PROCEEDINGS OF THE NATIONAL CONFERENCE ON 'LOAN AND SAVING: THE ROLE IN ETHIOPIAN SOCIO-ECONOMIC DEVELOPMENT' HELD 15-16 FEBRUARY 2013

CO-ORGANIZED BY HARAMAYA UNIVERSITY AND PUBLIC FINANCIAL ENTERPRISES AGENCY

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Edited and compiled by:

Mengistu Ketema (PhD)

Mengistu Urge (PhD)

Nigussie Dechassa (PhD)

Endrias Geta (PhD)

Mohammadamin Hussein

Temesgen Keno

Yemisrach Getachew

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PRELIMINARIES

Preamble

Saving is a pillar of economic growth when its provision as a loan passes through appropriate channels. Saving mobilization and credit provision by financial institutions are considered as a proxy for economic growth. The contribution of these institutions to economic growth symbolizes them as leading players in the sector. In addition, different national and regional regulatory organs and the public at large have their own contributions to this sector.

Saving rate in Ethiopia is low even by the Sub-Saharan African standard. A number of issues can be raised as to what accounts for the low rate of saving in the country. In fact, it can be argued that if there is willingness and motivation for effective saving, people can save whatever amount they have as dew drops provided that filling the pitcher is the aspiration. However, in low income nations like Ethiopia, where production is meant basically for subsistence with a uniformly inflationary period, saving is very difficult. Even if people save, the savers may lose due to decline in the purchasing power of the saved money surmounting the earning interest rate.

Problems related to loan and saving in Ethiopia should be mitigated for the purpose of attaining economic development through engaging all stakeholders. This is particularly vital at this juncture when Ethiopia has envisaged achieving its five-year Growth and Transformation Plan (GTP). Cognizant of this fact, Haramaya University, in collaboration with Public Financial Enterprise Agency, has organized a conference to provide a platform for stakeholders, including policy makers, practitioners and scholars in the academia for discussing on issues revolving around loan and saving in the country. The conference generated useful ideas and directions to enhance efforts towards upgrading the scale of deposit mobilization and loan provision, creating societal awareness on the need for saving and loan provision as well as pinpointing policy implications for the government of Ethiopia.

Seventeen scientific papers addressing the nature and behavior of saving and loan in particular and the role of financial sector development in pursuance of economic sector development in general, were presented and discussed. Specifically, the topics included the role of institutions in loan and saving, issues of governance, policy and regulations. The topics also dealt with the nexus of loan-saving-

development, emerging innovations in saving and loan, the role of loan and saving in the main sectors of the Ethiopian economy, and problems of information asymmetry and credit risk management.

The scientific papers presented under the aforementioned themes are included in this *Book of Proceedings*. On the whole, in the two-day conference, there was a significant accomplishment that also pinpointed policy directions and future actions to be taken to enhance loan and saving and stimulate economic growth in Ethiopia.

This *book of proceedings* is prepared to communicate the knowledge generated and experiences shared in the conference. We hope that the proceedings will inspire readers' thoughts and actions towards further progress in the area of loan and saving in the country.

Welcoming Address

Dr. Nigussie Dechassa, Vice-President for Research Affairs, Haramaya University

Your Excellency, Dr. Sintayehu Woldemichael, Director of Public Financial Enterprises Agency,

Your Excellency Ato Murad Abdulhadi, President of the Harari Regional state,

Distinguished Guests,

Staff members of the University,

Ladies and gentlemen,

First of all, on behalf of Haramaya University and myself, I would like to extend a warm welcome to all of you to this national conference on loan and saving, which is the first of its kind in the history of our University. I am indeed honoured and privileged to make this welcoming address.

The conference has been organized by the joint efforts of Haramaya University and the Public Financial Enterprises Agency. I would like to pay my tribute to all distinguished representatives who have come from various organizations to contribute to the fruition of this conference. Having all of you here has proved to us that this conference is indeed the common interest of all of us who desire to have a thorough understanding about the trend, nature, and behaviour of domestic resource

mobilization and loan provision in Ethiopia. The event also reveals how much we all appreciate understanding the mechanisms through which the financial sector contributes to the enhancement of the economy of our country.

Ladies and Gentlemen,

Our University and the Public Financial Enterprises Agency are indeed gratified by the opportunity of hosting this conference on the subject of loan and saving, which is a milestone for increasing saving mobilization and its appropriate allocation for enhanced growth of the country's economy.

Such a conference could have been conducted at no better time than now when the country has envisaged achieving remarkable economic growth through robust strategies like the Growth and Transformation Plan (GTP) and multipurpose mega projects like the construction of the Great Renaissance Dam. Implementation and execution of these development endeavours require huge amounts of monetary outlay, the lion's share of which has to be generated domestically. The issues of domestic resource mobilization and loan provision have been well addressed in the GTP plan with the understanding that a well functioning financial system is a major input for the successful execution of the development plans and achievement of the targeted goals. In other words, if the financial system distorts the allocation of funds in the presence of financial repression, economic growth cannot be realized and sustained and financial depth will remain deficient.

Thus, it is important to create a common understanding in the nation and make further efforts to strengthen the saving capacity and proper allocation of loans. This is also primarily required because in any society, promoting saving and creating public awareness on financial responsibility enhances self-economic wellbeing of savers in particular and the economic growth of the nation in general.

In this regard, the lessons from fast growing economies such as India and China demonstrates how enhancement of the national saving habit and development of the financial sector to effectively mobilize, pool, and channel domestic savings into productive capital is crucial to accelerate economic growth.

This workshop is hoped to generate useful ideas that will inform policy makers to put appropriate actions in place. It will also stimulate academics, practitioners, and professionals to make further investigations and practise innovative financial services and technologies, which may further address

the current challenges and improve prospects of the Ethiopian financial sector and its role in the country's economic growth.

In this conference, various scientific papers in different areas of saving and loan will be presented; reflections and discussions will be made, leading to fruitful and concrete outcomes.

I feel that the two-day conference will be a significant accomplishment that will set action packed agenda, providing something for everyone, which will include thought-provoking keynote speeches, challenging discussions, reflections, presentations, as well as informal networking outside the conference room.

What is more, eventually, an informative and educative proceeding will be prepared for public use.

I would also like to take this opportunity to thank the Commercial Bank of Ethiopia for making a substantial generous financial contribution to the cost of holding this conference.

I would also like to thank the conference organizing committee members, who were drawn from both Haramaya University and the Ethiopian Public Financial Enterprises agency for their dedicated efforts in organizing and realizing this conference.

I would also like to thank the various offices of both institutions for the wonderful support they have given to the organizing committee.

With this note, I wish you a very good conference packed with stimulating discussions and reflections on loan and saving that can feed into our efforts of achieving our goal of becoming one of the middle income nations in the World by the year 2025.

Thank you very much.

Opening Speech

H.E. Mr. Murad Abdulhadi, President of the Harari National Regional State

Your Excellency, Dr. Sintayehu W/Michael, Director for Public Financial Enterprises Agency,

Distinguished Guests,

Ladies and Gentlemen,

First of all, I would like to express my deep feeling that I am personally honored to make this official opening remark for the conference on '*Loan and Saving: The role in Ethiopia Socio-economic Development*', on behalf of His Excellency, Mr. Abdulaziz Mohammad, Vice-President of the Oromia National Regional State and the chairman of the Haramaya University Administrative Board, who has been unable to attend this conference due to other urgent official assignments.

I would like to thank the organizers of the conference, Haramaya University and Ethiopian Public Financial Enterprises Agency, for fully engaging themselves in executing this important event which forms a platform for researchers, professionals, practitioners and policymakers to discuss on the role of saving mobilizations and loan provision in Ethiopian financial sector development and its role in Ethiopian socio-economic development.

Ladies and Gentlemen,

The Government of Ethiopia has made a tremendous stride to harmonize the effort of different stakeholders in Ethiopian financial sector so as to enhance its role in the country's envisaged development plans. As a matter of this fact, the promotion of collaborative efforts between the Ethiopian Public Financial Enterprises Agency and public universities is worth-mentioning. In this regard, preceding conferences have been held at the University of Gonder in December 2011 and at Hawassa University in June 2012 and now the third conference is being held at Haramaya University. Hopefully, a series of similar conferences will be held in the future in a very organized and improved manner.

As we all repeatedly reflected on many occasions, we are working on many ambitious but achievable plans including the Growth and Transformation Plan (GTP) for 2011-2016 and the construction of the Great Renaissance Dam which are hoped to be a mantra for our vision, to be one of the middle income nations by the year 2025. Until today, with full commitment of the Government and the people, we have seen a bright light which could lead us to the overall success of these plans. Our economy has grown at 11.4% of real GDP during the years 2011 and beyond that in 2012 which were greater than the lower case 11% targeted in GTP. Accelerated economic growth has remained a continued momentum over the last eight years in Ethiopia.

At this juncture, it is important to note that the financial sector which is expected to play a vital role in the economic development as well as in the implementation of our development targets is in a road of success. Over the last two years, our financial sector development indicators such as reserve money have grown at about 40% which is by far greater than the targeted growth rate in GTP.

Thus, these and other achievements in our financial sector and the role that these play in our economic development and realization of the GTP plan are sound. In implementing GTP, the government of Ethiopia has planned to develop an accessible, inclusive, efficient and competitive financial system. This also helps the country to increase its domestic saving so as to sustain the fast and sustainable growth required to provide resources for expanding improving public services. The government is also working to create healthy competition among the different sub-sectors through supporting the private sector, micro-and-small scale enterprises (which are the incubations of growth) and financial institutions in order to improve the coverage and quality of financial services.

However, as the main importance of this conference, the role of domestic saving and loan provision should be improved further to enhance our achievements. This is because while about 1 trillion Birr is expected to be domestically rose from our nation over the GTP period, our current saving rate is about 9.5% of our GDP which is lower than the Sub-Saharan African case. This, thus, requires our focus to scale effective mobilization of savings and provision of credits through our financial institutions. It also requires enhancing our consensus and harmonizing our efforts towards upgrading the technologies (invention and innovation) for deposit mobilization and loan provisions, creating societal awareness about the need for saving and loan provision, as well as pinpointing policy directions for the government of Ethiopia to take effective actions to improve our saving and loan culture and concerns.

Ladies and Gentlemen,

As we all know, it is true in any kind of economic and political system that financial sector development serves as the engine of growth and a real growth emanates internally through domestic mobilization and conversion of resources. Cognizant of this fact, we should consider our financial sector as a factor fueling our economic growth and socio-economic development. Our today's conference, is, therefore, aimed at broadening our thoughts so as to put in place the proper functioning of the financial sector for financial self-sufficiency and domestic mobilization of resources as well as for creation of equity and equitability in the allocation of financial resources in our economy through provision of productive loans for the needy. In this fashion, let the financial sector play its basic role in the economy; serve the interest of government, private bodies and other stakeholders working in the sector.

Ladies and Gentlemen,

I am pretty sure that this kind of national conference is what we need to achieve all the above targets of our country. I hope this conference will go through evaluating the development of our financial sector and the role it plays in our economic development, addressing the nature and behavior of saving and loan in our financial institutions, their governance, policy and regulatory issues, the nexus of loan-saving-development and the important policy issues to be considered for effective financial sector development. Then, we will be focusing on overcoming our weaknesses and replicate our best practices to get most in terms of economic growth out of the sector. The increased investment in higher learning and research systems will provide the academics, researchers, and professionals who

are researching, innovating and inventing a new way of doing things with added values, thereby increasing the efficiency and effectiveness of the economy, political system, and the social environment. I also hope that after this conference, the collaboration between Universities and the financial sector will be much more enhanced.

I wish you all a stimulating and rewarding time.

Thank you very much for your attention!

Keynote Address

H.E. Dr. Sintayehu Woldemichael, Director of Public Financial Enterprises Agency

H.E. Dr. Sintayehu Woldemichael has made keynote address focusing on issues related to loan and saving. Among the major points he briefly addressed are the following:

- His Excellency, Dr. Sintayehu Woldemichael, has reminded the participants about economic growth that Ethiopia has registered over the past nine years. He said that the current growth and transformation plan would require boosting and sustaining economic growth in the years to come. He noted that this would require adequate focus on domestic savings.

- He also indicated the need to focus on human and physical capital development, among others. He stressed that capital accumulation and saving need to be taken as development agenda in the country, which could be achieved through domestic savings.

- His Excellency also briefly summarized the views of Keynes, Friedman, Modigliani, and other economists on theories of saving and consumption. He also mentioned that some of the assumptions of these different views may not work in the context of developing countries. The possible reasons he mentioned included the level of income which is at subsistent level in these

countries, the prevailing strong relationship of family members to support each other, borrowing constraints where current consumption is directly related to current income, and the problems of macroeconomic stability.

- H.E. Dr. Sintayehu Woldemichael also emphasized on the trends of saving in Ethiopia and the reasons thereof. He indicated that the current saving level in the country was at a better position. He also mentioned that the major reason of saving is for the saver to smoothen consumption though it could be also for economic development of the country.

- His Excellency has also indicated reasons for having low savings which deserve special focus in terms of further research investigations. These included, among others, poor access to financial institutions, less knowledge on finance (financial illiteracy), limited products from financial sectors (saving and loan), and macroeconomic stability. He stressed that it would be necessary to assess these four structural problems, and that concerted efforts should be made by various stakeholders towards this endeavor.

- Finally, he also indicated what should be done to solve the indicated structural problems. These included enhancing financial accessibility, improving financial literacy, introducing new financial products, and focusing on bringing macroeconomic stability.

PAPERS PRESENTED ON THE WORKSHOP IN THEMES

Theme 1: Institutions in Loan and Saving

Relative Efficiency of Rural Saving and Credit Cooperatives: An Application of Data Envelopment Analysis

Kifle Tesfamariam[1] and Hailemichael Tesfay[2]

[1]Assistant Professor, Department of Cooperative Studies, Mekelle University,

Email: kifletesfamariam@gmail.com

[2]Assistant Professor, Department of Finance and Investment, Mekelle University

Email: hailemichaelt2002@yahoo.com

Abstract: *Saving and credit cooperatives have been playing a distinct and important role in providing various financial services in rural areas of Ethiopia. However, the performance of rural financial cooperatives in mobilization of saving and provision of credit has been inadequate. Therefore, greater degrees of efficiency among rural saving and credit cooperatives would result in greater access to finance, higher profitability and increased financial services to rural people. This study was conducted to examine the technical efficiency of rural saving and credit cooperatives operating in Tigrai region of Ethiopia. Data were collected from 329 saving and credit cooperatives during the year 2012 and analyzed using Data Envelopment Analysis (DEA). The result showed that the extent of technical efficiency varies across geographical location and capital size of the cooperatives. Only 5.5% of the rural saving and credit cooperatives were found to be working at technically efficient level, while the rest are found to be inefficient. The average efficiency was 21.3% which indicates that there is substantial amount of inefficiency among rural saving and credit cooperatives in the study area. Technical efficiency was high for larger saving and credit cooperatives and low for smaller cooperatives. In terms of geographical location, the highest efficiency was observed among the cooperatives located in western and central zones of the region which accounted for 20 and 27.8%, respectively. The most interesting aspect of this study was that most of the efficient rural saving and credit cooperatives are the ones that received reward from the regional government for their best performance.*

Keywords: *Data Envelopment Analysis, saving and credit cooperatives, technical efficiency*

1. Introduction

The financial service sector in Ethiopia is composed of formal, semi-formal and informal sectors. The formal sector comprises diverse range of financial institutions such as commercial banks, insurance

companies and microfinance institutions that are regulated and licensed by the National Bank of Ethiopia (NBE). However, the semi-formal and informal sector mainly comprises of financial institutions like saving and credit cooperatives, and *iqqub* and *iddir,* respectively. These institutions play a central role within the financial sector in providing liquidity for payment services and facilitating financial transactions of various entities.

In addition, the emergence of member based financial institutions such as saving and credit cooperatives (SACCOs) has also been recognized for the provision of banking services in Ethiopia. SACCOs, which were only 495 in 1992, reached 10,270 in the year 2012, and currently constitute the first most common type of cooperatives in the country in terms of both number and membership with an extensive networking. As per the proclamation No. 147/1998, SACCOs were expected to play active role in bringing about broad-based development and poverty alleviation as they were permitted to take deposit from and grant loan to members. However, this proclamation failed to recognize SACCOs as formal financial institutions even though they were allowed to accept deposits and grant loans. As a matter of this fact, SACCOs are not subjected to the regulation and supervision by NBE that other formal financial intermediaries are subjected to.

Empirical evidences that elucidate these facts were scanty in Ethiopia. The few existing comprehensive economic analysis of the semi-formal sector like SACCOs which brought light to the nature and relative economic importance of this sector in Ethiopia were that of Dejene (1993), Mauri (1987) and Girma (1987). The economic analysis made so far has focused on the formal financial sector like banks. However, little empirical evidence has been generated to measure the efficiency of SACCOs. In this regard, whether SACCOs in Ethiopia operate efficiently in providing financial services as well as factors that affect efficient operation like capital size and location were not studied yet. Hence, the main objective of this study was to examine the overall efficiency of rural SACCOs in Tigrai region of Ethiopia.

SACCOs in Tigrai Region: The provision of efficient financial products and services plays a key role in developing a robust financial sector and enhancing outreach which in turn leads to greater economies of scale, thereby improving profitability and ensuring sustainability. In this context, the SACCOs in Ethiopia need structural changes for diversification of their activities to enhance self-sufficiency and provide access for rural people. For the SACCOs to perform, grow and achieve sustainability while at

the same time proving to be the instruments of development and poverty alleviation, it is relevant and appropriate to study their relative efficiency.

The primary beneficiaries of financial services offered by SACCOs are agricultural cooperatives. These SACCOs do not exclusively target the rural or define their mission as serving the poor. Their long term strategic direction is to ensure source of finance to agricultural cooperatives, innovate financial products and services, satisfy key financial needs and diversify members income and wealth base.

In Tigrai region, SACCO members usually rely on their own capital (shares) to foster their economic development through accessing financial services, saving and credit products. Since 2002, several rural SACCOs have been established in the region in collaboration with development organizations. Their appeal to rural people is spreading rapidly as evidenced by the demand indicated in rapid growth rates in membership and growing average sizes of loans and deposits.

As of June 2012, the number of rural SACCOs in Tigrai region has reached 793 with active total membership of 120,607 of which the percentage of women members were 38.8 %. These SACCOs pulled a total saving amount of 2.36 Million USD with 64,764.8 USD in share capital. These share capital and savings were invested in a 4.03 Million USD loan portfolio that finances microenterprises and agricultural activities of cooperatives. However, the SACCOs provide less than 1% of the country's total financing, and struggle with low-capacity management and governance (Kifle, 2012).

2. Research Methodology

Data sources: as of June 2012, there were 793 rural SACCOs operating throughout the Tigrai region. However, due to lack of complete data, this study considered only 329 SACCOs operating in all 36 districts of the region. Secondary data were also collected from different sources including financial statements of the SACCOs. In addition, data were obtained from the annual financial statements and annual reports of the Federal Cooperative Agency (FCA) and the Tigrai Regional Cooperative Promotion Agency during the year 2012.

Data Analysis: The two principal method of studying comparative efficiency are parametric and non-parametric methods. Stochastic Frontier Analysis (SFA) is a parametric method which determines comparative efficiency levels by hypothesizing a functional form. Data Envelopment Analysis (DEA), on the other hand, is a non-parametric method which employs mathematical linear programming model (Coelli *et al.,* 1998). The popularity of DEA rests on its capability to consider multiple inputs

and outputs for calculating relative efficiency. DEA comes up with a single scalar value as a measure of efficiency and does not require any specification of functional forms as required under parametric models.

Efficiency of any firm can be defined in terms of either output maximization for a set of inputs or input minimization for a given output. In DEA, relative efficiencies of a set of decision-making units (DMUs) are calculated. Each DMU is assigned the highest possible efficiency score by optimally weighing the inputs and outputs. DEA constructs an efficient frontier composed of those firms that consume as little input as possible while producing as much output as possible. Firms that comprise the frontier are efficient while those below the efficient frontier are inefficient. For every inefficient DMU, DEA identifies a set of corresponding benchmark efficient units (Coelli *et al*., 1998). Generally, DEA evaluates the efficiency of a given firm, in a given industry, compared to the best performing firm in that industry by considering many inputs and outputs. Thus, it is a tool of relative measure.

Various empirical studies on efficiency of banks and financial institutions had employed DEA method in different contexts. Some of the research work that measured efficiency in the banking sector includes comparisons made between cooperative rural banks in Sri Lanka (Jayamaha and Mula, 2011), Portuguese banks (Portela and Thanassoulis, 2007), Taiwanese Commercial banks (Kao and Liu, 2004), Cyprus Commercial banks (Soteriou and Zenios, 1999), American banks (Brockett *et al*., 1997), large Canadian banks (Schaffnit *et al*., 1997), and Mexican banks (Taylor *et al.,* 1997).

Inputs and outputs: A considerable debate underlying the assessment of the efficiency of service sectors in general and the banking sector in particular were about what constitute input and output of the banking industry (Sathye, 2003; Casu, 2002). Two different approaches appear in the literature regarding the measurement of inputs and outputs of the bank. These approaches are the 'intermediation approach' and 'production approach' (Humphrey, 1985). The intermediation approach views financial institutions mainly as mediators of funds between savers and investors (Banker *et al*.,1984). Outputs are measured in monetary values and total costs include all operating and interest expenses (Sealey and Lindley, 1977). In contrast, the production approach view banks as using purchased inputs to produce deposits and various categories of bank assets. Both loans and deposits are, therefore, treated as outputs and measured in terms of the number of accounts. This approach considers only operating costs and excludes the interest expenses paid on deposits since deposits are

viewed as outputs. Although the intermediation approach is most commonly used in the empirical studies, neither approach is completely satisfactory, largely because the deposits have both inputs and output characteristics which are not easily disaggregated empirically.

Berger and Humphrey (1997) suggested that the intermediation approach is best suited for analyzing bank level efficiency whereas the production approach is well suited for measuring branch level efficiency. This is because at the bank level, management will aim to reduce total costs and not just non-interest expenses while at the branch level a large number of customer service processing take place and bank funding and investment decisions are mostly not under the control of branches. Also, in practice, the availability of data required by the production approach is usually exceptional rather than in common. Therefore, following Berger and Humphrey (1997), we have selected intermediation approach as opposed to the production approach for selecting input and output variables in the present study.

The efficiency scores are estimated for individual SACCOs and mean efficiency scores are calculated for the sample as a whole. In terms of size and geographical location, estimated efficiencies are also examined with mean estimated scores over the study year. Moreover, correlation coefficients for input and output variables are estimated. Saving and total expenses have been identified as inputs and loans and total income have been identified as outputs. The following table presents the input-output specifications based on prior studies.

Table1: Input-output specifications of the intermediation approach

Variables	**Definition**	**Input/ Output**
Total expenses	Amount paid as interest on deposits, wages and other benefits to employees, and expenses incurred on others.	Input
Savings	Deposit mobilized from the members and includes share capital, voluntary, and compulsory savings.	Input
Loans	Amount of loan dispersed to the members.	Output
Total income	Income received on income generating activities and investments as interest.	Output

Table 2 presents the status of SACCO in Ethiopia in terms of number, membership, and savings and loan dispersed in 2012. The table reveals that despite the importance of commercial banks,

organizations based on cooperative model remained the dominant financial product/service provider. Moreover, SACCOs compete with other institutions in saving markets as well as lending markets.

Table 2: Status of SACCOs in terms of number, membership, savings and loan dispersed

Type of SACCO	Number of SACCO	Membership Size	Saving	Loan dispersed
Urban	3573	381212	994,960,169	73,185,994
Rural	6134	529063	211,358,991	179,509,934
Total	10270	910275	1,206,319,160	252,695,928

Source: FCA, 2012

3. Results and Discussion

Table 3 presents the results of the descriptive statistics on inputs and outputs. The correlation coefficients show that all variables have positive and significant relationship with each other. With regard to the estimated coefficients all output variables (loans and income) are positively and significantly correlated with deposits and expense. In particular, the association between loan and saving is very high (0.87). The strong statistical correlation justifies that the selected variables in the DEA models are appropriate. Overall, the correlation results indicate that change in one variable can be expected to impact the overall efficiency of the SACCOs. The reminder of this section discusses the efficiency of SACCOs based on estimated DEA scores.

Table 3: Descriptive statistics of inputs and outputs in DEA model

Input/output	Savings	Loans	Income
Loans	0.870 (0.000)		
Income	0.284 (0.000)	0.353 (0.000)	
Expense	0.224 (0.000)	0.312 (0.000)	0.442 (0.000)

Correlation is significant at the 0.01 level

Efficiency Score: the summary of estimated efficiency results of the study is presented in Table 4. Using the variable returns to scale (VRS), the average technical relative efficiency was found to be 0.213, which means that overall technical inefficiency of SACCOs is around 79% in 2012. Of the 329 SACCOs, 18 SACCOs are identified as "relatively efficient" with technical efficiency score equal to one. The remaining 311 SACCOs were found to be "relatively inefficient" with efficiency score

less than one in the same year. The inefficient SACCOs can improve their efficiency by decreasing resource inputs and increasing outputs. In other words, it implies that the SACCOs will be maximizing the output at given inputs or minimizing the inputs at given out put level depending on the amount of resource utilized. Most of the SACCOs were inefficient with a very low overall efficiency score of 0.213. This indicates that there is huge possibility for the SACCOs to increase their efficiency by improving utilization of their inputs and outputs. It should be clear that there are only 18 SACCOs which were efficient in relative terms.

Table 4: Summary of efficiency scores

				Descriptive Statistics			
Description	No of DMUs evaluated	Efficient	Inefficient	Mean	Max	Min	SD
VRS	329	18	311	0.213	1.000	0.008	0.256
SE	329	7	322	0.770	1.000	0.053	0.256

VRS= variable returns to scale; SE = Scale efficiency

Efficiency analysis by size: Table 5 presents the percentage of the sample for the small, medium and large categories based on capital size in a three tier classification. Based on researchers' discretion, DMUs with capital below Birr 100,000, from Birr 100,000 to 200,000 and over Birr 200,000 were categorized as small, medium and large, respectively. Out of the total sample, the proportion of small, medium and large SACCOs were 63%, 18% and 19%, respectively.

Table 5: Size metric of the sample

Size	Large	Medium	Small	Scale
Capital	19%	18%	63%	Large = More than 200 thousand Birr, Medium=100 thousand to 200 thousand Birr, Small=below 100 thousand Birr

In addition, the efficiency scores were analyzed for each size category using the DEA. Accordingly, the TE efficiency score were 17%, 16% and 41% for small, medium and large SACCOs, respectively, in 2012 (Figure 1).

