's total loan portfolio is set at 40%, and (ii) ST loans have been redefined as loans with one-year maturity date. Commercial banks assess these provisions hard to deal with.

Chapter Three

3.1 Research Methodology

In this section the researcher demonstrate the methodology which is used for this paper. This section present the research design, the sample and sampling procedure, data collection and analysis methods that used by the researcher. The type of model and the components of the model meaning both the dependent and the independent variables were explained.

3.1.1 Research Design

The primary objective of this study is to investigate the impact of NBE Bill purchase on profitability of private commercial banks. To conduct the research, quantitative research methodologies is employed. The study use secondary sources of data. In line with this the study uses correlation and regression analysis to analyze the secondary data while descriptive statistical tools will also be used for analysis of the secondary data.

3.1.2 Sampling Design

Currently there are eighteen commercial banks operating in Ethiopia of which two are government owned and the remaining sixteen are privately owned. The population of this study included all the sixteen private commercial banks in Ethiopia**.**

3.1.3 Sources and Tools of Data Collection

The study uses secondary source of data. In line with this, secondary data would be gathered from annual financial statements of all private commercial banks.

3.1.4 Data Analysis Method

The study uses statistical tools such as correlation and multiple linear regressions to analyze the secondary data which would be collected from private banks. The study would primarily run correlation analysis to see if there is a relationship between the dependent and independent variables. If there is a relationship exists between these two variables, the study would further make a multiple linear regression analysis so as to show the magnitude effect of

the independent variable over the dependent variable. Data collected from the secondary sources would be analyzed with the use of descriptive statistical tools such as tables, graphs, percentages, etc.

3.2 Identification of Dependent and Independent Variables

3.2.1 Dependent variables

For the Purpose of this study dependent variables are ROA, ROE & NIM. Bank profitability was measured by the ratio of the Return on Assets (ROA), Return on Equity (ROE), and Net Interest Margin (NIM). All profitability measures included in the study are described as follows;

Return on Asset (ROA)

As Golin (2001) points out, the ROA has emerged as key ratio for the evaluation ofbank profitability and has become the most common measure of bank profitability. The following authors also used ROA as a measure of bank profitability (Yuqi Li (2006), Abebaw and Depaack (2011), Berger (1995), IndranarainRamlall (2009), Imadetal. (2011), Tobias and Themba (2011), Belayneh (2011), and Athanasoglouetal(2008)). The ROA reflects the ability of a bank's management to generate profits from the bank's assets. It shows the profits earned per birr of assets and indicates how effectively the bank's assets are managed to generate revenues, although it might be biased due to off-balance-sheet activities. Average assets were used in this study, in order to capture any differences that occurred in assets during the fiscal year. ROA can be calculated as:

$$Return\ on\ Asset\ (ROA) = \frac{Net\ Profit\ After\ Tax}{Total\ Assets}$$

This is probably the most important single ratio in comparing the efficiency and operating performance of banks as it indicates the returns generated from the assets that bank owns.

Return on Equity (ROE)

Although ROA provides useful information about bank profitability, we have alreadySeen that it is not what the bank's owners (equity holders) care about most. They are more concerned about how much the bank is earning on their equity investment, amount that is measured by the return on equity (ROE), the net income per birr of equity capital. ROE were used by some of the following authors Indranarain Ramlall(2009), Bourke (1989), Molyneux

and Thornton (1992), Belayneh (2011), Andreas and Gabrielle (2009), Athanasoglou et al. (2008), and Guru et al. (1999).

$$Return\ on\ Equity\ (ROE) = \frac{Net\ Profit\ After\ Tax}{Equity\ Capital}$$

Net Interest Margin (NIM)

Another commonly watched measure of bank profitability is called the Net Interest Margin (NIM), the difference between interest income and interest expenses as a percentage of total loans and advances which includes deposits with foreign banks, treasury bills and other investments. One of a bank's primary inter mediation functions is to issue liabilities and use the proceeds to purchase income-earning assets. If a bank manager has done a good job of asset and liability management such that the bank earns substantial income on its assets and has low costs on its liabilities, profits will be high.

$$Net\ Interest\ Margin\ (NIM) = \frac{Net\ Interest\ Income}{Total\ Loans\ and\ Advance}$$

How well a bank manages its assets and liabilities, which is affected by the spread between the interest earned on the bank's assets and interest costs on its liabilities? This spread is exactly what the net interest margin measures. NIM was used as a measure of bank profitability by Angbazo and Lazerus(1997).

