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IMPACTS OF NON-EXISTENCE OF FINANCIAL MARKETS IN ASSET-LIABLITY MAMAGMENEMT OF ETHIOPIAN FINANCIAL INSTITUTIONS

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Fekade Tilahun

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Acronyms

AIB	Awash International Bank
ALM	Asset-Liability Management
BOA	Bank of Abyssinia
CBB	Construction and Business Bank
CBE	Commercial Bank of Ethiopia
CBO	Cooperative Bank of Abyssinia
CDs	Certificates of Deposits
CSA	Central Statistical Authority
DB	Dashen Bank
DBE	Development Bank of Oromia
EFMs	Emerging Financial Markets
EPRDF	Ethiopian People's Revolutionary Democratic Front
FRA	Forward Rate Agreement
GDP	Gross Domestic Product
IRRM	Interest Rate Risk Management
IRS	Interest Rate Swap
LIB	Lion International Bank
MFIs	Micro Finance Institutions
NBE	National Bank of Ethiopia
NIB	Nib International Bank
NIM	Net Interest Margin
Repo	Repurchase Agreement
RSA	Rate Sensitive Assets
RSL	Rate Sensitive Liability
UB	United Bank
USSR	Union Soviet Socialist Republic
WB	Wegagen Bank

Abstract

The subject of Asset-Liability management received more attention in modern financial and risk management of the financial sector. In this project, attempt is made to show the Ethiopian private commercial banks Asset-Liability matching effort. The research was mainly conducted through critical evaluation of the six selected commercial banks. ALM models which are evolved through time and took their current shape are used to determine the positions those banks. The research tried to address the problem of absence of organized financial market in the management of Assets and Liabilities. The outcome of the research suggested that, most of the banks are not in ideal liquidity position. Either, they are skewed to the right or left of the perfect match. It had also been observed that, banks effort towards their foreign currency position impaired by the rigid directives of the central bank. In line with this, potential solutions which were believed to alleviate the problem were recommended. Despite the above fact, bank were able to register remarkable increase in the period of six years from 2002 to 2006.To be successful, however, they are expected to capitalize these phenomena for maximum possible benefits.

CHAPTER I

The Problems and Its Approach

1.1 Background

Asset-Liability Management is a very important tool for any financial institutions to achieve their objectives. Banks, as a dominant financial institution, are required to have a good Asset-Liability Management as part of their risk management and mitigation tool. Financial institutions obtain funds by issuing financial claims against themselves to invest those funds with a higher rate than the cost of obtaining them.

Commercial banks accept deposits and use the proceeds to lend funds to consumers and businesses. Therefore, there should be a proper match between the liabilities portfolio (deposits are liabilities to the banks) and assets portfolios (loans are assets to the bank). Matching the assets and liabilities is not an easy task since banks are exposed to many potential dangers. To list down some of them, over reliance on deposits, uncertain claims, possessing assets and liability denominated in other different currencies, different terms of maturity etc.

The main role of efficient Asset-Liability management is to reduce potential source of risk and yet to maximize return on investment. This typically needs firms to a have a well established system to help the positions at any point in time. Obviously, financial

market instruments help banks in the process of implementation of Asset-Liability matching.

In many countries, banks extensively participate in financial market so as to keep the magnitude of assets and liabilities in proportion and to satisfy their risk appetite. They raise fund when they are in short position through these financial instruments. They can also knock off when they have idle fund temporarily. However, in Ethiopia, banks appear to face a number of constraints that hinder their ability to raise funds through such instruments.

There is a growing body of literature addressing the importance of financial market for banks to mitigate the problem of mismatch of assets and liabilities. Hence, it is imperative that a deeper investigation of the problem with the view of assessing the existing condition related to Ethiopian banks in the absence of those markets.

1.2 Research Problem

Today, Ethiopia is transforming to more competitive and open market which invite investors to participate in almost all part of the economic sector. Since 1997, the Ethiopian financial institutions have grown in both branch network and size of assets substantially. Financial institutions are known to play a crucial role as a financial intermediary. Asset and liability management is the most overlooked area in Ethiopian financial institution than their counterparts in other countries. Financial markets, on the

other hand, seem receive little or no attention by the current Ethiopian government rulemaking body administering the country for almost two decades.

Apart from being financial intermediary, financial institutions are expected to play a role of maturity transformations (accept deposits of varying maturity and pay off loans of different maturity). They also transfer risk appetite of customers. All these activities results in concentration of liquidity risk and interest rate risk.

Assets and liabilities of financial institutions shall be managed in order to maximize shareholders value, to enhance profitability and increase capital, to serve customer and community needs, and to protect the institutions from disastrous financial consequences. In short, sound asset and liability management help all financial institution as one of competitive weapon.

Though modern market driven economics requires financial market to promote efficient economic system through enhanced saving mobilization, improve capital structure, providing efficient tools for monetary and fiscal policy, Ethiopia is not among African countries that currently have financial market in place and therefore doesn't avail itself of the benefits of such markets.

The purpose of this study is to understand and describe asset and liability management practice of financial institutions. The second part of the study will attempt to see the impact of absence of financial market in those institutions. In lieu of the foregoing, the research seeks to find answers to certain specific issues that are related to the main theme of the subject matter.

1.3 Objective of the Study

The primary objective of the project is to look into empirically the impact of non existence of financial market on financial institutions of Ethiopia.

In addition, the study attempted to:

- To determine where the position of Ethiopians banks are in light of ALM tools;
- To identify major weaknesses (if any) and their root causes for issues related to ALM;
- To examine the impact of financial market for mitigating bank specific risks;
- To provide a valuable input for further study; and
- To recommend the appropriate solution to the problems identified.

1.4 Significance of the Study

The primary beneficiary of the study will be Addis Ababa University. Since the University is the sponsor, the findings of the study can be used as a reference material for further and related study or just for academic purpose.

Moreover, the out come of the research can be used the following groups.

- Banks under the survey;
- The governmental agencies;
- Researchers in the field of finance and economics for their research endeavors; and
- The nation at large.

It is also believed that important implication for National Bank of Ethiopia which are playing not only role of regulation but also is responsible for maintaining the stability of the financial system of the country. This in turn will contribute for the over all sustainable economic growth of the country.

1.5 Scope and Limitation of the Study

The findings and the outcome of the research would be more prolific and concrete if the data obtain were more detail and inclusive to the extent to include the marginal items. In the banking industry, it is common practice to call items which has paramount importance for ALM purpose but not reported in the traditional financial statement as "off balance sheet items". So far, the profession of accounting does show any signal to allow such items like unreleased approved loans, commitments in letter of guarantee and commitments in letter of credits and permitted overdraft amounts to be reported as assets and liabilities in the balance sheet. In this connection, the data used and analyzed for this research comprises merely "on Balance sheet items," might not be zero defect.

Besides, the tools of ALM are designed in such a way to be more effective when they are applied in short time say a quarter or less time span than the whole fiscal year. However, it was impossible to utilize interim financial reports for this research for two chief reasons:

- They are not official assertion of the management of the institution since they are not usually attested by independent public accountants (auditors); and
- They usually not produced in a standardized format.

The study deliberately compels to focus on six private commercial banks to make the research more manageable and entertainable. However, the study could have been more representative if it were made in other financial institutions, too. Due to anticipated constraint of financial and other pertinent resources, it is limited to the aforementioned institutions.

1.6 Research Design and Methodology

This section identifies data sources, sampling techniques, instruments and procedures of data collection tools, and data analysis.

Methodology

This study was focused on assessing the practices and problems of Asset and Liability management of some selected private Commercial Banks of Ethiopia in the absence of free financial markets. Therefore, a descriptive survey method was employed with the assumption that it will help to gather a financial data related to the problem under study. The rationale behind this assumption is that, the descriptive survey method of research is more appropriate to gather financial data of such a broad size.

In this study, six banks were selected non-randomly for the survey in consistence with the research questions. All the banks selected for the research were in operation for the period of 2002 to 2007. By doing so banks established after 2002 were not included in the survey. In addition to this, Commercial Bank of Ethiopia, which is the largest bank of Ethiopian banks in all dimension of measurement, was excluded from the survey.

In short, all the banks selected for the survey are privately owned and existed in the market at least for six years in commercial banking business. Accordingly, the following banks was included for evaluation:

1. Awash International Bank (AIB),
2. Dashen Bank (DB),
3. Bank of Abyssinia (BOA),
4. Wegagen Bank (WB),
5. United Bank (UB), and
6. Nib International Bank (NIB).

Data Sources

To get factual information, principally financial data were gathered and used. Audited financial statements over the period of 2002 through 2007 were analyzed. Those statements also prepared in accordance with the directive of National Bank of Ethiopia (a central bank and act as a supervisory agency of financial institutions of the land). Hence the major source of data was documents of financial reports which were

prepared in accordance with generally accepted accounting principles and the law of the land.

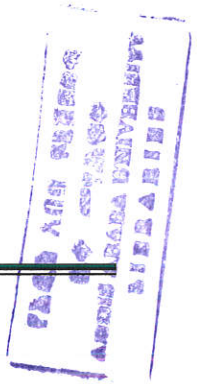
On the top of this, to cross check the data, interviews were conducted with officials of the Banking supervision department of National Banks of Ethiopia. This in fact helped to profound the research problem.

Data Analysis

To determine the existing practices and problems of Asset and Liability Management, appropriate models financial management was applied. Asset and Liability management system can be categorized into three components, namely liquidity risk management, interest risk management and foreign exchange risk management. The models, which are developed so far, are also in consistence with this classification. The following are the models in which data are plugged into for this particular research.

Flow approach Model

Flow approach Model is a simple to apply and easy to understand model developed to measure liquidity risk of banks to give fair idea of risk faced by the institutions. It will show the liquidity mismatch problem of maturing assets and liabilities.



Gap or Mismatch Model

Among the models evolved through time, the mismatch model is very popular and used by most of the banks in the developed economy. This is the model developed to pinpoint the interest rate risk. This model takes only risk sensitive assets and liabilities into account.

Foreign Exchange Management

The level and movements in the exchange rate have been a matter of policy concern for central bank of most developing countries like Ethiopia. These considerations often prompt central banks to intervene in the foreign exchange market so as to influence the exchange rate developments. The Ethiopian foreign exchange was characterized by continuous depreciation since the devaluation. The chief reason behind this phenomenon is the policy of the current government of Ethiopia. The government still does not show any interest to allow free movement foreign exchanges.

The policies of the government also give little room for the banks to accept deposit for residents in foreign currencies. But they are allowed to make deposit in foreign banks under strict follow up of the National Bank of Ethiopia. In addition, foreign banks do not yet show interest to make a deposit in Ethiopian private banks.

Accordingly, in accounting terms, Private Commercial Banks have assets in foreign currency with no liability. Under the pressure of consistent depreciation of exchange

rate, it is non sense to conduct analysis of the matching of assets and liabilities in foreign currency.

1.7 Organization of the Study

The remainder of this paper is organized as follows. The second chapter provides a review of related literature focusing on various models applicable for the research purpose. The third chapter presents the tests; analysis made and presents main results. The final chapter, chapter four, presents conclusion and recommendation.

CHAPTER II
Review of Related Literature

2.1 Introduction

There has been large volume of literature on financial management as well as risk management of financial institutions. The concepts received tremendous response from these institutions all over the world. The primary business of banks is to raise money from those who has surplus and redistribute it at a higher price to those who need it for various purpose. In this context, a mechanism for determining the profitability with a given level of risk becomes vital activity.

On the balance sheet, funds extended as loan is reported on banks asset side and deposits received is reported on the liability side. The banking book consists of all assets and liabilities that contribute to the profit by way of interest accruals. All deposits, loans and credit substitutes constitute this book. The balance sheet management is, therefore, the management of assets and liabilities of the banks concerning the mismatch problem upon maturity so that the bank will be enabled to reduce the related risk.

2.2 Historical Background

According to Sinha (2000) during the 1940s and 1950s, banks had plenty of low cost funds in the form of demand and saving deposits, and they did not know what to do

with these funds. Hence, emphasis, during this period, was on assets management. During the 1960s funds became less plentiful partly because of the growing prosperity in the economy following certain measures taken by the Government. As a result, demand for loans started increasing which forced the bank to turn towards managing their liabilities. Thus during the 1960s and 1970s, liability management was the dominant approach to bank balance sheet management.

Inflation and volatile interest rate during 1970s coupled with severe recession on the middle of decades, caused banks to concentrate on the management of both sides their balance sheet namely, assets and liabilities. The technique of managing both assets and liabilities became known as Asset-Liability management (ALM).

ALM combines the techniques of the previous three decades into cohesive process leading to coordinated management of the bank's entire balance sheet. Since 1980s due to dynamic process of change, ALM has become more important, and at the same time, more difficult to implement. There have been several technical developments in the area of ALM.

2.3 Asset Liability Management(ALM) Defined

Asset-Liability management is a term whose meaning has evolved. It is used slightly different ways in different contexts. ALM was pioneered by banks, but now other financial institutions also apply ALM techniques.

Before attempting to define an ALM, it is appropriate to have a look at the deriving forces leading to ALM. ALM looks at commercial banking from financial perspective and applies principles of financial management of banking. According to Sinkey (1994), the metamorphic changes occurring in the in the financial service industry have compelled the banks to fine-tube their operations in order to show a better bottom-line. The deriving forces of changes are aptly captured by the acronym T R I C K which stands for:-

T- Technology

R- Reregulation

I- Interest rate risk

C- Customers (competition for), and

K- Kapital adequacy (with the German spelling of 'capital')

Ozkan (2007) indicates the developments in information and communication technologies have created a suitable environment for new-information based financial activities and innovations in financial markets. As a result of these developments, emerging markets have gained growing attention in global financial markets. Since the investments in emerging financial markets (EFMs) are characterized as high-risk and high-return, these markets have been attractive sources and destinations for global investment portfolios.

Asset-Liability management is the management of the structure of a bank's balance sheet in such a way that interest related earnings are maximized with in the over all risk preference of the bank's management (Wilson,1988, P:12). ALM can also be defined as the management of net interest margins (NIM) to ensure that its level and riskiness are compatible with risk return objectives of the institution. NIM is defined as the ratio of net interest income (or spread) to total earning (Sinha, 1995).

