

DETERMINANTS OF INTERST RATE MARGIN IN COMMERCIAL BANK OF ETHIOPIA IN THE CASE OF SOF- OMER BRANCH (IN CASE OF BALE ROBA TOWN)



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ABSTRACT

Determinants of Interest rate margin: An Empirical Evidence from Commercial Bank of Ethiopia. The banking sector plays a fundamental role in economic growth, as it is the basic elements in the channeling of funds from lenders to borrowers. Efficient financial intermediation is an important factor in economic development process as it has implication for effective mobilization of investible resources. A major indicator of banking sector efficiency is interest rate margin. Thus, this study examines the macro-economic specific factors affecting bank interest rate margin of commercial bank in Ethiopia, covering the period of 2006-2013 EC. To this end, the study adopts a mixed research approach by combining document analysis. The findings of the study show that gross domestic product, interest rate volatility and financial institution have statistically significant and positive relationship with bank interest rate margin. Conversely exchange rate volatility and inflation has a negative relationship with bank interest rate margin. The study suggests that CBE should not only be concerned about internal structures and policies, but they should consider both the internal and external environment together in fashioning out strategies to improve their intermediary efficiency.

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List of Acronyms

CBE-----	Commercial Bank of Ethiopia
CPI-----	Consumer Price Index
ERV-----	Exchange Rate Volatility
FDI-----	Financial development institution
GDP-----	Gross Domestic Product
INFL-----	Inflation
IMF-----	International Monetary Fund
IRV-----	Interest Rate Volatility
NBE-----	National Bank of Ethiopia
NIM-----	Net Interest Margin
OECD-----	Organization for Economic Cooperation and Development
SSA-----	Sub Sahara Africa
WB-----	World Bank

CHAPTER ONE

1.1 Background of the Study

The banking sector plays a fundamental role in economic growth, as it is the basic element in the distributing of funds from lenders to borrowers. Efficient financial intermediation is an important factor in economic development process as it has implication for effective mobilization of investible resources. Consequently, banking sector efficiency plays significant role in an economy. A major indicator of banking sector efficiency is interest rate margins, which have been found to be higher in African, Latin American and the Caribbean countries than in DC countries (Randall, 1998; Brock and Suarez, 2000; Chirwa and Mlachila, 2004; Gelos, 2006; Crowley, 2007).

The prevailing margin between deposit-lending rates, the interest rate margins in an economy has important implications for the growth and development of such economy, as numerous authors suggest a critical link between the efficiency of bank intermediation and economic growth. Quaden (2004), for instance, argues that a more efficient banking system benefits the real economy by allowing _higher expected returns for savers with a financial surplus, and lower borrowing costs for investing in new projects that need external finance.

Therefore, if the banking sectors interest rate margin is large it discourages potential savers due to low returns on deposits and thus limits financing for potential borrowers (Ndungu and Ngugi, 2000). Valverde et al (2004) elucidate by noting that because of the costs of intermediation between savers and borrowers, only a fraction of the savings mobilized by banks can be finally channeled into investments. An increase in the inefficiency of banks, increases these intermediation costs, and thereby increases the fraction of savings that is lost in the process of intermediation. This ultimately reduces lending, investment and economic growth (Folawewo and Tennant, 2008).

The financial systems in most of the developing and underdeveloped countries are subject to structural, informational and institutional inefficiencies that ultimately lead to high margins between lending and borrowing rates of commercial banks. These high margins emanate from elevated and volatile lending rates and leads to a higher cost of capital for the borrowers, consequently reducing investments or promoting only short term high risk ventures. The impact of relatively higher banking margins could be devastating for businesses with less financial flexibility

especially small and medium enterprises. Lastly sustained high margin is a vital indicator of the poor performance of financial system inter alia inadequacy of banking regulation and can ultimately retard economic growth (Afzal, 2011).

A wide deposit-lending rate margin is not only indicator of banking sector inefficiency; it also reflects the level of development of the financial sector. In Ethiopia there is no any scientific research conducted in this area to the knowledge of the researcher. Therefore, in order to measure the desirable state of efficiency in banking system of Ethiopia, it is vital to study macroeconomic specific determinants of interest rate margin which is used as proxy variable for measuring intermediary efficiency for commercial bank of Ethiopia.