3.2.2 Independent variables

This study used the major dimensions of a bank's operation: Capital adequacy, NEB bills, total loans to total asset, and Liquidity. These variables can be measured in the following formulae;

Liquidity: the ratio of total loans to total deposits was used

$$Liquidity = \frac{Total\ Loan}{Total\ Deposit}$$

Capital Adequacy = the study used capital to total asset

$$\text{Capital Adequacy} = \frac{\text{Capital}}{\text{Total Asset}}$$

NBE Bill- the total amount of NBE Bills purchased by banks divided by total loans & advances

NBE Ratio= amount of Bills purchased by private banks
Total loans & advance of private banks

Loan to total asset: - measure the level of the core earning source from total asset. The formula was taken from Tesfaye Boru to measure the level of the core earning source from total asset.

Loan to total asset = Total Loans
Total Asset

3.3 Model Specification

The study use a panel regression technique to analyze the impact of NBE bills purchase on private commercial banks profitability.

3.3.1 Multiple Liner Regression analysis

A multiple liner regression model is used to determine the impact of the NBE Bill purchase (independent variables) to see its effect on banks profitability.

The general models to be estimated are in the following linear forms:

$$ROA\ it = \alpha_i + \beta_i NB_{it} + \beta_i LiQ_{it} + \beta_i capit + \beta_i\ LTA + \varepsilon_{it}$$

Where,

ROA_{it} is the dependent variable representing return on asset of each private commercial bank

$\alpha_i$is the intercept for each private commercial bank

NB_{it} is the independent variable representing NBE bills purchase of each private commercial bank

LiQ_{it} - Liquidity of the Bank

capit- Capital Adequacy of the bank.

LTA- Measure the level of the core earning source from total asset.

$B_i$is the coefficient for the independent variable

$\varepsilon_{it}$is the error term

$NIM_{it} = \alpha_i + \beta_i NB_{it} + \beta_i LiQ_{it} + \beta_i capit + \beta_i LTA + \varepsilon_{it}$

Where,

NIM_{it} is the dependent variable representing net interest margin of each private commercial bank

$\alpha_i$is the intercept for each private commercial bank

NB_{it} is the independent variable representing NBE bills purchase of each private commercial bank

LiQ_{it}– Liquidity of the Bank

$\beta_i$capit- Capital Adequacy of the bank.

LTA- Measure the level of the core earning source from total asset

$B_i$is the coefficient for the independent variable

$\varepsilon_{it}$is the error term

$ROE_{it} = \alpha_i + \beta_i NB_{it} + \beta_i LiQ_{it} + \beta_i capit + \beta_i LTA + \varepsilon_{it}$

Where,

ROE_{it} is the dependent variable representing return on equity of each private commercial bank

α_i is the intercept for each private commercial bank

NB_{it} is independent variable representing NBE bills purchase of each private commercial bank

LiQ_{it}– Liquidity of the Bank

$\beta_i$capit- Capital Adequacy of the bank.

LTA- Measure the level of the core earning source from total asset

$B_i$is the coefficient for the independent variable,

$\varepsilon_{it}$is the error term

Where, t= 2011-2014,

Table 3.6.1 Description of the variables used in the regression model

Variable	Description	Notation
Return on Asset	The return on total assets of the bank in year t.	ROA
Return on Equity	The return on equity capital of the bank in year t.	ROE
Net Interest Margin	The difference between interest income andinterest expenses as a percentage of total loans and advances	NIM
Liquidity	The ratio of loans to deposits	LIQ
NB Bills	Measure the amount of NBE Bills purchased by commercial banks.	Bill
Capital adequacy	The ratio of total capital to total asset	CAP
Core earnings ratio	The ratio of total loans to total asset	LTA

3.4 Limitation of Methodology

Multiple regressions were utilized due to the nature of the study. This limitation can be expressed in terms of ration analysis.

The study does not include (Assume) exogenous factors like inflation or GDP.