2.4 Significance of Asset Liability Management

Since developments are taking place in many of the worlds banking markets that directly affect the bank and its relationship with customers and new players (private sector banks, micro finance institutions etc) came on the scene offering new class of

products, both on and off balance sheet, Huizer (2007) identifies the following points as a reason for the rationale of asset and liability management (ALM):

- Increasing vulnerability to competition which forces banks to become much more selective in allocating resources to customers, markets and products.
- Financial markets and the consumers of financial service are becoming extremely sophisticated, resulting in newer and more numerous products and opportunities, as well as in an explosion of the number of market participants.
- Decision support has become more productive and consequently more affordable, as a result of advances in finance theory, analytical techniques and processing technology.

2.5 Tools of Asset and Liability Management

Although the primary objective of asset and Liability management system is liquidity risk management and interest risk management (Shahi, 2005), banks are also significantly exposed to foreign exchange risk (Hussien, 2007). Hence the tools of the system should be designed in such a way that to minimize those risks.

Managing the risk has been the integral part of the banking business. Risk can be defined as the degree of uncertainty of future returns as well as future transactions. This uncertainty has varied dimensions and therefore can be defined in different ways. One of the effective strategies, which are recognized world wide, is introduction and implementation of effective ALM policy.

A. Liquidity Risk Management

Banks are required to measure and manage their liquidity risk as many of their liabilities are payable on demand or at very short notice. Further, they must visualize and evaluate liquidity needs under different scenarios. Liquidity represents the ability to deal with shortage of funds (Kuvalakar, 2006). Liquidity risk is considered as a major risk for banks. It is defined as the potential for loss to an institution arising form either its inability to meet its obligation or to fund increases in assets as they fall due without incurring unacceptable cost or losses. (Alam and others, 2000)

Liquidity risk is measured through either stock approach or flow approach. Under stock approach, certain standard ratios are computed. Few of these ratios are given below:

- Liquid assets to short term liabilities;
- Core asset to core liabilities;
- Interbank borrowing to total assets etc.

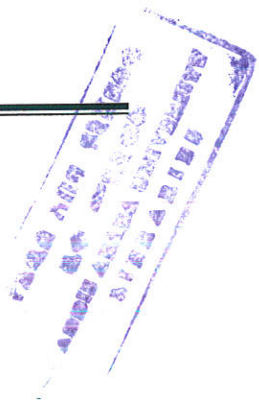
However, Shahi (2005, P.145) indicated that management of liquidity through ratio suffers from some draw backs, as it does not factor market liquidity aspect of assets and liabilities. Shahi (2005, P.88) argued that presence of some short term investment may

show improved liquidity risk of the bank whereas the investment itself may be highly illiquid. Further, the ratio, though good indicator of liquidity, may be valid good for a point of time only as balance sheet profile constantly changes. Therefore, the flow approach, the alternative model for measuring and managing liquidity has been accepted. Under flow approach, cash flows are segregated into different maturity ladders and net funding requirements for a given time horizon. According to Kuvalakar (2006, P. 171), the details of such information help the bank to identify and use required resource of funds to ensure adequate liquidity position.

Maturity profile statement is prepared with a view to compare a bank's future cash inflows to future cash outflows and to find out cash flow mismatches over a series of

specified time periods of buckets. Cash inflows are comprised of maturing assets and marketable non maturing assets. Similarly, cash outflow comprise of maturing of liabilities on due dates, purchases on creation of assets and contingent liabilities.

According to Carvey (2001), an incipient liquidity problem may initially reveals in the bank's financial monitoring system as a downward trend with potential long term consequences for earnings or capital. Given below are some early warning indicators that not necessarily always lead to liquidity problem for a bank; however these have potential to ignite such a problem. Consequently, management needs to watch carefully such indicators and exercise further scrutiny/analysis wherever it deems appropriate. Examples of such internal indicators are:



a) A negative trend or significantly increased risk in any area or product line;

b) Concentrations in either assets or liabilities;

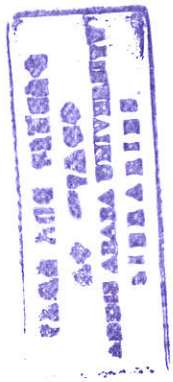
c) Deteriorations in quality of credit portfolio;

d) A decline in earning performance or projections;

e) Rapid assets growth funded by volatile large deposits

f) A large size of off-balance sheet exposure; and

g) Deteriorating third party evaluation about the bank.



B. Interest Rate Risk Management

Interest rate risk is the risk that evolving market conditions will bring about a change in interest rate. Interest rate risk is of significance to both issuer and holders of debt instruments (Maloney and Yawitz, 1986). Long-term instruments are more prices sensitive to changes in interest rate than short-term instruments. Interest rate risk management (IRRM) in banking book is a major objective of any ALM system (Shahi: 2005, P. 96). Typically, a bank positions its assets and liabilities into trading book and banking book. Interest rate movements cause price changes in trading book and earnings/economic value changes in banking book. While trading book assets and liabilities are held to take advantage of short-term price movements, banking book assets and liabilities arise out of relationship/regulatory requirements and provide accrual income to a bank.

Wilson (1988, P.39) indicated that for proper IRRM, the bank needs to be familiar with the exact future cash flows of its portfolio, both those determined fixed and variable cash flows that are sensitive to interest rates such as early withdrawals and repayments and interest-rate inducing movements. Two other requirements for IRRM are an interest rate forecast and a planning horizon.

According to Huizer (2007, P. 10), the manifestations of interest rate risk are summarized as follow:

- Mismatch, gap or repricing risk: the potential for unexpected gain or loss caused by the possibility that outstanding balance sheet components with interest rate fixed for a certain term have yet to be matched at terms which vary;
- Mix risk: the potential of unexpected gain or loss caused by supply of variable term, low cost balance sheet components behaving in an interest-elastic manner, (e.g. forcing the bank to change saving deposits in its funding with more costly money market liability; and
- Basis risk: the risk that widely used "administered" rate such as the US prime rate, typically based on the funding mix of a specific type of bank, will behave differently from the bank's subjective funding mix.

Within the constraints of the reactive approach, the reactive approach, only mismatch risk can be effectively managed. The other forms of IRRM require a proactive approach, primarily aimed at modifying customers' behaviour or promoting/rationing certain products.

Sinha (1995, P: 19) suggested that the risk involved in relation change in interest rate can be quantified in three applicable methods: Gap method, Simulation method and Duration method.

Gap Method

All the items of assets or liabilities are not affected by changes in interest rate. Gap is the difference between the existing rate-sensitive assets (RSA) and rate-sensitive liability (RSL) in a particular accounting (sensitivity) period. Let us suppose that a bank uses a twelve months definition of sensitivity. The asset portfolio of this bank will contain the following items which are rate-sensitive:-

- Investments with remaining maturities of less than twelve months;
- Fixed rate loans with remaining maturity of less than twelve months; and
- Floating rate loans that can be repriced within twelve months.

The liability portfolio will contain the following items which are rate sensitive:-

- Time deposits with remaining maturities of less than twelve months; and
- Borrowing/refinance which can be repriced within twelve months.

The actual management of bank's assets and liabilities focused on controlling the GAP for which the GAP report is prepared is prepared as under:-

- Determine the number of time bucket;

- Determine the length of each bucket;
- Slot all assets and liabilities in the appropriate bucket; and
- For all assets/liabilities, only residual maturity (i.e. the remaining life of the asset/liability) is to be taken.

$$GAP = RSAs - RSLs$$

Alternatively;

$$GAPRatio = RSAs / RSLs$$

Where,

RSAs = Rate Sensitive Assets

RSLs= Rate Sensitive Liabilities

There are three possibilities:

1. If the GAP is positive, any rise in interest rate would mean increase in profits, and any decline in interest rates would mean decrease in profits;
2. If the GAP is negative, any rise in interest rate would mean decrease in profits, and any decline in interest rates would mean increase in profits; and
3. If the GAP is zero, then the bank has perfectively matched the maturity of its assets and liabilities indicating that the rate sensitivity of earnings of assets and liabilities is so fine tuned that in case of any increase in interest rates, return on

assets would rise to protect the margin over funding costs. Such a perfect match is unachievable. However, many risk averse banks make all endeavors to achieve as a small a GAP as possible.

Simulation Method

This method involves forecasting the asset and liability picture under different scenarios and the consequent impact of interest rate changes on the net income. This computer generated scenario then ascribes probabilities on the basis of past behaviors and help the bank to choose optimum model. This method, though complicated, is more dynamic than the gap method because the latter assesses the gap on existing position of assets and liabilities without taking into account any future cash flows.

Duration Method

This is the most developed technique of quantifying and managing interest rate risk. This method was developed about 60 years ago by Fredrick Macaulay (Sinha, 2000, P.18) and that is why the duration is also known as Macaulay's Duration. Duration of an instrument is distinct from its final maturity and is calculated as the weighted average time over which the cash flows from an investment are expected, where weights are the relative present values of cash flows. Duration is expressed in time periods.

C. Foreign exchange Rate risk

Countries of the world have been exchanging goods and services amongst themselves from time immemorial. Since every sovereign has a distinct national currency, international trade and financial transactions have necessitated exchange of currencies.

Foreign exchange, simply stated, refers to foreign money which includes near money instruments dominated in foreign currency such as notes, cheques, bill of exchange, bank balances and deposit in foreign currencies. The term is also used to denote the method by which the currency of one country is exchanged for that of another, the causes which render such exchanges necessary, the forms in which such exchanges are conducted and the ratios or equivalent values at which they are affected.

The foreign exchange market can be defined as a market in which individuals' business firms and banks purchase and sell foreign currency. The term market in this definition does not refer to any centralized meeting place but to a communication system through which participants remain in continuous contact with one other.

The rate of exchange is the rate at which one currency is exchanged for another currency. It is a simple arithmetical expression which gives the value of one currency in terms of another and denotes the number of units of one currency which can be exchanged for a given number of units of another currency (Levi, 1996).

The IMF classifies the exchange arrangements of member countries under three broad heads: (www.bis.org)

- Pegged to a single currency (the USD and EUR are most common), or a currency composite like the SDR.
- Flexibility limited against a single currency or group of currencies
- More flexible arrangements like "managed floating", and independently floating" (www.bis.org)

Foreign Exchange Exposure

1. Alder and Dumas define foreign exchange exposure as 'the sensitivity of changes in the real domestic currency value of assets and liabilities or operating income to unanticipated changes in exchange rates'(Gardener,1998)

The first important point is that both foreign and domestic assets and liabilities could be exposed to effects of exchange rate movements. The second important point is that not only assets and liabilities, but even operating income can be exposed to exchange rate movements. Thirdly, exposure measures the sensitivity of changes in real domestic currency value of assets, liabilities and operating incomes. That is, it is the inflation adjusted values expressed in domestic currency terms that are relevant. The last point to be noted is that exposure measures the responses only to unexpected changes in the exchange rate as the expected changes are already noted (discounted) by the market.

Levi (2002) describes foreign exchange risk as "the variance of the domestic currency value of an asset, liability, or operating income that is attributable to unanticipated changes in exchange rates".

According to this definition, foreign exchange risk results when the domestic currency value of assets, liabilities or operating incomes, become variables in respond to unexpected changes in exchange rates. Where exchange rate is measurable in terms of the slope a regression equation between exchange rate movements and changes in the value of assets or liabilities, exchange rate risk can be expressed as a function of exposure and variance of exchange rate.

The equation can be written as:

$$\sigma^2(\Delta V) = a^2 \times \sigma^2(\Delta S^U)$$

And

$$a = \Delta V / \Delta S^U$$

Where,

$\sigma^2(\Delta V)$ = exchange rate risk

ΔV = change in the domestic values assets and liabilities

ΔS^U = unexpected change in the exchange rate

Types of Exposure

Exposure can be classified into three kinds on the basis of nature of item that is exposed, measurability of the exposure and the timing of estimation of exposure. These are:

- Transaction exposure
- Translation exposure
- Operating exposure

Transaction Exposure

Transaction exposure is the exposure that arise form foreign currency denominated transactions which an entity is committed to complete. In other words, it arises from contractual, foreign currency future cash flows. The exposure of a company in a particular currency is measured in net terms, i.e., after netting off potential cash inflows with outflows.

Translation Exposure

Translation exposure is the exposure that arises from the need to convert value of assets and liabilities denominated in a foreign currency, into domestic currency. For example, a company having foreign currency deposit will need to translate into domestic currency for the purpose of reporting at the time of preparation of financial statements.

Operating Exposure

2. Operating exposure is defined as the extent of which the value of a firms stands exposed to exchange rate movements, the firm's value being measured by the present value of its expected cash flows. Operating exposures is the result of economics consequence rather than accounting consequences, as in the case of transaction and translation exposure of exchange rate movements on the value of the firm, and hence also known as economic exposure. (Gardener,1998,pp.38-39)

2.6 Financial Market Instrument for ALM

A financial market is a market where financial assets are exchanged (Fabozzi and Modigliani, 1992, P: 21). Although there are many ways to categorize financial markets, the writer of this paper believes suitable for this study to categorize based on terms and risk preference. Markets for short term financial assets are called money market and one for longer maturity financial assets called the capital market. Derivatives, on the other hand, are special types of financial instruments which are used to manage risk based on risk preference of investor and/or issuer of the instrument. Because of this such financial instruments are called hedging instruments or simply risk management instruments (Kuvalakar, 2004).

A. Derivative

Derivative is a financial instrument whose value or pay of structure is derived from the values of underlying assets. Such underlying asset may be financial security like equity

or debt instrument, commodity or currency etc. With the help of derivatives, it is possible to transfer or sell risk to those individuals or institutions that are prepared to take or buy risk.

Derivative instruments can be used for speculative purpose as well as for accomplishing a specific financial or investment objective (Fabozzi and Modigliani, 1992, P: 432). The literature distinguishes four segments of derivative markets for emerging economies as well as for well structured and developed markets.

1. Local currency related derivatives like interest rate swaps (IRS), forward rate agreement (FRA) and interest rate futures;
2. Stock related derivatives like stock options, stock index options and futures;
3. Foreign currency related derivatives like forward contracts, currency options and currency swaps; and
4. Commodity market, the market which is mainly comprised of futures and forward contract in commodity market (Gardener,1998, p.68).