1.2 Statement of the problem

Economic development critically hinges on patterns and levels of resource mobilization and allocation in any country. Resources are mobilized through savings which at the level of macro economy pave way for the allocation of resources for the purpose of consumption and investment.

Similarly, investment depends critically on banking credit and the underlying lending system which enables the investors to borrow for the purpose of investing in real capital to enhance existing businesses or for establishment of a new business entity. In this way banking credit contributes to the generation of economic activity and eventually leads to higher national income and growth. Therefore all economic players including households, businesses and public sector are sensitive towards the efficient flow of resources from surplus to deficit units (Afzal, 2011).

A key variable in the financial system is the margin between lending and deposit interest rates. When it is too large, it is generally regarded as a considerable hurdle to the expansion and development of financial intermediation, as it discourages potential savers with low returns on deposits and limits financing for potential borrowers and this ultimately reduce feasible investment opportunities and therefore the growth potential of the economy. Financial systems in developing countries have been shown to exhibit significantly and persistently larger intermediation margin on average than those in developed countries (Hanson and Rocha, 1986).

Higher net interest margins usually imply lower banking sector efficiency, marked by higher costs due to inefficient control of operating

expenses, and have a negative impact on financial developments, resulting in lower investments and slower economic activity. On the other hand, lower net interest margins usually mark deeper and more developed financial markets, encourage investment activities and support economic growth (Dumicic and Ridzak, 2013).

In connection with research studies that have been conducted on determinants of interest rate margin, there are exhaustive studies examined this issue in different level of economies. In developed economies (Angbazo, 1997; Maudos and Guevara, 2003; and Gunter et al, 2013). In emerging economies , (Barajas et al ,1998 ; Afanassieff et al ,2000; Khawaja and Din ,2007; Norris and Floerkemeir, 2007 ; Maudos and Solis, 2009; Khan ,2010; Afzal ,2011; and Dumicic and Ridzak ,2013). In developing and sub-Saharan African countries, (Ramful, 2001; Chirwa and Mlachila, 2002; Folawewo and Tennant, 2008; Beck and Hesse, 2009; Akinlo, 2012; were and Wambua, 2013; and Ahokpossi 2013) conducted their studies on determinants of interest rate spread and net interest margin. While we see in Ethiopia there is no any empirical study conducted on this issue to the knowledge of the researcher.

Generally the studies conducted in developed, emerging, developing and Sub-Saharan African countries found different macroeconomic specific factors that affect interest rate margin of banks, but it depict variation in results since, and countries differ each other by their economic, financial, regulatory and operating environments.

In Ethiopia, the banking sector plays a dominant role in the financial sector, particularly with respect to mobilization of savings and provision of credit, but the interest rate margin¹ is high 6.48% (NBE, 2013) as compared to East African countries average i.e.5.48% (IMF, 2013), and vis-à-vis international standards 5% as cited in Afzal (2011). However, no empirical research have been conducted in Ethiopia on this issue to the knowledge of the researcher, as a result understanding the determinants of banks interest rate margin is important to improve intermediary efficiency of banks and achieving financial deepening. Therefore this paper is designed to fill the knowledge gap by investigating Macroeconomic specific factors that could possibly affects the variability of interest rate margin commercial Bank of Ethiopia.

1.3 Objectives of the study

In the framework of the problems highlighted above, the study has the following general and specific objectives:

1.3.1 General Objective

The general objective of this study was to examine the major macroeconomic determinants of interest rate margin in commercial bank of Ethiopia.

1.3.2 Specific Objectives

- ✓ To achieve the general objective, the researcher also includes specific objective.
- ✓ To investigate the effects of macroeconomic factors on interest rate margin in commercial bank of Ethiopia.

1.4 Hypothesis and Research Question

In order to attain the aforementioned broad objectives, the following five hypotheses and one research question are devised.

H1: There is a significant positive relationship between GDP and banks interest rate margin.

H2: There is a negative relationship between Inflation and banks interest rate margin.

H3: There is a significant positive relationship between interest rate volatility and banks interest rate margin.

H4: There is a negative relationship between exchange rate volatility and banks interest rate margin.

H5: There is a significant positive relationship between financial institution and banks interest rate margin.