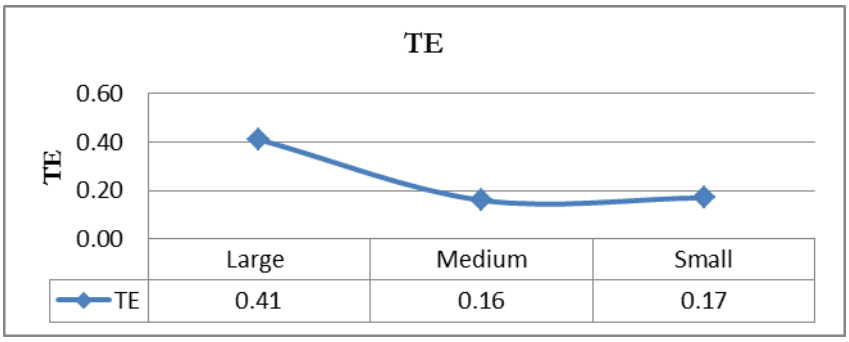

Figure1: TE and size

Efficiency analysis by location: efficiency scores were examined to see whether geographical disparity affects the efficiency of the SACCOs. According, Table 6 showed that SOCCOs located in eastern and south east zones were the relatively efficient and this constitute the lowest proportion. In fact, though South East zone had none of its SACCOs with a relative efficiency score of one, its overall mean efficiency score was greater than that of Eastern zone. In relative terms, the other three zones had better number of efficient SACCOs. It looks like the location factor has effect on efficiency but this requires further investigation by employing different approaches.

Table 6: Mean efficiency by location

S/No	Zone	Mean TE	No of efficient SACCOs	No of inefficient SACCOs	%age of Efficient SACCOs
1	South	0.276	4	65	6.15%
2	South East	0.221	0	35	0%
3	Eastern	0.137	2	69	2.9%
4	Central	0.201	7	104	6.73%
5	Western	0.259	5	38	13.16%

4. Conclusion

The primary objective of this study was to assess overall efficiency of SACCOs in Tigrai region by employing 329 rural SACCOs in 2012. It was found that the majorities of SACCOs were less efficient and did not use their inputs efficiently. However, it was found that there were significant differences in the efficiency of SACCOs by geographical size and locations. The findings of this study are

relevant in making policy decisions in the financial sector to help SACCOs operate in different markets especially in today's changing macroeconomic environment in Ethiopia.

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The Effect of Asset Liability Management on Profitability of Ethiopian Commercial Banks

Tamiru Belete

Lecturer, University of Gonder, Email: tamsolan2003@gmail.com

Abstract: *This study examined the effect of Asset Liability Management (ALM) on the profitability of Ethiopian commercial banks. The Social Cost Accounting (SCA) framework was used to conceptualize profitability measured as Return on Asset (ROA). Data were collected from eight commercial banks over the period from 2005 to 2010 and analyzed using pooled ordinary least square regression model. The result showed that all assets, except fixed assets, affect profitability positively. From liabilities, saving and fixed deposits, other liabilities and credit balances had significant and negative effect on commercial banks' profitability. Among the macroeconomic variables, real growth rate in GDP had negative and significant effect on commercial banks' profitability. Based on the result, the study recommend that commercial banks should focus on increasing public awareness to mobilize more saving and fixed deposits to enhance their profitability.*

Keywords: *Asset Liability Management, macroeconomic variables, ordinary least square regression model, profitability*

1. Introduction

Commercial banks are financial intermediaries that raise funds primarily by issuing checkable demand, saving, and time (fixed) deposits. The underdeveloped nature of the Ethiopian financial system makes the commercial banks to be authorized to provide universal banking service in the financial market. For instance, commercial banks undertake almost all of the transactions and activities of money and capital market. This conglomeration entails lack of diversification which exposes banks to credit, interest rate and liquidity risks. Credits risks are only associated with the asset of a bank while both interest rate and liquidity risks are associated with liabilities which influence investment decisions.

Asset liability management (ALM) involves the management of the uses of funds (assets) including investments, loans and advances as well as the sources of funds (liabilities) including various savings collected by banks and equities retained in a way that banks undertake productive financial services in an economy and maximize their own earnings. In this regard, ALM is considered as a dynamic process

of the planning, organizing, coordinating and controlling system of the various natures of the assets and liabilities of banks in order to achieve a specified net interest income.

Mishikin (2004) indicated that ALM is the practice of managing the various potential risks of commercial banks that arise due to mismatches and disproportions between the assets and liabilities of the bank. Such risks were indicated as the risks arising from the movement of interest rates, foreign exchange rates or liquidity problems. Even though such risks are highly prevalent among Ethiopian commercial banks, studies focusing on identification, measurement and control of these risks through tracing the effect of ALM on profitability were negligible. Hence, this study was undertaken to investigate cumulative effect of ALM and macroeconomic variables on profitability of commercial banks in Ethiopia using the social cost accounting (SCA) framework. The specific objectives of the study were i) examining the effect of assets management on profitability ii) examining the effect of liability management on profitability iii) identifying the specific items of asset that significantly contributes to the profit and iv) identifying the specific items of liability that significantly cost the profit of commercial banks.

Empirical studies on ALM and profitability in commercial banks: Various studies (Shubiri, 2010; Sayeed and Hoque, 2008; Asiri, 2007; Kosmidou *et at*., 2004) pointed out that ALM is a major factor having a significant effect on the profitability of commercial banks and require major policy concerns among nations with highly controlled financial systems. Calcagnini and Hester (1997), Vasiliou (1996), Kwast and Rose (1982), Hester and Pierce (1975), Hester and Zoellner (1966), Hester (1964) also addressed issues of profitability of commercial banks in developing countries and in Ethiopia. However, such studies are few and there is a need for further investigation. Besides, macroeconomic factors such as real growth rate in GDP and general rate of inflation were evidenced to be highly associated with ALM thereby affecting the ability of commercial banks to generate profit (Sayeed and Haque, 2008; Staikouras and Wood, 2001). Ramlall (2009) widely described that rapid economic growth increases profitability in large number of countries and movements in general activity are likely to generate direct impacts on profitability of banks. Staikouras and Wood (2001) explained that the effect of inflation can substantially undermine the stability of the financial system and the ability of the regulator to control the solvency of financial intermediaries, and as a result inferred that an important indirect influence on commercial banks can lie in the impact of inflation that influences customers behavior and change in demand for different kinds of financial services.

3. Research Methodology

Data: This study used data from eight purposively selected commercial banks in Ethiopia which constitute 94.70%, 94.44% and 92.62% of the total assets, deposits and loans, respectively, for the whole commercial banks in the country. The period from 2005 to 2010 was considered and the data were taken from the NBE.

Model Specification: The SCA model was used to examine the effect of ALM and selective macroeconomic variables on operating net income of banks explained as the revenues (interest income, service fees and commissions) and the costs/expenses (interest expenses on deposits and other liabilities and administrative expenses). The SCA model explains the variation in operating income of bank b in time t as:

$$\pi_{bt} = \propto_0 + \sum \propto_{1i} A_{ibt} + \sum \propto_{2j} L_{jbt} + \epsilon_{bt} \ldots\ldots\ldots \quad (1)$$

where:

π_{bt} = Operating profit of a commercial bank

A_i = the i^{th} asset of a bank; i = 1, 2, 3… n

L_j = the j^{th} liability of a bank; j = 1, 2, 3… m

b = banks; b = 1, 2, 3… z

t = the time period; t = 1, 2, 3… T

α_{1i} = the marginal rate of return on assets

α_{2i} = the marginal cost of liabilities

α_0 = Constant term

ε_{bt} = Stochastic term

As the banks included in this study have varying sizes, scale related inefficiencies in estimating the coefficients associated with heteroscedasticity of residuals (Kosmidou *et al.*, 2004) were minimized by dividing the values of all the variables for average total asset values as:

$$\frac{\pi_{bt}}{ATA_{bt}} = \frac{\propto_o}{ATA_{bt}} + \sum \propto_{1i} \frac{A_{ibt}}{ATA_{bt}} + \sum \propto_{2j} \frac{L_{jbt}}{ATA_{bt}} + \mu_{bt} \ldots\ldots\ldots \quad (2)$$

Whereas ATA_{bt} represents average total assets for bank b at time t and b_{ut} is the ratio $\frac{\epsilon_{bt}}{ATA_{bt}}$

However, the specification of the SCA model indicated above should take into account the effect of macroeconomic variables on profitability and a modified SCA model employed in this study is as given below.

$$ROA_{bt} = \frac{\alpha_o}{ATA_{bt}} + \sum \alpha_{1i} \frac{A_{ibt}}{ATA_{bt}} + \sum \alpha_{2j} \frac{L_{jbt}}{ATA_{bt}} + \alpha_3 GDP_t + \alpha_4 INF_t + \mu_{bt} \quad (3)$$

Where ROA_{bt} represents the return on assets for bank b at time t, GDP_t is the rate of gross domestic product at time t, INF_t is the general rate of inflation at time t, α_3 and α_4 represents coefficients of real growth rate in GDP and general rate of inflation, respectively.

Dependent variable: Since income tax is the rate levied by government, it is fixed and the use of net income after tax as a dependent variable cannot provide unbiased estimate of the influence of ALM and macroeconomic variables on profitability. As a result, the current study used the return on assets (ROA) defined as the ratio of operating net income to average total assets as a dependent variable.

Table 1: Explanatory Variables

Variables	Description
Assets variables	
A1	Deposits in other banks
A2	Other Investments and debit balances (treasury bills, bonds, sundry debtor, trust funds, and letter of credit)
A3	Loan and Advances
A4	Fixed Assets
Liabilities variables	
L1	Demand Deposits
L2	Saving and Fixed Deposits
L3	Other Liabilities and credit balances (other banks deposits, margin held on letter of credit, provision for taxation, state dividend payables and long term loans).
Macroeconomic variables	
GDP	Real Growth rate in GDP
INF	General rate of Inflation

Explanatory variables: This study used two categories of independent variables i.e. balance sheet related asset liability variables and selected macroeconomic variables. The labeling and description of these variables is given in Table 1.

Data Analysis: Both descriptive statistics and econometric approaches were used in this study. Descriptive statistics including mean, standard deviation, minimum and maximum values of the explanatory variables were measured. In addition, this study employed a linear regression analysis explained above to measure the effect of ALM and macroeconomic variables on profitability of commercial banks. To test the suitability of this method, Hausman and Breusch-Pagen Lagrangian Multiplier (LM) tests were used to discriminate between the fixed and random effects. Based on the tests results, the Pooled Ordinary Least square (OLS) model was fitted into the data set to get efficient and consistent estimates. In addition, Pearson correlation matrix and Variance Inflation factor (VIF) tests were made to deal with the problem of multicollinearity, cluster regression was run to test the existence of autocorrelation, Breusch-Pagen Godfrey test for normality was employed to test heteroscedasticity. Additionally, the normality test was made by using Anderson-darling (Skewness-kurtosis) and Shapiro-Francia and Chapiro-Wilk tests.

4. Results and Discussion

This part of the study provides the empirical evidences on the effect of ALM on commercial banks profitability in the Ethiopian banking sector over the period of 2005-2010.

4.1. Results of descriptive statistics

Table 2 below presents the descriptive statistics of both dependent and independent variables included in the study. Accordingly, the ROA of the sample banks was found to be 4.45% with standard deviation of 0.92%. For assets, the mean value of the deposits made in other banks to ATA ratio (A_1) was 12.19% with standard deviation of 6.85%. The ratio of total investments and other debit balances to ATA (A_2) was observed to have a mean value of 12.34% with standard deviation of 8.11%. The loans and advances to ATA ratio (A_3) was 61.78% indicating that half of the assets of the commercial banks were in the form of loans and advances. The standard deviation of 17.20% reveals a greater variability than all other asset variables used in the study. The mean ratio of fixed assets to ATA (A_4) was 1.65% with standard deviation of 0.74%. This might imply that funds used in acquisition of fixed assets has minimum portion than other asset items.

On the other hand, for liabilities, the ratio of current deposits to ATA (L_1) was found to have a mean value of 26.04% with standard deviation of 10.66% whereas the mean value of saving and fixed deposits to ATA ratio (L_2) was 59.31% with standard deviation of 13.45%. The mean and standard deviation differences between these two variables can be due to the fact that commercial banks usually accept deposits with short term maturities from a large number of individuals and grant loans with long term maturities to a small number of borrowers. The ratio between other liabilities and credit balances and ATA variable (L_3) has the mean value of 15.11% with the standard deviation of 8.15%.

Similarly, with regard to the macroeconomic variables incorporated in this study, the real growth rate in GDP and the general rate of inflation had mean values of 11.23% and 16.16% with the standard deviation values of 0.89% and 11.69%, respectively. The minima-maxima comparisons showed that the mean values of the real growth rate in GDP were with a lower variability while that of the general rate of inflation was with a higher variability and greater standard deviation.

Table 2: Descriptive statistics of the variables

Variable	Mean	Std. Dev.	Min	Max
ROA	.0445406	.0092582	.0179993	.0601415
A1	.121973	.0685992	.0212681	.3319977
A2	.1234916	.0811342	.0073624	.5886136
A3	.6178181	.1720636	.2461131	.8723988
A4	.0165206	.0074317	.0060778	.0375375
L1	.2604076	.1066681	.0892808	0.495429
L2	.5931932	.1345706	.3295338	.7966882
L3	.151184	.0815949	.029029	.4638283
GDP	.1123333	.0089759	.099	.126
INF	.1616667	.1169785	.028	.364

4.2. Results of the econometric model

Before running the econometric model, all the necessary tests with regard to specific and econometric assumptions were made to validate the models and minimize biases in the data set.

Effects of assets management on profitability: the pooled regression results indicated in Table 3 revealed that all assets (except fixed assets) had a positive effect on the profitability of commercial banks implying that effective management of these assets can enhance profitability. From the asset items, loans and advances to ATA ratio was observed to have significant contribution to ROA as a measure of profitability. The parameter α_0/ATA was observed to be positive and significant in affecting profitability. This also revealed that the existence of diseconomies of scale, thus, there is no significant profitability difference among larger and smaller banks included in the study.

Effects of Liability Management on Profitability: As shown in Table 3, the pooled OLS regression analysis result showed that all liabilities have negative effect on commercial banks' profitability. The data further indicated that the ratios of saving and fixed deposits to ATA as well as the ratio of other liabilities and credit balances to ATA were significantly costing the profitability of commercial banks in the Ethiopian financial market at 10% level. This can be due to the fact that saving and fixed deposits are the only large size source of funds while other liabilities and credit balances are costly source of funds.

Effects of Macroeconomic Variables on profitability: As indicated in Table 3, both real growth rate in GDP and general rate of inflation were significantly and negatively affected the profitability of the sample commercial banks. Real growth rate in GDP was observed to significantly affecting profitability at 0.01 which might be due to the fact that the level of GDP influences the supply and demand for loans and deposits, the cumulative sum of which may result in negatively affecting the profitability of banks. The negative and insignificant relationship between profitability and general rate of inflation exist either because bank managements may not be able to well anticipate the future rate of inflation or it may be happened unexpectedly. This is important because bank management's ability to predict inflation accurately can positively affect the profitability of the bank as the bank can adjust interest rates in the desired direction in order to increase profit, while failure to accurately predict inflation could raise costs due to imperfect adjustment of interest rates and thus adversely affect bank's profit.

Table 3: Pooled OLS regression result

ROA	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
A1	.0333322	.0224744	1.48	0.146	-.0121649	.0788293
A2	.0095676	.0145893	0.66	0.516	-.0199669	.039102
A3	.0494292	.0117355	4.21	0.000*	.0256718	.0731865
A4	-.003068	.1827806	-0.02	0.987	-.3730881	.366952
L1	-.0165925	.0226817	-0.73	0.469	-.0625092	.0293242
L2	-.0430796	.0193108	-2.23	0.032**	-.0821723	-.0039869
L3	-.0420708	.0218657	-1.92	0.062***	-.0863356	.002194
GDP	-.6291626	.1699912	-3.70	0.001*	-.9732918	-.2850334
INF	-.0004752	.011432	-0.04	0.967	-.0236182	.0226677
_cons	.1157945	.0232292	4.98	0.000*	.0687693	.1628196

Number of Observations = 48
F(9, 38) = 4.63
Prob > F = 0.00004
R-Squared = 0.5231
Adj. R-Squared = 0.4102
*,**,*** = Significant at 0.01, 0.05, and 0.1, respectively

5. Conclusion and Recommendations

5.1. Conclusion

The basic purpose of this study was to empirically examine the effect of ALM and macrocosmic variables on profitability of commercial banks in Ethiopia. The findings evidenced that the profitability of commercial banks in Ethiopia was positively affected by assets management and negatively affected by liability management. Specifically, loans and advances positively affected the profitability of commercial banks. All other asset variables were found to have no significant effect on commercial banks profitability implying that the asset base of commercial banks in Ethiopia is too narrow. The parameter α_0/ATA is positive and significant indicating diseconomies of scale. Thus, there is no significant profitability difference between large and small banks during the study period. Liability items like saving and fixed deposits as well as other liabilities and credit balances were

significantly costing the profitability of commercial banks. As a result, the performance of commercial banks is related to their ability to attract individual depositors.

The real growth rate in GDP has significant because its effect will depend on the economic conditions available in the economy. Favorable economic condition will affect positively the demand and supply of commercial banking services and profitability.

In general, assets management, mainly loans and advances, contributes positively to the profitability of commercial banks, except fixed assets. While liability management, particularly saving and fixed deposits and other liabilities credit balances, negatively costs the profitability of commercial banks. Therefore, in the Ethiopian commercial banking market, assets management positively and liability management negatively affects profitability.

5.2 Recommendations

Since saving and fixed deposits are the main source of funds for commercial banks, there should be clear and precise strategies to aggressively attract individual depositors. For this, public awareness on investments should be increased to increase the liability base of commercial banks. Commercial banks should be able to look into long term effects of inflation on the overall bank performance and need to expect adverse effects of such uncertainties on commercial banks' profitability.

To improve profitability as much as possible, commercial banks have to formulate aggressive policies for attracting saving and fixed deposits, even if the NBE require banks to retain a certain portion of the deposits with the bank as liquidity requirement. The supervisory and related services of policy makers should be geared towards optimum utilization of resources, prudent risk management, sound competitive environment, and excellence in service. Policy makers should enforce the government to have hard rules on loan default makers. This would enable commercial banks to diversify their loans and advances and they could realize the required profit out of it.

Possibly, if the money and capital markets are created and expanded, the asset and liability bases of commercial banks will increase and their asset portfolio might have more significant and positive effect on profitability. Therefore, the government should try to have solid rule and procedures on it and every concerned body should strive for its realization.

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Determinants of Microfinance Service Utilization in Dire Dawa Administration, Ethiopia

Endalew Wale[1], Endrias Geta[2] and Jema Haji[2]

[1]Meserete Kristos Church Relief and Development Association, Email: endalwtg@yahoo.com

[2]School of Agricultural Economics and Agribusiness Management, Haramaya University

Abstract: *In Ethiopia, poverty is pervasive and it is argued that one of its causes is deprived access to credit and other microfinance services to be used for the purpose of working capital as well as investment. Thus, micro credit service is among the areas of priority in the fight against poverty and ensuring sustainable development. The objectives of this study were to identify the determinants of microfinance credit service utilization and the prevailing challenges and opportunities faced by the MFI in the provision of the service in Dire Dawa Administration. It was based on the data obtained from 160 respondents, selected using multi-stage sampling technique as well as focus group discussions and key informant interviews. A binary logit model and descriptive statistics were used for the analysis of the data gathered. The result indicated that utilization of microfinance credit service was significantly influenced by factors such as area of residence, possession of fixed asset, sex of the respondent, educational level attained and distance of the respondents' residence from microfinance service giving center. Moreover, problems related to institutional capacity building, client mobility, and lack of facility for screening defaulters, harsh intervention environment, prevalence of HIV/AIDS, lack of incentive and limited awareness among the community were found to be the major challenges of credit service provision. However, supportive policy environment and improvements of the saving culture were the available opportunities for the betterment of microfinance service provision in the area. Therefore, developing gender sensitive strategies that promote the service provision among the female members of the community as well as developing an incentive package targeting female members of the community, establishment of satellite offices in the peripheral parts of the administration, focus to institutional capacity building, implementing a working and effective follow-up system, and designing human resource development plan need to be implemented by the concerned authorities to improve the performance of microfinance service provision and utilization.*

Keywords: Credit service, logistic regression model, microfinance institutions

1. Introduction

In our world, it is common to observe a few rich and a lot of poor people who cannot fulfill the minimum requirements of basic needs for their survival. Despite the score of modernization and advancement that have been registered in the world, the percentage of people living below poverty line is still huge (Todaro, 2000). Such condition is pervasive especially in least developed countries like

Ethiopia. Like most developing countries, Ethiopia is one of the low income countries in the world. The Ethiopian economy is mainly dependent on agriculture and vulnerable to several internal and external shocks such as frequent draughts, high population growth, low investment, and volatile primary product prices. These and other factors have resulted in declining level of the economy with deteriorating living conditions.

Since unemployment is the major problem in the Ethiopian economy, a lot of people were to join the informal sector. This sector is said to have a significant role in the creation of jobs and income generation for a large proportion of the population in Ethiopia. According to a paper compiled by the Ministry of Finance and Economic Development, the number of people earning their livelihood from the informal sector activities and small scale manufacturing industries is eight times larger than those engaged in the medium and large scale industrial establishments (MoFED, 2002). But, one of the major challenges in the informal sector was acquiring financial resources. To overcome this problem, microfinance services were indicated as suitable solutions that meet the need of borrowers who need capital in small amount.

In Ethiopia, delivery of financial services to the poor is a very recent development which was started with proclamation number 40/1996 in which the legal framework that allow the establishment and operation of microfinance institutions was framed. Microfinance credit service has become one of the most prominent instruments in the development programs and strategies of the country. Dire Dawa Microfinance Institution (DMFI) is one of those MFIs that were established and operating in the country. This institution is currently engaged in providing financial access to a large number of low income group and unemployed people in and around the residents of the Dire Dawa administration who were not able to have access to the financial services including micro credit service provided by formal banks due to perceived risk and lack of collateral (DMFI, 2010).

Despite the efforts made by DMFI to increase outreach in financial services, there is still a huge amount of unmet demand for such services. MFDR (2009) indicates that although consecutive reforms and efforts were made by the organization to sustain the service, utilization of the service among the community is affected by a number of factors. Hence, it is crucial to identify the determinants of microfinance credit service utilization and explore related challenges and opportunities. The objective of this study was, therefore, to identify the determinants of microfinance

credit service utilization in Dire Dawa Administration and assessing the prevailing challenges and opportunities faced by the MFI in the provision of the service.

2. Research Methodology

Types and sources of data: Both primary and secondary data were collected. Primary data were collected from a random sample of 160 households having exposure to DMFI while secondary data were collected from documents of DMFI, CSA abstracts and Regional Bureau of Agriculture and Bureau of Finance and Economic Development.

Sampling design and procedure: A multi-stage stratified sampling technique was employed to select sample respondents. In Dire Dawa administration, 9 urban kebeles and 5 rural kebeles were identified. Hence, the target groups were stratified based on the geographical location. Taking time, budget and accessibility into consideration, a total of four kebeles, two from rural and two from urban were randomly selected. Accordingly, kebele 01 and kebele 06 from the urban PAs and Biyo Awale and Wahele kebeles from the rural PAs were selected. Table 1 summarizes the samples taken.

Methods of data analysis: The data were analyzed using econometric model and qualitative approach. An econometric model known as binary logit regression model was used to identify the relative influence of explanatory variables on the dependent variable. A qualitative approach was used to summarize the constraints and opportunities identified during focus group discussion and key informant interview.

Table 1: Sample kebeles and sample size

Kebeles	Total HHs	Sample service user HHs	Non-user HHs	Sampled non-user HHs	Total sample HHs
Kebele 01	1400	18	1382	14	32
Kebele 06	4950	40	4910	50	90
Wahele	950	7	943	10	17
Biyo Awale	1050	10	1040	11	21
Total	8350	75	8275	85	160

3. Results and Discussion

3.1. Determinants of microfinance credit utilization

The binary logit model results indicated in Table 2 revealed that utilization of microfinance credit service was determined by the interaction of different demographic, socio-cultural, economic, and institutional factors. To test the measure of goodness of fit in logistic regression analysis, the chi-square was computed and showed that the model was significant at 1%. Hence, the null hypothesis stating the coefficients of independent variables to be equal to zero was rejected. The result indicated that 83.6% of the non-user and 86.6% of the users were correctly predicted at the cut value of 0.5. The model correctly predicted 85% of the sample cases.

Table 2: Maximum likelihood estimates of the logit model

	Estimated Coefficient B	S.E	Wald Statistics	Sig. Level.	Odds Ratio Exp (B)
SEXOFRES	-2.607	0.638	16.695	0.000	0.074
AGEOFRES	0.008	0.026	0.088	0.766	1.008
LENDNGPRO	0.099	0.500	0.039	0.843	1.104
FIXDASSET	2.036	1.225	2.763	0.096	0.131
MARGE	-0.235	0.351	0.448	0.503	0.791
KNOW	0.875	0.815	1.155	0.283	0.417
MEDAUSER	0.504	0.570	0.782	0.377	0.604
AOROFRES	2.099	0.612	11.751	0.001	8.156
PDSEPI	0.332	0.563	0.349	0.555	0.717
MOC	0.760	0.597	1.624	0.203	0.467
LONPAYMNT	0.458	0.500	0.838	0.360	0.633
DSTFINC	-0.744	0.227	10.751	0.000	0.475
EVRRISK	1.051	0.522	4.052	0.244	2.861
EDULEVL	0.109	0.089	1.524	0.017	0.896
Constant	2.819	2.353	1.435	0.231	16.764
Pearson - χ^2 value		77.571***		df = 16	
-2Log Likelihood		116.253			

***, ** and * refer to significance at 1%, 5%, and 10% probability level, respectively.

Education level of the respondent (EDULEVL): This variable was significant at 5 percent and positively related with microfinance credit utilization. This implies that all other things being kept constant, the odds ratio in favor of utilizing microfinance credit service would increases by a factor of 0.896 for a unit increase in education. The possible explanation for this is that education helps the individual to utilize microfinance credit service, because the capacity created would help the individual to analyze and interpret and make use of it than less educated individuals.