CHAPTER FOUR

4.1 RESULTS AND DISCUSSION

This chapter deals with the results of study which include descriptive statistics of variables, correlation results for dependent and explanatory variables, diagnosis test for the regression models, and regression analysis for three profitability measures; return on asset, return on equity, and net interest margin and discussion of results. Secondary data analysis was done by using E-views 6 software.

4.1.1 Descriptive statistics of variables

Table 4.1.1 The trend in growth of NBE bill purchase

Description	2011	2012	2013	2014	Average Growth Rate
Deposit	50,029,573.00	59,664,260.00	76,259,569.00	92,110,302.00	22.62%
Loan and Advances	25,245,140.00	34,248,787.00	43,856,233.00	52,615,504.00	27.90%
NBE Bill	6,465,733.00	12,510,881.00	18,275,778.00	25,236,749.00	59.22%
Loans including NBE Bill	31,710,873.00	46,759,668.00	62,132,011.00	77,852,253.00	35.21%
Bill to Deposit ratio	13%	21%	24%	27%	4.82%
Bill to Loan and advances ratio	26%	37%	42%	48%	7.45%
Bill to Loan and advances ratio including Bill	20%	27%	29%	32%	4.00%

In this section descriptive statistics for the dependent; Return on Asset (ROA), Return on Equity (ROE) and Net Interest Margin (NIM) and explanatory variables involved in the regression model are presented. Mean, maximum,

minimum and standard deviation values are included in the table below. These figures are gives overall description about data used in the regression models.

The table above shows that the growth rate of the cumulative amount of NBE bill purchased is by far greater than that of deposit and loans and advances of banks. As a result the ratio of NBE bill out of the total deposit mobilized and out of the loans and advances extended (including bill) have significantly increased from 13 % and 20% as at end of June, 2011 to 27 % and 32 % as at end of June 30, 2014. Moreover, the growth rate of the amount of NBE bill purchased is by far greater than the growth rate of both deposit and loans.

Table 4.1.2 trends of dependent variable with bills and profit

Measures	**Years**			
	2011	2012	2013	2014
Profit(billion)	3.0	3.8	4.2	5.8
Bill(billion)	6.4	12.5	18.2	25.2
ROE(%)	18.2	17.42	17.13	20.46
ROA(%)	2.2	2.5	2.4	2.7
NIM(%)	4.4	5.7	6.4	7.8

Source: annual financial report of private commercial banks 2011-2014

As we have realized from the above table despite measures imposed on the lending capacity of banks by NBE, private banks have been able to remain profitable with an increasing trend for the last four consecutive years. Sixteen private banks jointly amassed more than 5.8 billion birr net profit in 2013/14 budget year.