Research question:

What are the determinants of interest rate margin in commercial bank of Ethiopia and how do those factors influence the interest rate margin of CBE?

1.5 Significance of the study

The significance of this research includes the following:

- First, the study shows the degree of macroeconomic specific factors in what extent it affects CBE interest rate margin.

- Second, as it is explained in the statements of the problem part, in Ethiopia there is no any scientific research conducted in this area to the knowledge of the researcher. As a result, this study contributes towards extended research in the area of determinants of interest rate margin of CBE.
- Third, the study identifies the factors affecting bank interest rate margin significantly. Thus, it gives signal to the management of the banks and policy makers to consider the main factors that influence interest rate margin of bank; as a result it help to improve their intermediary efficiency and achieving financial deepening.

1.6 Limitation of the study

The researcher analyzed macroeconomic specific factors of interest rate margin of commercial bank of Ethiopia. In accomplishing this research, the researcher had been encountered by many obstacles. Above all, absence of mobile data, financial constraint .In addition to that shortage of time and absence of computer had been in face when this research is conducted. All these factors may put some shadow on the quality of the research.

1.7 Structure of the study

The study focuses on the investigation of the major determinants of interest rate margin in CBE. With the intent of the above broad objectives attainment, the study structure has presented as follows; chapter two presents a review of the literature including theoretical, empirical and research gap.

CHAPTER TWO

LITERATURE REVIEW

2.1 Theoretical Framework

2.1.1 Concept of financial intermediation

Financial intermediation is defined as a process of channeling funds from surplus sectors of the economy towards the deficit sectors. The institutions that perform this function are known as financial intermediaries. Banks are the most popular financial intermediaries in the world. The cost of performing intermediary services is termed as the cost of financial intermediation (COFI). As financial intermediaries, bank plays a crucial role in the operation of most economies. The efficacy of financial intermediation can also affect economic growth. Crucially, financial intermediation affects the net return to savings, and the gross return for investment. The margin between these two returns mirrors the bank interest margins, in addition to transaction costs and taxes borne directly by savers and investors. This suggests that bank interest spreads and net interest margin can be interpreted as an indicator of the efficiency of the banking system (Levine, 1996).

2.1.2 The rationale of the existence of financial intermediaries

The rationale of the existence of financial intermediaries and contribution in economic development can be classified into three main categories. These include information problems (theory of asymmetric information), transaction costs (financial services) and regulatory factors (agency theory).

2.1.2.1 Theory of asymmetric information

The primary reason for financial intermediation is informational asymmetries between participants of financial system. There could be ex ante asymmetries that would lead to adverse selection, interim ones, causing moral hazards and ex post, warranting need for audit or other costly monitoring or enforcement mechanisms. Financial intermediaries are expected to mitigate these explicit and implicit costs. Leland and Pyle (1977) demonstrate that financial intermediaries reduce asymmetric costs by acting as information sharing coalitions. Diamond and Dybvig (1983) proposed financial intermediation as risk absorption capacity for depositors against idiosyncratic shocks that would negatively impact their liquidity. Diamond (1984) advocates the role of financial intermediaries as monitoring agents on behalf of surplus units, where households will place deposits with intermediaries who in turn would extend credit to deficit units and monitor their activities.

2.1.2.2 Transaction cost

The existence of transaction costs is the second reason (in fact exogenous) for evolution of financial intermediation. The financial institutions would act on behalf of lenders and borrowers and exploit economies of scale and scope. The transaction costs would include monetary costs (Tobin 1963) and search costs, monitoring and audit costs (Benston and Smith 1976).

The intermediaries would transform financial claims of depositors to advances portfolio while maintaining liquidity and diversification. This would enhance the efficiency, while mitigating transaction costs, between borrower and lender which is difficult to achieve in absence of financial intermediaries (Holmstrom and Tirole 2001). Therefore, with role of intermediation, savers and investors are likely to interact optimally at considerable low cost with more effective screening and monitoring of current and expected default risk.