Sex of the respondent (SEX): The variable was significant at less than 1 percent significance level and negatively related with microfinance credit service utilization in the study area. This indicates that all other things being kept constant, utilizing microfinance credit service would decrease by a factor of 0.074 for female respondent. The possible explanation may be that male respondents have high involvement in the outdoor activity and better access to information accompanied by high decision power in comparison to that of female respondent.

Area of residence of respondents (AOROFRES): Area of residence of the respondents positively and significantly influences the probability of utilization of micro credit service at 1% in the study area. As indicated in Table 2, the odds ratio in favor of utilizing microfinance credit service increases by a factor of 8.156 for respondent residing in the urban area, citrus paribus. The possible explanation for this is that urban residents may have better access to the microfinance institution service and information related to microfinance credit institutions than that of the rural counterparts.

Distance of the microfinance institution from the respondent house (DSTFINC): The result showed that the distance of the respondent from the microfinance institution was significantly and negatively related to the utilization of microfinance credit service. This revealed that respondents in short distance from the microfinance institution were more likely to use microfinance credit service. Moreover, the odds ratio in favor of utilizing microfinance credit service decreases by a factor of 0.475 for those respondents residing at a far distance from the site of the microfinance institution. The possible explanation for this is that as the respondent is close (near) to the institution, he/she may have more knowledge about the service than the one in far place.

Respondent possession of fixed asset (FIXDASSET): The variable was significant at 10 percent and positively related to microfinance credit service utilization. This implies that, citrus paribus, the odds ratio in favor of utilization of microfinance credit service increases by a factor of 0.131 for respondents having a resource considered as a fixed asset. The possible reason for this is that the

possession of fixed asset would help the individual to easily meet the collateral requirement for the service.

3.2. Constraints of microfinance service provision

The responses obtained from the sample respondents both in the rural and urban area were triangulated with the experts and authorities affiliated to microfinance service provision. The following constraints were forwarded and underlined by the participants of the focus group discussion and individual interview as the main challenges hindering microfinance service provision in the administration.

Problems related with institutional capacity building: The result of interview and focus group discussion indicated that institutional capacity building was not given attention due to lack of sufficient funds as referred from the budget of DMFI.

Client mobility: In the group discussion with the microfinance officials, client mobility is one of the major challenges affecting the service provision of the institution. As a result, the organization is being forced to prefer dealing with clients of fixed seat as security for their investment. It was mentioned that large number of clients were reported to change their residence after taking credit from the institution. They either change residence within a city or relocate to other places in search of better job opportunities. It was underlined that client mobility causes lending institutions to incur huge operational costs as costs for follow-ups and tracing are high.

Lack of capacity for screening defaulters: The institution has tried to decentralize the service across offices in all the kebeles especially in the urban part of Dire Dawa. With this expansion of the service across all the kebeles, the number of microfinance service users has significantly increased. Despite the increase in the number of beneficiaries of the service, the institution does not have a well-functioning system to screen the defaulters. In the discussion with the officials, it was clearly stated that with the increasing number of defaulters, a well-developed mechanism and capacity to screen defaulters has become imperative. The institutions have been already funding the same defaulters thereby affecting its loan books. It is, therefore, apparent that lack of such capacity is a constraint to the development of the microfinance service in the area.

Challenges in macroeconomic environment: In the discussion with the officials of Dire Dawa Microfinance Institution, it was found that working in the microfinance sector by itself is a challenge due to many

factors including the nationwide high inflation rate. The macroeconomic environment is very challenging and it requires the institutions to innovatively take the market conditions into account and quickly responds to the emerging changes.

Lack of incentives: The participants of group discussion both from the community and the institution clearly disclosed the limited capacity of Dire Dawa Microfinance Institution in comparison to the huge demand of the service by residents in the urban and rural areas. The importance of participation of other stakeholders in the microfinance service provision was also considered to be crucial for which there has been no established attractive incentive structure. Since this sector has given high priority in the development agenda because of its potential to create jobs and increase household incomes, there should be clearly defined incentives for participants in the sector.

Low level of awareness about the service: It was found out during the group discussion that the DMFI has no experience of promoting the service and there was no deliberately organized and strategically planned awareness creation mechanism that targets the promotion of the service. The same result was also obtained in the discussion with the community in which the majority of the participants did not know even the objective of the institution.

Staff turnover: During the focus group discussion with the officials and experts as well as the beneficiaries of the microfinance institutions, workers turnover was mentioned as the main challenge faced by the institutions. Significant turnover was underlined to affect the service delivered by the organizations. In discussion with the staff, the key reasons were identified to be low salary rate and absence of incentive package. During the discussion it was mentioned that at least one staff member has resigned both from main and branch offices during the previous budget year.

Lack of coordination among partners: In discussion with the experts and officials of DMFI, the participants mentioned that different NGOs have been using microfinance service as a means of extending revolving fund to their targeted beneficiaries. Despite increasing number of NGOs working on microfinance services, there is no coordination among the organizations. This created lending duplication in addition to challenges created to control defaulters.

3.3. Opportunities available for effective microfinance service provision

Favorable policy environment: The focus group discussion has revealed that the existing government policy offers an opportunity for the promotion of microfinance services as it is very supportive and allows the institutions to expand their service.

Improvement in saving culture: Different efforts are being exerted by government of Ethiopia to cultivate saving culture and thereby increase the saving rate. As part of enhancing saving culture, both promotional and institutional measures are being implemented. For example, the saving for housing is one form of the institutional saving promotion strategy being applied by the government. In the discussion with the community and the officials of DMFI, it was stated that the saving culture is improving and this is believed to be a good opportunity for the development of microfinance service in the area.

Changing attitude towards the service: In discussion with the beneficiaries and experts of DMFI, it was mentioned that the service is becoming effective in creating jobs and addressing the need of marginalized groups that can be used as social collateral. The experts of DMFI stated that the number of people benefiting from the service is increasing through time. This appears to be above the capacity of the staff members who serve the customers and as a result customers wait for long time to be served.

4. Conclusion and recommendations

This study was carried out with the objectives of identifying the determinants of microfinance service utilization as well as the associated challenges and opportunities by taking DMFI as a case. In the study, it was observed that education was positively and significantly related to utilization of microfinance credit service. Therefore, it is recommended that the microfinance institution has to find ways by which the uneducated members of the community can better benefit from the service. In addition, the institution has to strengthen its effort of promoting the service among the uneducated and marginalized parts of the community.

The other important factor identified to significantly influence microfinance credit service utilization was sex of the respondents. It was observed that microfinance credit service utilization is higher among the male respondents. Hence, the concerned authorities have to develop the strategies that promote the service provision among the female members of the community. Furthermore, the

microfinance institution has to develop an incentive package targeting female members of the community. Promotional activities focusing on female beneficiaries must ensure their active participation.

The area of residence was identified to significantly and positively influence microfinance credit utilization by the respondents. Therefore, the microfinance institution in the administration is strongly advised to design a strategy by which the rural community can better benefit from the service. In addition, DMFI should open satellite offices in rural kebeles of the administration so that the communities in the administration could benefit from the service. Also, distance from microfinance institution was negatively related to microfinance service utilization. This also indicates the need to open satellite offices at adjacent areas of beneficiaries to ease access to the service. It was found that lack of due attention towards institutional capacity building is the major constraints in microfinance service provision due to lack of sufficient funds. This indicates that microfinance institutions need to have a clear vision of targeting institutional capacity building with sufficient budget allocation. The organization is also advised to put in place a regular capacity assessment plan so that the identified gap could be addressed in a regular manner.

Client mobility was one of the major challenges affecting the service provision. This requires the DMFI to design and implement effective monitoring system so that the institution can take timely action. Moreover, staff turnover was one of the challenges faced by DMFI. Hence, the DMFI should put in place performance based salary structure as well as incentive package to retain qualified staff.

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Health Check-up of Commercial Banks in Ethiopia

Yonas Mekonnen, Arega Seyoum and Anteneh Gorfu
Lecturers, College of Business and Economics, Jimma University
E-mail: Mekonneny@gmail.com

Abstract: *One of the problems of Ethiopian commercial banks is their tendency to rely on mere ratio analysis in evaluating their financial performance. No attempt has been made to apply Capital adequacy, Asset quality, Management efficiency, Earning ability and Liquidity position (CAMEL) framework to check their performance. This study evaluated the performance of selected commercial banks in Ethiopia using a framework of CAMEL. Data were collected from sample audited annual reports of private and public banks for the years 2000-2010 which were selected using judgmental sampling technique. Descriptive and inferential statistics as well as multiple regression models were used to analyze the data. The result showed that the independent variables in CAMEL framework have highly explained the performance variables i.e., return on assets and return on equity. The private banks were in a better position than the public banks in terms of asset quality, management quality, and earning ability, while public banks were better in capital adequacy. However, liquidity position was high for both private and public commercial banks.*

Keywords*: Bank performance, CAMEL framework, health of commercial banks*

1. Introduction

Banks are the key financial institutions that provide financial services thereby highly contributing to the economy of a given country. The returns on asset are the indicators of the healthiness of these institutions. According to Flamini (2009), the banks in most sub-Saharan African countries have shown an increase to their return as compared to other banks in other developing countries. Banks in Ethiopia has also shown a great improvement in their return on asset (NBE, 2010). There were 15 banks in operation and 30 microfinance institutions, among which 12 were private banks and the rest 3 were state owned banks. In 2008, the Ethiopian banking industry covered 91.5% of the total asset share of the financial institution (EEA, 2011). Performance of banks in Ethiopia as stated by many researchers is in a good position compared to other African countries.

According to Access Capital (2010), Ethiopian banks were showing growth in terms of their profitability and dividend shares. Mostly the private banks in Ethiopia get their main revenue from collecting deposit, providing loans and foreign exchange. By the end of June 2010, the bank sector had capital and reserves of 5,064 billion Birr while having a loan portfolio of 21,385 billion Birr with 23.7% capital adequacy ratio (CAR) (Addis fortune, 2010).

There are different measurements of bank performance used by different countries. The international framework set by the bank for international settlement in Basel accord is used as a base in most countries to evaluate the financial performance of their banks. This framework sets the extent that banks should acquire capital i.e., at least 8% of the risk-weighted asset. The directives of the National Bank of Ethiopia (NBE) have adjusted its standard to the Basel standard stated above.

This paper attempted to assess the overall performance of Ethiopian banks in a comprehensive manner based on international and national standards with the objective to test whether or not the banks in Ethiopia meet the directives set with respect to financial performance. Specifically, the study attempted to check the financial health of banks and identified the strength and weakness of the banks. The study used the CAMEL framework and directive set by national bank of Ethiopia to evaluate the stand point of the commercial banks in Ethiopia.

2. CAMEL Framework Based Bank Health Check-up

Saidov (2011) stated that the role of the commercial banks is considered as a backbone to the survival of the economy of a country as their function intermediates between depositors (savers), borrowers, investors, and other stakeholders in the financial sector. Most commercial banks in different countries use different methods to evaluate their performance. In addition to the customary ratio analysis, banks use methods like CAMEL framework, GIRRAFE, EAGELS and PEARLS. Uyen (2011) pointed out that CAMEL can figure out the performance of banks in all aspects, provide a useful tool to examine the safety and soundness of banks, and mitigate the potential risks which may potentially lead to bank failures. Kouser (2012) also indicated that CAMEL framework is used for evaluating performance, ranking and assessing banks based on capital adequacy, asset quality, management ability, earning ability and liquidity position.

CAMEL rating has become a concise and indispensable tool for examiners and regulators of banks. This rating ensures a bank's health conditions by reviewing its different aspects based on various information sources such as financial statements, funding sources, macroeconomic data, budget and cash flow (Dang, 2011). Nevertheless, Hirtle and Lopez (1999) emphasized that CAMEL rating is highly confidential, and only exposed to the bank's senior management for projecting the business strategies, and to appropriate supervisory staff. CAMEL framework has five components: capital adequacy, asset quality, management quality, earning ability and liquidity position as elucidated below.

Capital adequacy: Capital adequacy or regulatory capital is determined to understand how well banks can have enough capital in order to sustain operational losses and show whether the banks are not

engaged in investment activities that increase risk to default. The capital structure of banks is usually highly regulated because capital plays a crucial role in reducing the number of bank failures and losses to depositors. When a bank fails, the highly leveraged firms are likely to take excessive risk in order to maximize shareholder value at the expense of finance providers (Olweny and Shipo, 2011). Capital adequacy for this study has been analyzed using two categories such as capital adequacy and leverage ratios.

Asset quality: Asset quality is one of the major factors that affect the health of banks. The quality of assets held by an individual bank has an impact on the performance of the bank. Exposure of credit risk, trends of non-performing loan and borrower's profitability determine the heath of the asset quality of a bank (Baral, 2005). In addition to assessing trends in classified assets, delinquent loans and credit concentrations, the asset quality component rating takes into account management's ability to underwrite and administer credits in a prudent and sound manner (Ilhomovic, 2009). To evaluate asset quality, the current study used two financial ratios i.e., loan loss provision to total loan and loan loss provision to total asset.

Management quality: Measuring of management quality is subjective by its nature. As such sound management is a key to bank performance but is difficult to measure. It is primarily a qualitative factor applicable to individual institutions. Several indicators, however, can jointly serve as an indicator of management soundness. Expenses ratio, earning per employee, cost per loan, average loan size and cost per unit of money lent can be used as a proxy of the management quality (Baral, 2005). For this study, two rations i.e., operating expense and interest expense ratios were used to measure management quality.

Earning ability: Earning ability indicates the ability of the banks in generating revenue by using assets, shareholders equity and the proportion of gross income. To assess the earnings performance of a bank, it will be helpful to look at a variety of ratios and measures including return on assets (ROA), return on equity (ROE) and profit margin (PM).

Liquidity position: Liquidity is defined as the capacity of financial institutions to finance the increases in their assets and pay their liabilities as these mature. Siegel (2007) defined liquidity as the ability of a firm to meet its short-term obligation. Banks can concretely manage their liquidity risk in many ways such as where it is exactly performed in the organization, how liquidity is measured and monitored, what measures banks can take to prevent or tackle a liquidity shortage.

3. Research Methodology

Quantitative data has been used to evaluate the performance of the banks using the last ten year data starting from year 2001 to 2010. The reason to focus on secondary data was that CAMEL framework mainly demands data from audited annual and published reports. Out of 15 banks which are in full operation, 8 were purposively selected based on three criteria i.e., capital size of the banks, year of establishment and rank of banks in 2010 African banks rating. Both descriptive and inferential statistics were used to analyze the data. In addition, multiple regression analysis was used to analyze the relationship between the independent variables and the dependent variables of health indicators (ROA and ROE).

Model specification: The multiple regression model was specified as:

$$ROA = \beta o + \beta_1 CAR_{1it} + \beta_2 LLPL_{it} + \beta_3 IER_{3it} + \beta_4 PM_{4it} + \beta_5 LDR_{it} + \varepsilon$$

$$ROE = \beta o + \beta_1 CAR_{1it} + \beta_2 AQ1_{2it} + \beta_3 IER_{3it} + \beta_4 PM_{4it} + \beta_5 LP1_{5it} + \varepsilon$$

Where ROA refers to return on assets, ROE is return on equity, βo is the constant variable, CAR_{1it} stands for capital adequacy ratio of banks at time t, $LLPL_{it}$ refers to loan loss provision to total loan at time t, IER_{3it} is interest expense ratio to loan of banks at time t, PM_{4it} is profit margin of banks at time t, LDR_{it} is liquidity position based on loan to total deposit ratio of banks at time t, and ε indicates the error term. Similarly, β1, β2… β5, represent the coefficients that infer the change to the dependent variable.

4. Results and Discussion

*Capital Adequacy***:** The capital adequacy ratio result showed that all Ethiopian banks fulfill the standard set by the Basel accord and national bank of Ethiopia as well as the sub Saharan African capital adequacy ratio benchmark. The minimum and the maximum average in the last ten years is 25% and 33%, respectively. This result is quite greater than the standard of minimum 5%. However, private banks average was below the industry average in contrast to the public banks. Based on the result computed from audited annual financial statement of the banks, all banks included in the study were highly leveraged banks.

Asset Quality: Asset quality was measured in relation to the level and severity of non-performing assets, recoveries and level of provisioning. Based on loan loss provision ratio, the result for Ethiopian banks showed a good position. Banks that give higher loan had higher loan loss provision ratio. The higher ratio indicates that the banks were participating in a more risky loan provision service. The default rate

of private banks was lower than that of public banks. Loan loss provision to total asset was used to see whether Ethiopian banks loan loss provision is kept in their account in proportion to their asset, so that they can have the ability to cover if default occurs. The higher ratio indicates the banks' ability to control any losses occurred on its asset. Nevertheless, higher ratios indicate that the bank is participating in a riskier business. If the bank kept a higher provision, it means the bank is expecting loan provided to customer has a high probability of not being returned. The result indicated that all Ethiopian banks loan provision to total asset is small compared to their asset size. Based on NBE status, the private banks were strong and the public banks are said to be satisfactory in their asset quality.

Management Quality: The lower the ratio the better is the performance of the manager in using the resource in generating revenue. The minimum expense spent by Ethiopian banks was 29% indicating an expense of 29 cents from 1 Birr earning generated by operating the business. Almost 87.5% of the Ethiopian bank managers were effective and efficient in spending in operation to generate revenue. Lower ratio shows how well the manager is effective in achieving its goal. Interest expense ratio shows how well banks manage the loan and this helps the bank to pay an interest expense. Higher ratio indicates that the financial health of the banks is worsening. This in other term indicates that the manager of the bank is not efficient in controlling its asset. The industry average of Ethiopian commercial banks in the last ten year showed that banks should spend 3% of the total loan provided as interest expense from the loan they are providing. In general, Ethiopian commercial banks are said to be effective and efficient.

Earning Ability: This shows how well manager make control to the asset of the bank and equity in order to get a better earning. Earning quality of Ethiopian banks in this study was calculated and analyzed by using three measurements including ROA, ROE and profit margin. The higher the ROA ratio, the better is the health of the financial institutions. The industry average of Ethiopian banks for the last ten years was 2.5, which was greater than the African standard (2.0). Hence, Ethiopian banks can be considered to be healthy banks implying that Ethiopian banks are very strong in generating revenue using their asset efficiently during the period. Regarding ROE, Ethiopian banks were strong enough in generating profit using their shareholder equity properly. On the other hand, the profit margin of Ethiopian banks were said to be in a good level. In general, the above analyses indicated that the earning ability of the Ethiopian commercial banks was at a good position.

Liquidity Position: The liquidity position of Ethiopian banks has been evaluated using two methods, liquid asset to deposit ratio and loan to deposit ratio. The result indicated that the Ethiopian banks included in this study were liquid. This is a good indication for the bank to attract more customers because customer will be free of fear to deposit in bank. The other is loan to deposit ratio which indicates institution's ability to cover withdrawals made by its customers. The higher the ratio of loan to deposit ratio, the weaker is the financial health of the banks. Ethiopian banks asset have the ability to cover the liability of the banks. So they are said to be strong and liquid banks.

Results of Regression Model: From the variables included in this study, capital adequacy, interest expense to loan and net income to gross income were significant in influencing the healthiness of banks as measured by ROA and ROE proxies. Loan loss provision to loan, interest expense to total loan as well as loan to deposit ratio affected ROA negatively where as capital adequacy ratio and loan to deposit ratio affected it positively. The study showed that 49.1% and 74.7% of the variations in ROA and ROE, respectively, were explained by independent variables.

5. Conclusion and Recommendations

This study showed that the commercial banks in Ethiopia had high non-utilized money which indicated mobilization of resources was difficult and showing low profit generation of the public banks. The managers of banks can alleviate the problem by setting different strategies like lending tied money to different investors by participating in non-interest business and in a business that helps in generating stable income. They should give due consideration to their capital adequacy as it plays a crucial role in reducing the number of bank failures and losses to depositors when a bank fails.

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Theme 2: Governance and Policy Dimensions in Loan and Saving

Deficiencies in Legal, Regulatory and Supervisory Frameworks of Saving and Credit Cooperatives in Ethiopia

Aregawi Tesfay and Kifle Tesfamariam
Mekelle University
Email: aronet2@yahoo.com, kifletesfamariam@gmail.com

Abstract: *Deficiencies in legislative and regulatory frameworks risk the growth and soundness of any financial institutions in any country. These need to be under the control of national level organizations like central banks, which are highly specialized in various aspects of finance. However, only a single cooperative legislation rule governs all saving and credit cooperatives (SACCOs) in Ethiopia. This legislation lacks the needed and specialized legislatives as well as regulatory and supervisory frameworks which are vital to meet the financial needs of cooperative members. Consequently, the cooperatives find themselves limited in growth, in mobilizing savings and in making loans to the lower-income groups whom they generally serve. Further, they are unable to participate fully in national financial markets, where their services could contribute to greater economic efficiency and expanded development opportunities for current and potential members. This paper examined the deficiencies in legal framework and policy for SACCOs in Ethiopia. More specifically, the study was focused on comparison of the available legal frameworks with the international standards with a view to find out the gaps for the successful functioning of the SACCOs. The benchmark for this purpose was the standards of the World Council of Credit Union (WCCU) and the experiences of various financial cooperatives from different developed and developing countries.*

Keywords: *Legal framework, SACCOs, WCCU*

1. Introduction

The history of Savings and Credit Cooperatives (SACCOs) establishment in Ethiopia dates back to 1957 with employees of the Ethiopian Roads Authority as the pioneers. Cognizant of the role of cooperatives, successive governments, took measures to promote cooperatives (including SACCOs), in both urban and rural areas, for their respective ends. But, their motives for doing so and hence the approach and principles and norms followed as well as the extent of intervention differed depending on the ideological orientations of the respective governments. The promotion, regulation and supervision of SACCOs were based on the Proclamation No.241/58. The basis of this proclamation is

associated with the then five year development plans to serve as a tool in the transformation of the smallholding agriculture.

After the overthrow of the monarchial rule, a socialistic system of centralized command economy has been constituted in which the promotion, regulation and supervision of cooperatives has been changed radically. A new cooperative proclamation was promulgated as No.138/70. According to this proclamation, different types of cooperatives were promoted, regulated and supervised under different ministries. Consequently, SACCOs were licensed and regulated by National Bank of Ethiopia (NBE). However, no effort was made by NBE to come up with specialized directives or legal environment to license, regulate and supervise SACCOs. Hence, the NBE used the general cooperative law/proclamation to perform its assigned duties and responsibilities pertaining to the operation of SACCOs. NBE was also constrained by its absence of branches or other delegates throughout the country to promote and provide technical assistance to SACCOs.

The whole approach of cooperative promotion has been changed with the adoption of the new economic policy (i.e., market economy). In particular, the incumbent government issued a new legal framework (Proclamation No. 147/1998 and 402/2004) which incorporated internationally accepted principles, values and ethics of cooperatives. Unlike the previous regime, all cooperatives types were promoted, regulated and supervised under the umbrella of a single authority. On the other hand, Proclamation No. 147/1998, failed to recognize that SACCOs are financial institutions despite the fact that they accept deposits and grant loans. They are not subjected to promotion, regulation and supervision that other formal financial intermediaries are subjected to. Thus, SACCOs were taken from NBE and made under the supervision of one unified authority.

Despite the ups and downs experienced, SACCOs are now expanding (in terms of number as well as membership) in both rural and urban areas. Many have formed unions (which have reached about 64) and some even have formed cooperative banks. Performance analyses of the sector indicate that at present there are 10,270 SACCOs active in the country with the total membership of 910275 and a saving amount of 1.2 Billion Birr. However, the sector provides less than one percent of the country's total financing, and many struggle with low-capacity management and governance (Kifle, 2012).

Therefore, for the SACCOs to perform, grow and achieve sustainability while at the same time prove to be the instruments of development and poverty alleviation endeavor; it is important to examine the current regulatory and supervisory document, weaknesses and challenges of saving and credit

cooperatives by reviewing pertinent literatures on SACCOs operation in the country and from international experiences.

2. Rationale for regulatory framework

Prudential financial regulation refers to the set of general principle or legal rules that aim to contribute to the stable and efficient performance of financial institutions and markets. These rules represent constraints placed on the actions of financial intermediaries to ensure the safety and soundness of the system (Chaves and Gonzalez, 1994). Thus, financial regulation should serve macroeconomic goals by ensuring the solvency and financial soundness of all financial institution. In addition, regulation should provide the client protection against excessive risks that may arise from failure, fraud, or opportunistic behavior on the part of the financial service institution. Finally, regulation should also promote efficient performance of financial intermediaries and competitive markets (Wright, 2000). Despite, the level of development of SACCOs, having regulation and supervision appears indispensable for their operational efficiency and effectiveness as it reduces risks that are likely to occur and function prudentially.

The theoretical review on the framework shows that having well organized regulatory and supervision assists the management effectiveness and efficiency of financial institutions. In connection to this, the regulation & Supervision can be undertaken by several different parties which includes: i) The general assembly ii) The board of directors or the management committee iii) The control committee or internal audit iv) External auditors are knowledgeable and competent v) External supervision by a special agency, central bank/its agents. In this context, Chaves and Gonzalez (1994) laid out points to be considered in the regulation and supervision framework design that include: the financial condition and structure of local microfinance institutions; their roles within the financial services industry; and the capacity of the regulating entities to administer external regulation and supervision effectively.

Specifically the regulation framework addresses the main risks: financial and governance. It addresses financial risks associated with quality and equity to liabilities; provisioning of non-performing assets; whether deposits will be accepted from members only or includes non-members, rules that prevent the concentration of shares, deposits or loans in the hands of few members. Regulation can address the governance risks in setting out the minimum qualification for board members, the fiduciary responsibilities of the boards, and audit requirements.

Moreover, to support its practicality and ensure the relevance of the regulatory environment, it should maintain the element of simplicity. The simplicity of regulatory requirement for small financial cooperatives emanates from assisting them to provide services to their members.

In order to ensure that financial cooperatives are adhering to the regulatory standards, there should be close supervision by various level external bodies. Though, different countries might follow one or more than one of the supervision approaches, generally there are four types of supervision systems. These are: (i) direct supervision; (ii) auxiliary supervision; (iii) delegate supervision; and (iv) self-regulation. Furthermore, in order to provide the required regulatory and supervisory functions by federations or unions, a provision should be made on the proclamation and equip them with professionals to undertake the intended activities.