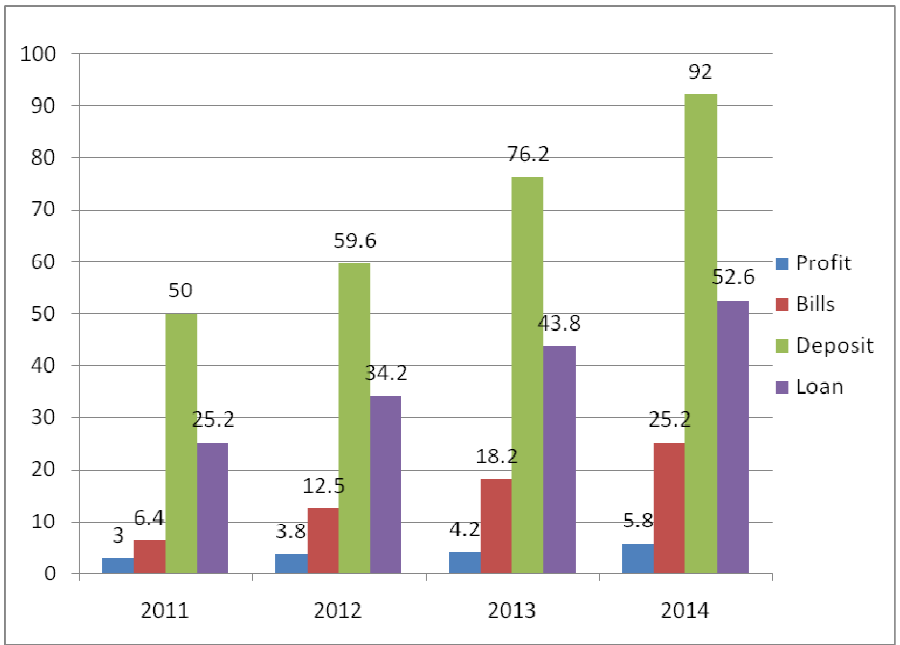
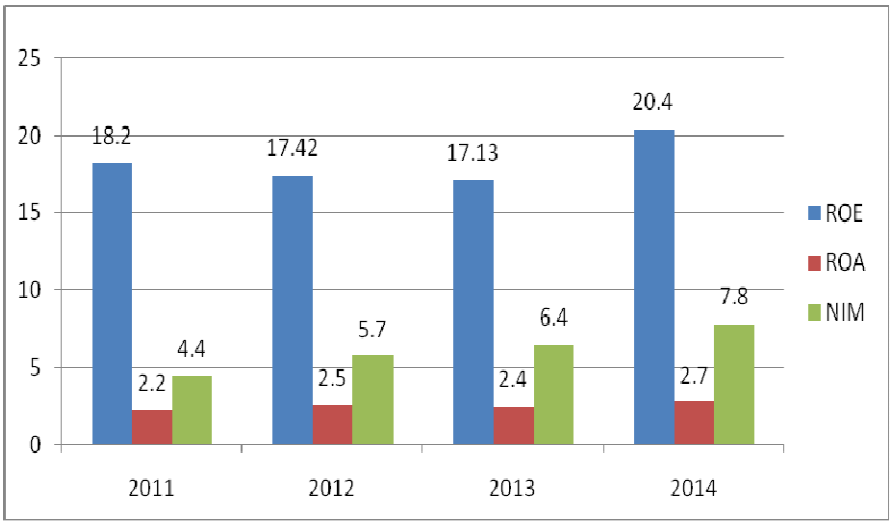