2.1.2.3 Agency theory

The third justification of financial intermediaries relates to their role to regulate money creation and financing of an economy (Fama 1980 and Merton 1995). The inherent risks and concerns of solvency in a financial system require the monetary and prudential supervision that is not possible in direct interaction of savers and investors. Although, regulatory supervision of financial intermediaries is expensive but the potential benefits that emanate in form of safety for depositors are immense and considered as main economic rent extracted from monitoring and control (Matthews and Thompson, 2005).

2.1.3 Concept of interest rate margin and its measurement

The one thing that typically distinguishes bank from other financial institutions is the provision of loans and deposit products. Deposits are liabilities while loans are asset for bank. A banks core activity is to act as financial intermediary. It pays interest to depositors, while it receives income from borrowers; the difference between these two rates is termed as interest rate margin or spread. The interest rate margin,

or the financial intermediation margin is an important indicator for the banking system and the intermediation process.

The financial intermediation is associated with cost of intermediation. Interest rate between lending and deposit rate used for making judgment on banks efficiency in case of individual bank margin, or banking systems efficiency in case of overall margin of banking system (Maudos and Solis, 2009).

Issues in measuring banking margin:

While the concept of cost of financial intermediation (COFI) is straightforward, there is no single measure to gauge COFI in its true sense. In practice, it is proxy by margins or banking spreads indicating gap between some sort of representative lending and deposit rates of financial intermediaries. The most widely used indicators are the net interest margin gap between interest earned and interest paid normalized by average earning assets or total assets and the banking spread gap between lending and deposits rates bank (Arshad, 2011).

According to Brock and Suarez (2000) four different indicators of banking margin have been computed to highlight definitional issues. These indicators are broadly classified into two categories according to the coverage of banks assets and liabilities. Specifically, narrowly defined indicator is based on banks loans and advances. On the other hand, broad definition of indicators take into account larger share of banks' assets and liabilities compared to the narrow definition. Narrow and wide definitions of margin are presented as follows:

- Narrowly defined margin

$$SN1 = ((\text{Interest earned on loans} / \text{Average loans}) - (\text{Interest paid on loan} / \text{Average deposit})) * 100$$
- Broadly defined margin

$$SW1 = ((\text{Interest earned} / \text{Average interest bearing asset}) - (\text{Interest paid} / \text{Average interest bearing liabilities})) * 100$$

$$SW2 = ((\text{Interest plus commission earned} / \text{Average interest bearing assets}) - (\text{Interest paid} / \text{interest bearing liabilities})) * 100$$

$$SW3 = (\text{Interest earned} - \text{Interest paid}) / \text{Average Assets}$$

Where n is used to reflect the narrow definitions of spread and we represent wide definitions. While there is no consensus on specific definition of banking margin and a meaningful benchmark, the SW1 definition of banking margin is more appropriate for the analysis as it takes in to

account the earning assets and interest bearing liabilities of the bank (Arshad, 2011).

2.1.4 Concept and accounting analysis of net interest margin

Net interest margin serves as a measure of banks efficiency and it is calculated as the proportion of net interest income to total assets or earning assets. For analyzing the interest margins some kinds of analyses may be carried out, one of which is the accounting decomposition first developed by Hanson and Rocha (1986). Using the banks profit and loss statements, the following equation is derived:

$$NI = NII - (OE - NNII - NEI) - LLP - T$$

Where, NI (Net Income) represents the net result of bank (after taxes), NII stands for Net Interest Income, OE corresponds to the Operating Expenses, NNII represents the Net Non-Interest Income, NEI stands for the Net Extraordinary Income, LLP represents the Loan Loss Provisions and T stands for Taxes.

2.1.5 Factors affecting interest rate margin

The theory of net interest margin is developed first by Ho and Saunders (1981) and is called the dealer model. The way it works can be briefly explained as follows: the banks are considered as risk-averse agents that accept deposits and make loans, which arrive randomly and the probability of arrival depends on the margins that banks fix and on the elasticity of loan demand/deposit supply. The random nature of loan demand and deposit supply exposes the bank to interest rate risk. Let's suppose that a new deposit reaches the bank and owing to the lack of the simultaneously demand for loan, this latter shall be invested in the money market. In such a case the bank encounters the re-investment risk at the end of the maturity period when it should re-invest this amount. On the other side, if a new loan demand is financed in the money market, the bank will encounter the re-financing risk as at the end of the maturity period, it has to provide funds once again. In this case, in addition to interest rate risk, the bank will encounter the credit risk too. Hence, a risk-averse financial intermediary shall request as recompense a higher margin. Ho and Saunders (1981) modeled the behavior of a bank that acts as intermediary between lenders and borrowers. The theoretical model indicates that the optimum bank interest margin depends on four factors: the degree of risk aversion, the market structure, the average size of bank transactions and the variance of the interest rate on loans and deposits.