For the remainder of this section, attention will be given the first three types of derivatives since the commodity market is beyond the scope of this paper.

Interest Rate Derivative Products

Of the various techniques or methods, interest rate swap and forward rate agreement are well known and widely used financial derivatives, which are being used extensively by various participants in the money and securities markets.

Interest Rate Swap

An interest rate swap is a financial contract between two parties exchanging or swapping a stream of interest payments for notional principal amount during a specified period. Such contract generally involves exchange of a fixed to floating or floating to floating rate of interest. There are two types of IRS; the detail about them is given below:

Plain Vanilla Swaps

Such swaps are referred to as a single currency and fixed-floating interest rate contracts. In view of this, in such types of swaps one party agrees to make payments on floating interest rates and other party agrees to make payments on fixed interest rates.

Exotic Swaps

Such swaps are structured according to the needs of individual clients. Exotic swap includes call and put options on swaps, inverse floaters, and amortization swaps etc (Sinha and Kumar, 1999).

Forward Rate Agreements (FRA)

A forward rate agreement is a financial contract between two parties to exchange interest payment for a notional principal amount on settlement date for a specified time from start date to maturity date. Accordingly on the settlement date, cash pavements based on contracts (fixed) and settlement rate are made by the parties to one another. The settlement rate is agreed benchmark/reference rate prevailing on the settlement date. A buyer of FRA is looking for a protection against a rise in interest rates. A seller of FRA is looking for protection against drop in interest rate (Viswanathan, 1999)

Instruments for Managing Foreign Exchange Risk

According to Fabozzi and Modigliani (1992, p.635), there are four instruments which can be used to protect against adverse foreign exchange rate movements:

1. Foreign currency forward contract;
2. Foreign currency future contract;
3. Foreign currency options; and
4. Foreign currency swap.

Hedging through the Forward Market

In order to hedge its transaction exposure, a bank having a long position in a foreign currency (having a receivable) will sell the foreign currency forward. That is, go short in the forward market, and a bank having a short position in a foreign currency (having a payable) will buy the currency forward. That is, go long in the forward market. The idea behind buying or selling a foreign currency in a currency forward market is to lock the rate at which the foreign transaction takes place, and hence the costs and profits.

Hedging through Futures

The second way to hedge exposure is through futures. The rule is the same as in the forward market. That is, go short in the future if you are long in the foreign currency and vise versa. Hedging through futures has an effect similar to hedging through forward contract. As the gain /loss on the future contract are cancelled by the loss/gain on the underlying transaction, the exposure gets almost eliminated. Here it is assumed that the basis remains constant. Only a small part of the exposure is left due to the mark-to-market on the future contract.

The main difference between hedging through forward and future is that while under a forward contract the whole receipts/payment takes place at the time of maturity of the contract, in the case of future, there has to be initial payment of margin money, and further payments/receipts during the tenure of the contract on the basis of market movement.

Hedging through Options

Options can prove to be useful and flexible tool for hedging transactions and translation exposure. A firm having a foreign currency receivable can buy a put option on the currency, having the same maturity as the receivable. Conversely, a firm having a foreign currency payable can buy a call option on the currency with the same maturity

Hedging through options has advantage over hedging through forwards or futures. While the latters fix the price at which the currency will be bought or sold, options limit the downside loss without limiting the upside potential. That is, since the firm has the right to buy or sell the foreign currency but not the obligation. It can let the option expire by not exercising its right in case the exchange rate moves in its favour, thereby making the profit it would not have made, had it hedged through forwards or futures. But this advantage does not come free. Because of this features, options generally costs more than the other tools of hedging.

Another advantage offered by options is flexibility. There is only one exchange rate at which a currency can be bought or sold. Under a future or forward contract, on the other hand, options are available at different exchange rates. Depending of the firm's

outlook about the future and its risk taking capacity, it can buy a suitable contract (Avadhani, 1998)

Hedging through Currency Swap

In a currency swap, there is an exchange of both interest and principal. Two parties (also called counterparties) agree to swap payments based on different currencies. In a currency swap, the counter parties will issue bonds in the other bond market. The currency swap agreement will require that:

1. The counterparties exchange the proceeds received from the sales of the bonds
2. The counterparties make the interest rate to service the debt on the other party
3. At the termination date of the currency swap, both parties agree to exchange the par value of the bond.

B. Money market Instruments for Liquidity Management

Money market instrument are instruments that at a time of issuance have a maturity of one year or less. The assets traded in money market include but not limited to, Treasury Bill (T-bills), Commercial Papers, Certificates of Deposits (CDs), Repurchase Agreement (Repo) and Federal Funds (fedfunds) (Fabozzi and Modigliani, 1992). Each of these will be briefly below:

Treasury Bills (T-Bills)

A T-bill is a discount security. Such securities do not make periodic interest pavements. The security holder receives interest at maturity date, when the amount received is the

face value (maturity value) which is larger than the purchase price. At issuance, bills have maturity value of one year or less. Treasury bills are quoted at bank discount basis, not at price basis. The yield on bank discount basis is computed as follow:

$$Y_D = \left(D/F\right) \times \left(360/t\right)$$

Where,

Y_D = Yield on a bank discount

D = Discount which is equal to the difference between the face value and price

F = Face vale

t = number of days remaining to maturity

Commercial Papers

Commercial paper is a short term unsecured promissory notes that is issued in the open market and represents the obligation of the issuing corporation. The issuance of commercial paper is an alternative to bank borrowing for large corporations with strong credit rating. The maturity of commercial paper is typically less than two hundred seventy days and most common maturity range is thirty to fifty days or less.

Commercial papers like treasury bills, is a discount instrument. That is, it is sold at a price less than its maturity value. The difference between the maturity value and the price is interest earned by the investor.

Certificates of Deposits (CDs)

A certificate of deposits (CDs) is a financial assets issued by a bank indicates a specified sum of money has been deposited at the issuing depositary institutions (usually banks). CDs are issued by bank to raise funds to financing their business activity. A CD bears a maturity date and a specified interest rate, and can be issued at any denomination.

A CD may be negotiable or non negotiable. In the former case, the initial depositor must wait until the maturity date of the CD to obtain the funds. If the depositor wishes to withdraw funds prior to the maturity date, an early withdrawal penalty is imposed. In contrast, a negotiable CD allows the initial depositor (or any subsequent owner of the CD) to sell the CD in the open market prior to maturity date.

Repurchase Agreement (Repo)

A repurchase agreement (Repo) is the sales of securities back from the purchase at a specified price at the designated future date. Basically a Repo is a Collateralized loan, where the collateral is a security. The following formula is used to calculate the interest on Repo.

$$Interest = \Pr incipal \times \mathrm{Re}\, poRate \times (\mathrm{Re}\, poterm/360)$$

Federal Funds

The last money market for this discussion is the federal fund market. The rate determined in this market is the major factor that influences the rate paid in all other money market instruments described. Financial institutions, especially banks are required to maintain reserve. Reserves are deposits at the central or reserve bank of the federal or central government of the country are called federal funds.

No interest is earned on federal funds. Consequently, the bank that maintains federal funds in excess the amount required incurs an opportunity cost. At the same time, there

are institutions whose federal funds are less than the amount required. Typically, smaller banks have excess reserve. While money center banks find themselves short of reserves and must make up the short falls. One way those banks with less than required reserve can bring reserve to the required level is to borrow federal funds from a bank that has excess reserves. The market in which federal funds are bought (borrowed) by banks that need these funds, and sold (lent) by banks that has excess federal fund is called the federal fund market. The equilibrium interest rate, which is determined by the supply and demand for federal fund is the federal fund rate.

CHAPTER III

Empirical Analysis

3.1 Background

In 1905, the first modern bank in the history of the country, Bank of Abyssinia was established. The bank was owned and managed by the British-owned National bank of Egypt and was given a banking monopoly for fifty years, including the right to issue notes and coins. However, three other banks were established during the next decades. The first 100 percent African owned bank on the African continent, Bank of Ethiopia replaced Bank of Abyssinia in 1931. Bank of Ethiopia was also authorized to issue notes and coins and to act as the government's bank. Unfortunately, after few years of operation, the bank was closed following the Italian invasion. The invasion resulted in several Italian banks to open branches during the anti-colonialism war time. The State bank of Ethiopia was established in 1942 and became operational in 1943 after the victory over the invaders (Belay: 1987; and Brown bridge and Harvey: 1998).

New banking law split the function of State Bank of Ethiopia in 1963 into central and commercial banking, respectively, as National Bank of Ethiopia (NBE) and Commercial Bank of Ethiopia (CBE). Both were owned by government. The 1963 law further allowed for other banks including foreign owned ones (provided that they were at least 51 percent owned by Ethiopians) to operate in the country. Consequently, many other banks were established (Belay: 1987; and Brownbridge and Harvey: 1998, p.42).

In 1975, after the fall of the imperial government, there was a major change of economic strategy in the banking sector as it was exhibited in almost all other economic sectors. The then new military regime aimed to create a socialist oriented, centrally planned and commanded economy by modeling the then USSR (Union Soviet Socialist Republics). The policy brought about, among other things, nationalization of all privately owned banks and concentrated them into Commercial Bank of Ethiopia (CBE). Then the main financial sector reform was to direct the government banks to finance greatly increased public sector and reduced down the role of CBE to book keeping works since there were no stringent credit analysis for loans provided to public enterprises. (Brownbridge and Harvey: 1998, p.58)

Even though economic liberalization began during the last years of the military government, neither then nor in the statement of the successor government (EPRDF led Federal Government), did financial sector reform as priority. The succeeding government was also very determined not to allow entrance of foreign banks into Ethiopia, even as minority interest with Ethiopian banks and investors. The

commitment for continued ownership of existing financial institutions was extremely strong (Brownbridge and Harvey: 1998, p.64). However, in recent years measures are being taken to privatize the Construction and Business Bank.

The main institutional changes proposed were very much less radical compared to elsewhere in Africa (Brownbridge and Harvey: 1998, p.78). Among such changes, however, were:

- Allowing privately sector banks to operate, but only if owned 100 percent by Ethiopians;
- Reconstructing Development Bank of Ethiopia (DBE) and Construction and Business Bank (CBB);
- Giving greater and better autonomy in lending and other major decisions to Commercial Bank of Ethiopia.

Privatization of banks in developing countries improves bank governance, competition, efficiency and performance and foster stability. In most developing countries, the government (politicians and bureaucrats) is not a benevolent social guardian and then state owned banks can be used for political and personal gains. Hence, privatizing of banks (though not sufficient) would be good measure to prevent this to happen. Nevertheless, privatization has some potential costs. Such costs may include private

banks turn away from undeserved markets (e.g. rural sectors), engage in excessive risk lending and hence engender banking crisis and instability, provide insufficient but concentrated lending of the banking sector is concentrated post-privatization, and borrowers with informational and contractual difficulties may be rationed out by private banks (Lemma:2005).

3.2 The Financial System in Ethiopia

In Ethiopia the banking system dominates the financial system. At the close of May 2008, the financial system comprises of one central bank (National Bank of Ethiopia), ten commercial banks (of which two are owned by government), one development bank (DBE), 27 Micro Finance Institutions (MFIs), nine insurance companies, one pension fund (Social Security Authority), and numerous savings and Credit Association (Birritu: 2008).

At the close of June 2007, total assets of the banking sector (central bank, commercial banks and development bank) reached ETB 142.3 billions (which is more than 83 percent of GDP of the Year) (CSA, 2007)

Commercial banks in Ethiopia comprise the publicly owned Commercial Bank of Ethiopia-CBE (1963) and Construction and Business Bank-CBB (1975); and eight other privately owned banks viz., Awash International Bank-AIB (1994), Dashen Bank-DB

(1995), Bank of Abyssinia-BOA (1996), Wegagen Bank -WB (1997), United Bank-UB (1998), Nib International Bank -NIB (1999) and Cooperative Bank of Oromia-CBO (2004), Lion International Bank-LIB (2006), listed in order of their age.

3.3 Analysis of Asset-Liability Growth

A. Awash International Bank

During the first three years of this survey (2002-2005), AIB did not pose challenge due to surplus liquidity. As depicted in table 1, the surplus liquidity was generated the growth rate of all deposit exceeds that of loan growth rate by significant margin. The growth rate gap is phenomenal in the year 2005 which was which was 28.26 percent and 15.48 percent for deposits and loan respectively. However, since 2005 the growth situation has changed. The loan growth of AIB far exceeded its deposit growth as evidenced from table 1.

Therefore, liquidity management has becoming increasingly challenging after 2005. In line with this, it needs more efficiency and competency level to analyze the increasing demand of loan and reduce potential non performing loan.

The other challenge posed on AIB was that more of the deposit growth was arising form saving deposits than demand deposits. As clearly seen from the table, the demand deposits (it is costless) were not increasing in such a way to surpass saving deposits for which the bank had to pay interest expense

B. Dashen Bank

Except for 2004 and 2007 (Please refer Table 2), DB enjoyed a higher loan growth rate than deposit growth rate; even in the mentioned the growth gap is minimal. This would render both advantage and drawback. The advantage was that the interest margin will be higher and the shortage the relative risk would have been aggravated.