3. Review of the current regulatory and supervisory Framework of SACCOs in Ethiopia

As the Federal Cooperative Agency (FCA) is the sole organization to regulate and supervise SACCOs, they are not considered as formal financial institutions. However, international experience has shown that the legal framework for financial cooperatives plays a double role such as empowering, enabling their development and encouraging growth and sustainability, and ensures that financial sector rules are appropriately applied, particularly to protect owners and depositors against poor financial management. Although, the financial cooperatives in Ethiopia are governed by the general cooperative proclamation/law, provisions are not made with regard to liquidity, solvency and risk management. In order to address this problem, a new organizational manual has been prepared by adopting World Council of Credit Union (WOCCU's) monitoring and evaluation system.

However, a problem has been encountered in its implementation due to various reasons. Most regulatory and supervisory activities were geared towards agricultural cooperatives, while other types of cooperatives receive little attention. Accounting and auditing framework and bylaws were mainly derived from this and made to comply with the anthem of the above rules and regulations. Hence, there is no clear demarcation between the financial and non-financial cooperatives. Here below are the major issues in regulatory and supervisory framework of SACCOs which are currently practiced and their critical limitation in Ethiopia.

Membership base: the membership in a primary society is restricted to persons living or working within a given area (article 6(2)) may have merit in the sense that the spirit of cooperation and sharing of

information is likely to be stronger. However, critical review of framework on this issues show that: (a) size of the respective organizations put limit on the size of the primary SACCOs members number-hence SACCOs in small organizations remains too small to achieve economies of scale; (b) membership ceases upon termination of employment or retirement or labor trimming. The trouble is that this is likely to create a short-term horizon among members and management of SACCOs in their investment decisions. For example, they are unlikely to be interested in long-term projects/investment by the SACCO, thus constrain themselves by limiting their engagement to short term opportunities. This later problem cannot be resolved by forming SACCO union since their union membership also ceases the moment they leave the primary SACCO.

Trust: It is essential to generate mutual trust among members of the society as a mechanism for saving mobilization for SACCOs in Ethiopia. Lack of effective and efficient regulation and supervision of deposit taking entities therefore not only puts doubt on the integrity of the cooperative system but also fails to generate greater trust within the community. It might have a devastating effect in the rural areas if it continues like this, where there is no close follow up and supervision by the Woreda office and having incapable management committee.

Operation areas: Both the federal (No. 147/1998, and the amended No. 402/2004) and regional (201/2008 of Tigrai, 134/2006 of Amhara and 111/2006 of SNNP) cooperative proclamations, and guideline did not define operational areas for SACCO unions. What is stated both in the federal and regional states' cooperative proclamations and in the guideline is that any two and more primary SACCOs can establish SACCO unions.

The SACCO unions in urban areas established on the basis of work areas and community based organization. The Addis Ababa SACCO union is established by employed workers' saving and credit cooperatives while Women self employment SACCO union is established by individual self employed members organized at community level. However, in the case of rural SACCO unions, they are established on the bases of geographical proximity which covers one Woreda in the minimum and up to eight Woredas as a maximum. Hence, this created inconsistency in area of operation in urban and rural areas that limits primary cooperatives potential to grow.

Performance standards for SACCOs: SACCOs in Ethiopia are characterized by poor performance and operational structures, weak internal control system and inappropriate financial technologies. Even SACCOs who have adequate capital have not diversified their services and operate the mercy of their

member interest. Besides, the regulating agency focuses on the constitution of reserves and dividends not on the financial regulation, the regulatory and supervisory framework clearly do not include performance standards. However, cognizant of this fact recently the federal cooperative agency (FCA) has tried to adopt standards commonly cited on the world council of credit union (WOCCUs) PEARLS system. As indicators the standard include P= Protection, E= Effective financial indicator, A=Asset quality, R= Rate of return and cost, L= Liquidity and S= Signs of growth and has 44 ratios that are grouped to measure.

However, there is no clear distinction as how these SACCOs are classified according to their level of development. Moreover, lack of adequate trained manpower in the area (finance) has constrained also to regulate and supervise SACCOs according to these performance standards. There is no specificity as to which type of SACCOs (their capital size, tier, etc) should be applied these rations categorically. The intention of FCA is to classify SACCOs in to various levels and determine the type and number of ratios to be applied accordingly. If we see some of the big SACCOs in Addis Ababa in terms of the amount of saving mobilized and the assets they own they have surpassed the minimum requirement to establish a commercial bank according to the banking law of the country. Their resources have been tied up and deposited in the commercial bank of Ethiopia. Therefore, classification of SACCOs according to their level of development appears indispensable. Categorization to different levels, viz., (i) sustainability stage; (ii) development stage; and expansion stage allowing distinct measurement parameters to differentiate them accordingly has not been done. Consequently all SACCOs are treated similarly irrespective of their level of development or asset size and others.

Member economic participation and the question of reserves and solidarity funds: The general cooperatives proclamation (section 33, No 147 of 1998) has determined that 30% of their met profit should be deducted and maintained as statutory reserve. The amount allocated for the reserve fund shall not exceed 30% of the capital of the cooperatives and it shall be deposited in saving account either for a reserve fund, or for the expansion of work. But this is not envisaged in reality/ this amount is not divisible. No SACCO has materialized this rule and no follow up and pressure is made from the regulating agency as such.

Audit of Saving and Credit Cooperatives: It is clearly stated in the proclamation that the appropriate authority shall audit or causes to be audited by the person assigned by the agency, the account of any cooperatives at least once in a year. But the agency faced a critical shortage of auditors to do the task.

The recent report of the agency (2010) has revealed that only 30% of the existing cooperatives have received auditing services. Here, we can see how the problem is serious and it hinders to investigate whether cooperatives are operating efficiently and provide the required services to members according to given standards. On the other hand, it is clearly stated in the proclamation that the inspecting personnel can be assigned by the agency. However, until 2006 there was no guideline on how inspection should be carried out. Even the new inspection manual is a generalist one without any distinction on the type of cooperatives.

Provisions for actions to be taken for loss of property of fund of the society: It is indicated on the proclamation that the auditor or inspector shall make a report to the managing committee of the agency. For any misconduct on the proclamation, it is indicated on the document that as to how measures can be taken but the authority failed to exercise due to limited capacity. Furthermore, the audit findings are not properly handled and made ready to take appropriate measures.

Uniform treatment/view of SACCOs: The SACCOs in the country differ considerably in terms of their stages of development and experience, size, degree of sophistication of their members as well as their potential and opportunities they face. Yet, they are subjected to uniform regulation which the advanced ones find unduly restrictive and inadequate. It might be necessary to introduce tiered regulation with differentiated rules that allow the large SACCOs to graduate to 'open' SACCOs which engage in various functions including accepting deposits from and lending to non-members, issuing securities, providing payments services, investing in equity etc. This however, requires commensurately rigorous prudential regulation and supervision that ensure their safety and soundness. Provisions related to licensing requirements, governance standards, safe guards (capital adequacy, reserves, liquidity, loans loss provisioning), disclosure and reporting requirements, inspection, limits on risk exposure etc. become crucial. Manner of distribution pertinent to financial cooperatives, power of the regulator and the manner it is to be institutionalized etc are only some examples that are not entertained by the general law.

Differences in interpretation of the cooperative legislation at various levels: In some cases, the demarcation of authorities between federal and the regional states are not clearly understood at all levels. A typical example would be the formation of cooperative federation. According to the FCA strategic plan, the country follows four tier vertical structures: primary, union, federation and league. In practice some regions like SNNP and Tigrai regions have established federation at regional level, but are not backed

by the respective regional level cooperatives law. If cooperatives continue to integrate vertically, the federations established or would be established at regional levels are expected to form another layer before joining the league or the league will be established including the regional level federations. We believe that such misunderstanding emanated from misinterpretation of the grand federal cooperative law and such confusions need to be clearly defined.

Absence of linkage between Urban and Rural SACCOs: SACCOs have a peculiar feature as they are basically financial institutions and hence cannot be lumped together with other types of cooperatives. As such they need an appropriate legislation as well as institution that guide their development and nurtures and promotes them. The urban and the rural SACCOs in different regional state (Oromia, Amhara, Tigrai and SNNP) of the country are being promoted under different authorities. The urban SACCOs are being promoted and regulated by the Municipality in the SNNP and Tigrai, while the same is under the mandate of the Trade and Industry in Oromia and Amhara national regional states. The rural SACCOs are however regulated and promoted by the regional agriculture and rural development bureaus. The separation of urban and rural SACCOs in terms of the authority to promote, support and regulate debilitate the financial cooperative movement of the country.

NGOs model: NGOs have played significant role in the formation of grass root SACCOs in Ethiopia. NGOs like Self Help, VOCA Ethiopia have played important role in initiating and organizing some of the rural SACCOs that are operating in the country today in the pursuit of their community development objectives. For example, as of 2012 in Tigrai regional state, there are 793 rural SACCOs registered with the Regional Cooperative Promotion (RCP). Out of these, 738 were formed by the RCP under the RUFIP program and 55 by VOCA Ethiopia. The driving motive behind the promotion of SACCOs by NGOs is poverty reduction.

However, NGOs did very little to give the necessary orientation on universally accepted cooperative principles and values and mode of business operation to SACCOs. This has not helped the primary cooperative to develop vision and frame the way forward to ensure both institutional and financial sustainability. In this regard, the regulatory framework could not clearly state the mandate and the play ground rule of NGOs.

4. Cooperative regulatory and supervisory frameworks in practice

Countries across the world have different levels of cooperative legislation. According to an ILO review (Frazzio, 1994) the legislations can be grouped as follows.

General cooperative laws that regulates all types of cooperatives in a country: this is the most common form of cooperative legislation found in Brazil, Côted'Ivoire, Germany, Hungary, India, Jordan, Kenya, Mexico, Spain, and Thailand. Such laws become operational only if they are supplemented by sector-specific regulations that must be adopted by the government. On the other hand, countries like Japan, Romania, and Uruguay, adopted separate laws for special types of cooperatives. Some others countries adopted specific codified law like civil code (e.g. Switzerland), the commercial code (e.g. Belgium, partly Czech Republic and Guinea) or the Rural Code (e.g. France), or as a part of company law (e.g. New Zealand). A few countries (China, Denmark, Norway, some states in USA) have not passed any special legislation on cooperatives, but this is exceptional. At the other extreme, there are countries such as Guyana, Italy, Mexico, Namibia, Spain, and Thailand that have included specific provisions on cooperatives in to national constitution.

ILO document recommended the following concerning the types of laws relevant to regulatory and supervisory frameworks. The various options outlined above have their own advantages and inconveniences, but the general view that has emerged over the years is that there is a need for a specific cooperative law which will permit the incorporation and registration of cooperatives and give confidence to those with whom they have commercial or financial dealings. Moreover, it is generally felt that the more satisfactory type of legislation covers cooperatives of all types, urban and rural, primary and secondary, and places them under the jurisdiction of a single ministry or governmental authority. This kind of arrangement, which of course does not prevent cooperatives from establishing working relations with other technical ministries, avoids the fragmentation of the cooperative movement itself, which may take place where cooperatives are registered under different acts and placed under the supervision of different public authorities with perhaps, heterogeneous policies.

Furthermore, the document underlined its remakes on new legislation to be passed or revised in the context of the developing countries. In the case of Ethiopia, cooperatives are being promoted based on the existing general cooperative legislation No. 147/1998 and the amended proclamation No.402/2004. The proclamation reflects the basic cooperative principles and values. This law is by far better than cooperative laws passed in the past. Besides, as federal country the federal states have their

own cooperative laws formulated which reflect the grand cooperative law of the country. However, the promotion of financial cooperatives requires specific law to be in place as the existing general cooperative law is not responsive to all the needs of financial cooperatives.

Similarly, the law does not provide for formation of cooperative banks, and insurances, which are vital to the development of SACCOs. Therefore, it is important to revisit the existing cooperative law. Similarly, the law does not provide for formation of co-operative in to banks, and insurances, which are vital to the development of SACCOs'. Thus, this is also an area of concern that should be revisited in the regulatory and supervisory framework of Ethiopian cooperatives law. Specific review on Bolivia and Ghana financial cooperatives show that, it is possible to adopt some of the provisions for Ethiopian SACCOs regulatory and supervisory framework. For instance, the Bolivian approach of regulation and supervision of saving and credit cooperatives has two cooperative laws, viz: (a) general cooperative law; and (b) saving and credit cooperative law. Furthermore, Bolivia has a multi-regulatory authority to regulate and supervise financial cooperatives. Unlike our general cooperative laws, Bolivia has separated laws. i.e., the general cooperative law and SACCO law. SACCOs are categorized in to "open" and "closed" type of cooperatives, where the open SACCOs are highly regulated and liable to conform to financial rules strictly. There is no excuse or exemption to SACCOs specifically to tolerate or bypass some of the prudential norms for being a cooperative financial institution.

The central points in this regard are adhering strictly to regulatory and supervisory framework irrespective of the type of financial institutions; definite/demarcated rules to conduct appropriate regulations by designated institution/agency, etc.; categorization of SACCOs, where the regulatory and supervisory function of the multiple regulating authorities will make it simple and easy. Ghana has a separate credit union law besides the general cooperative law. The law is prepared by Ghana cooperative credit union association (CUA) LTD. Some of the main points or provisions of the law are that the ministry of cooperatives is designated as a regulating body of credit unions of Ghana. In addition, unless authorized by the bank of Ghana to do so, no credit union shall accept demand deposits, and provide computerized banking services including the operation of Automated Teller Machines (ATM), telephone banking, internet banking, inter-credit union networking and smart cards.

Besides, CUA shall have the authority to develop and amend from time to time, financial standards as required for governing the operation of credit unions. The financial standards developed by CUA shall

not be binding and effective until the financial standards have been approved by the bank of Ghana and the supervision board, and notice of financial standards has been sent to the credit unions. Besides a credit union shall, in its operations comply with all financial standards. A credit union shall ensure that it maintains accurate and reliable accounting systems which include a record of all amounts received from, and payments made by members together with interest calculated there on if any, and shall prepare a monthly income statement and balance sheet that complies with generally accepted accounting principles and any guidelines or standards issued by CUA or any other body authorized by the supervision board.

The registrar appoints a liquidator with the advice of the bank and other liquidation of a credit union when, the registrar on examination has determined that the credit union no longer is in operation, or is insolvent and when the registrar has received a recommendation from the supervisory board that the credit union be liquidated or the registrar has received a request in the form of resolution approved at least by three-fourth of the members at a general meeting.

In this case Ghana has adopted a multiple authority regulation approach. Even though the ministry of cooperatives is designated as a regulating organization, the role of bank of Ghana in the overall supervision appears to be indispensable. Beside the CUA has a vital role in setting financial standards and provide financial services and part of the supervisory body. This has been revealed in the composition of the supervisory board, which comprises the bank of Ghana, ministry of cooperatives and CUA. There is no categorization of credit unions as open or closed type. Hence, they provide service to members and are not allowed to do business with non-members or the general public. The allocation of a clear cut duties and responsibilities among the multiple regulating and supervising institutions to prevent redundancy and duplication of activities is what matters in determining the approaches to be adhered. Unlike other central banks in some countries, financial standards, accounting systems, and audit requirements are to be set by CUA, while approval is received from the bank before its execution. Therefore, in multiple regulatory and supervisory approaches, an integration and interrelationship/interdependency of all stakeholders is required to conduct these functions properly.

5. Conclusion

From the review made so far, it is possible to conclude the following critical intervention points on Ethiopian regulatory and supervisory framework taking in to consideration the World Bank report.

Clarity on the powers and duties of financial cooperatives, and on regulatory and supervisory responsibilities is important. Legal frameworks should evolve with the growth of the financial cooperative sector. Regulatory requirements should reflect both the degree of complexity and degree of risk, and accompanied by a supervisory arrangement that works in a cost effective manner. A specialized regulatory framework with a hierarchical supervisory regime that takes into consideration the capacity of cooperatives and their future growth potential are appeared to be imperative. A good legal, regulatory, and supervisory framework is a prerequisite for sustainable growth and development of financial cooperatives, and hence for sustainable rural outreach.

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Theme 3: Saving, Loan and Development

Assessment of Saving Culture among Households in Ethiopia

Aron Hailesellasie, Nigus Abera and Getnet Baye
Lecturers, College of Business and Economics, Mekelle University
Email: aronsellasie@gmail.com, nassizeab@yahoo.com, gbg1976@yahoo.com

Abstract: *Empirical studies conducted over time have indicated that domestic saving and investment are highly correlated. It is recognized that saving is an important factor in economic development as it enables the conversion of resources into capital. Adequate savings are important for capital formation and have a direct impact on economic growth, and as such are vital for achieving macroeconomic stability. Despite this fact, saving rate of Ethiopia to GDP is 9.5% i.e., the poorest saving rate in the world as compared to China, Bangladesh and South Africa which have a better saving rate in the world. Hence, Ethiopia is characterized by poor saving culture which results in very small domestic savings available for investment. Knowing this fact, the country has envisaged in its five year Growth and Transformation Plan (GTP) (2010/11 -2014/15) to increase saving rate from 9.5% to 20% of the GDP. This study was carried out to investigate the root causes of poor saving habit in selected cities of Ethiopia. Data were collected from 544 households' selected using non-proportional quota sampling technique covering three major cities namely Addis Ababa, Hawassa, and Mekelle. The study employed descriptive statistics and chi-square tests to analyse the data. The result indicated that the main causes of poor saving were inappropriate saving products, lack of incentive to save, low income level, high level of debt, low interest rate and high inflation rate. Based on the findings, the study suggests that government and development actors should work to create awareness on saving among the society, stabilize inflation, implement forced saving, modernize and make saving institutions accessible. In addition, mechanisms of enhancing income generation and reviewing the saving interest rate regulation should be devised.*

Keywords: *Income, inflation, interest rate, saving culture, saving product*

1. Introduction

The business dictionary (www.businessdictionary.com) defines savings as the portion of disposable income not spent on the consumption of consumer goods, but accumulated or invested–directly in capital equipment, by paying off a home mortgage or indirectly through the purchase of securities. The other form of saving is through putting money aside in a bank or financial services provider, investing in a pension plan or in other forms of income–generating investments. Elbadawi and Mwega (2000) stated that empirical studies conducted over time have indicated that domestic saving and investment are highly correlated. It is recognized that saving is an important factor in economic development as it

enables the conversion of resources into capital. Strong saving performance is crucial for macroeconomic balance and for the maintenance of financial and price stability. Saving is beneficial for the economy as a whole and thus for the citizens of the country. Sekgobela (2004) stated that adequate savings are important for capital formation and have a direct impact on economic growth, and for achieving macroeconomic stability.

There is lack of adequate domestic savings in most developing countries and as a result more reliance is placed on foreign savings in the form of capital inflows. The issue of low levels of domestic savings is a major problem in developing countries due to high levels of unemployment, low wages, and engagement of a large proportion of the population in the informal sector as well as poor performance of the economy (Reddy *et al.,* n.d.). Prinsloo (2000) pointed out that the low level of domestic saving limits a country's rate of investment, restrains the rate of economic growth and makes the country more vulnerable to international capital shifts.

The continent of Africa has been identified as having an unsatisfactory growth in saving rates, which slows down capital accumulation. Africa's low saving rate influences the ability of banks to lend to small enterprises due to the limited availability of capital. Sub-Saharan countries are also facing low saving rate problem which is below 17%, so Ethiopia is not unique. Currently, only about six million households save money in financial institutions in Ethiopia with average of 875 Birr per year. Saving rate from GDP of Ethiopia is 9.5%, i.e., the lowest saving rate as compared to that of China, Bangladesh and South Africa which have better saving rates.

Hence, Ethiopia is characterized by poor saving culture which resulted in very small domestic savings available for investment. In the coming ten years, the industry sector is expected to lead the economy instead of the current agriculture-lead economy. In order to realize this, the industry sector needs to be promoted. For the sector to be promoted, it requires among other things adequate capital that is readily available for investment in the form of domestic savings. Recognizing this fact, the country has planned to promote saving habit among citizens so as to mobilize adequate saving. In the five years Growth and Transformation Plan (GTP) of the country (2003 -2007), it is envisaged to increase saving rate from 9.5% to 20% of the GDP. To achieve the GTP target, there is, therefore, a need to investigate the root causes of low saving and cultivate saving culture of households thereby ensure success in the economic growth. The overall objective of the study, therefore, was to investigate the root causes of poor household saving culture so that appropriate actions can be taken to promote

saving culture among households. More specifically, the study has attempted to assess household saving rate from the total income, investigated the saving habit of households, identified factors that affect household saving and explore alternative to promote saving.

2. Research methodology

The Study Design: This study was conducted in order to investigate the root causes of poor household saving culture in Ethiopia. It applied the descriptive type of research. As widely accepted, the descriptive method of research is a fact-finding study that involves adequate and accurate interpretation of findings. The study opted to use descriptive type of research considering the desire to acquire firsthand data from the respondents so as to formulate rational conclusion and recommendations.

Sampling Technique: The study was based on the data collected from 544 households who earn income either from worker compensation or self employment. It was carried out in two major regional cities (Mekelle and Hawassa) and Addis Ababa. Non-proportional quota sampling technique was used to allocate sample respondents and convenient sampling method was applied to select the sample respondents.

Methods of Data Collection and Analysis: To collect the data required, the study used both primary and secondary sources of data. The primary data were derived from the answers given by the respondents using a self-administered questionnaire. Both close- and open-ended questions were included to allow for in-depth investigation of household saving culture. The secondary data were derived from published and unpublished documents and literature related to the research problem such as journals articles, magazines, books and periodicals. The data were analysed by employing descriptive statistics and Chi-square test.

3. Results and Discussion

About 64% of the respondents saved a portion of their income whereas 35.9% of them did not save. This shows that the majority of the households in Ethiopia save their money. However, only 36.8% of the respondents saved their money in saving accounts, while the remaining preferred purchasing physical assets. However, they have very low habit of saving regularly. The study indicated that only 7% out of the total sample included in this study had regular saving and the remaining majority saved irregularly, in physical assets or never at all.

Two categories of factors were identified to be responsible for low saving habit of households in Ethiopia, i.e., internal factors (characteristics of households) and external factors. The internal factors of saving habit that emanate from characteristics of households were identified using chi- square test. The Pearson chi-square value for household age is greater than the table value that is 1.402 > 0.711, which showed age to be significant factor of the saving behavior of households. This implies that as households' age increases, their saving will decrease. This could be due to the fact that young aged households work more than the old aged households and hence earn more income that allows for more saving. There are various studies showing that age of households affects saving behaviors. For instance a study by Bovenberg and Evant (1990) showed that the higher the old aged population in the nation, the lower is the saving rate in the economy. Similarly a study by Foley and Pule (2005) concluded that the young and elder population saves more than the middle aged population. Another study by Attasion (1997) showed that individual's age is expected to be negatively correlated with saving.

The Pearson chi-square value for household gender is greater than the table value that is 1.429 > 0.00393. This shows that gender is a determinant factor of the saving behavior of households. The behavior and terms of saving of individuals' differs from one sex to another. The study revealed that female headed households tend to save better than male headed ones. The possible reasons for the observed less inclination to save by male households could be that male households are highly vulnerable to unexpected expenses because of the already developed life style by the community. They are expected to cover the principal household consumption and outside the family affairs in any social interaction. Besides, the personality of male headed households is open to extravagancy that is males maximize consumption simply because of their financial capacity. However, females are reserved from such extravagancy and they are financially well planned than males. Since saving is primarily a function of income the situation leads into low level of saving.

The Pearson chi-square value for household education level is greater than table value that is 5.679 > 0.1145. This shows that the level of education is a significant determinant of the saving behavior of households. The study revealed that as level of education of the households' increases, their behavior to save improves. With regard to frequency of saving, majority of households with low level of education practiced inconsistent and less frequent saving while households who were able to access and complete secondary and tertiary education practiced regular saving.

The Pearson chi-square value for household work status is greater than table value that is 5.478 > 0.103, indicating that work status is a significant factor for the saving behavior of households. The study revealed that self-employed households save more than employed and retired households. Because of continuous flow and more uncertain nature of their income, self-employed households have a keen interest for saving. Conversely, wage employees were relatively certain about the flow of their income and whatever the amount of salary they earn, they are less eager for saving.

The Pearson chi-square value of household housing status is greater than the table value that is 5.806 > 0.00393. This shows housing status is a significant factor for the saving behavior of households. The study revealed that households who did not have their own house saved more than those having their own house. This may be due to the fact that having a house in the future is what motivates people in the study area to save more.

The Pearson chi-square value of household income level is greater than the table value that is 14.522 > 0.1145 showing that income level is a significant factor for the saving behavior of households. The study revealed that as the income level of the households' increases, the saving rate also increases.

The Pearson chi-square value of household marital status is greater than the table value that is 7.003 > 0.352. This shows that marital status is a significant factor of the saving behavior of households. The study revealed that the saving behavior of widowed and married households is better than unmarried ones. Majority of unmarried individuals would spend unplanned expenditure mainly in favor of their own interest. Moreover, unmarried household financial planning scope is narrow and designed in self-oriented way. Because of these reasons their saving behavior is weak. But married households are morally and socially responsible for collective interest especially in financial sphere. Married household heads' financial plan is also somewhat broader in scope than unmarried ones. Because of this reason the married household saving behavior is better than unmarried ones but less than widowed households.

The Pearson chi-square value for household's number of dependents is greater than the table value that is 3.572 > 1.635. This shows number of dependents is a significant factor determining the saving behavior of households. The study revealed that when the number of dependents increases, the saving behavior of households increases.

The saving habit of households is also affected by economic and social factors. In this study respondents were asked to rank factors that affect saving behavior from different socio-economic factors such as attitude of the society towards saving, lack of appropriate saving product, lack of incentives to save, low interest rate, low income of the society and inflation rate. Among these, the majority of respondents ranked inflation as first factor that discourage saving. Next to that low attitude of saving habit of the society, low interest rate and low income of the society were ranked from second to fourth, respectively.

4. Conclusion and Recommendations

The saving culture of the society in the study area was found to be poor. The causes for the poor saving practice in this study include demographic, economic and social factors. The critical economic factors that affect saving culture include low interest rate of saving, lack of incentives to savers and high inflation rates prevailing in the country. The single most determinant of poor saving habit is attitude of the societies towards consumption than saving. The demographic factors that affect saving habit include age, gender, education level, work status, housing status, income level, marital status, and number of dependants.

Government has to take the major role in installing the saving culture through financial literacy. In addition, stabilization of inflation, implementing forced saving, modernization of and accessibility to saving institutions, stabilization of the income level of the society, and reviewing the saving interest rate are some of the major issues that should be emphasized by the government.