Macroeconomic variables affects the performance of the banking sector by influencing the ability to repay borrowed loans; the demand for loans with the unpredictable returns from investment and the quality of collateral determine the amount of premium charged and therefore the cost of borrowed funds to the investors. With an unstable macroeconomic environment and poor economic growth, investors face uncertainty about investment return and these raise the lending rates as the level of nonperforming loans goes up, squeezing the bank margin. For example, poor output prices reduce firm profitability while reduced asset prices reduce the value of assets for collateral and therefore the credit-worthiness of the borrowers. As a result, return on investment declines, increasing the level of non-performing loans, and banks charge high-risk premiums to cover their default risk (Ngugi, 2001).

2.2 Empirical review

A number of studies have examined the determinants of bank interest rate spread and interest margins in many countries around the world. Most of the studies consider internal factors (i.e., banks' specific) and external factors (i.e., industry-specific and macroeconomic factors) and examine either a particular country or a number of countries and a number of explanatory variables have been proposed for three categories, according to the nature and purpose of each study. In the following section the researcher review determinants of interest rate margin with respect to developed, emerging and developing countries.

2.2.1 Determinants of interest rate margin in developed countries

There are three studies that have been reviewed from developed economies. These are Angbazo (1997); Maudos and Guevara, (2003); and Gunter ET, al (2013). The aforementioned researcher has conducted their study in US, European banking sector and Austria respectively. Angbazo (1997) examined the determinants of bank net interest margins for a sample of US banks using annual data for 1989- 1993 in a country specific basis. The results for the pooled sample suggested that the proxies for default risk, opportunity cost of non-interest bearing reserves, leverage and management efficiency are all statistically significant and positively related to bank interest margins. The ratio of liquid assets to total liabilities, a proxy for low liquidity risk, was inversely related to the bank interest margins.

Maudos and Guevara, (2003) investigated the factors that affects interest margin of European banking sector on the basis of a broad

sample of banks in Germany, Spain, Italy, France and the United Kingdom in the period 1993-2000. The model shows that the —pure|| interest margin depends on the competitive conditions of the market, the interest rate risk, the credit risk, the average operating expenses and the risk aversion of banking firms, as well as on other variables not explicitly introduced into the model (opportunity cost of reserves, payment of implicit interest and quality of management).

Finally, Gunter ET, al (2013) analyzed the determinants of the net interest margin in the Austrian banking sector. They considered various explanatory factors bank, industry and macroeconomic determinants of interest rate spreads and they concludes that the most significant variables that affect net interest margin are fee income, staff expenses and other operating expenses, balance sheet structure, leverage ratio, competition and GDP.

2.2.2 Determinants of interest rate margin in emerging countries

There are eight studies that have been reviewed from emerging economies. These are Barajas et al (1998), Afanassieff et al (2002), Khawaja and Din (2007), Norris and Floerkemeir (2007), Maudos and Solis (2009), Khan and Khan (2010), Afzal (2011) and Dumicic and Ridzak (2013) . The aforementioned researcher has conducted their study in Colombia, Brazil, Pakistan, Armenia, Mexico, Pakistan, Pakistan and Central and Eastern Europe (CEE) respectively.

Barajas et al (1998), examined the sources of high intermediation spreads observed in the Colombian banking sector over the pre liberalization period (1974- 1988) and the post liberalization period (1991-1996) and found mixed results. Liberalization increased banking sector competitiveness, lowered market power and reduced financial taxation from its high 1970s level. The results also show bank spreads to be more responsive to non-financial costs (wages) and changes in loan quality.

Afanassieff et al (2000), using panel data techniques to find out the main determinants of bank spreads in Brazil, found that macroeconomic factors such as inflation rate, risk premium and economic activity are the most relevant factor in explaining the spreads.