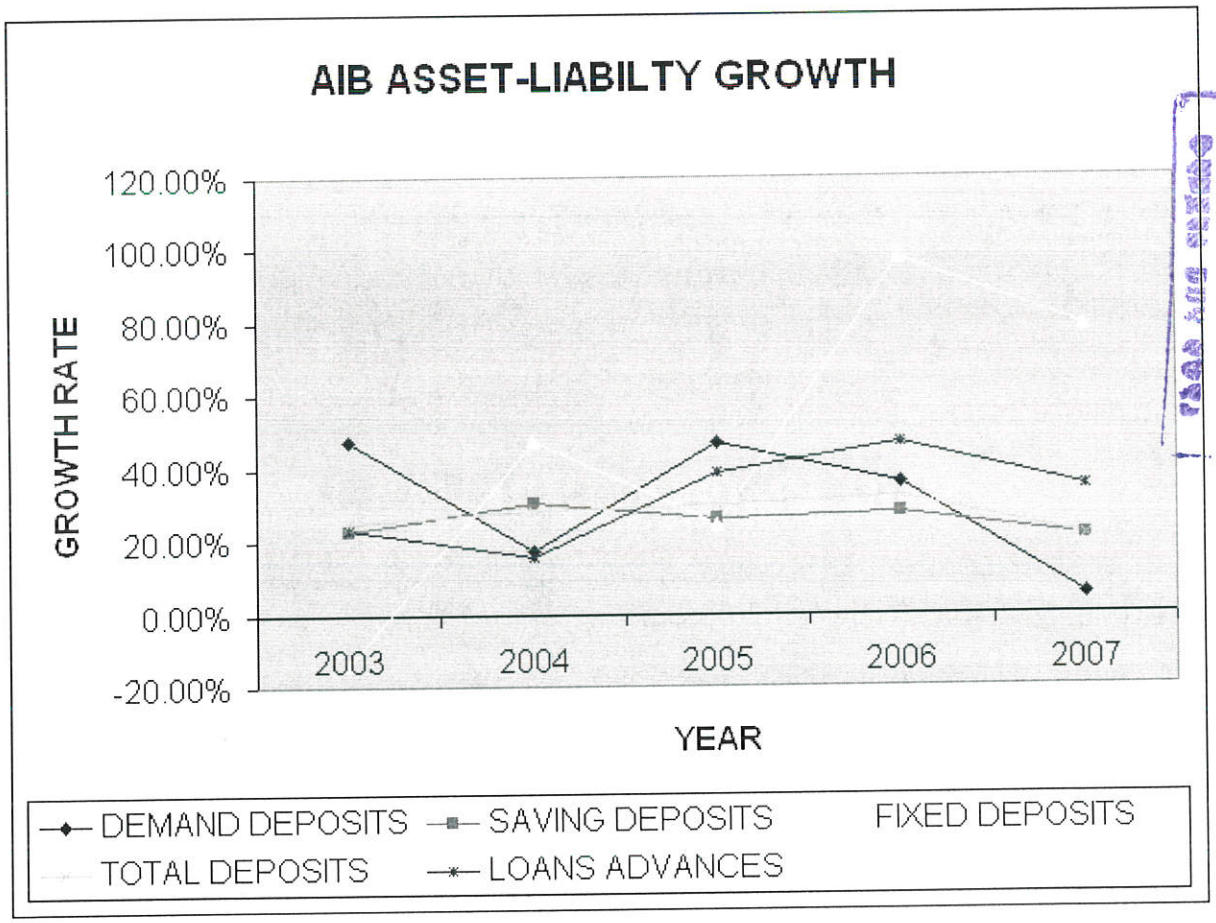
As shown in table 2, the costless deposits that is the demand deposits, is growing at a better rate than the saving deposit (which is interest bearing). For the year 2005, for example, the growth of demand deposit and saving deposit was 47 percent and 26 percent respectively.

If one needs to make comparison among the banks the nominal figures showed that the strength of DB was by far greater than all other private banks especially in the asset size and quality of asset portfolio.

Awash International Bank
Asset-Liability Growth Rate

	2003	2004	2005	2006	2007
Demand Deposits	47.59%	17.14%	47.04%	36.02%	5.05%
Saving Deposits	22.72%	30.40%	25.94%	27.56%	21.28%
Fixed Deposits	-13.73%	47.73%	24.62%	97.53%	78.75%
Total Deposits	25.16%	28.26%	29.94%	32.32%	21.23%
Net Loans and Advances	23.33%	15.48%	38.60%	47.11%	35.00%

Table 1 Asset-Liability growth of AIB

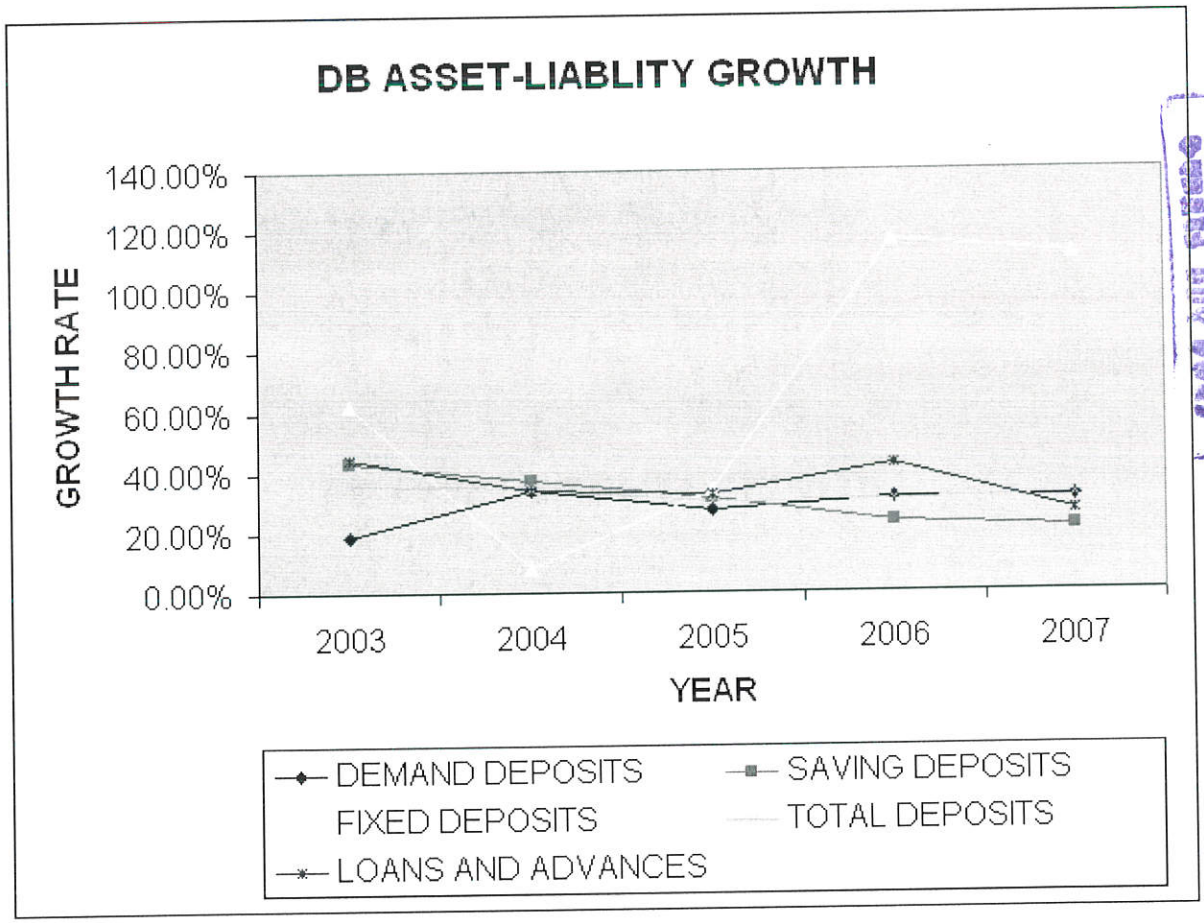


Graph 1: AIB Asset-Liability growth

Dashen Bank
Asset-Liability Growth Rate

	2003	2004	2005	2006	2007
Demand Deposits	18.58%	33.69%	27.29%	31.02%	30.99%
Saving Deposits	43.28%	37.12%	31.01%	23.51%	21.34%
Fixed Deposits	62.30%	8.08%	33.64%	116.78%	111.94%
Total Deposits	36.10%	34.36%	30.07%	30.32%	31.66%
Net Loans and Advances	44.14%	33.58%	32.76%	42.59%	26.27%

Table 2: Asset-Liability growth of DB



Graph 2: DB Asset-Liability growth

C. Bank of Abyssinia

BOA was unique from all other banks that it was able to almost perfectly match its assets and liability for the 2002 to 2005 as depicted in table 3. On the top of this, the deposit portfolio of BOA was significantly affected by higher growth of demand deposits over the other types of deposits which constitute the portfolio. This helped the BOA to manage costs of funds some how well and better than others.

However, the last couples of years pose a challenge for the bank. The year 2006 was a year higher growth of loan as higher than nearly 62 percent which was the highest of all time under the survey period. In line with this, the fixed time deposit of the same year was jumped by more than three digit growth rate (nearly 104 percent). The year 2007, on the other hand, was the year with an exact reverse scenario of its preceding. I.e., there was a higher growth in overall deposits and surpassed the growth of loan. It was 25 percent to 16 percent for deposits growth and loan growth.

D. Wegagen Bank

Wegagen bank was special with its non fluctuating trend in growth consistently in both portfolios. As clearly indicated in table 4, both total deposit and loans are growing evenly from year 2002 through 2007. This

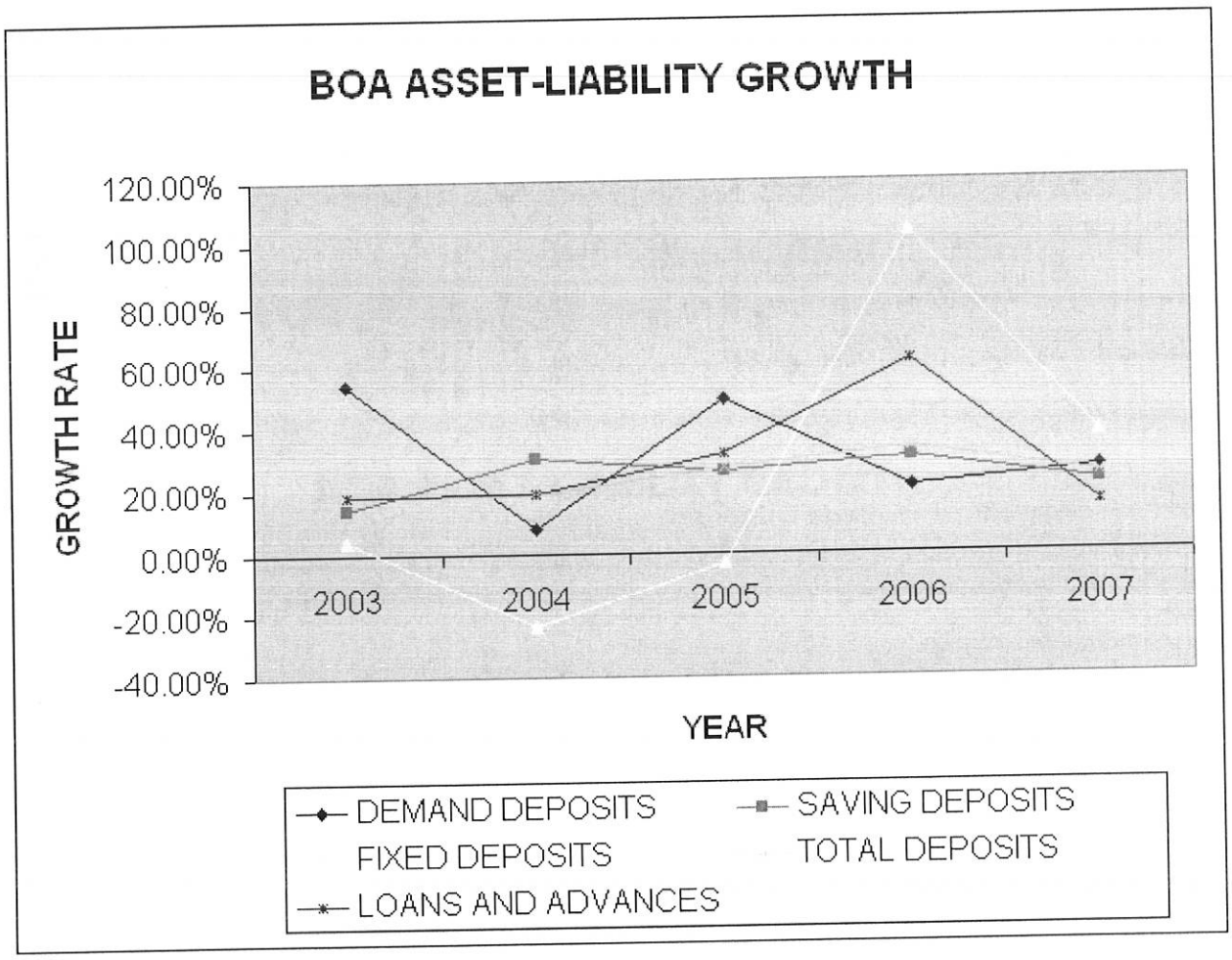
equitable growth was guaranteed the matching of assets (Loans) and liabilities (deposits).

Furthermore, WB had higher nominal demand deposit amount consistently after the year 2003 (please refer table 4). The situation helped the bank in the better position to minimize its cost of fund since demand deposits are interest free deposits. However, this advantage is not without drawback, since the demand deposit account had unconditional right to withdraw the money, its liquidity position might be threatened.