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The Role of Saving and Loan in Economic Growth of Ethiopia

Gebeyehu Raba
Planning and Research Office, Nib International Bank S.C.
Email: gebeyehur2010@yahoo.com

Abstract: *The objective of this study was to assess factors influencing domestic saving and evaluate the impact of saving and loan on Ethiopia's economic growth. Both descriptive and multiple regression analysis were applied on annual data sets covering the period from 1975 to 2011. The long-run co-integration method and the short-run Error Correlation Models were employed. The empirical results revealed that value of GDP per capita, financial deepening, investment, and accessibility of bank branches have positive influence while inflation rate and private consumption have negative influence on saving mobilization in Ethiopia. Other variables including gross domestic saving, domestic credit to state owned enterprises, domestic credit to private sector, and interest rate spreads have showed positive impact on Ethiopia's economic growth both in short-run and long-run. The findings of the study suggested that workable policy action should be put in place to improve the level of per capita income and degree of financial depth so as to accelerate economic growth.*

Keywords*: Economic growth, financial sector, loan, saving*

1. Introduction

It is widely accepted that financial sector development is an essential element for economic growth. Mobilizing domestic resources and its efficient uses helps a country to attain sustainable development and get rid of dependence on external resource for investment. In the realization of this notion, the issue of proper utilization and fair distribution of internal resources for development requires special attention in developing countries like Ethiopia. In connection to this, the Federal Democratic Republic of Ethiopia (FDRE) has issued remarkable financial sector liberalization policy in 1992.

Following the free-market economic policy, a number of privately owned financial institutions have been established and they are contributing a lot to the economy through their intermediary role of channeling financial resources to investment. Moreover, existence and strength of the private sector in an economy could smoothly facilitate the distribution of resource. Though workable and potential economic policies were issued by FDRE, the status and share of some macroeconomic variables such as domestic savings and domestic credits have showed low progress.

Ethiopia is one of the less developed countries whose economic performance is partly dependent on external resources. Domestic resource mobilization in Ethiopia needs an extra effort and coordination

with appropriate policy and right regulation to attain the desired development. Most of the financial institutions functioning in Ethiopia use deposits as an input for loan disbursement and allied activities. Therefore, mobilizing significant amount of savings and channeling it to productive investment through domestic credit is one of the major functions of them. This study deals with the roles and importance of financial sectors' loan and savings to the Ethiopian economy. More specifically, this study analyzed the key determinants of savings mobilization, examined the growth pattern of gross domestic savings and domestic credit, assessed the impact of savings and loan in promoting the socio-economic development, evaluated the savings and loan products functioning in Ethiopian financial sector, analyzed the legal framework governing financial activities in pre and post reform periods and identified prospects for better resource mobilization and credit access in the countries financial sector.

2. Savings, Loan and development in Ethiopia

Development of financial institutions contribute a lot to economic development in different ways particularly in developing countries including Ethiopia where level of monetization is very low. Strong and well structured financial sector facilitates economic growth by providing variety of services based on needs of the different economic sectors. Domestic saving mobilization by commercial banks and credit allocation functions stem from their role as the financial intermediaries in the domestic economy. The link between domestic savings, commercial bank credits and economic growth is not a new discovery**.** Its debate has a pedigree and is marked with conflicting conclusions. The difference in conclusion is due not only to differences in theoretical perspectives, but also to the way in which the link between them is taken into account by researchers (Orji, 2012).

There are some empirical studies that deal with impact of bank savings and bank credits**.** Some authors have found a significant positive relationship between savings and per capita income (Orji, 2012, and Mahmoud, 2008). Moreover, the study made by Tochukwu (N.d) revealed that a unit change in income growth will bring about a 0.3% change in private saving in Nigeria. Mahmoud (2008) found that degree of financial depth has significant positive impact on domestic savings and negative relationship between budget deficit and domestic savings in Egypt. Orji (2012) revealed significant positive relationship between per capita income and financial deepening on domestic savings. On the other hand, bank savings, bank credits and interest rate spreads significantly determine economic growth.

3. Research Methodology

Data Source and method of data collection: secondary data source was used for this particular study from published and unpublished documents, articles, proclamations, books and annual reports. In addition, the study used time series data from 1975 to 2011 to empirically analyze the role of savings and loan in Ethiopian economic growth. Data were also collected through observation techniques.

*Method of analysis: D*escriptive statistics and econometric model were employed to analyze the collected data. The descriptive statistics was used to summarize the qualitative and quantitative aspect of the study. The study applied co-integration method and Error Correlation Model to show the influence of policy and non-policy variables on savings and loan as well as economic growth in Ethiopia.

Based on the nature and aim of the study, co-integration and ECM models were adopted. Model adopted by Orji (2012) is modified to arrive at model of domestic savings in Ethiopia.

Model I

DSA=F (PCY, FLD, RIR, SIR, ADR, PRCN, I, FB) …… (1)

Where:

Domestic Savings (DSA): (is the total savings mobilized by financial institutions in Ethiopia)

Per Capita Income (PCY): (This is real GDP per capita income of people). Various economic theory and empirical evidences confirms that an increase in people income influences positively their savings capacity.

Financial Deepening (FLD): Financial deepening is the degree of financial depth or development represented by broad money (M_2) as a ratio to GDP. Financial deepening enhances the degree of monetization of the economy. Strong financial intermediation facilitates financial deepening. That is financial performance of different sectors of the economy are highly dependent on level of monetization. Based on this premises financial deepening have positive impact on savings.

Investment (I): Investment and savings are more interrelated macroeconomic variables that feed each other. In most cases savings support investment as an input. On the other side investment creates job

opportunity for people, adopts new technology, and improves standards of livings at national level. The expected sign here is positive.

Real Interest Rate (RIR): is the difference between nominal interest rate on savings deposit and annual inflation rate. Its impact on savings depends on the annual inflation rate of a country. In Ethiopia where double digit annual inflation rate is experienced recently, it impacts savings negatively.

Private Consumption (PRCN): gross private consumption, people uses their disposable income for consumption and savings. Even at the condition of absence of income people consume by borrowing or selling their assets to survive what is called autonomous consumption. That means consumption is compulsory needs of human life. High consumption implies less saving in the households and economy and vice versa. Here consumption has negative impact on savings.

Age Dependency Ratio (ADR): Demographic factors such as population age structure and dependency ratio influences savings behavior of the economy. Of the three stages in human life childhood, middle age or youth stage and old age, people consume more than they produce during childhood and old age. Age dependency ratio here is the ratio of the sum of people younger than 15 and those older than 64 to the working age population. Life cycle hypothesis assumes that when there are too many dependent people in the country, consumption tends to increase and savings decline. Therefore, the expected sign here is negative.

Saving Interest Rate (SIR): can be defined as an incentive or benefit made to savers on the money saved for various purposes. When saving interest rate is relatively high, people encouraged to save their money instead of hoarding or holding with physical assets. It has positive relationship with savings.

Fiscal Balance (FB): is the overall surplus or deficit as percentage of GDP. This variable helps to evaluate the Recardian equivalence on Ethiopia's budget deficit. With regard to the government budget deficit impact on savings, there are two opposing views whether it decreases or no effect on national savings. Owing to the long standing deficit trend in the country, the expected sigh is negative.

To make empirically verifiable, equation (1) has to be transformed into econometric equation;

$$DSA = \beta o + \beta 1PCY + \beta 2\ FLD + \beta 3\ RIR + \beta 4SIR + \beta 5\ ADR + \beta 6PRCN + \beta 7\ I + \beta 8FB + \mu \ldots\ldots\ldots\ldots\ldots \quad (2)$$

Where;

βi = Parameter to be estimated

μ = Error term which incorporates other determinants that are not included in this model

Equation (2) can be re-write as follows;

$$\Delta DSA = \beta o + \beta 1(\Delta PCY) + \beta 2(\Delta FLD) + \beta 3(\Delta RIR) + \beta 4(\Delta SIR) + \beta 5(\Delta ADR) + \beta 6(\Delta PRCN) + \beta 7(\Delta I) + \beta 8(\Delta FB) + \mu \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (3)$$

Whereas Δ =Difference operator

The model used to analyze the impact of gross domestic savings and domestic credit on economic growth can be specified as follows;

GDP =F (DSA+DCSE+DCP+IRS+EXR) --- (4)

Where:

GDP: Gross Domestic Product (proxy for economic growth in Ethiopia) at current market prices

DSA: Domestic Savings

DCSE: Domestic Credit to State Enterprises

DCP: Domestic Credits to Private sector (domestic credit disbursement by financial Institution to privately owned sector in Ethiopia)

IRS: Interest Rate Spreads (the difference between maximum lending rate and floor Saving interest rate)

EXR: Exchange rate (Birr per unit foreign currency)

$$GDP = \beta o + \beta 1DSA + \beta 2DCSE + \beta 3DCP + \beta 4IRS + \beta 5EXR) + \mu - - - -(5)$$

$$\Delta GDP = \beta o + \beta 1 (\Delta DSA) + \beta 2(\Delta DCSE) + \beta 3(\Delta DCP) + \beta 4(\Delta IRS) + \beta 5(\Delta EXR) \text{ ---- } (6)$$

4. Results and Discussion

4.1. Review of gross domestic savings in Ethiopia (1975 to 2011)

Ethiopia has experienced low domestic savings rate in the two successive regimes (the Derg & the FDRE) for 36 years. From 1974/75 to 2010/11, average saving rate as a percentage of GDP was 7.1%. During the Derg regime (1973/74 to 1990/91) the average percentage share falls down to 6.7% from that of 11.3% from 1960/61 to 1973/74 (EEA, 2011). This high decline was mainly due to the political instability, successive war and conflict in the regime. While during the FDRE regime, the gross domestic saving rate in the first decade (1992 to 2002) showed insignificant change and registered only 7.7% of the GDP. During the period 2003 to 2011, saving rate declined to 6.5%. Though the country has following the free-market economic policy for the last two decades and private sectors involvement have flourished, gross domestic saving rate did not show progress than that of former regimes. The major reasons for this are fluctuation of saving interest rate with declining trend, double digit inflation rate, low per capita income, underdevelopment of formal financial sector, high dependency burden, and limited financial services and absence of stock market, which are factors that discourage saving by citizens.

4.2. Deposit mobilization behavior

During the Derg regime, deposit mobilization was undertaken by public banks. At the end of the regime in 1991/92 all deposits (100%) was mobilized by Commercial Bank of Ethiopia (CBE) and the other two public banks were involved in making loan mainly to state enterprises. Following the fall of the regime, the issuance of free-market economic policy, and new banking business proclamation No 84/94, private banks were established and started banking business since 1994. In 2010/11, due to the competition between the fourteen private banks and three public banks', the deposit mobilization share of CBE fallen to 62.3%. The market share of the two public banks, Development Bank of Ethiopia and Construction and Business Bank was only 2.2% and 35.5%, respectively while the rest was mobilized by the fourteen private banks. Out of the total deposit by all banks in 2010/11, 50.4% was demand deposit followed by 45.9% saving deposit and 3.7% time deposit. This result indicated that on average Ethiopian banks pay interest expenses to only half of their deposit balance in the reporting period.

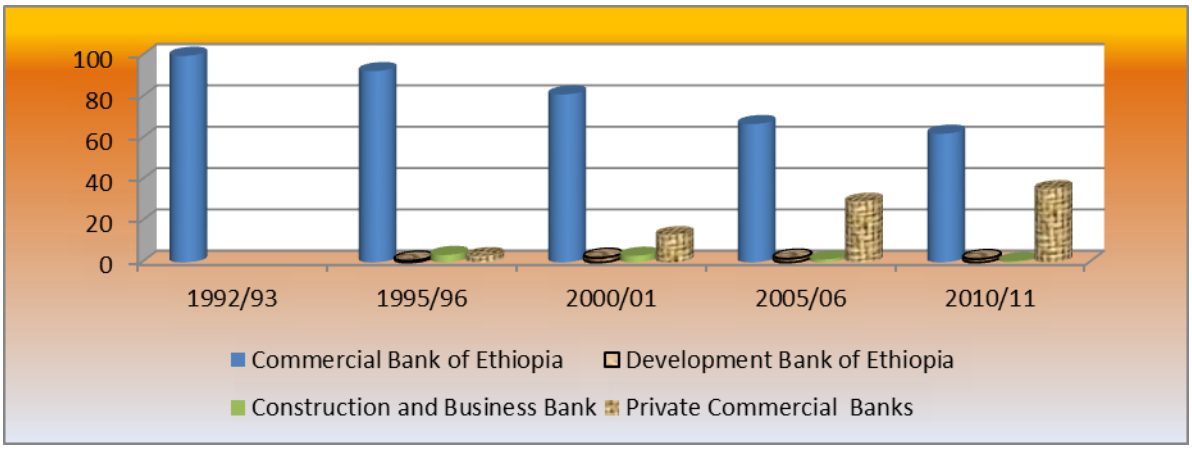

Figure 1: Composition of total deposits with Banks.

Microfinance Institutions (MFIs), though their number reached 31 in 2010/11, the total deposits mobilized by this institution were found to be only 2.7% of bank deposits. That is due to the MIFs' capacity of intervention in rural areas for resources mobilization. Because of this, their rural credit disbursement potential was also very low in reducing rural poverty.

4.3. Loan disbursement and collections

In this sub-section the study tried to compare loan disbursement and collection in three successive regimes (Imperial, the Derg and the FDRE regimes) in Ethiopia. During the imperial regime, domestic credit had different features with informal, semi-formal and formal sectors. According to Dejene (1993) 'credit during the pre-revolution in Ethiopia was characterized by concentration of bank operations in few urban centers (e.g. Addis Ababa alone accounted for 64% of the bank branches), high collateral and minimum loan requirements which favored big businessmen and the virtual neglect of the agricultural sector. By 1974 agriculture had received no more than 10% of the total bank credit in spite of the fact that the sector had accounted for more than 50% of the GDP. The interest rate varied from 4.5% to 9.5% per year depending up on the type of project and borrowers.

In the imperial regime landlords were potential sources of rural credit as loan by informal sector. Like modern formal financial sectors they had considered different factors. Prior to 1974, money lenders were often rich land owners. Following the nationalization of land, landlords have disappeared as a social class, and their roles as money lenders are being replaced by rich traders. The financial operations of money lenders are simple, cost-effective and flexible compared to those of banking system. Interest rates, which are never stated in the agreement made with the borrower are influenced

by the extent of personal relations, degree of risk involved, availability of funds in the community, length of the maturity period and extent of competition from the formal financial market (Mauri, 1987, p.15 cited in Dejene,1993)

In the Derg regime (1973/74 to 1990/91) the remarkable economic reform where all privately owned financial institutions were nationalized to provide financial services mainly to public projects, state farms and cooperatives, but gave little attention to private sectors. When the ruling party came to power in 1975 before nationalization policy was implemented, the share of domestic credit disbursement to public projects was only 34 %. In 1980 it was increased by more than two folds and reached 74.4 % as a result of the 1975 nationalization policy and 1978 Cooperative Societies Proclamation No.138/78. After a decade the figure declined to 60.2% in 1990/91. From 1980/81 to 1990/91 the average domestic credit disbursement to public project and cooperatives were constituted 72.1% of the total loan disbursement.

When disbursement by institutions is reviewed, in 1980/81 CBE made the highest (79.7%) followed by DBE (18.6%). By the end of 1990/91, the share of CBE fallen to 62.5% and the other two banks' share was raised to 28.7% by DBE and 8.8% by that of CBB out of the total disbursement. With regard to disbursement by sector, in 1980/81 the highest was to agriculture (29.5%) followed by import (18.4%), and housing and construction (12.7%). After a decade, 81.1 % of the total loan disbursement was made to three sectors; agriculture (49.9%) which is half of the total disbursement, housing and construction (17.1%) and industry (14.1%).

The issuance of economic reform and liberalization policy by FDRE put incredible change in the country's financial sector. One of this is the licensing and supervision of banking proclamation No. 84/94 and monetary and banking proclamation No. 83/94 resulted in re-organization and transformation of privately owned financial institutions in the country. The policy moderately removed the sector discrimination on domestic resources distribution especially in domestic credit allocation with establishment of private banks and some internal policy adjustment of state owned banks. It is noteworthy that at the first year of the FDRE, the share of private sector raised to 52.2% in 1992/93 from low level of 39.8% in 1990/91. Furthermore, in 2005/06 it reached 81.7%. However, the ratio was declined to 67.8% in 2010/11. The argument behind the fall is the long standing credit ceiling which was removed in 2011 and 27% of the NBE purchase on each loan and advance. From the total loan disbursement during FDRE regime, on average, 76% has made to private sectors.

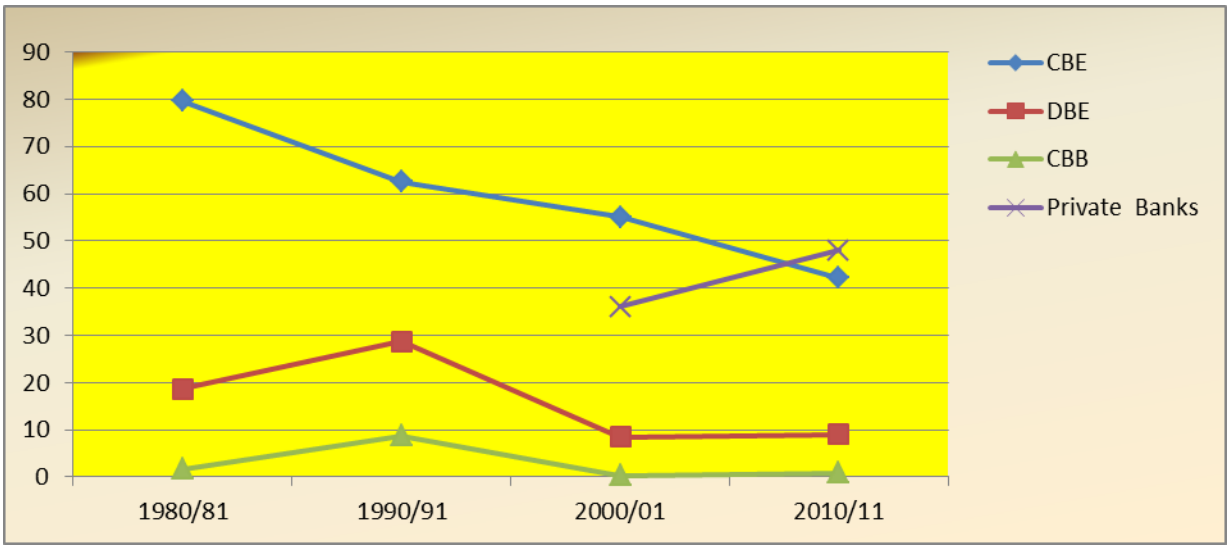

Figure 2: Total Loans disbursements by banks (%age).

Disbursement by sector as of 2010/11: the highest loan was disbursed to international trade (25.1%), followed by industry (24.8%), agriculture (19.5%), domestic trade (16%) and export. Though agriculture contributes the lion share to GDP and employment in the country, loan disbursed to this sector has been significantly declining from 49.9% of the total disbursement in 1990/91 to 19.5%, but loan disbursed to the industry sector was relatively satisfactory.

Loan collection feature of agriculture, industry and, housing and construction during the Derg regime was relatively low (66.9%, 80.6% and 91.7%, respectively) as compared to that of domestic trade, international trade, and import and export sector. In the post reform at the end of the review period, loan collection from the public sector was low compared with collection from private sector (85%). When institutions are compared, loan collection status of both the public and private banks showed increased performance in 2010/11 making about 91% and 92% for the public and private banks, respectively. The aggregate progress observed in loan collection by the banking sector is the result of proper policy and regulation by NBE and necessary analysis of pre-disbursement and close loan follow–up scheme of each bank.

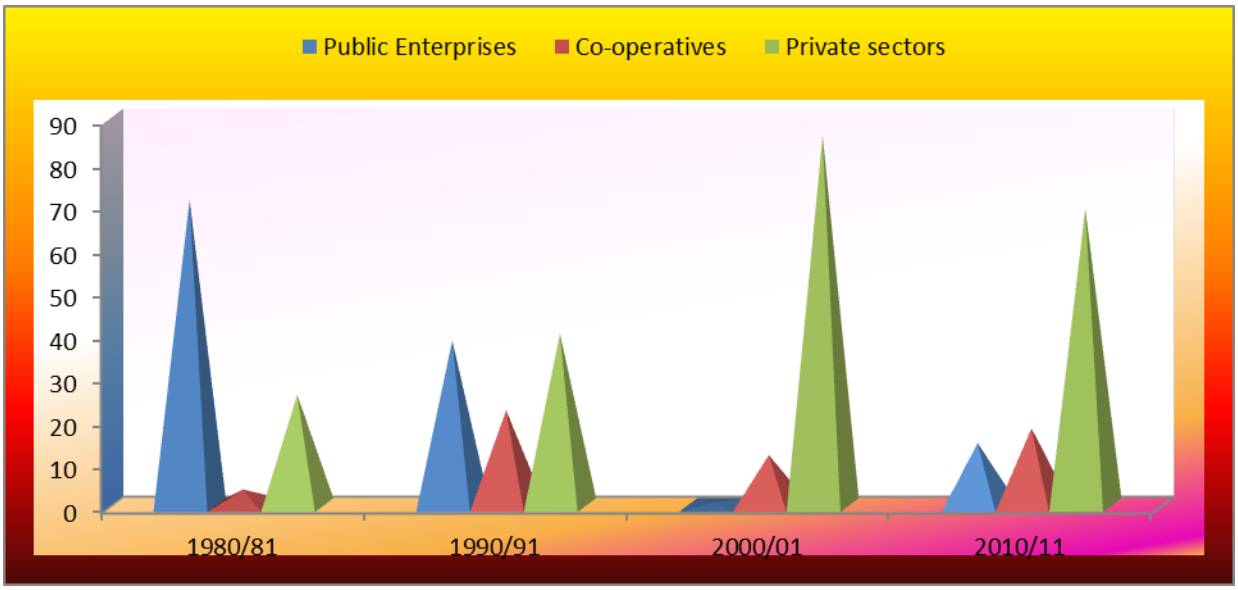

Figure 3: Credit disbursements by clients (%age).

4.4. Outstanding loan and advances

When outstanding loan and advances of Ethiopian banks is reviewed, it was found that on average, outstanding loan of private sector has escalated to 70.2% at 2010/11 from 24.4% in 1990/91. The market share of CBE was 46.3% followed by DBE (16.2%), CBB (2.3%) and the fourteen private banks shared 35.2% of the total outstanding loan and advance (Figure 4). When the outstanding loan status by sectoral distribution is reviewed, industry takes the highest (27.9%) followed by international trade (24.4%), and agriculture stood at third stage with percentage share of 14.3% (Figure 5).

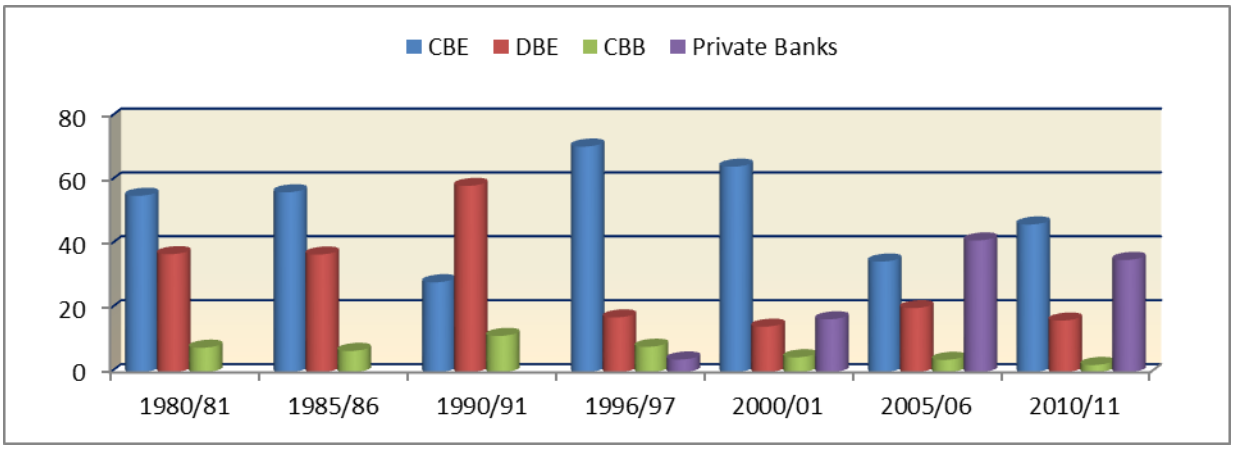

Figure 4: Composition of outstanding loans by Banks (%age)

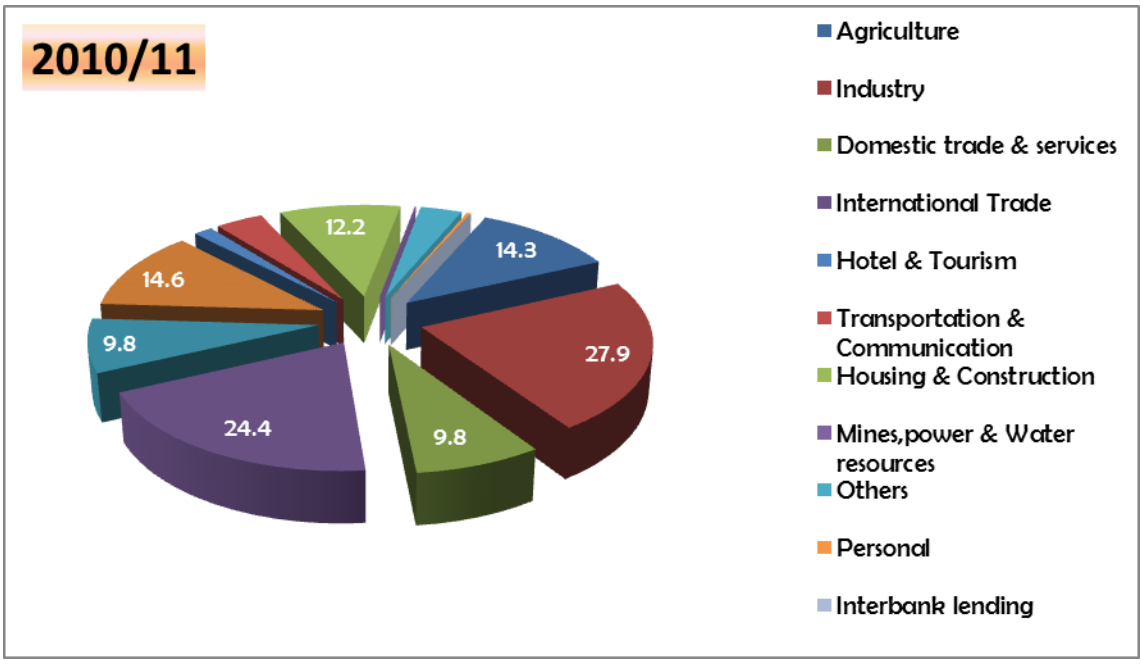

Figure 5: Composition of outstanding loans by Sector (%age)

In addition to the banking sector, all micro finances have disbursed Birr 7 billion to their members. The total small credit made by them constitutes only 9.5% of the outstanding loan and advances of banks and 1.4% of GDP in 2010/11. The share and magnitude of private credit has been increasing at increasing rate except for the recent few years. The outstanding loan made by all banks was 14.5% of GDP. However, the share is remaining stagnant for the past three decades which was 14.2% of GDP in 1980/81. Because of this low percentage of loan to GDP with different successive government, the accessibility to credit facilities remains constraint to the majority of business people and investors.