Norris and Floerkemeir (2007) used bank level panel dataset for Armenia to examine the factors explaining interest rate spreads and margins from 2002 to 2006. They employed a variety of bank specific and macro variables including overhead costs, bank size, non-interest income, capital adequacy, return on assets, liquidity, deposit market share, foreign

bank participation, real GDP growth, inflation, money market rate and change in the nominal exchange rate. Using both pooled OLS and fixed effect regression they concluded that bank specific factors such as size, liquidity, return on asset, market concentration and market power explain a large proportion of banking spreads.

Khawaja and Din (2007) investigated the determinants of interest rate spreads in Pakistan using panel data of 29 banks from 1998 to 2005. They used industry variables like concentration and deposit inelasticity (measured as interest rate insensitive current and saving deposits) and firm variables of market share, liquidity, administrative costs, asset quality and macroeconomic variables of real output, inflation and real interest rates. They concluded that inelasticity of deposit supply was the major determinant of interest rate margin.

Maudos and Solis (2009) analyzed the determinants of net interest income in Mexican banking sector for the period between 1993 and 2005. Their sample constituted of 43 commercial banks with 289 annual observations of an unbalanced panel data. They observed high interest margins for Mexico. They considered various explanatory factors to explain the behavior of banking spreads. These included operating costs, volatility of interest rates, implicit interest payments, quality of management, non-interest income, credit risk, degree of risk aversion, market risk, transaction size, liquidity, cost to gross income, GDP growth and inflation rate. The reported results reflected that except for liquidity all other variables were significantly related to interest rate spreads. They concluded that the high Mexican spreads are mainly a function of average operating costs and market power while non-interest income, despite of increasing over the years, has low economic impact.

Khan and Khan (2010) examined the efficiency of financial intermediation in Pakistan using banking spreads and net interest margin for the period 1997 to 2006. They employed bank specific indicators of non-interest income, provision to NPLs, administrative costs, foreign ownership and industry specific variable of concentration and macroeconomic indicator of real GDP growth and interest rate volatility. The review concluded that all of the variables were significant in explaining interest rate spreads with administrative costs and foreign ownership explaining a higher proportion in comparison with other determinants.

Afzal (2011) analyzed the determinants of interest rate spreads and margins in Pakistan's commercial banking sector in the post transition period from 2004 to 2009. They employed an exhaustive set of firm level and macro variables, and the findings reveals bank size , operational

efficiency, asset quality, liquidity, risk absorption capacity and GDP growth were important determinants of banking spreads but, the interest rate volatility and financial development indicator was not significant.

Finally, Dumicic and Ridzak (2013) investigated the main determinants of the net interest margin in eleven CEE countries: Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic and Slovenia. The total sample consists of 12 periods (from 1999 to 2010) and 152 cross sections (banks), by considering bank specific, industry specific and macroeconomic factors.

2.2.3 Determinants of interest rate margin in developing countries

There are seven studies that have been reviewed from developing countries, Ramful (2001), Chirwa and Mlachila (2002), Folawewol and Tennant (2008), Beck and Hesse (2009), Akinlo (2012), Ahokpossi (2013) and Were and Wambua (2013). The aforementioned researcher has conducted their study in Mauritius, Malawi, 33 Sub-Saharan African (SSA) countries, Uganda, Nigeria, Sub-Saharan African (SSA) countries and Kenya respectively.

Ramful (2001) examined the determinants of interest rate spread of Mauritian banking sector found that operating cost, required reserve and poor quality loan are the main factors that affect interest rate margin of Mauritian banking sector.

Chirwa and Mlachila (2002) used panel data techniques to investigate the causes of interest rate spreads in the commercial banking system of Malawi over the liberalized period of the 1990s. Their results show that high interest rate spreads were attributable to monopoly power, high reserve requirements, high central bank discount rate and high inflation.

Folawewo and Tennant (2008) examined the determinants of interest rate margin in 33 Sub-Saharan African (SSA) countries focusing on industry and macroeconomic variables. Their results show that interest rate spread is influenced by the extent of the crowding out effect of government borrowing, public sector deficits, discount rate, inflation, Level of money supply, reserve requirement, level of economic development, financial development and population size.