Bank of Abyssinia
Asset-Liability Growth Rate

	2003	2004	2005	2006	2007
Demand Deposits	54.48%	7.73%	49.33%	21.02%	26.80%
Saving Deposits	13.95%	30.32%	26.25%	30.85%	22.61%
Fixed Deposits	4.17%	-23.33%	-3.48%	103.60%	38.05%
Total Deposits	18.37%	18.49%	27.61%	33.80%	24.99%
Net Loans and Advances	18.38%	19.01%	31.95%	62.15%	15.51%

Table 3 Asset-Liability growth of BOA

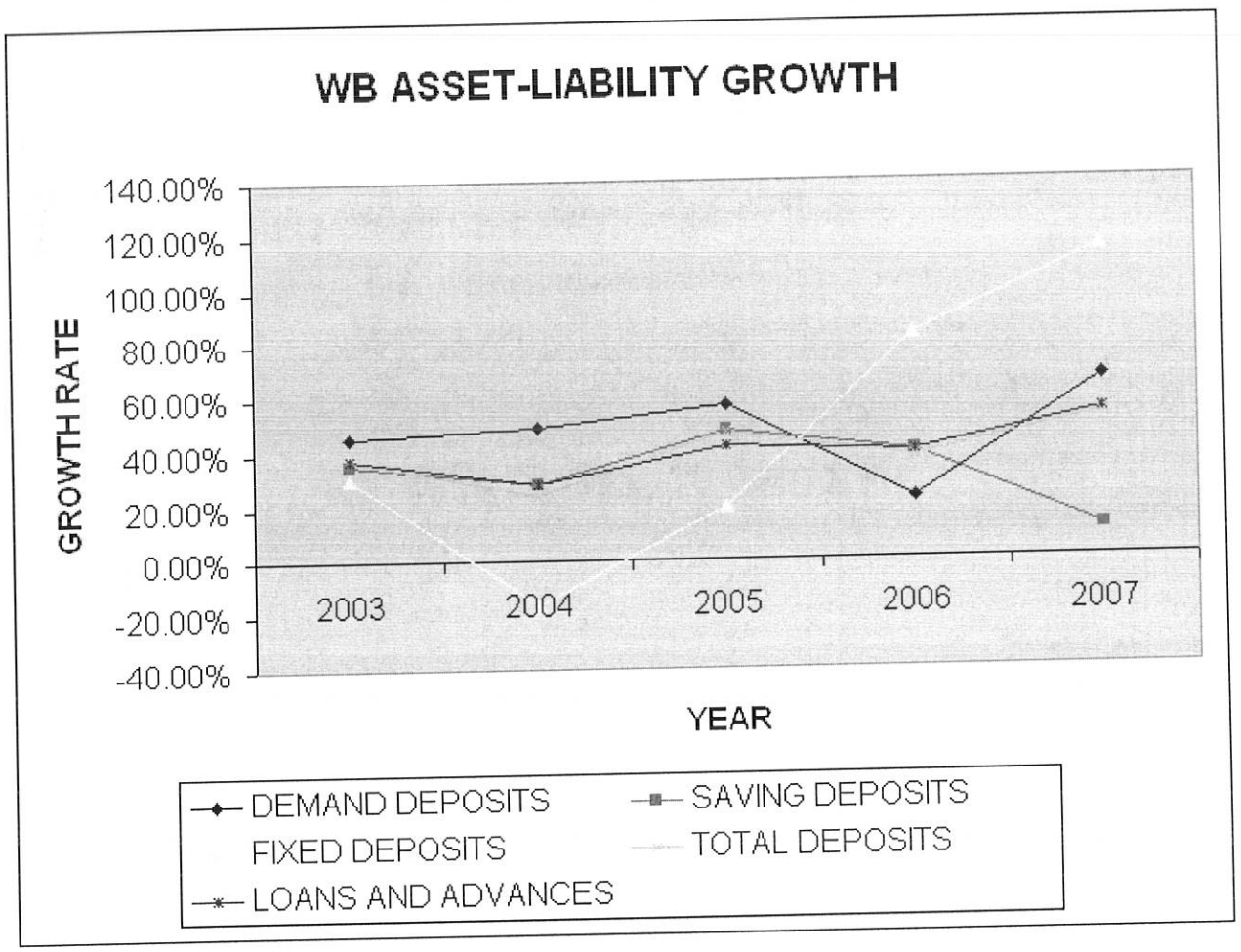


Graph 3: BOA Asset-Liability growth

Wegagen Bank
Asset Liability Growth Rate

	2003	2004	2005	2006	2007
Demand Deposits	45.93%	49.40%	57.33%	22.88%	66.90%
Saving Deposits	35.64%	28.10%	47.58%	39.58%	11.20%
Fixed Deposits	30.66%	-16.20%	20.00%	83.33%	115.15%
Total Deposits	37.77%	24.43%	47.03%	38.04%	53.21%
Net Loans and Advances	37.62%	28.23%	41.75%	39.79%	54.05%

Table 4: Asset-Liability growth of WB

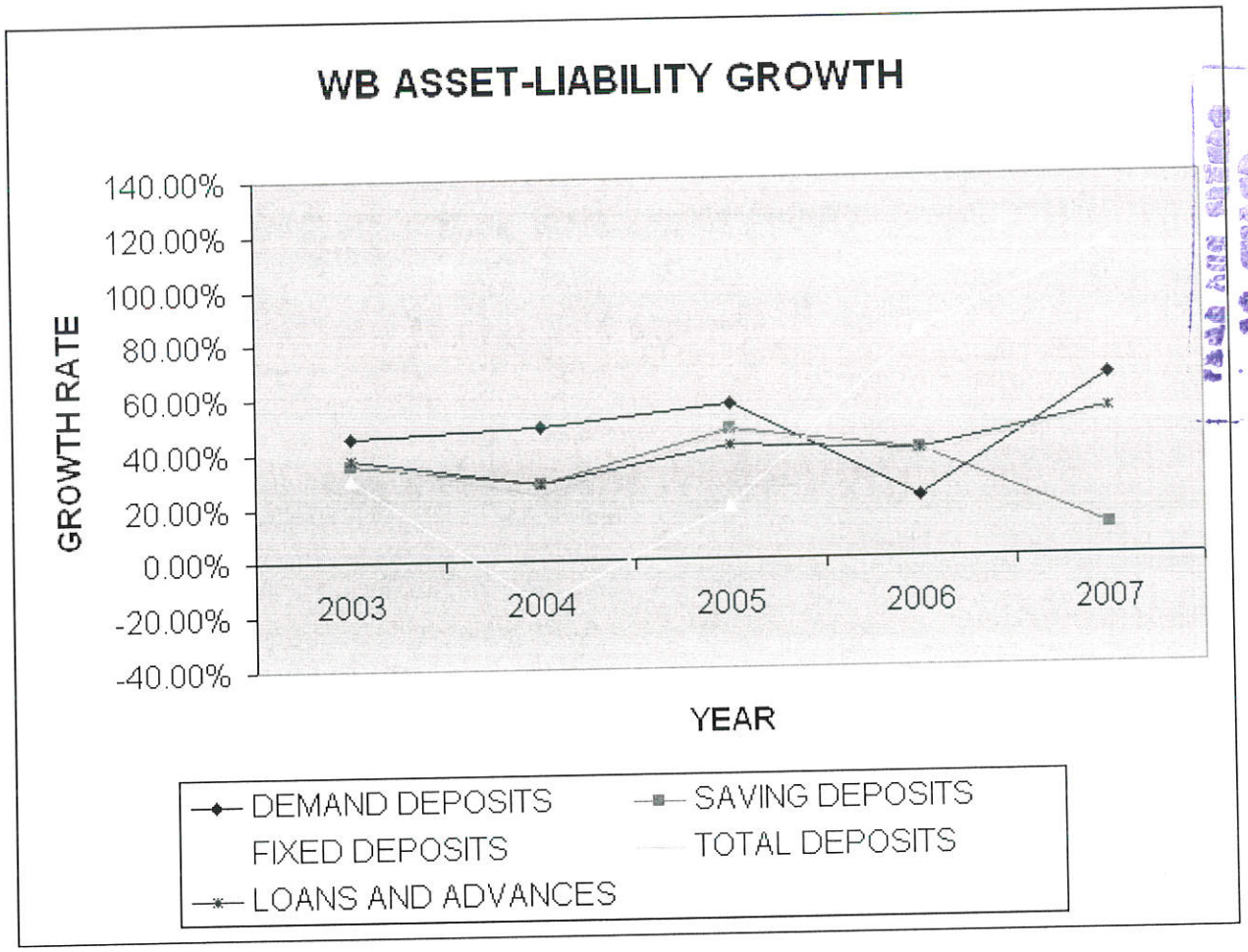


Graph 4: WB Asset-Liability growth

Wegagen Bank
Asset Liability Growth Rate

	2003	2004	2005	2006	2007
Demand Deposits	45.93%	49.40%	57.33%	22.88%	66.90%
Saving Deposits	35.64%	28.10%	47.58%	39.58%	11.20%
Fixed Deposits	30.66%	-16.20%	20.00%	83.33%	115.15%
Total Deposits	37.77%	24.43%	47.03%	38.04%	53.21%
Net Loans and Advances	37.62%	28.23%	41.75%	39.79%	54.05%

Table 4: Asset-Liability growth of WB



Graph 4: WB Asset-Liability growth

E. United Bank

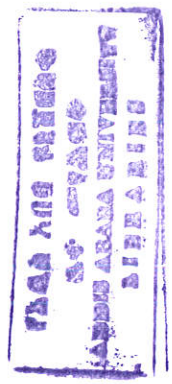
United Bank had grown in both asset portfolio and liability portfolio in the first for years of the study period. In this period, although both parts were growing the deposits growth rate by far exceeded that of liability. This rendered the bank to be over liquid and the problem is not only interpreted not mismatch but also the funds of the cost were high without proportional increase interest revenue might narrow down the spread.

As depicted in Table 5, the growth of fixed time deposit was extremely high. This would give the predictability the timing of outflow. Unlike demand deposit, fixed time deposit is attributed to for known timing of maturity, would give a chance minimizing or avoiding the risk of availing fund at the right time. Fixed time deposits, however, has a problem higher cost of fund than all the deposits, would pose a challenge to keep a higher spread.

For the last couple of years, things started to change, the growth rate of deposits were slow, where as the loan side was started to growth at a higher rate. This counterbalanced the first four years growth margin.

F. Nib International Bank

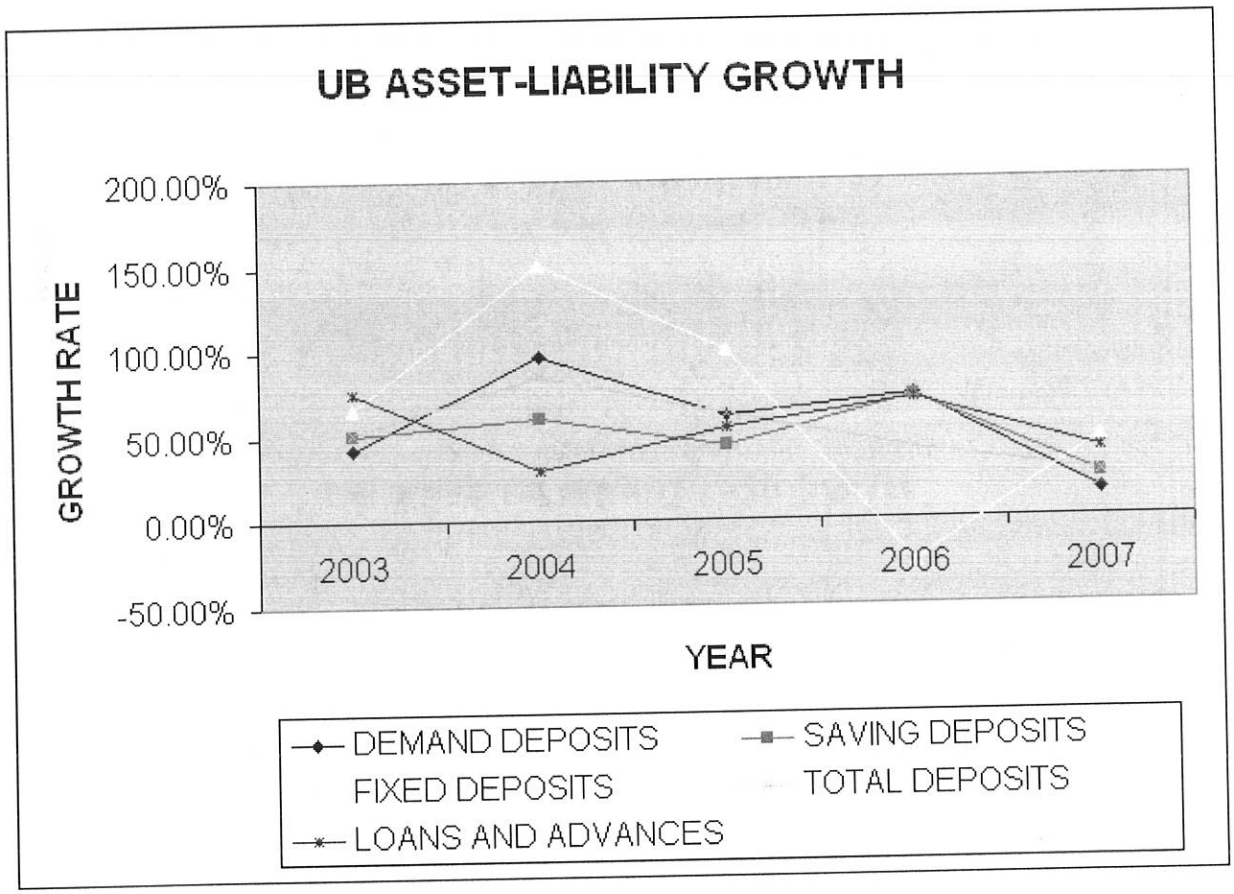
Through out the six year periods, the growth schedule depicted that both the assets and liabilities fairly in the same direction and in proportional size. It helped the bank to match its assets and the liabilities since the fluctuation volatility is minimal. Table 6 shows the facts.