Chart 1

In billion

Years

Chart 2



In Billion

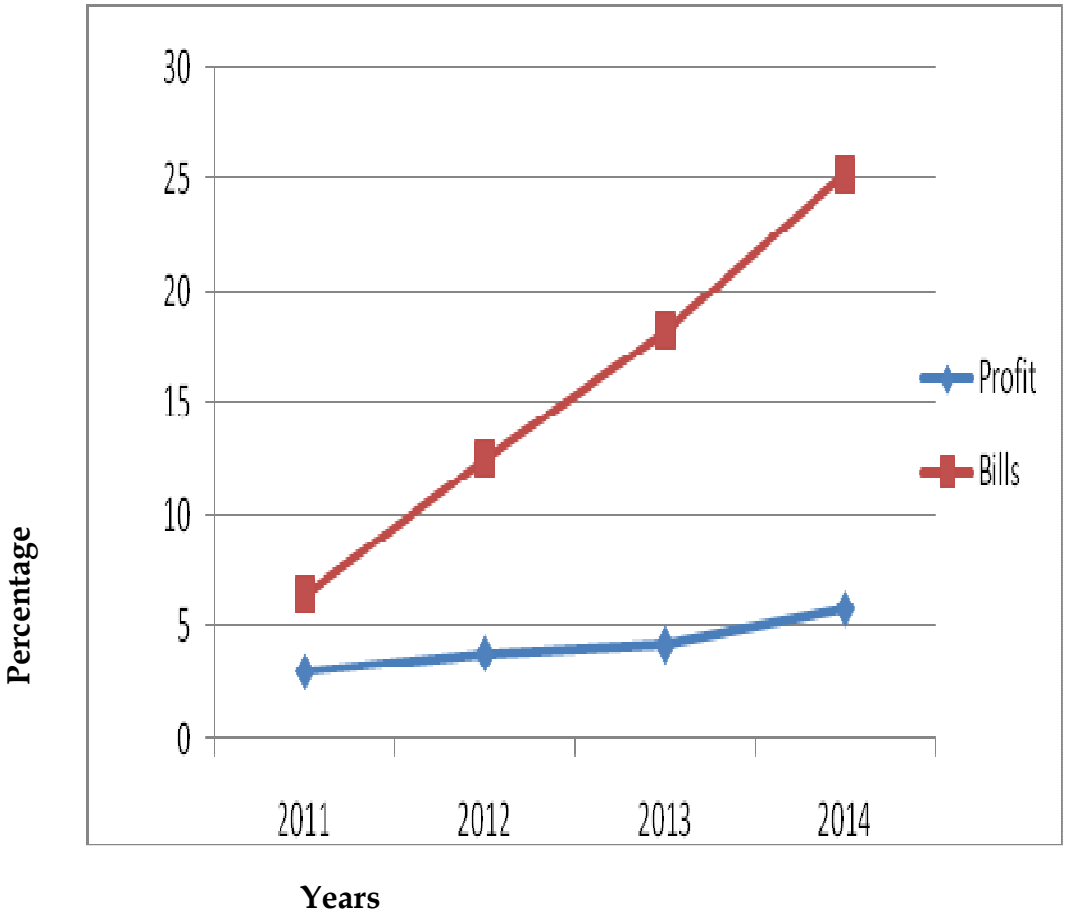
Years

Source: Annual Report of private commercial Banks

Years

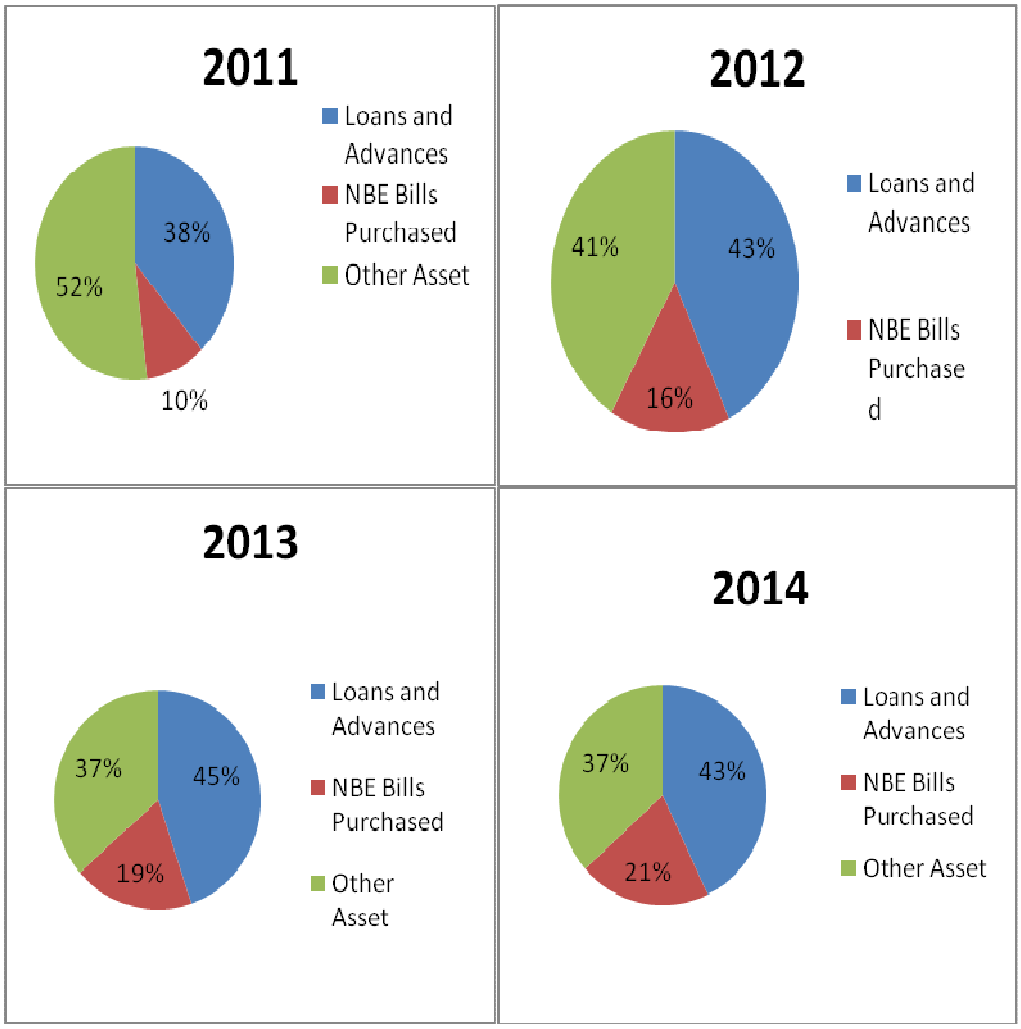
Source: Annual Report of private commercial Banks

Chart 3



Source: Annual Report of private commercial Banks

Pie chart 1



The above Pie Charts shows that the share of others assets are diminishing as compared to total asset while bills to total asset is increasing.