Beck and Hesse (2009) analyzed factors explaining interest rate margin in Uganda and compared with peer African countries for the period

between 1999 and 2005. They used panel data set of 1390 banks from 86 countries. To explain the high variation in interest rate margins across countries, they used bank size, exchange rate depreciation, real T bill rate, liquidity ratio, concentration, inflation, GDP growth, institution development and overhead costs. They reported that that most of the bank specific as well as macroeconomic factor are relevant in explaining high banking margins in Uganda. However, the foreign banks and changes in market structure had no significant relation with interest rate margin. They concluded that size, high T bill rates and institutional deficiencies explained large proportions of Ugandan interest margins.

Akinlo (2012) examined the determinants of interest rate spreads in Nigeria using a panel of 12 commercial banks for the period 1986-2007. The results suggest that cash reserve requirements, average loans to average total deposits, remuneration to total assets and GDP have positive effect on interest rate spreads. However, non-interest income to average total assets, treasury certificate and development stocks have negative relationship with interest rate spreads.

A more recent study on determinants of bank interest margins in SSA is by Ahokpossi (2013) using a sample of 456 banks in 41 SSA countries. The results show that bank-specific factors such as credit risk, liquidity risk and bank equity are important, determinants of interest margins, but such spreads are not sensitive to economic growth.

Finally, were and Wambua (2013) investigated the determinants of interest rate spreads in Kenya's banking sector based on panel data analysis. The empirical results show that bank-specific factors play a significant role in the determination of interest rate spreads.

2.3 Conclusions on the literature review and knowledge gaps

As per the review of the literature, there are a number of empirical studies conducted on the determinants of interest rate margins and spreads in developed, emerging, developing and Sub-Saharan African countries focusing on different sets of factors (bank specific, industry-related and macroeconomic factors) and methodologies (time series and panel data methods) depending on the type of data, frequency and coverage (panel of banks, countries or country-specific analyses).

However, there is no universally accepted findings to the determinants of interest rate spread and net interest margin, since, countries differ each other by their economic, financial, regulatory and operating environments. For example Maudos and Solis (2009) found

interest rate volatility as a significant factors that affect the interest rate margin of Mexican banking sector, it was inconsistent with Afzal (2011) which found interest rate volatility as insignificant factors for determining interest rate margin of Pakistans banking sector, and also Beck and Hesse (2009) found inflation as the main determinants of interest rate margin of Ugandan banking sector, it was inconsistent with Were and Wambua (2013) which found inflation as insignificant variable for determining Kenyan banks interest rate spread, so further empirical evidence could provide additional insight about the determinants of interest rate spread.

Furthermore, the literature revealed that all of the prior researchers adopt a quantitative research approach only without considering a lot of limitations of it, so the researcher fill this gap by adopting mixed research approach which provides a better understanding about research problems than either approach alone and brings robustness to the research findings.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Approach

Decision regarding the selection of research instrument, the nature of collected data and the analysis of collection are based on the research method used in a study. Selection of appropriate research methods is very important because it decides the quality of study findings. For the purpose of the present study, mixed approach which advocates the combination of both qualitative and quantitative has proved to be ideal for the study on determinants of interest rate margin in CBE. Mixed method approach focuses on collecting, analyzing and mixing both quantitative and qualitative data in a single study or series of studies. The decisive argument here is that the use of both quantitative and qualitative approaches in combination provides a better understanding of research problems than either approach achieves alone. Mixed method research involves both collecting and analyzing quantitative and qualitative data

either sequentially or concurrently (Creswell, 2003). Hence, the following sections present consecutively the quantitative and qualitative aspects of the research method.

3.1.1. Quantitative aspect of research method

The quantitative aspect of the research method intends to obtain data needed to generalize about the determinants of interest rate margin of CBE. Specifically, the current study collects the data through structured review of documents. The data related to a document analysis which is necessary to undertake this study were gathered from the NBE annual report for ten consecutive years (1999-2008) EC.

3.1.2. Qualitative aspect of research method

Since the nature of this research requires in-depth understanding of the factors affecting interest rate margin of CBE, these data collected from different sources like, ministry of finance and development, central statistical authority, commercial bank of Ethiopia report and Ethiopian economic growth report.