Savings and investment trends (1980/81 to 2010/11) as percentage of GDP: Several economic theories confirm that savings and investments are very interrelated macroeconomic variables. Figure 6 below depicted that during the last three decades the average gross domestic saving rate from 1980/81 to 2010/11 was 7.2% of GDP. On the other hand, the average gross fixed investment in the same period is 18.2% of the GDP showing wide resources gap of 11%. This witnessed the heavy dependence on foreign sources for investments. The average gross investment during the last two decades in Ethiopia was 20.5% of the GDP while the average gross domestic savings was 7.1% of the GDP at 2010/11 widening the gap to 13.4%.

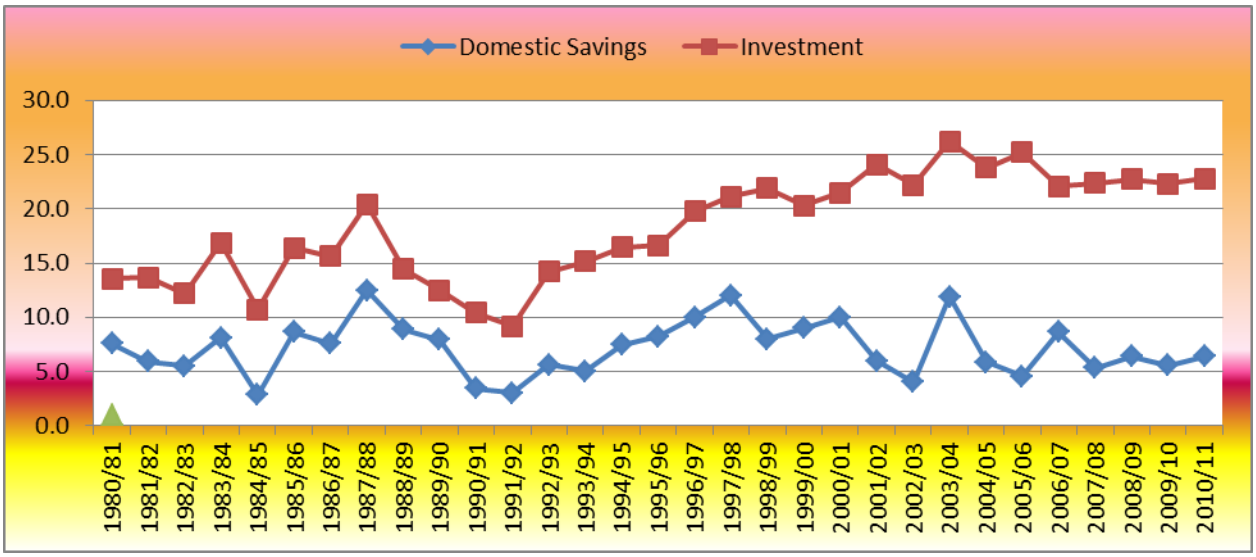

Figure 6: Domestic saving and Investment
Sources: NBE

Table 3 shows the OLS estimation of domestic saving as explained by different factors. The result showed that per capita income has positively and significantly (at 1% level) affected gross domestic savings in Ethiopia. Therefore, a unit increase in per capita income resulted in 20 units increase in the gross domestic savings in the country's economy. Hence, an increase in real GDP per capita income has positive and significant impact in mobilizing domestic savings in the short run and national economy in the long run. Financial deepening which represents broad money supply to GDP (M2/GDP) as an indicator of financial development or degree of monetization in the economy, is found to positively and significantly (at 1%) influence gross domestic savings. The result indicated that financial sector development in Ethiopia has significant and positive impact on savings at national level.

Real interest rate in Ethiopia affected domestic savings negatively and found to be statistically significant at 5% level. As a result a one percent increase in real interest rate leads to 161 percent decline in size of savings in Ethiopian economy. On the other hand, the saving interest rate positively and significantly affected savings mobilization at 1% level. Hence, raising savings interest rate increases size of savings in long run (Table 3).

Age dependency ratio was found to be negatively related to domestic saving which is significant at 10%. This significant influence of age dependency ratio on gross domestic savings might owe to the high population with low income. Besides, gross private consumption has showed negative but insignificant impact on savings in Ethiopia (Table 3).

According to this regression result, fiscal balance has showed insignificant positive relationship with savings in Ethiopia. That is government budget deficit has no impact on gross domestic savings. This result met the theory of Recardian equivalence which says when government budget deficit increases or public savings decline, people tend to save expecting future burden. Thus private saving is perfect substitute of public savings (Table 3).

Table 3: OLS result of Domestic Saving

Variable	*coefficient*	Standard Error	t-prob
PCY	20.18751	3.33413	0.000
FLD	524660.26	17130.37	0.005
RIR	-161.8218	72.26038	0.033
SIR	893.9582	379.0402	0.026
ADR	-7722.245	4279.09	0.080
PRCN	-29297.28	17990.17	0.115
I	-148.6301	284.5271	0.606
FB	253.3368	362.4995	0.490
ECM-$_1$	-080588	.353888	0.822
R^2 =85			

4.5. Error Correlation Mechanism (ECM)

Table 4 shows the empirical result of the error correlation mechanism of the immediate past (ECM_{t-1}). In the long run the error term adjust itself to equilibrium position at the speed of 8%. This low speed adjustment on savings mobilization is mainly due to the low degree of monetization in the economy, low saving trends, and other economic factors. From the Dickey Fuller test for unit root, residual is stationary at 1% level. The variables are co-integrated.

Table 4: Residual test

Variable	T-ADF	lag	t-prob
Residual	-3.682***	1	0.002

NB: indicates significance at 1%

The estimated OLS model results are depicted in Table 5. The gross domestic savings is found to be positively related to economic growth represented by gross domestic product which is statistically significant. A 1% increase in gross domestic savings leads to 5.3% in GDP in long run. The result confirmed the prior argument that states increase in savings promotes investment which in turn contributes to growth. Moreover, domestic credit to state owned enterprise was found to have positive and statistically significant influence on economic growth in Ethiopia. That is economic growth in Ethiopia is promoted by huge government expenditure financed by banks. This result is similar with prior expectation that government expenditure increases outputs which facilitate economic growth. In this case 1% increase in bank loan to state enterprise leads to 7% increase to Ethiopian economic growth.

The regression result showed that domestic credits to private sectors have statistically significant and positive impact on economic growth. This confirms the prior expectation that bank loans to private sector enhance investment in income generating activities which accelerate economic growth. Further, the result for interest rate spreads in Ethiopia showed no significant impact on economic growth which might be due to instability of saving interest rate (since 1992 saving interest rate has revised six times) which fluctuates the spreads over times. Exchange rate (EXR) was also found to have no significant impact on economic growth that implies Birr earned per unit Dollar have no impact on overall economic growth. In the long run the error term adjust itself to equilibrium position at the speed of 71.6%.

Table 5: Modeling GDP by OLS

Variable	coefficient	Standard Error	t-prob
DSA	5.28	1.54	0.002
DCSE	7.18	1.80	0.000
DCP	4.56	1.06	0.000
IRS	-2412.39	2810.15	0.398
EXR	-3664.42	2325.63	0.126
ECM_1	-0.72	0.21	0.002

$R^2 = 0.984$

5. Conclusion and recommendations

This study investigated determinants of domestic savings and impacts of savings and loan on economic growth in Ethiopia for the period of 1975 to 2011. The coefficients of determination (R^2) of the models were high which indicated that the explanatory variable were able to show the variation in the dependents variables. The empirical results shows growth in income, degree of financial depth, and saving interest rate have significant positive impact on savings mobilization whereas age dependency ratio and real interest rate have significant negative impact on savings in Ethiopia. Furthermore, domestic savings, credit for enterprises and credit to private sector were found to have positive and significant influence on economic growth in Ethiopia.

Based on the findings of this study, recommendations could be forwarded. The performance of saving and savings mobilization in Ethiopia with difference in successive regimes was assessed to arrive at efficient and workable savings mobilization strategies. Accordingly, the domestic savings performance observed so far is very low. This trend implies that, deposits mobilization becomes one of the confronting activities of deposit taking financial institutions in Ethiopia to redress the increasing demand for loan. They should design various deposit mobilization strategies considering the existing situation in the country. In compliance with National Bank of Ethiopia directives, the following statements could be commendable strategies for Ethiopian financial institutions:

- Provide adequate training to staff in order to raise their participation and awareness on importance of deposit mobilization to the institution as well as to the national economy.

- Gain customer trust by building strong relationship with potential customers to build strong deposit base that ensure safety, sustainability and profitability of the institution.
- Benchmark other financial institution's services and facilities to provide customer preference oriented services based on customer needs analysis.
- Increase customer access to funds by implementing modern banking technology and use best system such as ATM, POS and online banking services.
- Apply aggressive promotion through electronic media and printed materials to attract new deposit and maintaining close connection with depositors.
- Expand outreach by identifying different target markets such as potential farmers, associations, co-operatives, unions, NGOs, investors, pastoralists, wholesalers, retailers and others.
- Develop personalized banking relationship with potential depositors by appointing customer relationship manager; new product development based on customer needs and areas of interest.
- Offer variable saving interest rate, limited types of account, and time and amount of the deposit
- Introduce public awareness program particularly on fund usage in order to adapt them with banking habit and inculcate saving culture in the community and open sub-branches in rural areas where seasonality matter, like during grain collection and coffee harvest farmers have potential to save their money.

The macroeconomic policy in Ethiopia should develop the productive base of the economy to increase the real income growth of the people and minimize unemployment. This can be achieved since the country's GDP growth is from agriculture, but due attention should be given to the sector than what has been done so far by introducing or expanding modern commercial farming with proper fertilizer and improved seeds in order to increase agricultural productivity which in turn increases households income. In urban areas, government policy should gear its effort in creating jobs and income generating activities.

Financial sector development should be improved because degree of financial depth or degree of monetization significantly encourages savings. Where sound financial sector is available and appropriate domestic savings is mobilized, domestic credit could be available to the existing high demand which will accelerate economic growth.

In FDRE regime saving interest rate is revised six times and most of them were at declining trend. Saving interest rate analysis result showed strong relationship with domestic savings. Increase in saving interest rate encourages depositors. Therefore, government policy should give necessary attention to increase the floor saving rate. On the other hand, there is a need to improve the level of real interest rate as it significantly and negatively influence savings. The recent double digit inflation increases cost of living and uncertainty which limits ability to save. Necessary actions should be taken in order to reduce current inflation rate to single digit.

Demographic factors showed that age dependency ratio has significant negative impact on savings. This is due to the fact that Ethiopia is a populous country and low income per capita which increases dependency burden on households. Government policy should make more effort in family planning and management to all people in order to adjust things in line with the existing situation in the country.

The focus of development policy should pay more attention to domestic credit allocation as it is statistically significant in positively influencing economic growth. Both credit to state enterprise and private sectors have showed significant impact in the analysis. The capacity of financial sector should be improved in credit disbursement. As revealed by the result of the descriptive analysis, private banks are in trouble of liquidity risks. That is loan to deposit ratio of private commercial banks were only 52%. Nearly half of their deposit of funds was not directly invested on loan and advances rather 20% is held in reserve and liquidity account and 27% in NBE Bill purchase at very low interest rate. Here it is better if the percentage of NBE Bill purchase or reserve and liquidity rate is revised again in order to stretch the private commercial banks' hands in the magnitude of credit disbursement. Besides, government should introduce financial literacy education program like budgeting and planning mainly focusing on savings through school curriculum and mass media.

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Poverty Reduction Impact of Microfinance Institutions and Determinants of Client Success: A Case Study on Two Rural Kebeles of Fogera Woreda

Sefiager Alem
Lecturer, Department of Accounting and Finance, Addis Ababa University
Email: sefiager@gmail.com

Abstract: *Currently, there is a strong belief among development economists that microfinance interventions can have significant poverty reduction impacts through improving income generation, smoothing consumption and reducing vulnerability to shocks of their beneficiaries. Cognizant of this fact, much research has been conducted on the impacts of microfinance institutions (MFIs) on poverty reduction. In this study, attempts were made to assess the poverty reduction impact of Amhara Saving and Credit Institute (ACSI). Data were collected from a randomly selected sample of households from two rural kebeles of the Fogera district in two rounds of 2004/05 and 2008/09. The data were analyzed using the difference-in-difference model fitted to a quasi-experimental research design. Results indicated that borrowers in the study area were poorer than the non-borrowers which reflect the fact that ACSI targeted the poor households in its intervention. In addition, the results revealed that borrowers have experienced a significant increase in their income and wealth. The level of poverty reduction among the borrowers was higher than that among non-borrowers. The study, thus, concludes that microfinance interventions of ACSI had a positive impact in reducing the incidence, depth and severity of poverty.*

Keywords: *Difference-in-difference, impact evaluation, microfinance*

1. Introduction

Ethiopia is one of the poorest countries in the world. According to the 2008 statistical update of the UN, Ethiopia, with an HDI index of 0.389 ranked 169 out of 177 countries. The national incidence of poverty is 38.7 percent being 39.3 percent in rural areas and 35.1 percent in urban areas. The annual average per capita consumption in the country as of 2004/05 in terms of 1995/96 prices was Birr 1,256. The annual per capita consumption of the rural population by 2004/05 in terms of 1995/96 prices was Birr 1,147 whereas the per capita consumption of the urban population for the same period was Birr 1,909 (MoFED, 2005).

In an effort to tackle such a very high incidence of poverty, various strategies have been devised by the government of Ethiopia. In November 2000 the interim Poverty Reduction Strategy Paper (PRSP) was developed. Among the major items included in the PRSP was assessment of the nature and causes

of poverty in the country and analysis of the broad impacts of a reform program on poverty. Based on such an assessment the first phase of the PRSP, Sustainable Development and Poverty Reduction Program (SDPRP) was adopted in 2002 (MoFED, 2002 cited in Kassahun, 2007). Improvement of rural financial services through expansion of microfinance services was among the measures emphasized in the SDPRP (Kassahun, 2007). Credit to the rural population was meant to increase their utilization of modern agricultural inputs and diversification of livelihoods. The expected results were to increase income and hence reduce poverty in rural areas. Consequently, the government of Ethiopia allowed the establishment and operation of microfinance institutions by proclamation number 40/1996. Since then, 28 microfinance institutions have been licensed and are operating all over the country.

Even if a lot of debate is going on and critics are questioning microfinance's effectiveness as anti-poverty tool, there is an overwhelming evidence that microfinance does improve the living standard of the poor (Khandker, 1998). In Ethiopia, studies have documented the potentials of microfinance as an anti-poverty tool. Yet a lot has to be done in identifying the modalities under which the service should be provided under different socioeconomic settings. This study assessed the poverty reduction impact of ACSI and the underlying factors that determine the success of the ACSI clients in their efforts to step out of poverty.

2. Measuring poverty impacts of microfinance

There are contending views on the potential of microfinance services on poverty reduction. One view holds that microfinance and microcredit programs are not effective ways of reducing poverty (Khandker, 1998). Amongst the proponents of this view Bouman and Hospes (1994) argue that activities financed through microcredit programs have limited growth potential and no sustained impact on the poor. Rather they make the poor dependent on the program itself. In a similar line of argument, Buckley (1997) argues that the shift from less poor clients i.e. from microenterprises to small businesses, at least in Africa, has not been answered. Others from the Ohio school (Adams and Pishke, 1992) noted that such programs are usually highly subsidized by donors and the government, therefore even if they manage to reach the poor they are not cost effective means of alleviating poverty. In general, those that argue against microfinance programs, claim that microcredit and microfinance programs are social liabilities consuming scarce resources without significantly affecting long-term outcomes.

On the other side, proponents of the microfinance programs argue that institutional credit is important means of ending poverty (Yunus, 1983 cited in Khandker, 1998). In addition, they claim that they can overcome problems of credit imperfections (Khandker, 1998). According to this view, credit smoothes consumption and eases constraints in production raising the income and productivity of the poor. Khandker (1998) mentioned that microfinance institutions should exist because traditional banks and financial institutions fail to meet the needs of women and the poor hence alternative institutions should be developed to meet these groups` demand for financial services.

Measuring Poverty: Any poverty analysis cannot be effective without proper understanding and measurement of poverty. However, there is no single satisfactory measure of poverty that could be universally applied. Ravallion (1996) put this fact as poverty measures are contentious and prone to disputes. Yet various efforts were made to quantify poverty.

Sen (1976) summarized the issues in the measurement of poverty into two, identifying the poor among the total population and constructing an index of poverty using the available information about the poor. The former involves the choice of a criterion of poverty i.e. the selection of a poverty line and ascertaining those who satisfy that criterion, i.e. fall below the poverty line and those who do not. While the later deals with the issue of setting indices that properly indicate the incidence, depth and severity of poverty. Thus, setting a proper poverty line is an essential step in poverty analysis as this helps to determine the comparisons of interpersonal welfare and structure of the resulting poverty profile (Ravallion, 1996).

Conceptually, the term poverty remains grey and affected by a number of social subjectivities as a result of which there is no single method of setting the poverty line. The common approaches used to set a poverty line are the absolute poverty line, relative poverty line and subjective poverty line. World Bank (2005) defines absolute poverty line as fixed in terms of the standard of living it commands over the domain of poverty comparisons. This poverty line remains fixed over time with adjustments only for inflation and revisions in the threshold of real poverty.

One important issue in defining absolute poverty lines is the selection of a welfare indicator. In this regard, two approaches are commonly used in setting poverty lines i.e., the welfaristic and the non-welfaristic approach. The welfaristic approach or the utilitarian is based on attainment of a certain welfare or utility level. Sen (1976) argues that this approach presumes a comparable interpersonal utility functions and preferences among individuals though this might not be the case. The non-

welfaristic approach, on the other hand, defines poverty lines based on the basic needs or calorie requirements of individuals.

The other crude measure of poverty is the head count index (Ravallion, 1996) that measures the proportion of people from the total population whose income falls below the poverty line. This measure determines the percentage of people living below the poverty line and indicates the incidence of poverty in a given population. Sen (1976) has criticized this poverty measure as that which does not provide adequate information about the distribution of income among the poor and hence fails to measure the level of inequality among the poor. It is insensitive to the extent (depth) of poverty.

Poverty gap ratio is also a measure of the percentage of the mean short fall of the poor from the poverty level. It measures the extent of the income shortfall from each poor people. Unlike the head count index, the poverty gap index is insensitive about the number of people below the poverty line. This approach fails to measure the severity or intensity of poverty because it assigns equal weights to all the poor below the poverty line. This is a good measure of the depth of poverty in that it indicates the average resource required to pull the poor out of the poverty line. In association, the squared poverty gap index is the measure of severity of poverty. This is a poverty index measured by squaring the poverty gap index. Squaring the poverty gap index assigns larger weights for incomes farther away from the poverty line and as a result it takes inequality or distribution of income among the poor into account (World Bank, 2005). This is the only measure among the three that indicates the severity (intensity) of poverty in a population. The Foster, Greer and Thornbeck (1984) termed as FGT model considers all the above indices as a family of measures. The FGT model is specified as:

$$\text{Squared Poverty Gap Index } (P_{\alpha}) = 1/N \sum_{i=1}^{n} (G_{i/z})^{\alpha}$$

Where Z is the poverty line; n is the number of people earning income below the poverty line G_i is the poverty gap; N is the total population living in the community; and α is an FGT parameter which can have values of 0, 1, and 2. When α is 0 the model calculates the head count index, when α is 1, it measures poverty gap index and when α is 2 it measures squared poverty gap.

MoFED (2005) criticizes the welfarist approach as it does not provide a well-defined poverty line and justifies the non-walfarist approach as a more objective, suited and widely used measures in Ethiopia. The poverty line is, thus, defined as a threshold of per capita income or consumption level below

which an individual is labeled as 'poor'(MoFED, 2005). Two common welfare indicators applied are income and consumption. Though both have their own merits and demerits, consumption is a better indicator of welfare in developing countries than income.

3. Research Methodology

Sampling technique: A two-staged sampling procedure was employed to select the sample households included in the study. First, sixteen sub-areas in Fogera woreda where ACSI provides service were categorized into distant and near kebeles based on their distance from Woreta town, the major market place in the area. Then, one kebele from each category was randomly selected. Quhar kebele was selected from the near kebeles and Kidist Hana kebele was selected from distant kebeles. Then every third client was drawn using systematic sampling from the 2006 loan records of ACSI. To incorporate the long term impact of the credit, clients who have taken three loans were considered. Hence, clients who have started taking loans in 2006 were considered.

Thereafter, a numerically comparable number of non-clients from each of the kebeles were randomly selected from the records maintained by the development agents. In this study clients refer to the respondents who were the borrowers from ACSI and non-clients refer to respondents who have never borrowed from ACSI.

Table 1: Sample size

	Clients		**Non-Clients**	
	Quhar	Kidist Hanna	Quhar	Kidist Hanna
Total population	104	108	984	1020
Sampled Households	27	29	26	27
Percent	26%	27%	2.7	2.7

Data sources and methods of data acquisition: The study has used both primary and secondary data sources. Primary data were collected through structured questionnaire. Respondents were asked about various household economic indicators such as income, wealth, and expenditure at two points in time, i.e. in 2005 and 2006 based on the recall of the respondents. Village level data such as access to infrastructure were also collected through key informant interview in the Woreda Agriculture Bureau and employees of ACSI and focus group discussion was conducted with both household and key

informant groups. In addition, secondary data were collected from statistical reports of the CSA, Bureau of Rural Development and Bureau of Finance and Development in Amhara National Regional State.

Methods of Analysis: In impact assessment studies controlling for factors that could generate bias remains a basic task. Khandker (1999) noted that bias in assessing program impacts arises from differences in the capacity of individuals, households and village. This is technically termed as heterogeneity and required to be controlled in assessing the impact of intervention program such as credit. Quasi-experimental research design with a difference-in-difference (DID) method was highly recommended in impact assessments and this method was employed in the current study too.

DID procedure employs analysis of data from two separate periods, one before the program intervention and the other at the time of measuring the impact. Similarly, the analysis makes two comparisons i.e. comparisons across time and comparisons across groups (treatment and control groups). This method is called a difference-in-difference technique. This analysis is reasonable because there are no exogenous limitation for being a member of ACSI i.e. membership is self-selected. In addition, ACSI's program placement is not biased by accessibility of roads and infrastructure.

Based on Khandker et al. (2006) the current study used the semi-logarithmic reduced form of income equation conditional on credit as indicated below.

$$\ln Yij = \alpha H_{ij} + \beta V_j + \gamma C_i + \mu_j + \eta_i + \varepsilon^y ij$$

where Yij is the per capita expenditure of the i-th household living in j-th village, H is set of observed non-credit household characteristics, C is an indicator of credit at the household level, V represents village level characteristics, μ is unobserved village-specific heterogeneity, η represents unobserved household characteristics, and ε is a vector of idiosyncratic errors distributed across households.

In order to solve the effect of unobserved heterogeneity bias on the outcome of interest, a panel data regression with household level and village level fixed effects is determined. If this is to be valid there must be a variation in the credit status over time in the sample households. The simple way to proceed is if the data allow a clean division between periods where the household becomes a member (t=1) and when it is not (t=0). This allows a straight forward before and after comparison of welfare between clients and non-clients. Therefore, including the time factor in the above model results in the following model specification:

$$\ln Yijt = \alpha Hijt + \beta Vjt + \gamma Cit + \mu j + \eta i + \varepsilon^{y}ijt$$

Taking the difference over the four-year period of the study, one would obtain the following difference equation, where the sources of endogeneity (i.e. the unobserved village and household characteristics, and assuming these characteristics do not change over time) are dropped out. In this case, the simple OLS can be applied to the following differenced equation (difference in time equation) to estimate unbiased effect of the credit (γ):

$$\Delta \ln Yijt = \alpha \Delta Hijt + \beta \Delta Vjt + \gamma \Delta Cit + \varepsilon^{y}ijt$$

Where ΔlnYijt is the difference in income or consumption across time, ΔHijt the difference in the observed household characteristics across time, ΔVjt is the difference in village-level characteristics over time, ΔCjt is the difference in the credit status, and ε^{y}ijt overtime.

Then, to see the effect of credit on welfare the above difference in time equation can be formulated to a difference-in-difference equation for the clients and non-clients, for the treatment and control group, for the two periods as:

$$[\Delta \ln Yij^{B} - \Delta \ln Yij^{N}] = \alpha[\Delta Hij^{B} - \Delta Hij^{N}] + \beta[\Delta Vj^{B} - \Delta Vj^{N}] + \gamma$$

In theory, if the data are from a randomized experiment, the expected values of the bracketed terms on the right-hand side of the above expression will collapse to zero, leaving only the credit impact coefficient, γ, which is the estimate of the credit impact. However, if the data are not from an experiment, taking the expectation does not similarly collapse the right-hand-side bracketed expressions, the estimate of γ, will be biased upward or downward depending on how the expression on the right-hand-side turn out after the differences are performed. Khandker et al. (2006) suggested differentiating of the above equation with respect to C, where C is a dummy C=1 for clients and C=0 for non-clients. The estimated γ from the above equation then is:

$$(1/yijt)\partial\, \Delta \ln Yij / \partial \Delta Cit = \gamma$$

This equation estimates the elasticity coefficient of taking credit on welfare as measured by per capita expenditure. The other part of the paper analyses the relative importance of household and village level characteristics on the welfare (increase in per capita expenditure) of clients. To this end, a multivariate regression analysis is employed. Here, household income differential conditional to

program participation is regressed over household and village level variables. The model is specified here below:

$$\Delta Yij = Xij\beta_y + Vj\gamma_y + Cij\delta + \alpha\mu j + \theta\eta ij + \varepsilon ij^y$$

Where ΔYij is the difference in the income and/or per capita expenditure of a household, Xij is a vector of household characteristics, $V\gamma_c$ is vector of village level characteristics, Cij is level of participation by the borrower, β, γ and δ are unknown parameters, $\alpha\mu j$ and $\theta\eta ij$ are unobserved village and household specific variables, respectively with parameters α and θ, and εij^C is the error term uncorrelated with the regressors. The parameters for the unobserved household and village level effects are assumed to be zero and uncorrelated with the same parameters that determine demand for participation.