Table 4.1.3 Descriptive statistics of variables

Dependent Variable	Mean	Max	Min	Std. Dev.
ROA	2.5	5.0	1.0	1.2
ROE	18.2	45.8	17.0	10.9
NIM	6.0	9.7	4.0	2.5

Independent Variables	Mean	Max	Min	Std. Dev
Bill	34.0	72.6	42.0	16.8
Liquidity	51.1	74.0	40.0	17.85
Capital adequacy	15.3	52.1	19.0	9.2
Loans to total asset	36.7	52.4	28.0	13.1

Source: Stata output from private banks financial statements

As it can be seen from the above table, Return on asset has mean value of 2.5, which is lowest as compared to that of other dependent variables. The standard deviation 1.2 and range 4.0 showed that there was lowest variability in the data for the profitability measures. Return on equity has average value of 18.20 it is the highest of all dependent variables. The standard deviation 10.9 and range of 28.8 showed high variability. Lastly, Net Interest Margin mean was 6.0 and ranked as a moderate average value. The standard deviation 2.5 which is not far from mean value and showed moderate variability as compared to other dependent variables. It means that almost all private commercial banks are applying relatively consistent interest rate on all kinds of finances and few variations were observed in net interest margin.

Explanatory variables also displayed in table 4.1, above and four explanatory variables which are expected to determine the profitability of private commercial banks are exhibited; liquidity, NBE Bills, Capital adequacy and Loans to total asset.

The mean value of liquidity of private banks was 51.1, and the range of 34.0which is the highest variability among variables. The standard deviation value of the variable is 17.85, which is the highest as compare to all independent variables the bill value. The mean value of liquidity shows that the Ethiopian private commercial banks are moderately liquidity.

The Bill amount to be purchase is growing fast as compare to loan growth. It shows a mean value of 34.0 and range of 30.60. It has also a next highest standard deviation of 16.80.

Capital adequacy has the lowest mean value of 15.30 the range was 33.10 and a standard deviation of 9.2 as compared to other independent variables.

The capital adequacy mean value results suggest that above 15.0 of the total asset of private commercial banks were financed by shareholders funds while the remaining 85.0 was finance by deposit liabilities.

Lastly the loan to total asset variables has a mean value of 37.0 and range of 8.7 has less variability. The mean value of loan to deposit shows that out of the total asset of all private commercial bank 37% is consistence of loans advance extended to borrower

4.2. Correlation analysis between study variables

In this section the correlation between profitability measures; return on asset, return on equity, and net interest margin and explanatory variables , liquidity, NBE bills , Capital adequacy and Loans to total asset have been presented and analyzed. A correlation matrix is used to ensure the correlation between explanatory variables.

4.2.1. Correlation analysis between return on asset and Explanatory variables

The ROA reflects the ability of a bank's management to generate profits from the bank's assets and this profitability measure is correlated with other explanatory variables either positively or negatively. In table 4.2 below, the correlation analysis was undertaken between profitability measure; return on asset and explanatory variables; liquidity, NBE bills, Capital adequacy and Loans to total asset.

As it can be seen from the table, there was a positive correlation between return on asset and NBE Bills and loan to deposit (liquidity). This means that when amount of NBE bills purchase increase, the ROA will increase, on the other hand when the loan to deposit ratio increase the amount of loans granted increase and so also the amount of interest income.