3.2. Type and Source of data

The data used for this is collected from secondary sources. Data obtained from different organizations like national Bank of Ethiopia (NBE), which regulates the banking sector of the country, central statistical authority, ministry of finance and economic development, and World Bank. In this study annual data from 1999-2008EC is used.

Moreover, the aforementioned researchers used spread or net interest margin as a dependent variable to measure intermediary efficiency of banks except Khan and Khan (2010) and Afzal (2011), this study use both measures of financial intermediary efficiency i.e. spread and NIM as a dependent variable.

Finally, in Ethiopia there is no any empirical study conducted in this area to the knowledge of the researcher, therefore this study is designed to fill this knowledge gaps by investigating macroeconomic determinants of interest rate margin in CBE.

3.3 Method of data analysis

Descriptive and econometrics methods used to analysis and interpret the data qualitatively and quantitatively. The researcher uses both methods simultaneously, in descriptive method the analysis interest rate margin in commercial bank of Ethiopia theoretically and in econometrics method

analysis the relation between interest rate margins with independent variables. In econometrics part after regress the data.

3.4. Model specification

To examine the determinants of interest rate margin in commercial bank of Ethiopia the study employs panel data procedures data across bank and over time. As noted in Brook (2008) the general form of the panel data model can be specified as follows:

$$Y_{it} = \alpha + \beta x_{it} + \varepsilon_{i,t}$$

In this equation, y_{it} represents the dependent variable, and x_{it} contains the set of explanatory variables in the model. The subscripts i and t denote the cross-sectional and time-series dimension respectively. Also α is taken to be constant over time t and specific to the individual cross-sectional unit i . Stylized facts and the review of the literature suggest that banking margin are influenced by a host of factors, Bank, industry and macroeconomic specific determinants (Khawaja and Din, 2007; Maudos and Solis, 2009; Khan and Khan, 2010; Afzal, 2011 among others).

The empirical model is specified as follows:

$$r_{it} = \alpha_i + X_{it}\beta + Z_t\gamma + \varepsilon_{it}$$

Where r_{it} is the interest rate margin for bank i in period t computed as the difference between lending rate and deposit rate, X_{it} is a vector of bank specific variables, α_i is bank-specific fixed effects capturing the impact of unobservable (omitted) effects, Z_t is a vector of time-specific variables (industry and macroeconomic variables) and ε_{it} is the statistical disturbance term.

Based on the above models and on the base of selected variables the current study used econometric model as shown below. The dependent variable regressed with different independent variables based on multiple regression models as follows:

$$\text{margin}_{it} = \alpha + \beta_1(\text{GDP})_t + \beta_2(\text{INFL})_t + \beta_3(\text{IRV})_t + \beta_4(\text{ERV})_t + \beta_5(\text{FI})_t + \varepsilon_{it}$$

Where; GDP gross domestic product

- o INF---- inflation
- o IRV---- interest rate volatility
- o ERV----exchange rate volatility
- o FI-----financial institution

CHAPTER FOUR

TIME AND BUDGET BREAK DOWN

Time Table

No	Activities to Accomplish	Accomplishment periods in months							Remark
		January	February	March	April	May	June	July	
1	Problem identification								
2	Review of literature								
3	Topic Selection								
4	Feedback for topic selection from advisor								
5	Developing Proposal								
6	Feedback for proposal from advisor								
7	Submitting a final research proposal to								
8	Data collection								
8	Reporting data								
9	Data / case interpretation and analysis + writing and								
10	Submitting edited 1 st								
11	Feedback by advisor								
12	Submitting final draft to the school								
13	Defense								

Budget Breakdown

No	Item	Measurement unit	Quantity	Price per Unit (birr)	Total
1	Double A Papers	Packet	3	200	600
2	Internet Cost	Minute	1200	0.50	600
3	Flash disk 16GB	Piece	2	600	1200
4	Pen	Unit	14	6	84
5	Photocopy	Page	1500	1.50	2250
6	Writing and printing	Page	200	7	1400
7	Binding	Unit	7	15	105
8	Paradigm of researcher	Day	20	206	4120
9	Transport Cost	Unit	4	250	1000
10	For Data collectors (2)	Day	15	100x2	3000
11	SPSS Training	Day	15	100	1500
Grand Total					15,859

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