Dependent Variable

Change in per capita expenditure: This measures the change in the per capita expenditure of households from 2005 to 2009. The per capita expenditure of households is calculated using the cost of basic needs approach that is the total food and non-food expenditures of a household divided by the adult equivalent units in the household. The rationale for using expenditure instead of income is due to the fact that income usually lacks objectivity and reliability is difficult to remember when generated from self-employment and many households have a tendency to under or over report their income (World Bank, 2005).

The classification of households as poor and non-poor has been made using the poverty lines set by 1995/96 HICE study (MoFED, 2006). The poverty lines set in this study are Birr 806.27, 1,075.03, and 1,343.78 per capita expenditures for extreme poverty, poverty, and moderate poverty, respectively. This, hence, requires converting the per capita expenditures determined based on 2005 and 2009 prices to 1995/96 prices. In converting the expenditures, the food and non-food indices of the Amhara Region State are used.

Independent variables

Table 2: List of explanatory variables in the model

Variable	Measurement
Age	Ratio scale that takes age of the household age
Mean Age of the household	The average age of all the household members
Household size	Ratio scale measured in household equivalent units
Education	Education level of the household head
Level of participation with ACSI	The total cumulative loan taken from ACSI (This is used for the second regression only)
Income	Expenditure of the household in 1997 E.C. in terms of 1995/96 prices.
Land holding size	Ratio scales that measures land ownership in hectares
Oxen ownership	The number of oxen owned by the household.
Livestock Ownership	Ratio scale measured in tropical livestock units
Engagement in non-farm activities	Dummy variable 1 if the household engages in non-farm activities and 0 otherwise.
Infrastructure	Ordinal scale 2 if the village has access to paved road, 1 if the household has dry weather road, 0 if no access to road
Irrigation	Dummy variable 1 if the village has access to irrigation and 0 otherwise
Distance from Woreta	Dummy variable 1 for Quhar (near) and 0 for Kidist Hana (distant)

4. Results and Discussion

Age and mean age of the household: Table 3 below presents the age profile of the household heads and the mean household age of the respondents. Age of the household head captures the effect of life-cycle such as, experience, asset accumulation, family formation and other inter-generational differences among the respondents. As the caretakers of their family, household heads in rural household have a significant input on household decisions. As an individuals' maturity improves with age and the optimality of the above household decisions also improves. The mean age of the household heads of the total respondents is 43.71 years. The mean ages of the two sample groups are 44.75 and 43.38 years for clients and non-clients, respectively. Even if the clients are slightly older, the age difference between the two groups is not statistically significant (t value=0.300; P value=0.585).

The mean ages of the household members of the respondents is also summarized in Table 1. Mean household age indicates the dependency ratio in a household. Households with very low mean age or very high mean age have child and old age dependency ratio within the household. The mean household age of the two sample groups are 25.38 and 21.89 for clients and non-clients, respectively. There is no significant difference in the mean household ages between the two sample groups (t value=0.10; p value=0.920).

Table 3: Demographic Characteristics of the respondents

	Clients	**Non-Clients**	**Total**
Household age	44.75	43.38	43.71
Mean age of the household	21.89	22.03	21.96
Household size	5.61	5.40	5.55

Household Size: Household size has two opposing implications. On one hand, larger household size implies more consumption hence can affect a household's welfare negatively. On the other hand, rural households depend primarily on family labor, consequently households with larger members tend to have higher productivity, particularly in peak times such as weeding. Families with limited family labor are forced to hire labor. The salary, usually in kind, takes part of the household's yield. Besides, there is a possibility of lower productivity due to motivation problems (Stiglitz, 1993). As opposed to this, families with larger family size can earn additional income by sending a family member to work in families with scarce labor. Another important demographic variable that can affect a households' welfare is household size.

During the focus group discussion the participants have mentioned that boys as young as 13 or 14 can earn up to 7 madiga (1 madiga is about 30 kgs) of crop by working as a cattle keeper in recently married or very old couples, who has very limited labor available. Yared (1999) argued that boys and girls as young as 10 years old can have significant effect on the overall productivity of a household as they can help in some chores (such as keeping cattle or babysitting), which relieves adults to focus on important tasks during peak periods such as weeding. The focus group participants' rated having more children (larger households) positively. The sample respondents in the study have a mean household size of 5.55. The non-clients have mean household size of 5.40 and clients have a mean household size of 5.61. The difference between the two groups is not statistically significant.

Education: From the total respondents 58 (44.4%) of the household heads are illiterate and the remaining 64 household heads are literate. Out of the 64 household heads 67.2% (43 household heads) can only read and write, 21.9% (14 household heads) have attended primary education, and the remaining 10.9% (7 household heads) have reached to the mid school (5-8th grade). None of the respondents has education beyond 8th grade.

The inter group comparison indicates that clients have the higher percentage of illiterates with 55.4 % (31 households) illiterates. The comparable figure for the non-clients is 43.4% (23 households). Fifteen (26.8%) and 22 (41.5%) of the household heads can only read and write among the clients and the non-clients, respectively. Ten of the clients have formal education of which 7 (12.5%) are at the elementary level (1-4th grade) and the remaining three (5.4%) have reached the junior level (5-8th grade). From the non-clients eight household heads have attended formal education, of which 6 (11.3%) are 1-4th grade and the remaining 2 household heads (3.8%) have reached the junior levels (5-8th grade). In general, there is no significant difference between the education level of the clients and the non-clients, but in terms of the ability to read and write the non-clients are significantly better than the clients. ($\chi 2 = 5.037$ $p < 0.05$).

Table 4: Education status of the sample respondents

Relationship with ACSI	Those who can at least read and write	Education level of the house hold head				T
		No	Read and Write	1 - 4th grade	5 - 8th	
Clients	25 (44.6)	31(55.4)	15(26.8)	7(12.5)	**3(5.4)**	5
Non-	30(56.6)	23(43.4)	22(41.5)	6(11.3)	2(3.8)	5
Total	64(52.5)	58(47.5)	43(35.2)	14(11.5)	7(5.7)	1

Land holdings: The mean land holding of the respondents is 1.18 hectares (standard deviation=0.6673) in 2004/05 and 1.13 hectares in 2008/9 (Standard deviation= 0.572). As can be seen from Table 5 the mean land holding of the respondents declined over the four year period from 2005 to 2009 by 4.2 percent (t value=1.856 p, value= 0.066).

Table 5: Land holdings (in hectares) of the respondents

	2004/05		2008/09		Total	
	Clients	Non-Clients	Clients	Non-clients	2004/05	2008/09
Mean land size	0.96	1.45	0.94	1.35	1.18	1.13
Standard deviation	0.495	0.782	0.462	0.640	0.667	0.572
t value	3.608		3.833			
P-value	0.001		0.001			

The reasons for the decline are inheritance given to children when they get married (58.8%), taken by government for common resources such as forests and grazing land (23.5%), land sales (1.6%) and given to a family member other than children (0.8%). This implies the significant role inheritance plays in the landholdings of the households in the study area and the long term effects of household size in land holding of the households. Besides, there is a convergence in the land holding of respondents. The non-clients have larger land holding size than the clients in both periods. In both periods the average land holding of the non-clients is significantly higher than the clients. The percentage decline over the period is 2.13% and 7.14% for the clients and the non-clients, respectively.

Livestock ownership: Ox is the major source of draught power in Ethiopia. It is a major source of family labor. As a result the number of oxen a household owns significantly determines the household's productivity and wealth status. A complete farmer is one who at least has a pair of oxen. The participants during the focus group discussion have emphatically expressed the importance of having a pair of oxen.

The importance of oxen can be seen at different level of oxen ownership. A household with no ox at all cannot plough its land unless it rented oxen from other farmers who own more than two oxen. As has been pointed out by the focus group participants the decision taken by most farmers with no ox is either to rent their land or give their land for share cropping (*siso* as locally called). Farmers with only one ox however need not rent their land rather most of them either rent an ox or share their ox with a household with one ox. This is locally called *mekenajo*. Both of these have significant implication on the yield and productivity of the households. Renting out and share cropping take significant portion of the produce from the household, and sharing oxen (those in *mekenajo*) results in significant reduction of productivity as they lose significant part of the peak ploughing time since they have to share the time with other farmers.

On the other side, farmers with more than two oxen can earn extra income by renting out their oxen. In addition, these households do not face any risks of missing the peak ploughing period. However, households with more than two oxen in the study area are limited due to the large costs associated with feeding an ox and only 8.2% (10 households) in 2004/05 and 21.3% (26 households) in 2008/09. To further strengthen this point, participants during the focus group discussion claimed that many farmers do not have the incentive to own oxen for the purpose of renting. Participants during the focus group discussion have pointed out that the cost of keeping an ox is demotivating for the farmers especially when the small amount of grazing land is taken in to account. Besides, the participants have also mentioned social ties as another disincentive for renting out oxen as social ties reduce the net benefit from renting.

Table 6. Oxen and livestock ownership of the respondents

	2004/05		2008/09		Overall	
Number of	Clients	Non-Clients	Clients	Non-Clients	2004/05	2008/09
0	20(35.7)	2(3.8)	1(1.8)	1(1.9)	22(18.0)	3(2.5)
1	11(19.6)	15(28.3)	20(35.7)	3(5.7)	35(28.7)	25(20.5)
2	21(37.5)	32(60.4)	31(55.4)	30(56.6)	55(45.1)	68(55.7)
3	4(7.1)	3(5.7)	4(7.1)	14(26.4)	9(7.4)	20(16.4)
4	0	1(1.9)	0	5(9.4)	1(0.8)	6(4.9)
Mean	1.16	1.74	1.68	2.36	1.44	2.01
t value	4.415		7.609		7.884	
P value	0.001		0.0001		0.001	
Livestock in TLU						
Mean	2.22	3.46	3.33	4.97	2.83	4.15
Standard dev.	1.81	2.00	1.65	2.71	2.01	2.41
t value	3.392		3.831		8.564	
P value	0.001		0.001		0.0001	

The average number of oxen owned by the total sample respondents has increased from 1.44 per household in 2004/05 to 2.01 in 2008/09. This implies a significant increase in ox ownership over the period (t-value = -7.884, $p < 0.001$). The major reason for this increase is the increase in oxen ownership by the clients. For instance clients with no oxen have declined from 20 (35.7) in 2004/05 to just one in 2008/09.

Group wise the non-clients have the largest mean ownership of ox in both periods with 1.74 oxen per household and 2.36 oxen per household in 2004/05 and 2008/09, respectively. This is a significant increase in wealth as measured by number of oxen owned from 2004/05 to 2008/09 (t-value= -7.609, p value < 0.001). Similarly, there is a significant increase in ox ownership of clients from 1.16 oxen per household in 2004/05 to 1.68 oxen per household 2008/09 (t-value -4.4149 p-value < 0.001)

The data presented in Table 6 above indicates a mean livestock ownership of 2.83 in 2004/05 and 4.15 in 2008/09. This is a significant increase over the four year period. (t value -8.564, p-value<0.001). This indicates a significant increase in the wealth status of all the respondents. Another indicator of this significant increase in the livestock ownership of the respondents is the significant decline in the respondents that own two or less TLU from 40 (32.1%) to 18 (14.8%) ($\chi 2$= 10.94 p value <0.001) and the increases in the frequency of ownership of higher TLU categories.

Comparison of the two groups indicates that non-clients are richer than the clients in both periods. They have mean livestock of 3.46 TLU and 4.97 TLU in 2004/05 and 2008/09, respectively. The comparable figure for the clients is 2.22 TLU in 2004/05 and 2.96 TLU in 2008/09, respectively. A t-test also indicates that the difference in livestock ownership between the clients and non-clients in both periods is statistically significant (t value = -3.392 p-value =0.001 for 2004/05; t-value -3.831 p value <0.001 for 2008/09). Individually, both groups have exhibited significant increases in livestock ownership during the period covered by the study (tested at 99% confidence level).

Engagement in Rural Non-farm Activities: Engaging in non-farm activities has dual effects on households' productivity and welfare. It is a means of diversifying income sources and earning of higher levels of income by investing in high risk high return activities. Besides, income generated from non-farm activities can be plowed back to agriculture with an effect of increasing agricultural productivity. Over the study period, participation in rural non-farm activities of the total respondents has increased from 22.9% to 32.8% ($\chi 2$=37.705 p-value < 0.001) mainly due increased involvement by the clients as the non-clients engagement did not change significantly. Besides, participation of the clients in the rural non-farm activities has increased significantly. The major source of this increase comes from livestock trading (trading goats and sheep). It increased from just 4 households (3.2%) to 12 households (9.8%), which is an increase of 200%. The higher involvement of the clients in non-farm activities coupled with the fact that most of the activities are low return and labor intensive indicates the clients are more concerned about the security of their income. This emanates either from the better awareness of the

clients which in turn led to their becoming a borrower or from their higher need for security because they are poorer than the non clients.

Comparison between the two sample kebeles reveals that the involvement in the rural non-farm activities is more prevalent among Kidist Hanna respondents. This is because Kidist Hanna is farther than Quhar from Woreta and there is no formal road connecting Kiddist Hana to Woreta town. These make going and trading in Woreta costly. Hence, it increases the incentive to engage in non-farm activities especially in trading activities.

Table 7: Respondents participation in rural non-farm activities

	Clients		Non-clients		Total	
	2004/05	2008/09	2004/0	2008/0	2004/	2008/09
HHs engaged in RNFA	19(33.9)	28(50.0)	6(11.3)	9(17.0))	28(22.	40(32.8
Non-farm Activities						
Petty trading	4(7.1)	4(7.1)	2(3.6)	3(5.7)	6(4.9)	8(6.6)
Trading	1(1.8)	3(5.4)	1(1.8)	1(1.8)	2(1.6)	4(3.3)
Employment	4(7.1)	3(5.4)	1(1.8)	2(3.6)	7(5.7)	7(5.7)
Selling food & drinks	3(5.4)	7(12.5)	1(1.8)	1(1.8)	4(3.3)	8(6.6)
Selling fire wood	3(5.4)	6(10.7)	1(1.8)	1(1.80	4(3.3)	7(5.7)
Livestock trading	0	9(16.1)	2(3.6)	3(5.7)	4(3.3)	12(9.8)
Selling construction	6(10.7)	5(8.9)	0	3(5.7)	9(7.4)	5(4.1)
Carpentry	1(1.8)	0	1(1.8)	1(1.8)	2(1.6)	2(1.6)
Others	4(7.1)	4(7.1)	3(5.7)	4(7.5)	7(5.7)	8(6.6)

Expenditure: The expenditure amount of both the clients and non-clients has exhibited a significant increase over the study period. The 2004/05 expenditure by the non-clients is significantly higher than the clients for the same period.

Table 8: Mean expenditure of the sample respondents

	Clients		Non-clients		Total	
	2004/05	2008/09	2004/05	2008/09	2004/05	2008/09
Mean	1,103.07	1,257.51	1,393.07	1,588.02	1239.63	1,413.5
t-value	3.886		3.336		11.752	
P-value	0.001		0.001		0.001	

Improvements suggested: Respondents were asked to give their suggestions regarding the improvements of ACSI services. Clients were asked to list the problems they have noticed from the ACSI services, while the non-clients were asked to list the constraints that pushed them away from ACSI. The three most important improvements suggested by the respondents are individual lending (36%), increasing the loan amount (33%) and improving the loan design (timing of releasing funds, repayment pattern, and the loan term).

For the clients the three most frequently suggested improvements are improving loan design (23 respondents), increasing the loan amount (12 respondents) and individual lending (11 respondents). During the focus group discussion, the group discussants also mentioned that the loan design especially the timing where repayments are expected did not suit their situations. They mentioned that they are expected to make repayments in August which forces them to sell their oxen. They stated that they would have preferred if repayments are made after they have collected their crops (in February and March). The loan amount they claim is also another limitation that ACSI has to improve. They stressed that the loan size ACSI is borrowing does not keep in track with the increase in the price of inputs (especially oxen). The focus group participants have also mentioned that the joint liability and frequent meetings requirements of group lending are the other features they want ACSI to change.

For non-clients the three most frequent improvements they need ACSI to implement are individual lending (22%), increasing the loan amount (19%) and reducing the frequency of meetings and equal access (11%). During the non-client focus group discussion the participants have utterly mentioned that the most important factor which pushed them away from becoming ACSI clients is being accountable for the defaults of others. Besides, they have mentioned the frequent meetings and the related productive time loss while attending ACSI meetings did not justify the amount of loans provided. This reason may have come from their better economic position, since most of them already own ox they need loans much larger than what ACSI is already giving. Eleven respondents mentioned that they are not treated equally in the loan approval process. During the focus group discussion too

some have stated that assessments are being made by local political officers rather than professionals working in ACSI.

Poverty Reduction Impact and Determinant Factors: This section primarily presents the poverty analysis of the respondents in 2005 and 2009, and tries to present the factors that determine success in the poverty reduction through credit. To this end, the expenditure effect of credit is determined using the difference- in- difference of method. Then, the effect of various household and village level variables on the success of clients is determined using a multivariate regression method.

Incidence, Depth and Severity of Poverty: The incidence of poverty among the sampled respondents in 2005 is lower than the national average of 2005, which was 38.7% (MoFED, 2005). However, the incidence of poverty amongst the clients of ACSI (50.8%) is significantly higher than the country average for the same period. This is an indication that the clients are poorer than the other two sampling groups.

Table 9: The head count, poverty gap and squared poverty indices of the respondents

	2004/05		2008/09	
	All Sample	Clients	All Sample	Clients
Headcount Index(poverty line)	0.324	0.508	0.138	0.314
Headcount Index (moderate)	0.603	0.772	0.371	0.577
Poverty gap index	0.053	0.095	0.026	0.059
Poverty gap index (Moderate)	0.13	0.231	0.054	0.115
Poverty severity index	0.014	0.026	0.005	0.012
Poverty Severity Index (Moderate)	0.043	0.080	0.016	0.036

The head count indices for the non-clients by 2005 were 13.20% (seven households). As far as extreme poverty is concerned only 8 households (6.8%) of the sampled households lie below the extreme poverty line, all of whom are clients. The poverty gap index for the total respondents by 2004/05 is 0.053. This is lower than the country's index of 0.083 for 2004/05. However, the index for the clients in the same period is significantly higher than the country's average, still indicating ACSI's targeting of the poorer sections of the society. As far as the targeting by ACSI is concerned, it is successful in excluding the relatively rich groups of the society. The major barriers to entry for the richer households seem to be group lending and frequent meeting requirements by ACSI as indicated in the focus group discussion. These are too costly for richer households to afford.

The severity index of 0.014 for the total sample is also much lower than the country's average of 0.027. In this case the clients' index is slightly lower than the country's average indicating very low income inequality. During the period covered in the study, 2004/05 to 2008/09, significant improvements have been made in terms of reducing poverty in the area. For sure ACSI has played a role in that. Comparing the 1997 E.C. indices with the 2001 E.C. indices can reveal these improvements. All the three measures of poverty incidence, depth and severity of poverty have improved significantly among the clients of ACSI. The incidence of poverty has reduced from 50.8% to 31.4% amongst the clients. This is a significant decline ($\chi 2 = 4.44$ p value < 0.05). Besides the depth and severity of poverty as measured by poverty gap index and poverty severity index has shown significant improvements over the period.

However, care should be taken not to jump to a conclusion that the above changes on the clients have been commenced by credit and credit alone. This is because various macro, meso and/or micro level phenomena, apart from or coupled with credit, may have brought the changes. One indicator of the significant impact these other variables have made is the significant increase in the expenditures and incomes of the non-clients. Therefore, to see the impact credit has on household expenditure, the contribution of credit on the households' expenditure should be isolated. To that end, a fixed effect estimate of the effect of credit controlling for the household and village level characteristics other than involvement in the credit program has been conducted.

After controlling for wealth (land holdings in 2005, total livestock and number of ox owned in 2005), the mean age of the household, age of the household head, household size, engagement in rural non-farm activities, literacy and type of road to which the household has access, the difference in per capita expenditures over the four year period indicates a favorable result for the clients. The clients' per capita expenditure differential is higher than the non-clients by 2.00% (t-value=2.402 and p-value= 0.062). The result is significant at 90% confidence level. This implies borrowing from ACSI has on average an extra 2.00 increase in expenditures from 2005 to 2009. That is, there is a 2.00% income (expenditure) effect for being a client of ACSI. Applying this estimated impact of credit, 2.00%, on the 1997 E.C. expenditure of the clients' indicates the poverty reduction effected by ACSI. Table 10 below indicates the poverty impact of borrowing calculated based on the 2.00% estimated income effect.

Table 10: Poverty impact of ACSI

	Actual before joining ACSI	Estimated based on 2.00% incremental impact of borrowing	Poverty impact of credit
Head count index	0.508	0.433	0.075
Poverty gap index	0.095	0.087	0.008
Poverty squared	0.026	0.024	0.002
Moderate poverty head	0.772	0.684	0.088
Poverty gap (moderate)	0.231	0.190	0.041
Poverty squared	0.080	0.066	0.014

P value = 0.046 for the poverty change P value = 0.125 moderate poverty

Out of the 18.4% poverty reduction in the area (Table 10), microfinance credit (ACSI) operation contributed 7.5%. In terms of the moderate poverty head count index, ACSIs operation contributed 8.8% reduction out of the total. It has also contributed 0.8% and 0.2% of the decrease in depth and severity of poverty in the study area.

In terms of other measures ACSI resulted in a significant improvement in the ownership of oxen. However, when the number of oxen owned is considered the non-clients has made more improvements. Keeping the 2004/05. oxen ownership constant, the non-clients' ownership in 2008/09. is higher than the clients by 0.379 oxen. This is significant at 90% confidence level (t- value = 2.758; p value=0.007). The relatively lower effect on the number of oxen owned coupled with the significant increase in the ownership (just having an ox) could be because the clients repay their loan by reselling the oxen they buy with the loan. The net result is the number of the oxen they own will not increase. This in turn implies that ACSI is required to reassess its loan design, which is also suggested by the clients.

Determinants of success: So far the analysis has focused on assessing the poverty impact of credit using its effect on household per capita expenditure. To this end various household and village level characteristics have been controlled. The forth coming section analyses the effect these variables have on the expenditure difference on the clients. To see the extent to which the explanatory variables affect expenditure and income of the clients, a multiple regression analysis has been conducted. The independent variables selected are age of the household head, mean household age and household size

from the demographic factors, and land size, size of livestock by 2004/05 and number of oxen owned from the wealth measures and participation level in the credit program. Besides, collection of market information and access to paved road are used.

Demographic factors; age of the household head, mean age of the household, and household size significantly determine the per capita expenditure increases of the clients. An R square value of 0.252 indicates that these three variables determine 25.2% of the variation in per capita expenditure. The model has an F value of 5.738 and a p value of 0.002 indicating the relationship of these explanatory variables with the per capita income and that the difference is not a result of chance. Individually, the coefficient for household mean age and age of the household heads is significant at the 90% confidence level, and household size coefficient is significant at 95% confidence level.

The result indicates that household mean age and age of the household head have positive impacts on the per capita difference for households; 0.280 and 0.017 standardized beta coefficients, respectively. The result implies that a one year age in the mean household age and age of the household head increases per capita expenditures of a client household by 1.7% and 2.8%, respectively. The effect of household age is minimal but it is positive towards older members.

On the other hand, household size has negative effect on per capita expenditure difference in the client households. The output can be interpreted as, an increase of family size by one person decreases household per capita expenditure by 34.9%. This is in direct contrast to what the participants during the focus group discussion have claimed. Most of the participants have claimed that having more children improves their welfare by increasing their productivity. However, as this analysis indicate the presence of disguised unemployment for long periods of the year and the expansion of school enrolments in the area, made the marginal productivity of dependents lower than their marginal consumption. The high positive coefficient for mean household age strengthens this point.

Both wealth and level of participation have a positive impact on the expenditure differences across the study period. The coefficients of land and level of participation in the credit program on per capita expenditure differences are coefficients of 0.100 and 0.141 for per capita expenditure difference. These individual coefficients are statistically significant. The effect of land is larger than level of participation on income but lower effect on per capita expenditure.

Regarding the demographic variables, mean age of the household has the highest positive impact on the households' per capita expenditure and household size in general has a negative effect on per capita expenditure. Age of the household head has only a slightly positive effect on the per capita expenditure differences of the clients.

In another scenario, wealth as measured by land holdings of the household in 2004/05has the strongest effect on the overall income of a client and level of participation in the credit program as measured by cumulative loans, which has significant effects on the difference in the per capita expenditure of the clients.

From the other variables, literacy has no effect on the per capita expenditure increases of the clients. Besides, participation in rural non-farm activities has negative impact on per capita expenditure and income. This could be due to the very low income and labor intensive nature of the non-farm activities the clients are currently engaged in. At the village level variables, access to paved road has significant effect on the expenditure of the clients.

5. Conclusion

As measured by expenditure, land size, oxen, and livestock, the clients of ACSI are poorer than their non-client counterparts. This indicates that ACSI's success in targeting the poorer households. The study revealed that credit given by ACSI has brought positive impacts on the clients' livelihood. It increased income and ownership of oxen. ACSI's impact in terms of reducing poverty as measured by its 2% effect on per capita expenditure is 7.5% in poverty incidence, 0.8% in the depth of poverty, and 0.2% in the severity of poverty. In terms of asset accumulation ACSI has resulted in a significant decrease in the percentage of clients with no oxen even though its impact on the number of oxen owned is limited. The limited result is due to the fact that clients have to sell their ox to repay the loan.

In terms of livelihood diversification participation, ACSI resulted in increased participation on non-farm and off-farm rural activities. But it was also found out that clients participation on non-farm activities have low returns with a negative impact on total income of the household. Therefore, ACSI has to provide business development service to its clients so that they are able to identify and engage in more profitable activities.

Regarding the service ACSI is currently delivering, respondents have dissatisfaction about the methodology, flexibility and design of loans. According to the respondents, the four most important

areas ACSI has to improve in order of importance are individual lending instead of group lending, increase in the amount of loan, improvement in the loan design, such as its term, repayment pattern and period, and reduction in the frequency of meetings. This implies that borrowers of ACSI are sensitive about the loan design, flexibility of methodologies and transaction costs, which is in accordance with the evidence in literature of rural finance (Stiglitz 1991; Robinson 2001).