United Bank
Asset Liability Growth Rate

	2003	2004	2005	2006	2007
Demand Deposits	42.86%	96.67%	61.86%	73.30%	16.31%
Saving Deposits	50.88%	60.47%	43.84%	71.54%	24.67%
Fixed Deposits	66.67%	150.91%	100.72%	-24.91%	47.60%
Total Deposits	51.85%	85.37%	62.59%	41.04%	26.31%
Net Loans and Advances	75.78%	30.39%	54.47%	71.05%	40.31%

Table 5: Asset-Liability growth of UB

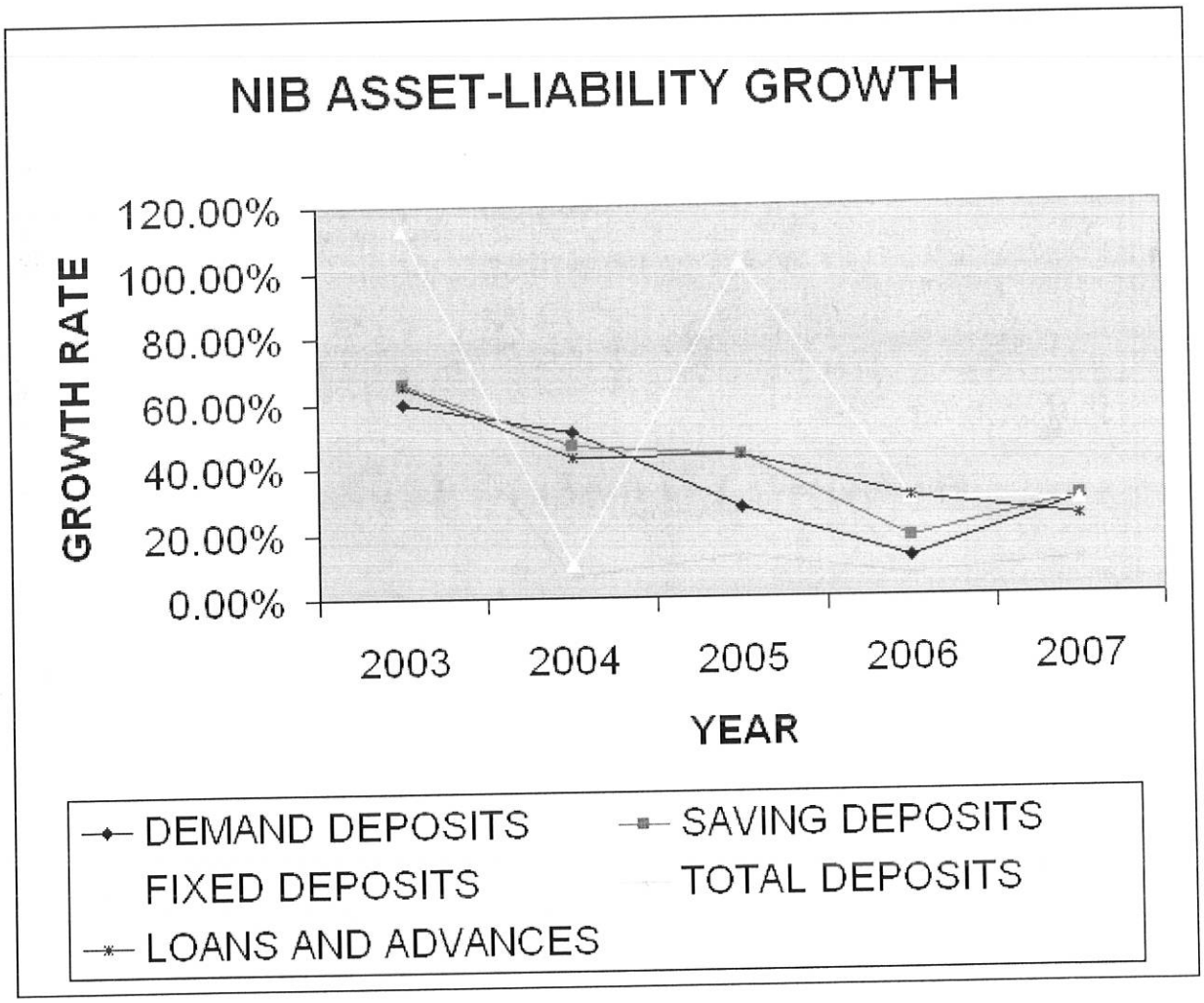


Graph 5: UB Asset-Liability growth

Nib International Bank
Asset Liability Growth Rate

	2003	2004	2005	2006	2007
Demand Deposits	60.00%	50.66%	27.51%	11.99%	29.36%
Saving Deposits	65.52%	46.73%	43.81%	18.05%	29.63%
Fixed Deposits	112.77%	10.00%	101.82%	29.73%	28.82%
Total Deposits	70.43%	6.85%	12.59%	6.62%	10.58%
Net Loans and Advances	65.00%	43.18%	43.65%	30.57%	23.77%

Table 6: Asset-Liability growth of NIB



Graph 6: NIB Asset-Liability growth

In general, it was learnt that for the all six private commercial banks has grown with a higher rate in both their deposits and loan portfolios. However, the growth rate for the liability portfolio differs for one deposit type to anther. The fixed time deposit, for examples, growth significantly for some times and decline significantly for some periods as shown the first six table and charts. This is because the banks were unable to replace the maturing fixed time deposits with new fixed time deposits contract. This would have been a problem for the banks unless they have alternative plan to fill the vacuum created by the withdrawal of fixed time deposit.

It can also be understood and interpreted also that there is a high level of correlation between the assets and the liabilities in most of the banks except few exception. This is to mean that the growth in the deposit is subordinated by the growth of the corresponding loans and advances helps the banks to have a balanced and healthy financial growth.

3.4 Analysis of Liquidity risk Management

As described in the methodology section, the flow approach is mostly advisable method to describe liquidity risk. The inflows for this study are those assets in a maturing position and which are the core assets of the banks and the outflows are maturing liabilities which are also core liabilities of banks.

A. Awash International Bank

The bank is over liquid. The gap is by far greater than the requirement of National bank of Ethiopia (NBE), at that the requirement of the NBE was only 15%. Although it was exhibited an eventual improvement in the latter period, the bank was unable to borrow or invest what has been collected in the form of deposits. The worst time was the year 2004. In this year, as shown in Table 7, AIB had excess deposit over loan of 42%, which is also by 27% more than the requirement of NBE. The bank was able to improve its position in the year 2007 by pulling down its excess position into 23% (This also above the requirement by 8 %.)

B. Dashen Bank

Dashen bank showed a gradual and continuous improvement in its liquidity position from 2002 through 2007. The bank seems relatively perfect since it enables keeping in balance the risk return trade off when liquidity risk may be seen in isolation. As depicted in Table 8, DB was good in the last two years of the survey having a gap ratio of 16% and 20% respectively, which exceeds the NBE requirement only by 1% percent and 5% respectively again. This helped DB to take the most out of its deposits without violating the requirement. DB does not take unwise aggressive position as well as not being in a conservative scenario situation.

Awash International Bank
Liquidity Risk Profile
(In millions of ETB)

Particular	2002	2003	2004	2005	2006	2007
Inflows (Assets)	613	756	873	1210	1780	2403
Outflows (Liability)	930	1164	1493	1940	2567	3112
Gap (Inflows-Outflows)	-317	-408	-620	-730	-787	-709
Gap as % to outflow	-34.09%	-35.05%	-41.53%	-37.63%	-30.66%	-22.78%

Table 7: AIB liquidity risk profile

Dashen Bank
Liquidity Risk Profile
(In millions of ETB)

Particular	2002	2003	2004	2005	2006	2007
Inflows (Assets)	845	1218	1627	2160	3080	3889
Outflows (Liability)	1191	1621	2178	2833	3692	4861
Gap (Inflows-Outflows)	-346	-403	-551	-673	-612	-972
Gap as % to outflow	-29.05%	-24.86%	-25.30%	-23.76%	-16.58%	-20.00%

Table 8: DB liquidity risk profile

C. Bank of Abyssinia

The first four years of the survey were exhibited over supplied funds as identified as high as over 30 percent. This is due to the effort mad by the bank to attract more deposit than it could borrow or invest. As can be learned from table 9, assessment and management of liquidity were poor in the first four years and exhibited a gradual slight improvement in the latter two years. This is manly because the assets (inflows) growth pace were better than that of liabilities (outflows) in the year 2006 and 2007.

In 2006, there was a slight risk of liquidity since it was slightly below the requirement of NBE by nearly 2 percent. However, this situation was reversed in the 2007 by increasing to 19 percent liquidity position.

D. Wegagen Bank

The Wegagen's liquidity position was not as such attractive in terms of matching assets and liabilities. Table 10 showed that, the bank liquidity positions were not improved significantly during the all periods, except 2006. The structure of the asset and liability was not designed in such a way that optimizes the risk return trade off. The excess position of liabilities over assets was almost riding in the given margin between 20 percent and 26 percent

Bank of Abyssinia
Liquidity Risk Profile
(In millions of ETB)

Particular	2002	2003	2004	2005	2006	2007
Inflows (Assets)	631	747	889	1173	1902	2197
Outflows (Liability)	909	1076	1275	1627	2177	2721
Gap (Inflows-Outflows)	-278	-329	-386	-454	-275	-524
Gap as % to outflow	-30.58%	-30.58%	-30.27%	-27.90%	-12.63%	-19.26%

Table 9: BOA liquidity risk profile

Wegagen Bank
Liquidity Risk Profile
(In millions of ETB)

Particular	2002	2003	2004	2005	2006	2007
Inflows (Assets)	386	542	695	951	1516	2060
Outflows (Liability)	515	704	876	1288	1778	2724
Gap (Inflows - Outflows)	-129	-162	-181	-337	-262	-664
Gap as % to outflow	-25.05%	-23.01%	-20.66%	-26.16%	-14.74%	-24.38%

Table 10: WB liquidity risk profile

E. United Bank

United bank's position of liquidity were highly volatile and vulnerable, it always wander form one extreme point to the opposite extreme point. For example, as depicted in table 11, the gap ratio was as low as 1.39 percent in the year 2003 and as high as 34.1 percent in 2005. For three years (2002, 2003 and 2007) out of six years of investigation the gap ratio were significantly less than 15 percent which can be interpreted as excessive loan extension and/or lack of having good of amount deposits. On the other hand, the banks also were in a position of being over liquid, for the remainder of the three years periods (2004, 2005 and 2006).

The scope of volatility associated with these assets and liabilities might render unpredictable pattern and therefore widen the risk of managing assets and liabilities. This might arise from inefficient financial intermediation or unequal and inconsistence concerns of the consequence of liquidity management.

F. Nib International Bank

Table 12 comes up with completely different picture of liquidity profile of all other 5 Liquidity profiles under the survey. For all the periods the gap ratio is below 15 percent which were recommended by the central bank. This seems

because of intentional aggressive policy employed by the bank to exploit higher amount of returns form the funds injected in the banks operation.

This aggressive strategy could bring about higher amount of profit margin in relation to other banks in the study. However, it was not without problem, the problem was that for all the six years studied the bank position of liquidity always in red light scenario which demands to built a safety margin for the interest and benefits to all sorts of stock holders preferably for creditors whom are identified as depositors.

United Bank
Liquidity Risk Profile
(In millions of ETB)

Particular	2002	2003	2004	2005	2006	2007
Inflows (Assets)	161	283	369	570	975	1368
Outflows (Liability)	189	287	532	865	1220	1541
Gap (Inflows-Outflows)	-28	-4	-163	-295	-245	-173
Gap as % to outflow	-14.81%	-1.39%	-30.64%	-34.10%	-20.08%	-11.23%

Table 11: UB liquidity risk profile

Nib International Bank
Liquidity Risk Profile
(In millions of ETB)

Particular	2002	2003	2004	2005	2006	2007
Inflows (Assets)	320	528	756	1086	1418	1755
Outflows (Liability)	345	588	832	1223	1452	1879
Gap(Inflows-Outflows)	-25	-60	-76	-137	-34	-124
Gap as % to outflow	-7.25%	-10.20%	-9.13%	-11.20%	-2.34%	-6.60%

Table 12: NIB liquidity risk profile

To sum up, the banks under the study were in different liquidity position and needs to have different risk mitigation and hedging strategy. Liquidity position of AIB and BOA are by far greater than the required liquidity position. This might have been created either because the banks intentional conservative policy or it might be due to the inefficiency of the banks to extend the loans and advances in proportion to its deposits. Although DB's and WB's position seem stable, they are still a bit over liquid which might give the bank margin of safety. The other two banks, namely UB and NIB are in a volatile position, which make them in a riskier position.

3.5 Analysis of Interest Rate Risk Management (IRRM)

Interest rate is subject to changes unconditionally by the circumstance beyond the control of the bank. In fact, in Ethiopian context, it is the National Bank of Ethiopia to set the minimum interest rate paid on saving deposit. The bank has the right to increase the minimum interest if they look for to attract new saving deposits, currently NBE does not pose in limits, higher or lower, for rates of interest in the funds loaned by the banks.

Whenever stiff competition materializes, the interest rate risk will become a clear challenge for management of commercial banking services. The spread between cost of borrowing (to be paid to depositors) and income from use of funds (to be

received from borrowers) will narrow down in era of real competitions. These in turn would result in interest rate risk. In short interest rate risk is risk due to uncertain future interest rate.

In addition, the banking industry is introducing new types of product not only to attract customers but also to cope up with the current situations. Among others, the innovation variable interest which merely depend the ups and downs of Treasury bill effective interest rate or other inter bank offering rate might bring a complication of the already existed interest rate risk. Bank may build there asset portfolio with variable interest rated assets portfolio and fixed interest rated liability portfolio and vise versa. In either case, the interest rate risk will be aggravated.

Unlike liquidity risk management, interest rate risk management is the concern of merely interest rate sensitive assets and liabilities. By interest rate sensitive item is to mean assets on which the bank receives interest periodically and liabilities on which the bank Pays interest.

A. Awash International Bank

As shown in table 13, it is obvious that except the last year the risk sensitive Liabilities are exceeding significantly risk sensitive assets. Of course, significant improvement was registered in 2007. They would have to adopt a mechanism to hedge these risks, in case if the spread rate margin were

narrowed. Because the higher the negative magnitude of the gap, the lower will be the profitability of the primary line of business.

Awash International Bank
Rate Sensitive Gap
(In millions of ETB)

	2002	2003	2004	2005	2006	2007
Assets	613	756	873	1210	1780	2403
Liabilities	713	875	1141	1437	1833	2223
Gap	-100	-119	-268	-227	-53	180

Table 13: AIB Rate Sensitive Gap

B. Dashen Bank

As clearly seen in the following table, Dashen bank seems free from Interest rate risk. This is primarily because the DB's liability portfolio highly dominated by demand deposits for which the bank need not pay periodic interest to the customers.

Dashen Bank
Rate Sensitive Gap
(In millions of ETB)

	2002	2003	2004	2005	2006	2007
Assets	845	1218	1627	2160	3080	3889
Liabilities	737	1056	1448	1897	2343	2843
Gap	108	162	179	263	737	1046

Table 14: DB Rate Sensitive Gap

C. Bank of Abyssinia

As BOA has negative mismatch in the years 2004 and 2005, its net interest margin or earning were lower. The reverse would happen in the last two years of table 15. Provided that the table will help to forecast the future, BOA is in a position not showing a consistent growth or proportional growth for the years to come.