Table 4.2.1 Correlation Matrix ROA

	ROA	BIL	CAP	LIQ	LTA
ROA	1.0000				
BIL	0.5187	1.0000			
CAP	-0.0335	0.2557	1.0000		
LIQ	0.5710	0.5726	0.6080	1.0000	
LTA	0.6817	0.6622	0.3704	0.9329	1.0000

Source: Stata output from private banks financial statements

As per the above table the correlation coefficient between ROA and NBE bills was 0.51 which is smallest positive coefficient as compared to other variables that means it has a small association with profitability of private commercial banks. But ROA and loan to total has a highest positive correlation coefficient which is 0.68 the ROA is also negatively correlated with liquidity.

4.2.2. Correlation analysis between return on equity and explanatory variables

Return on Equity (ROE), the net income per birr of equity capital, which is more concerned about how much the bank is earning on their equity investment. The correlation analysis was done between profitability measures; return on equity and explanatory variables; liquidity, and NBE bills.

Table 4.2.2 Correlation Matrix ROE

	ROE	BIL	CAP	LIQ	LTA
ROE	1.0000				
BIL	0.4214	1.0000			
CAP	-0.1961	0.2557	1.000		
LIQ	0.3926	0.5726	0.6080	1.0000	
LTA	0.5703	0.6622	0.3704	0.9329	1.0000

Source: Stata output from private banks financial statements

As shown above, there is a positive correlation between ROE and bill, liquidity and loan to deposit. Among these variables loan to total asset is strongly correlated. The capital adequacy is also has a negative correlation.

4.2.3 Correlation analysis between net interest margin (NIM) and explanation variables

Net interest margin can be measured as the difference between interest income and interest expenses as a percentage of total loans and advance.

The correlation analysis between NIM and explanatory variable; liquidity, NBE bills, Capital adequacy and Loans to total asset was done.

Table 4.2.3 Correlation Matrix NIM

	NIM	BIL	CAP	LIQ	LTA
NIM	1.0000				
BIL	0.6829	1.0000			
CAP	0.4066	0.2557	1.0000		
LIQ	0.7342	0.5726	0.6080	1.0000	
LTA	0.7551	0.6622	0.3704	0.9329	1.0000

According to the above correlation matrix there is a positive correlation between NIM and all explanatory variables but among this loan to total asset has strong positive correlation.

4.3 Regression analysis between ROA and explanatory variables

Regression analysis was run to examine the relation between profitability measures of ROA , liquidity ,capital adequacy ,loan to total asset and NBE bills.

Regression model

ROA = 0.002+0.013 Bill- 0.072 CAP + 0.044 LIQ + 0.017 LTA

Table 4.3 Regression analysis result between ROA and explanatory variable.

	Coefficient	S. error	T Value	P Value
Bill	.0137048	.0089411	1.53	0.131
CAP	-.0729293	.0209821	-3.48	0.001
LIQ	.0443758	.0282513	1.57	0.122
LTA	.0178346	.0356869	0.50	0.619
R. Squared	.6358			
Adjusted R. Squared	.6177			
F. statics	20.86			
Prob. (F.statics)	.0000			
Number of Observation	64			

Source: Stata output from banks financial statements.

As indicated above the NBE bill has a slight positive relationship with ROA as compare to a positive relation to liquidity and loan to total asset. The capital adequacy has a negative relationship with ROA.

4.4 Regressions analysis between ROE and explanatory variables

The regression model of return on equity was

ROE= 0.039 + 0.043 Bill – 0.475 CAP – 0.152 LIQ +0.760 LTA

Table 4.4 Regression analysis result between ROE and explanatory variable.

	Coefficient	S. error	T Value	P Value
Bill	.0427233	.0818329	0.52	0.604
CAP	-.4752591	.1920384	-2.47	0.016
LIQ	-.1524929	.25857	-0.59	0.558
LTA	.7602776	.3266239	2.33	0.023
R. Squared	0.6345			
Adjusted R. Squared	0.6123			
F. statics	16.27			
Prob. (F. statics)	.0000			
Number of Observation	64			

Source: Stata output from banks financial statements.

As indicated above the capital adequacy and liquidity has negative relationship with ROE. The bill has a marginal positive relationship with ROE. And loan to total asset has a strong positive relationship with ROE.

4.5 Regression analysis between NIM and explanatory variables

Another measure of bank's profitability is net interest margin, the different between interest income and interest expense as a percentage of total loans and advances.