Bank Of Abyssinia
Rate Sensitive Gap
(In millions of ETB)

	2002	2003	2004	2005	2006	2007
Assets	631	747	889	1173	1902	2197
Liabilities	631	719	937	1183	1548	1898
Gap	0	28	-48	-10	354	299

Table 15: BOA Rate Sensitive Gap

D. Wegagen Bank.

Wegagen can be considering as the best in its ability managing interest rate risk for two reasons. First, it has a consistence grow of nominal gap favoring to leverage of interest rate paid and so will have a remarkable growth in net interest margin which in fact had in the net profit. Second, the growth rate is super. Even DB couldn't register such a higher growth as demonstrated below in Table 16

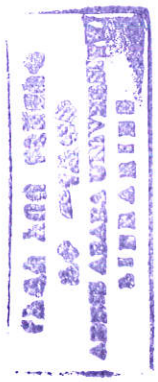
Wegagen Bank
Rate Sensitive Gap
(In millions of ETB)

	2002	2003	2004	2005	2006	2007
Assets	386	542	695	951	1516	2060
Liabilities	202	274	351	518	723	804
Gap	184	268	344	433	793	1256

Table 16: WB Rate Sensitive Gap

E. United Bank

United bank was also good in managing its interest risk management. As shown below in table 17, UB was not able to keep the pace of growing consistently. The year 2004 for is the typical example that the assets growth left behind the liability growth as it was the fact before and after.



United Bank
Rate Sensitive Gap
(In millions of ETB)

	2002	2003	2004	2005	2006	2007
Assets	161	283	369	570	975	1368
Liabilities	114	172	276	397	681	849
Gap	47	111	93	173	294	519

Table 17: UB Rate Sensitive Gap

F. Nib International Bank

Nib is also good in raising demand deposits than saving deposits, as it was the case of Dashen Bank and Wegagen bank. However, the NIB case growth and structure could not be comparable to that of WB.

Nib International Bank
Rate Sensitive Gap
(In millions of ETB)

	2002	2003	2004	2005	2006	2007
Assets	320	528	756	1086	1418	1755
Liabilities	203	336	493	709	837	1085
Gap	117	192	263	377	581	670

Table 18: NIB Rate Sensitive Gap

In summary, except AIB and partially BOA, all the banks are in a positive liquidity position. Even AIB and BOA exhibits a gradual improvement to come out of negative position and settle with a positive position.

In case of positive gap, the magnitude of the loan able asset increases the interest revenue earned which exceeds the interest expensed incurred from the interest bearing deposits are in the safest position.

To sum up, overall ALM positions of banks vary significantly from one bank to another bank. Most of the banks are not good enough to manage their liquidity position. Comparatively speaking, they are scattered from one end to the opposite end when they are cascaded in their degree/magnitude of liquidity position. On the other hand, interest rate risks management position show up the opposite history. That is, banks are almost in the skewed position which has a positive impact from risk/return view point.

3.6 Liquidity Management and Nonexistence of Financial market

As stated in the statement of the problem section of this paper, Ethiopia is not organizing financial market as opposed to the demand of efficient financial system elsewhere in the world. There is no visible signal whether the government has an intention to provide legal framework and infrastructure for such a market.

Presently, the only available financial instrument is Treasury bill of the Ethiopian auctioned by the National bank of Ethiopia to fill the short term deficit of the government budget. Private commercial market has two major problems to deal with this market. First, the Treasury bill market is only transacted in the primary market. That is, it could be purchased directly from the auction market

conducted by the issuer bank once in a while. It doesn't have a secondary market for immediate needs. Second, the supply of the Treasury bill market by far less than the aggregate demand of all the private commercial banks in most of the cases.

Liquidity management as one tool of ALM requires quick investment and divestment decisions without passing through a stringent credit analysis for their immediate demand. In most of the cases, Commercial banks are engaged in extension short term loan for the working capital needs of their customers (borrowers).

As learnt form the analysis of liquidity management from table 7 through 12, it could be securitized that the six banks are either pretty well above the requirements the central bank or they are short of this requirements. For instance, Awash international bank (AIB) and Bank of Abyssinia (BOA) were stretched with a loan portfolio significantly less than what they could lend to the extent of 23 % (38%-15%) (Please refer Table 7) . The excess funds would have been invested somewhere in a money market to get a returns from those excess funds. They could have been participated in the market as an investor because they were in excess position.

On the other hands, Nib international Bank was consistently below the requirement of National Bank of Ethiopia. As shown in table 12, it was short of fund to the Extent of 13% (15%-2%). The bank could participate in the market as

a deficit unit. That is, it could finance its shortage by entering into the money market.

Some banks like United bank were in a volatile position. Some times it went up and sometimes it went down. Hence this bank could take part in the money market in either as an investor or issuer position as the case may be.

In short, the lack of the financial market and most importantly the money market (a market for instruments maturing within a year) affected banks by hindering their ability to actively participate in the market to fulfill the reason for which they are established and for effectively and to the best of their stakeholders' interest.

3.7 Interest Rate Risk Management & Nonexistence of financial market

Interest revenues (a sum of money received for the loan extended) are primary revenue for banks. In the same token, interest expense (a sum paid for the cost deposit) is major expenditure in the income statement of banks. Interest margin, therefore, take the attention prudent financial and risk mangers of banks. In line with these ideas, the financial market came up with new branded financial instruments which help as a bridge between financial institutions which faces opposite interest risk scenario. These instruments, as discussed in the second

chapter of this paper, are designed in such a way that to help change uncertainness of cash flows from interest to certainness.

Table 13 through 18 depicted the fact that all banks except AIB are in a positive rate sensitive position. This could be interpreted as any increases in deposit interest rate automatically reduce or surpass the interest margin for the five banks under study. In the era of persistent inflation, it hard to expect a decline in interest rate.

Derivate instruments which were developed to reduce the risk of interest rate change in the form of swap agreement could assist the problem and keeps the institutions to be the safest side by small premium payment.

CHAPTER IV
Conclusions and Recommendations

4.1 Conclusion

The subject of financial markets establishment is a live issue in developing countries like Ethiopia. In general, it seems that it has paramount importance for efficient and effective economic and financial system. One of the crucial factors for financial management decisions of banks and other businesses is to match there inflow of resources with outflows. This is done within its risk reference and in light of legal and regulation requirement. The determination of the right mix of asset and liability is therefore, to take into account various variables.

This paper attempts to illuminate the impact of absence of financial markets in the financial institutions Asset-Liability Management. The practical test of Asset-Liability management was taken on private commercial banks. It is determined through the yardsticks of liquidity risk management and interest rate risk management.

The paper also tried to address the issue of ALM by utilizing models created for such a purpose on each of the banks evaluated. As argued in this paper the gaps

identified would have been filled by the use of the instruments which were available easily with negligible transaction cost.

After considering the theoretical arguments and substantiating with empirical evidence, the following conclusions were drawn:

- Private commercial banks exhibited a consistent growth in both their assets portfolio and liability portfolio;
- Banks liquidity position is vulnerable;
- It is observed that most of the banks are not in a position to have a safety value to filter the risk scenarios;
- It appears that private commercial banks to unable to attract foreign currency deposit so as to get both transaction and translation advantage;
- The absence of strong financial market impaired and constrained the banks to improve their ALM position;
- The private commercial banks even are not strictly participating in the existing sole financial market instrument.

4.2 Recommendations

In coalition with the analysis made and conclusion drawn, the following recommendations, which are more than lip services, are forwarded:

- Banks should have to establish a good Asset-Liability policy. On the top this, it is also advisable to form a committee consisting of senior managers from finance and operation divisions/departments. The committee should establish the desired level of attainable ratio of liquidity, ratio of profitability and other pertinent restriction so as to promote sound Asset-liability management. Moreover, the committee should conduct periodic review (say every month) and provide both feedback and feed forward information and instruction for the concerned staff as an early earning signal; (self assessments)
- Although, it can be the component of the above recommendation; for immediate solution, banks with chronic liquidity problem has to take necessary decision to improve the position of liquidity;
- Financial institutions directly through their association (for example, association of bankers, association of insurers) or indirectly through chamber of commerce persuade the law maker to create conducive

financial system including the secondary market since they had suffered from its non existence;

- Banks with excess funds, should take a quick action to participate in the treasury auction primary market;
- Though repeatedly said, the rulemaking body has to create the legal infrastructure , for the swift, effective, less costly mobilizing funds to the desired position;
- The NBE, as a government policy enforcement body, should has to relax some of the directives, at least to some existence; for example, allowing commercial banks to transact among themselves and their corporate customers in foreign currency;
- Banks with shortage of the foreign currency shoud have to exert effort so as to put themselves in a better import-export facilitator, foreign exchange transfer transaction position and exploit holding gain; and
- In collaboration with scholars, and professional societies of economists, accountants and financial analysts, and other interested groups a continuous independent symposia and workshop should be entertained so as to maximize the capacities of the banks officers.

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Awash International Bank
Balance sheet
Year ended
(In millions of ETB)

	2002	2003	2004	2005	2006	2007
Assets						
Cash on hand	120	76	100	129	125	181
Cash at bank	6	2		2	2	1
Reserve account with NBE	81	61	206	233	237	520
Deposit with Foreign Banks	66	100	116	267	367	426
Treasury bills	130	316	337	235	198	
Other Investments	10	3	3	3	3	3
Trust Funds						
Other Debit Balances	48	30	61	72	152	196
Total Loans and Advances	637	800	946	1290	1872	2512
Less Provision for NPL	24	44	73	80	92	109
Net Loans and Advances	**613**	**756**	**873**	**1210**	**1780**	**2403**
Customers Liability for LC						
Fixed Assets	38	57	74	75	90	100
Total	**1112**	**1401**	**1770**	**2226**	**2954**	**3830**
Liabilities						
Demand Deposits	166	245	287	422	574	603
Saving Deposits	713	875	1141	1437	1833	2223
Fixed Deposits	51	44	65	81	160	286
Foreign Bank's Deposits						
Total Deposits	**930**	**1164**	**1493**	**1940**	**2567**	**3112**
Trust Funds						
Short term Loan						
Other Credit Balance	51	73	94	16	18	214
Margin Held for L/C		27	22	42	65	70
Long Term Loans						
Provision for Taxation			6			
Dividend Payable						
Other provisions						
Bank's Liability to L/C						
Equity						
Authorized and Paid	100	111	127	155	188	253
Legal Reserve	17	19	23	32	43	67
General Reserve	2	2	3	7	8	7
Retained Earning						
Profit and Loss A/c	12	5	2	34	65	107
Capital and Reserve	**131**	**137**	**155**	**228**	**304**	**434**
Total	**1112**	**1401**	**1770**	**2226**	**2954**	**3830**

Appendix 1. Balance Sheet of AIB

Dashen Bank
Balance sheet
Year ended
(In millions of ETB)

	2002	2003	2004	2005	2006	2007
Assets						
Cash on hand	58	103	77	110	120	150
Cash at bank	28	34	81	75	1	13
Reserve account with NBE	101	138	225	390	482	861
Deposit with Foreign Banks	192	245	190	446	546	647
Treasury bills	130	129	299			
Other Investments	31	23	26	28	28	28
Trust Funds						
Other Debit Balances	79	75	113	165	229	356
Total Loans and Advances	872	1267	1690	2232	3164	3988
Less Provision for NPL	27	49	63	72	84	99
Net Loans and Advances	**845**	**1218**	**1627**	**2160**	**3080**	**3889**
Customers Liability for LC						
Fixed Assets	22	26	39	46	60	97
Total	**1486**	**1991**	**2677**	**3420**	**4546**	**6041**
Liabilities						
Demand Deposits	393	466	623	793	1039	1361
Saving Deposits	737	1056	1448	1897	2343	2843
Fixed Deposits	61	99	107	143	310	657
Foreign Bank's Deposits						
Total Deposits	**1191**	**1621**	**2178**	**2833**	**3692**	**4861**
Trust Funds						
Short term Loan						
Other Credit Balance	83	117	166	214	280	419
Margin Held for L/C	60	94	101	104	136	146
Long Term Loans						
Provision for Taxation	15	10	22	26	52	71
Dividend Payable	15	20	38			
Other provisions						
Bank's Liability to L/C						
Equity						
Authorized and Paid	75	75	100	100	156	282
Legal Reserve	18	25	39	57	90	137
General Reserve				86	65	65
Retained Earning	29	29	33		75	60
Profit and Loss A/c						
Capital and Reserve	**122**	**129**	**172**	**243**	**386**	**544**
Total	**1486**	**1991**	**2677**	**3420**	**4546**	**6041**

Appendix 2. Balance Sheet of DB

Bank of Abyssinia
Balance sheet
Year ended
(In millions of ETB)

	2002	2003	2004	2005	2006	2007
Assets						
Cash on hand	28	51	58	110	101	128
Cash at bank	252	242	170	16	5	1
Reserve account with NBE	70	73	104	440	472	433
Deposit with Foreign Banks	85	141	123	193	203	260
Treasury bills			173			200
Other Investments	5	5	5			
Trust Funds						
Other Debit Balances	58	61	44	90	113	136
Total Loans and Advances	669	809	962	1234	1963	2305
Less Provision for NPL	38	62	73	61	61	108
Net Loans and Advances	**631**	**747**	**889**	**1173**	**1902**	**2197**
Customers Liability for LC		90	67			
Fixed Assets	13	13	19	35	38	41
Total	**1142**	**1423**	**1652**	**2057**	**2834**	**3396**
Liabilities						
Demand Deposits	134	207	223	333	403	511
Saving Deposits	631	719	937	1183	1548	1898
Fixed Deposits	144	150	115	111	226	312
Foreign Bank's Deposits						
Total Deposits	**909**	**1076**	**1275**	**1627**	**2177**	**2721**
Trust Funds						
Short term Loan						
Other Credit Balance	54	67	84	118	173	209
Margin Held for L/C	29	39	17	37	45	35
Long Term Loans						
Provision for Taxation	9	2	16	21	37	28
Dividend Payable						
Other provisions						
Bank's Liability to L/C		90	67			
Equity						
Authorized and Paid	129	132	137	166	265	265
Legal Reserve	10	11	21	36	58	75
General Reserve	4	4	6	6	13	13
Retained Earning	-2	2	29	46	66	50
Profit and Loss A/c						
Capital and Reserve	**141**	**149**	**193**	**254**	**402**	**403**
Total	**1142**	**1423**	**1652**	**2057**	**2834**	**3396**