The regression model drawn

NIM= 0.002+ 0.051 Bill + 0.027 CAP + 0.021 LIQ + 0.070 LTA

Table 4.5 Regression analysis result between NIM and explanatory variable.

	Coefficient	S. error	T Value	P Value
Bill	.0512846	.0164302	3.12	0.003
CAP	.0272662	.0385569	0.71	0.482
LIQ	.0214468	.0519149	0.41	0.681
LTA	.0700373	.0655785	1.07	0.290

R. Squared	0.6484
Adjusted R. Squared	0.6246
F. statics	27.21
Prob. (F. statics)	.0000
Number of Observation	64

From the above table, we can realize that all the explanatory variables have positive relationship with NIM. But their relationship is not that much strong.

Chapter Five

5. Summary, Conclusion and Recommendation

In this chapter the major objective of the study are summarized conclusions are drawn based on thefindings and recommending are forwarded.

5.1 Summary and conclusion

The main objective of this study was to investigate the impact of NBE bill purchase on bank's performance in terms of its profitability. Accordingly balanced panel data of 64 observations from 2011 to 2014 of sixteen private commercial banks was analyzed using multiple linear regression method. In the study secondary date obtained from annual financial report of each banks were used. Based on these data three regression model (ROA, ROE and NIM) were drawn.

The study finds that exposure to government bills purchases has a moderate effect on the profitability of private commercial banks in the past years. Even after the introduction of NBE bill purchased directive, the profit of all private commercial bank on average has been increasing. It reached 5.8 Bill in 2014 as compare to 3.0 Bill in 2011.

The major findings of the study results from secondary data analysis are:-

- ROA has been increased from 2.2% in 2014 to 2.7 % in 2014. The incremental was marginal because of in growth rate of NBE Bills purchasing is by far greater than that of loans & advances. On the other hand, based on the regression analysis all explanatory variables have a positive relationship with ROA.
- With regard to ROE as profitability measure for the study, NBE bill and loan to deposit has a positive relationship, although the relation with NBE bills was marginal.
- As we have realized from the descriptive statics, the return of equity has been increased from 18.00 % in 2011 to 20 % in 2014, regardless of the increase in NBE bill purchase amount from 6 Billion in 2011 to 25 Billion in 2014.
- As to the NIM regarding the regression analysis all explanatory variables have positive relationship with NIM.

When we see the descriptive statics the NIM has shown a steady growth 4.48 % in 2011 to 7.83% in 2014

5.2 Recommendation

Since the introduction of NBE bills purchase directives, private banks are able to purchase more than 25 billion birr bill up to june30, 2014. Even if the impact of this policy measure has been crowding out private commercial banks, banks have been enjoying high profitability from high noninterest income and charging high interest rate on their loan and advances.

On the other hand, the bill seems contributed positively to performance via moping the excess liquidity holding of banks or providing an opportunity for private banks to invest their excess funds in government securities than the customary practice of holding their liquidity asset in zero earning accounts at the National Bank of Ethiopia.

The banks cost related to bill purchase to some extent seems covered by the borrower but the increase in rate has not resulted in materialized high default risk. In general, the result of the study shows that the effect of the policy measure is mitigated by the excess liquidity standing of banks during the policy formulation, the limited but likely possibility to expand to other fees generating service, stable liability price & banks discretion to adjust their asset prices.

However, the decline trend in the share of loans from the total asset could have negative effect on the long run but to some extent tone down by the maturity of part of the bills in few years time.

Therefore, based on the study result the following specific recommendations are forwarded.

- The NBE should either phase out the policy or bring down the required 27% to the level that shouldn't affect the lending capacity of private commercial banks.
- The NBE should also think otherwise by increasing the amount of interest rate i.e 3% that should cover the cost of funds plus maintaining certain profit margin.
- The private commercial banks on the other hand should take appropriate action such as:-

- Enhance its deposit on mobilization endeavors in a better way than its normal practice.
- Should encourage demand deposits. Currently the average demand deposit to total deposit is around 23%. Therefore banks should reverse this status to expenses the noninterest bearing deposit liability.
- Improve customer services.
- Should raise noninterest income charges such as fees and commission to the recoup the difference between the bills bearing only three percent interest and the five percent interest they give on deposits.

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