Appendix 3 . Balance Sheet of BOA

Wegagen Bank
Balance sheet
Year ended
(In millions of ETB)

	2002	2003	2004	2005	2006	2007
Assets						
Cash on hand	69	86	75	104	147	167
Cash at bank	30	33	54	104	91	124
Reserve account with NBE	65	55	95	62	175	327
Deposit with Foreign Banks	64	140	185	350	248	702
Treasury bills						
Other Investments						
Trust Funds						
Other Debit Balances	18	18	20	24	57	67
Total Loans and Advances	406	571	738	1002	1593	2155
Less Provision for NPL	20	29	43	51	77	95
Net Loans and Advances	**386**	**542**	**695**	**951**	**1516**	**2060**
Customers Liability for LC						
Fixed Assets	14	15	16	21	25	33
Total	**646**	**889**	**1140**	**1616**	**2259**	**3480**
Liabilities						
Demand Deposits	172	251	375	590	725	1210
Saving Deposits	202	274	351	518	723	804
Fixed Deposits	137	179	150	180	330	710
Foreign Banks' Deposits	4					
Total Deposits	**515**	**704**	**876**	**1288**	**1778**	**2724**
Trust Funds						
Short term Loan						
Other Credit Balance	41	55	72	89	118	168
Margin Held for L/C	20	33	50	43	85	144
Long Term Loans						
Provision for Taxation	6	4	13	16	23	41
Dividend Payable						
Other provisions						
Bank's Liability to L/C						
Equity						
Authorized and Paid	53	77	89	113	151	238
Legal Reserve	6	8	16	28	46	74
General Reserve				3	5	8
Retained Earning	5	8	24	36	53	83
Profit and Loss A/c						
Capital and Reserve	**64**	**93**	**129**	**180**	**255**	**403**
Total	**646**	**889**	**1140**	**1616**	**2259**	**3480**

Appendix 4. Balance Sheet of WB

United Bank
Balance sheet
Year ended
(In millions of ETB)

	2002	2003	2004	2005	2006	2007
Assets						
Cash on hand	21	35	34	44	68	116
Cash at bank	21	13	14	15	72	33
Reserve account with NBE	37	55	47	135	286	141
Deposit with Foreign Banks	38	70	195	290	167	468
Treasury bills	25					
Other Investments						
Trust Funds						
Other Debit Balances	3	4	6	8	17	25
Total Loans and Advances	163	290	384	593	1004	1410
Less Provision for NPL	2	7	15	23	29	43
Net Loans and Advances	**161**	**283**	**369**	**570**	**975**	**1368**
Customers Liability for LC						
Fixed Assets	8	9	9	11	14	32
Total	**314**	**469**	**674**	**1073**	**1599**	**2183**
Liabilities						
Demand Deposits	42	60	118	191	331	385
Saving Deposits	114	172	276	397	681	849
Fixed Deposits	33	55	138	277	208	307
Foreign Bank's Deposits						
Total Deposits	**189**	**287**	**532**	**865**	**1220**	**1541**
Trust Funds						
Short term Loan						
Other Credit Balance	26	72	30	42	124	225
Margin Held for L/C	8	17	13	29	48	34
Long Term Loans						
Provision for Taxation	3	2	3	12	16	23
Dividend Payable						
Other provisions						
Bank's Liability to L/C						
Equity						
Authorized and Paid	82	83	85	88	132	259
Legal Reserve	3	4	6	14	25	41
General Reserve					34	9
Retained Earning	3	4	5	23		51
Profit and Loss A/c						
Capital and Reserve	**88**	**91**	**96**	**125**	**191**	**360**
Total	**314**	**469**	**674**	**1073**	**1599**	**2183**

Appendix 5. Balance Sheet of UB

Dashen Bank
Balance sheet
Year ended
(In millions of ETB)

	2002	2003	2004	2005	2006	2007
Assets						
Cash on hand	41	67	76	138	111	147
Cash at bank	25	10	21	28	23	21
Reserve account with NBE	5	40	62	98	93	279
Deposit with Foreign Banks	96	97	92	200	208	249
Treasury bills		30	80			
Other Investments		1	1	2	2	3
Trust Funds						
Other Debit Balances	42	106	152	170	141	111
Total Loans and Advances	324	550	786	1133	1475	1817
Less Provision for NPL	4	22	30	47	57	62
Net Loans and Advances	**320**	**528**	**756**	**1086**	**1418**	**1755**
Customers Liability for LC		131	149			
Fixed Assets	5	6	7	10	31	42
Total	**534**	**1016**	**1396**	**1732**	**2027**	**2607**
Liabilities						
Demand Deposits	95	152	229	292	327	423
Saving Deposits	203	336	493	709	837	1085
Fixed Deposits	47	100	110	222	288	371
Foreign Bank's Deposits						
Total Deposits	**345**	**588**	**832**	**1223**	**1452**	**1879**
Trust Funds						
Short term Loan						
Other Credit Balance	61	125	181	215	211	223
Margin Held for L/C	20	41	47	50	56	50
Long Term Loans						
Provision for Taxation	9	6	14	20	23	30
Dividend Payable						
Other provisions						
Bank's Liability to L/C		131	149			
Equity						
Authorized and Paid	84	105	129	160	200	307
Legal Reserve	7	10	18	30	44	63
General Reserve		1	1	1	1	1
Retained Earning	8	9	25	33	40	54
Profit and Loss A/c						
Capital and Reserve	**99**	**125**	**173**	**224**	**285**	**425**
Total	**534**	**1016**	**1396**	**1732**	**2027**	**2607**

Appendix 6. Balance Sheet of NIB

Awash International Bank
Asset Liability Schedule
(In Millions of ETB)

	2002	2003	Growth	% growth	2003	2004	Growth	% growth	2004	2005	Growth	% growth	2005	2006	Growth	% growth	2006	2007	Growth	% growth
Demand Deposits	166	245	79	47.59%	245	287	42	17.14%	287	422	135	47.04%	422	574	152	36.02%	574	603	29	5.05%
Saving Deposits	713	875	162	22.72%	875	1141	266	30.40%	1141	1437	296	25.94%	1437	1833	396	27.56%	1833	2223	390	21.28%
Fixed Deposits	51	44	-7	-13.73%	44	65	21	47.73%	65	81	16	24.62%	81	160	79	97.53%	160	286	126	78.75%
Foreign Banks's Deposits																				
Total Deposits	**930**	**1164**	234	25.16%	**1164**	**1493**	329	28.26%	**1493**	**1940**	447	29.94%	**1940**	**2567**	627	32.32%	**2567**	**3112**	545	21.23%
Net Loans and Advances	**613**	**756**	143	23.33%	**756**	**873**	117	15.48%	**873**	**1210**	337	38.60%	**1210**	**1780**	570	47.11%	**1780**	**2403**	623	35.00%

Appendix 7: AIB Asset Liability Growth Schedule

Dashen Bank
Asset Liability Schedule
(In Millions of ETB)

	2002	2003	Growth	% growth	2003	2004	Growth	% growth	2004	2005	Growth	% growth	2005	2006	Growth	% growth	2006	2007	Growth	% growth
Demand Deposits	393	466	73	18.58%	466	623	157	33.69%	623	793	170	27.29%	793	1039	246	31.02%	1039	1361	322	30.99%
Saving Deposits	737	1056	319	43.28%	1056	1448	392	37.12%	1448	1897	449	31.01%	1897	2343	446	23.51%	2343	2843	500	21.34%
Fixed Deposits	61	99	38	62.30%	99	107	8	8.08%	107	143	36	33.64%	143	310	167	116.78%	310	657	347	111.94%
Foreign Banks's Deposits																				
Total Deposits	**1191**	**1621**	430	36.10%	**1621**	**2178**	557	34.36%	**2178**	**2833**	655	30.07%	**2833**	**3692**	859	30.32%	**3692**	**4861**	1169	31.66%
Net Loans and Advances	**845**	**1218**	373	44.14%	**1218**	**1627**	409	33.58%	**1627**	**2160**	533	32.76%	**2160**	**3080**	920	42.59%	**3080**	**3889**	809	26.27%

Appendix 8: DB Asset Liability Growth schedule

Bank of Abyssinia
Asset Liability Schedule
(In Millions of ETB)

	2002	2003	Growth	% growth	2003	2004	Growth	% growth	2004	2005	Growth	% growth	2005	2006	Growth	% growth	2006	2007	Growth	% growth
Demand Deposits	134	207	73	54.48%	207	223	16	7.73%	223	333	110	49.33%	333	403	70	21.02%	403	511	108	26.80%
Saving Deposits	631	719	88	13.95%	719	937	218	30.32%	937	1183	246	26.25%	1183	1548	365	30.85%	1548	1898	350	22.61%
Fixed Deposits	144	150	6	4.17%	150	115	-35	-23.33%	115	111	-4	-3.48%	111	226	115	103.60%	226	312	86	38.05%
Foreign Banks's Deposits																				
Total Deposits	**909**	**1076**	167	18.37%	**1076**	**1275**	199	18.49%	**1275**	**1627**	352	27.61%	**1627**	**2177**	550	33.80%	**2177**	**2721**	544	24.99%
Net Loans and Advances	**631**	**747**	116	18.38%	**747**	**889**	142	19.01%	**889**	**1173**	284	31.95%	**1173**	**1902**	729	62.15%	**1902**	**2197**	295	15.51%

Appendix 9: BOA asset liability growth schedule

Wegagen Bank
Asset Liability Schedule
(In Millions of ETB)

	2002	2003	Growth	% growth	2003	2004	Growth	% growth	2004	2005	Growth	% growth	2005	2006	Growth	% growth	2006	2007	Growth	% growth
Demand Deposits	172	251	79	45.93%	251	375	124	49.40%	375	590	215	57.33%	590	725	135	22.88%	725	1210	485	66.90%
Saving Deposits	202	274	72	35.64%	274	351	77	28.10%	351	518	167	47.58%	518	723	205	39.58%	723	804	81	11.20%
Fixed Deposits	137	179	42	30.66%	179	150	-29	-16.20%	150	180	30	20.00%	180	330	150	83.33%	330	710	380	115.15%
Foreign Banks's Deposits	4																			
Total Deposits	**515**	**704**	189	36.70%	**704**	**876**	172	24.43%	**876**	**1288**	412	47.03%	**1288**	**1778**	490	38.04%	**1778**	**2724**	946	53.21%
Net Loans and Advances	**646**	**889**	243	37.62%	**889**	**1140**	251	28.23%	**1140**	**1616**	476	41.75%	**1616**	**2259**	643	39.79%	**2259**	**3480**	1221	54.05%

Appendix 10: WB asset liability growth schedule

United Bank
Asset Liability Schedule
(In Millions of ETB)

	2002	2003	Growth	% growth	2003	2004	Growth	% growth	2004	2005	Growth	% growth	2005	2006	Growth	% growth	2006	2007	Growth	% growth
Demand Deposits	42	60	18	42.86%	60	118	58	96.67%	118	191	73	61.86%	191	331	140	73.30%	331	385	54	16.31%
Saving Deposits	114	172	58	50.88%	172	276	104	60.47%	276	397	121	43.84%	397	681	284	71.54%	681	849	168	24.67%
Fixed Deposits	33	55	22	66.67%	55	138	83	150.91%	138	277	139	100.72%	277	208	-69	-24.91%	208	307	99	47.60%
Foreign Banks's Deposits																				
Total Deposits	**189**	**287**	98	51.85%	**287**	**532**	245	85.37%	**532**	**865**	333	62.59%	**865**	**1220**	355	41.04%	**1220**	**1541**	321	26.31%
Net Loans and Advances	**161**	**283**	122	75.78%	**283**	**369**	86	30.39%	**369**	**570**	201	54.47%	**570**	**975**	405	71.05%	**975**	**1368**	393	40.31%

Appendix 11: UB asset liability growth schedule

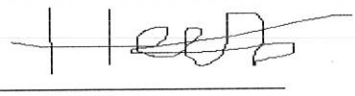
Nib International Bank
Asset Liability Schedule
(In Millions of ETB)

	2002	2003	Growth	% growth	2003	2004	Growth	% growth	2004	2005	Growth	% growth	2005	2006	Growth	% growth	2006	2007	Growth	% growth
Demand Deposits	95	152	57	60.00%	152	229	77	50.66%	229	292	63	27.51%	292	327	35	11.99%	327	423	96	29.36%
Saving Deposits	203	336	133	65.52%	336	493	157	46.73%	493	709	216	43.81%	709	837	128	18.05%	837	1085	248	29.63%
Fixed Deposits	47	100	53	112.77%	100	110	10	10.00%	110	222	112	101.82%	222	288	66	29.73%	288	371	83	28.82%
Foreign Banks's Deposits																				
Total Deposits	**345**	**588**	243	70.43%	**588**	**832**	244	41.50%	**832**	**1223**	391	47.00%	**1223**	**1452**	229	18.72%	**1452**	**1879**	427	29.41%
Net Loans and Advances	**320**	**528**	208	65.00%	**528**	**756**	228	43.18%	**756**	**1086**	330	43.65%	**1086**	**1418**	332	30.57%	**1418**	**1755**	337	23.77%

Appendix 12: NIB asset liability growth schedule

1 Statement of Certification

This is to certify that Fekade Tilahun has carried out his project work on the topic **"Impact of Non-Existence of Financial Markets in Asset-Liability Management of Ethiopian Financial Institutions"** under my supervision. In my opinion, this work qualifies for submission in partial fulfillment of the requirements for the award of Degree of Masters in Business Administration.

Signature 

Mehari Mekonen (PhD)

Project Advisor

2 Statement of Declaration

I declare that this project work is my original work. It has not been submitted for any degree/Diploma in any University. I have undertaken it independently with the advice and suggestions of my advisor for the project, Dr. Mehari Mekonen. In carrying out of the project work I have different sources and materials, which have been appropriately acknowledged.

Signature _____

Fekade Tilahun