Finally, the factors that significantly contribute to clients' success in graduating out of poverty are the level of participation (cumulative loans taken), land holding size, ownership of oxen, level of dependency in the household, age of the household head, and access to paved roads. On the other hand, participation in rural non-farm and off-farm activities and household size negatively affect expenditure increases of the clients during the period covered in the study.

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Financial Access to Everyone: A Review

Ramesh Rengasamy
Assistant Professor, College of Agriculture and Environmental Sciences, Bahir Dar University. email: ramesh.gri@gmail.com

Abstract: *Expanding financial access to everyone is an interesting development idea, particularly in the context of effectively reaching the world's poorest families in a more effective way. Pinning faith on this concept, there has been a surge of interest in promoting microfinance in the recent past. Ethiopia is reported to have one bank branch per hundred thousand people. In the absence of bank branches, often, it is Micro Finance Institutions (MFIs) or local savings and loan groups that serve as a source of finance for all. The potential of micro finance in generating self-employment as well as lifting women and poor families out of poverty is macro in scale, which perhaps, remains the main reason it has found centre-stage in development discourse and practice. This paper is a review of outstanding studies on the performance of MFIs in Africa in general, and Ethiopia in particular. The focus is on what works, and what remains a pitfall in effectively expanding financial access to everyone in rural Ethiopia. Microfinance is characterized by provision of loans to a group of poor individuals without collateral for the purpose of income generation and economic empowerment. It is evident from the review that since its advent, there have been many conflicting views about micro-lending's ability to empower those without access to credit. Scholars have argued that aid and hand-outs to African countries ought to be abandoned altogether in favor of partnerships like microfinance. Others still maintain that microfinance is a misnomer asserting that microfinance is not used for entrepreneurship but instead for 'consumption smoothing'. The third set of researchers go further, declaring that extending credit to marginalized groups or communities in nation is futile and even counterproductive because 'no one was ever liberated by being placed in debt'. This way, the debate goes on. Critically reviewing these literatures, this study concludes that from the size of poverty spread in rural, semi-urban and urban areas in Ethiopia, the task of providing microfinance service to families living below the minimum standard is dominant. The avenues for semi-urban poor for improving their lives are large compared to their rural counterparts. Hence, microfinance has a greater qualitative role to play in case of rural poor. It is also found that at least 43 countries around the world have adopted some version of the micro-credit model, and that if this sector is growing too quickly we should be careful to monitor it and consider various regulations and measures to prevent or correct instances of voracious lending. An ideal loan would be one that immediately goes towards funding a new venture or increasing the capacity of an existing project. Another interesting revelation as revealed in this review was ensuring competition. It is an essential part of broadening access as competition encourages incumbent institutions to seek out profitable ways of providing services to previously excluded segments of the population. This also helps to increase the pace of adopting new lending technologies that improve access to microfinance services.*

Keywords: *Broadening access, financial inclusion, microfinance*

1. Introduction

Expanding financial access to everyone is an interesting development idea, particularly in the context of reaching the world's poorest families in a more effective way. In plain language, microfinance describes loans given to a group of poor individuals without collateral, for the purpose of income generation. Pinning faith on this concept, there has been a surge of interest in microfinance in the past decade. The world's largest aid agencies have worked in many of the least developed and developing countries to assist the poor committing people, money, and countless hours with a view to building more inclusive financial systems—systems that work for the poor. The potential of micro-finance in generating self-employment, and to lift women and poor families out of poverty are macro in scale, which obviously, are the reasons it has found centre-stage in development discourse (and practice) today.

The efforts of the funders and their network of micro finance institutions (MFIs) are unprecedented. Their efforts have today helped achieve almost a near-universal consensus around the fundamentals of an inclusive financial system: from regulation and supervision at the policy level, to financial reporting and disclosure at the institutional level, to fairly priced products at the client level. All have contributed to the professionalization of microfinance, once considered a marginal, even charitable, activity by financiers. Interestingly, in the process, it has helped push microfinance beyond the conference rooms of aid agencies, to the boardrooms of commercial bankers and policymakers. Best practices are becoming standards to emulate. Credit to small groups who were too impoverished to be considered credit-worthy has generated different micro-lending models, including profit-based ones today.

The picture so far is breathtaking. Where small, heavily subsidized microcredit schemes used to be the norm, hundreds of profitable microfinance providers of all institutional shapes and forms are now offering a wide range of financial services—money transfers, deposit services, and insurance—to ever-larger numbers of poor people in their communities in many Africa countries today. In a sure sign that microfinance is going mainstream, domestic and international commercial banks are now entering the fray, motivated by the excellent performance of poor clients and the promise of new information and delivery technologies to reduce cost and risk. Certainly, micro finance is one of the admirable innovations as a development strategy.

This paper is a review or a synthesis of outstanding studies on the performance of MFIs in Africa in general, and Ethiopia in particular. The purpose of the paper is to take stock of the nature of discourse

and debate current to 'providing financial access to the poorer communities in Africa'. The focus is on what works, and what are the pitfalls in expanding financial access to everyone in Ethiopian Villages.

Pro-poor policies and strong institutions to deliver services are essential for human development to take place. It holds good - be it provision of safe drinking water or providing financial access to the enterprising poor to start small business. Recent development theory sees the lack of access to finance as a critical mechanism for generating persistent income inequality, as well as slower growth. Without inclusive financial systems, poor individuals and small enterprises need to rely on their own limited savings and earnings to invest in their education, become entrepreneurs, or take advantage of promising growth opportunities. Accessibility can be seen as physical accessibility (proximity) and financial accessibility (affordability).

2. Where have we reached, and where are we heading?

Microcredit Summit Campaign Report 2011 reports that MFIs extend loans to more than 200 million clients by the end of 2010. Through various socio-economic ties of the borrowers and their families, microfinance has impacted upon the lives of around 1 billion people in emerging markets and developing countries. That tells about the reach of MFIs world-wide (Larry, 2011).

Connecting groups of poor households to lending institutions, or micro loans through institutional (non-exploitative) arrangements foster the strengthening of local economies by enhancing the financial flow within households and villages. It makes way for consuming life-improving facilities and technologies, while incurring minimal risk to the lending party. The spreading of and innovation within the microfinance sector demonstrates a successful initiative that is both socially conscious and economically beneficial (Campbell, 2010).

The reach of micro finance as a development strategy – operating at the micro level, and creating an impact at the macro level is well-documented. Whatever be the obscurity of the nature of village one lives in, financial access is a dire need to be able to move beyond subsistence, putting to use one's entrepreneurship acumen. The Global Financial Inclusion Indicators Index- 2012 (Findex) reports that worldwide approximately 2.5 billion of the people – world's poor - do not have a formal account at a financial institution. The reason is not only because of poverty, but also due to costs, travel distance and paper work involved etc. Access to affordable financial services is linked to overcoming poverty, reducing income disparities, and increasing economic growth.

The financial systems of many African countries still remain under-developed (as compared to other developing economies) even though most of these countries have undergone extensive financial sector reforms in the last two decades. Indicators of the use of financial products and services by adults and enterprises in the region show that many challenges remain toward building a more financially inclusive financial sector in Africa. For instance, recent evidence from Global Findex database shows that less than a quarter of adults in Africa have an account with a formal financial institution and many adults in Africa use informal methods to save and borrow. Similarly, many small and medium size enterprises (SMEs) in Africa cite access to finance as a major obstacle.

Access to Banking & Bank Account penetration: A publication of the World Bank (2012) reports that overall, 24% of adults in the African region have an account. Within Africa, there is a large variation in account ownership: 24% of adults in Sub-Saharan Africa are reported to have an account at a formal financial institution, though this ranges from 51% in Southern Africa to 11% in Central Africa. In Eastern Africa, account penetration reported is 23% (Demirguc-Kunt and Klapper, 2012). In Sub-Saharan Africa the most frequently cited reason for not having a formal account is lack of enough money to use one. This is the response given by more than 80% of adults without a formal account (Asli Demirgüç-Kunt Leora Klapper, 2012), and the second reason attributed is physical access and documentation related barriers.

Ethiopia is reported to have less than 1 bank branch per 100,000 people (World Bank, 2008). Perhaps not surprisingly, there are 229 deposit accounts for every 1,000 people in Bangladesh (WB, 2008). In many of the African countries, in the absence of bank branches, often, it is Micro Finance Institutions (MFIs) or local savings and loan groups that serve as source of finance for all. We must note here that the history of formal establishment of Micro Finance Institution in Ethiopia is limited to about fifteen years. The first group of a few MFIs was established in early 1997 following the issuance of Proclamation No. 40/1996 in July 1996[1]. But like in most African countries, there are barriers related to physical distance, technological inaccessibility, documentation requirements etc.

[1] In the recent proclamation no.626/2009 of Ethiopia, microfinance is defined as a business and hence banks licensed by NBE are allowed to engage in microfinance without a separate microfinance business license. The New proclamation also allows MFIs to apply any lending methodology at their own discretion.

Many firms, particularly small ones, often complain about lack of access to finance (World Bank, 2012). Recent research using detailed firm-level data and survey information provides direct evidence suggesting that such complaints are valid in that limited access stunts firms' growth. This finding is supported by studies based on census data and individual case studies using detailed loan information. For example, an Investment Climate Survey conducted (in the year 2008) by the World Bank reads that more than 60% of the firms in Sub-Saharan Africa report that *both access to finance and cost of finance* as the major constraint to firm growth (World Bank, 2008; World Bank, 2012). The Global Competitiveness Report (2011-2012) confirms this statement reporting that among the most problematic factors for doing business in Ethiopia, the one that stands on the top is access to finance. Thus, access is one prominent reason for the least percentage of population using the financial services of a commercial bank or an MFI.

If one goes through the evidences on micro finance penetration across countries in Africa, one finds that Ethiopia is at the bottom most of the rung. That means to say that the percentage of people using MFI services in Ethiopia is (14%) very minimal (World Bank, 2008 p.135 & p.191) and when we probe further, the reasons that stand out prominent are: Physical or geographical inaccessibility, and inability of the poor to produce the documents demanded.

Physical/Geographical Access: Bringing financial services to 'rural clients' is a major challenge on the financial inclusion agenda. Geographic distance to the nearest branch, or the density of branches relative to the population, can provide a first crude indication of geographic access or lack of physical barriers to access. Often the main barrier to financial inclusion in rural areas is the great distances that rural residents must travel to reach a bank branch. Poor infrastructure and telecommunications, and heavy branch regulation, also restrict the geographical expansion of bank branches (CGAP, 2009). Indeed financial inclusion is positively and significantly correlated with access points measured as commercial bank branches per 100,000 people. Sub-Saharan Africa economies are at the low end of the spectrum with low number of commercial bank branches per 100,000 adults and low account penetration.

Box – 1: Regulatory Framework – Ethiopia

The regulatory framework that governs the financial system in Ethiopia among others consists of National Bank of Ethiopia establishment proclamation no. 591/2008, licensing and supervision of Banking Business Proclamation No. 592/2008, licensing and supervision of Insurance business Proclamation and licensing and supervision of Microfinance Business Proclamation No. 626/2009. National Bank of Ethiopia establishment proclamation no. 591/2008 has provided authority for NBE to set prudential standards for banking and other financial institutions. The proclamations are enacted by the parliament and secondary legislations or directives that govern the operation of financial institutions are issued by the central bank.

Source: Yigrem Kassa, 2010. Regulation & Supervision of Microfinance Business in Ethiopia: Achievements, Challenges & Prospects, National Bank of Ethiopia.p.34

Expanding Access through Technology: One of the ideas for expanding financial / banking access is by putting to use technology. The idea that physical access barriers can be overcome by technology is an excellent idea, but this can become a reality when a country can make available the relevant technology, and makes it accessible to the poor. Thus, in terms of tiding over the 'access-related problem' by introducing technological solutions such as the mobile phone banking or the use of Automated Teller Machines (ATM), the ATM access reported in Ethiopia is 0.28%, which is used by 0.41% of those who use the financial services of one or the other of the institutions for loan and savings.

Among the Sub-Saharan African countries, only in Kenya about 68% of those with bank accounts use mobile banking, followed by Sudan (52%) and Algeria (44%) (Demirguc-Kunt, 2012). Ethiopia is reported to be one of the lowest in the world in mobile phone use (26%), and we have a figure to report about those using mobile banking.

Box – 2: Prodem's ATMs and biometric technology respond to poor customers

In 2002, Prodem's private financial fund (FFP) in Bolivia began installing Smart Automatic Teller Machines (SATMs), which incorporate fingerprint readers to verify clients' identities rather than relying on Personal Identification Number (PIN) technology. The ATMs also use voice instructions in three languages and an easy-to use graphic interface to allow illiterate clients to use them. The ATMs are used in conjunction with smart cards that contain the relevant client information, so transactions are immediately recorded on the card. The ATM updates data centrally only twice a day, which saves Prodem an estimated $800,000 per year in Internet charges. Today, Prodem has 52 ATMs, along with 40 POS devices at gas stations and supermarkets, where clients can use their smart cards to access funds 24 hours a day, seven days a week. Customers have found these user-friendly ATMs and POSs attractive, with nearly 50,000 smart card savings accounts by 2003 (out of a total of nearly 62,000 savers). The machines encouraged clients to save more often, whenever they have cash available, increasing deposits in regular savings accounts from $102,000 in 2000 to $19 million as of June 2005.

Sources: Whelan, "Automated Teller Machines," Hernandez and Mugica, *What Works: Multilingual Smart ATMs for Microfinance, Cited in* Brigit Helms, 2006. *Access for All, Building Inclusive Financial Systems, CG to Assist the Poor.*

Documentation Requirements as a Barrier: Limited geographic or physical access to a bank is only one type of barrier that potential customers face. Insufficient documentation is a commonly cited reason for younger adults in Sub-Saharan Africa and distance from a bank is an important barrier for adults living in rural areas. By limiting eligibility, documentation requirements can be another important barrier to access. For example, banks in Albania, Mozambique, Spain, and Sweden demand on average only one document to open a bank account, whereas banks in Bangladesh, Cameroon, Chile, Nepal, Uganda, Ethiopia and Zambia require at least four documents, including an identity card or passport, recommendation letter, wage slip, and proof of domicile. Given the high degree of informality in many developing countries, only a small proportion of the population can produce these documents. More than sixty percent of the population in countries like Cameroon and Ethiopia work in the informal sector and is thus unable to produce a wage slips. People in rural areas in Sub-Saharan Africa—61% of the overall population—are often unable to provide a formal proof of domicile, which becomes a barrier or limits banking services to poor clients from villages.

The Habit of Thrift and Savings: The data on saving behavior of adults shows that about 50% of the people in western Africa have the habit of saving, followed by about 38% in Eastern Africa. They save either at a formal financial institution, or using other local informal methods. Local informal methods seem to dominate in both the regions referred to (Demirguc-Kunt and Klapper, 2012*)*. While many savers blend formal and informal methods, many use *only* community savings clubs. Formal savings practices are not very common in Ethiopia, and savings practices are reported to be common in Nigeria, South Africa and Kenya. In Sub-Saharan Africa, 34% of those who save report having used only a community based savings club. Large scale saving surveys generally do not gather data on the alternative methods, such as the poor might save through asset accumulation (such as gold or livestock) and saving — 'under the mattress' (*Asli Demirgüç-Kunt et al., 2012)*.

Box – 3: The Ethiopian Financial system

The Ethiopian Financial system, generally speaking falls into three categories. These include: formal, semi-formal and informal financial system. The formal financial system is a regulated sector, which is well organized and provides financial services mainly to urban areas. This formal financial system in Ethiopia is mainly compared with financial institutions such as banks, insurance companies and microfinance institutions. At the end of 2008/2009, there are 12 Commercial Banks (two government owned), 1 government owned development bank, 12 insurance companies (one of which is government owned,) and 30 microfinance institutions (owned by regional governments, NGOs, individuals, associations etc.) The saving and credit cooperative are considered as semi-formal financial institutions, which are not regulated and supervised by NBE. The informal financial system includes Equib, Eddir and others, which are not regulated.

Source: Yigrem Kassa, 2010. Regulation & Supervision of Microfinance Business in Ethiopia: Achievements, Challenges & Prospects, National Bank of Ethiopia.p.28

Borrowal Accounts with Small Firms as an Indicator: Bank finance is typically the major source of external finance for firms of all sizes. Improvements in the functioning of the formal financial sector can reduce financing constraints for small firms and others who have difficulty in self-financing or in finding private or informal sources of funding. Research indicates that access to finance promotes more start-ups: it is smaller firms that are often the most dynamic and innovative. Countries that strangle this potential with financial barriers not only lose the growth potential of these enterprises but also risk missing opportunities to diversify into new areas of hitherto unrevealed comparative

advantage. Financial inclusion also enables incumbent firms to reach a larger equilibrium size by enabling them to exploit growth and investment opportunities.

A useful measure of access to financial services is to look at number of borrowal accounts in the rural financial system vis-a-vis the population. Thus outreach can be measured in terms of number of borrowal accounts vis-a-vis the rural poor in terms of households. The same holds good firms as well. World Bank Enterprise Survey (year) of Africa reports that on average, percent of enterprises in African countries with a bank account (across all firm size groups) is comparable to or greater than the percent of enterprises with a bank account in all other developing economies. For instance, 83% of small and 94% of medium sized enterprises in Africa are reported to have bank account. However, only 22% of enterprises have a loan or a line of credit from a formal financial institution, due to procedural and documentation related formalities.

Furthermore, greater financial inclusion allows firms the choice of more efficient asset portfolios as well as more efficient organizational forms, such as incorporation. If stronger financial systems can promote entry of new firms, enterprise growth, innovation, and risk reduction, then it is almost inescapable that stronger financial systems will improve aggregate economic performance.

3. Key messages and conclusion

Micro credit is considered an excellent development idea, in the sense, by providing loans rather than grants, the micro-credit provider can become sustainable by recycling resources over and over again. Hence, micro-credit serves to deliver the 'holy trinity' of outreach, impact and sustainability (Julius H. Kotir et al., 2009). The review concludes that from the size of poverty spread in rural, semi-urban and urban areas in Ethiopia, the task of taking microfinance to the below poverty-line families is enormous. Access to credit enables poor people to invest in a wide range of assets, better nutrition, improved health, access to schooling, a better roof on their homes and expansion of their small businesses (World Bank, 2002; Littlefield et al., 2005; Ashcroft, 2008). Access to financial services can be essentially viewed as a fundamental driver of increased household income and resilience. Therefore access or outreach encompasses the ability of Microfinance Institutions (MFIs) to reach the poor and remote people.

Micro finance programmes with features like innovative loan products, coupled with low incidence of default and modest interest rates have made it very attractive, encouraging entrepreneurship among

individuals and groups. It has, indeed, demonstrated a development initiative both socially and economically beneficial.

Despite the recent financial sector growth in Africa over the past decades, many individuals and firms are still excluded from access to financial services in African countries. Analysis of the usage and access of financial services by adults and enterprises shows that African countries lag behind other developing economies in both aspects, and that cost, distance, and documentation requirements are important obstacles. Despite the fact that the costs of technology are reducing, successful use of technology in microfinance is still the exception rather than the rule. Several challenges remain that inhibit the widespread adoption of technology to extend financial services delivery across vast distances and to millions of people quickly. They include: literacy level of the clients, as well as the capacity of staff, infrastructure such as internet connectivity, and even electricity.

Removing physical, bureaucratic, and financial barriers to expand financial inclusion is challenging since this also requires addressing the underlying structural causes. Nevertheless, measures to improve contestability of financial systems and underlying information and regulatory environment are also likely to speed up the introduction and adoptions of new products, processes, and technology that may help further lessen these barriers, especially in Africa. The most evident example is the recent success of mobile money in Sub-Saharan Africa which shows that innovations can bring about dramatic changes in how people engage in financial transactions by lowering entry barriers, reducing costs, and expanding access.

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The Linchpin Nature of Saving, Investment and Growth: A Review of Literature and Drawing Lessons for Ethiopia

Mebratu Leake
Lecturer, College of Business and Economics, Haramaya University
E-mail: mebratuleake@yahoo.com

Abstract: *Theoretical and empirical literatures have provided compelling evidence on the causal, direct and positive interrelationship between saving, investment and economic growth. One popular empirical research finding but a debatable issue is that causality relationship can run in both directions: there exists a positive causality relationship from saving to economic growth and from economic growth to saving. Despite the reciprocal relationship, however, one inevitable reality is saving plays a fundamental role on national capital formation, and is a seminal factor in the investment and economic development pattern. With the help of financial vehicles and institutions, resources are mobilized from surplus and unproductive economic units (mainly from households in developing countries like Ethiopia) in the form of savings to deficit and demanding units (private investors and government) for productive usage, thus stimulating economic activities. Several studies conducted in developing countries have revealed that the existence of stubborn and underdeveloped economies owing to weak domestic resource mobilization practices (low saving culture), lack of structured and organized mechanisms and low income generating ability of households. Thus, in low income countries, private large scale investments are difficult. Hence, a systematic fill up of a pitcher with dew drops (savings) that becomes full after some periods (capital accumulation) to finance large scale industries and national mega projects should be promoted. In light with this, this study reviews theoretical and empirical literatures revealing the tangible relationship between saving, investment and growth (in the saving to economic growth direction) justifying the reasons why countries (specifically African countries) look into domestic resource mobilization (saving) and why saving remains low in Africa. Finally, a lesson is drawn from which Ethiopia can learn and enhance its saving status to fill the financial gap and envisage investment and economic growth.*

Keywords*: Economic growth, investment, saving*

1. Introduction

The cause-effect relationship between domestic saving, investment and economic growth has received considerable attention among researchers, academia and policy makers. The role of domestic saving and investment in promoting economic growth has been perplexing researchers and is still remained unsettled agenda (Jangili, 2012; Gutiérrez and Solimano, 2007). Proponents of domestic saving argue for promoting domestic saving (capital accumulation) to create productive capacity (investment) where

investment is an essential vehicle to enhance productivity and likely to generate knowledge spillover and new technologies. Domestic saving is an important variable as capital importation (foreign savings) can be volatile and lead to sudden circuit breaking, and may force to costly macroeconomic adjustments and eventually growth crises.

From the standard growth theory, however, a country can grow faster by investing on its physical and human factors of production with a cross border (global) capital markets and investment financed from international capital flows (foreign saving). Hence, saving is not an essential element of growth process. Many commentators of the saving, investment and growth correlation argue the effect of growth on saving, not saving on growth. Thus, the causality and direction of the trend depends on X (growth) causes Y (saving), and hence, change of growth happens first for saving to occur (Aghion *et al.*, 2009). The essence of this economic philosophy is bringing economic growth by attracting foreign investments to create employment opportunities and low income households begin to generate income and hence save the extra consumption for investment and asset accumulation to sustain development.

Literature debates on the importance of saving in promoting investment and economic growth. In countries with low income society, saving is either immaterial or abandoned as a strategy to promote investment and economic growth. Many studies conducted in developing countries, however, advice the countries to work on enhancing domestic resource mobilization and integrate with other development strategies to finance domestic investment and create job opportunities to stimulate and sustain growth. In light of this, reviewing theories of economic growth and empirical findings is helpful to design policies that can foster investment and economic performance.

The purpose of this paper is to scantly review essential theoretical and empirical literatures regarding the causal relationship of saving, investment and growth. Understanding the causation is fundamental, not just for simple knowledge consumption, but for policy design. If saving is merely a passive variable to investment or growth, then policies for growth should focus on promoting investment on human, plant and equipments of accelerating innovation/creativity, entrepreneurship and technological advancements. Otherwise, if savings are seminal factors in driving growth, policies should be designed in light of incentivizing households, the private sector, and government to save. Accordingly, the direction of the relationship is first reviewed followed by related controversies of financing investment and economic growth (domestic saving or foreign saving). The main reasons

why African countries should look for domestic resource mobilization than attracting international cash inflows (foreign direct investment and remittances) are discussed. Saving in Africa, especially in the Sub-Sahara, is at its low standard. Thus, studies conducted on the reasons why it remains low are reviewed and explained. Lastly, lessons for policy implications are drawn from where Ethiopia can learn to enhance its saving culture and finance its economic growth in general and large scale national projects in particular.

Based on these argument, this study was aimed at reviewing the casual relationship between saving, investment, and economic growth, investigating the reasons why African countries should look for domestic saving for economic development, identifying the reasons why saving is at its lower status in Africa, and drawing a lesson as well as forwarding policy recommendation from the review.

2. Saving, investment and growth: The causality pattern puzzle

The Monterrey Consensus that emerged from the International Conference on Financing for Development in March 2002 called for mobilizing and increasing the effective use of domestic financial resources in pursuit of internationally agreed development goals, including those contained in the Millennium Declaration (UN, 2002). This consensus seems to support the role of saving (saving to growth direction) in capital accumulation and the channel for productive use (investment) and facilitate growth. A scant review of literature on the relationship of domestic saving and economic growth also depicts a positive relationship that higher rates of domestic saving induce growth. Despite the above notions, both theoretical and applied research have been disputed on the direction of the causality relationship of domestic saving, investment and economic performance (growth): the effect of domestic saving on investment and growth (saving to growth direction) Vs the effect of growth on saving (growth to saving direction). Different theoretical models provide quite different interpretation and empirical findings reach in varied results. The schools of thought and study findings can be categorized into three.

One school of thought claims that domestic savings drive higher growth rate. This view was stipulated by the early growth models of Harrod (1939), Domar (1946), and the new growth models of Romer (1987). Harrod-Domar growth model (a pre-neoclassical model) meant the direct relationship between current investment and the rate of economic growth that investment induces growth. The traditional growth model of Solow (1956), in which higher savings lead to higher per capital income in a steady-state, and thus, higher growth rates on the transition path is consistent with this view. The central idea

of Lewis's (1955) traditional theory was that an increase in saving would accelerate economic growth (Jangili, 2011). Pre-neoclassical and neoclassical growth models, with their underlying assumptions and greatly focusing on the supply side, emphasized on the role of domestic saving in promoting economic growth. What is more, the growth model implied for an economy to have positive and sufficient marginal saving rates in order to embark on a sustained path of economic growth. If this condition is not met, credit aid would fail to generate growth while foreign debt would continue to accumulate, driving the economy into a debt trap (UNECE, 2000).

Classical economists in the 18th and 19th centuries, like Adam Smith (who is commonly considered as the founder of modern economics) and David Ricardo (known follower of Adam Smith), addressed the question which compel, saving or growth. Both economists regarded savings in an economy as important vehicles for capital formation, and important factor for growth since it leads to higher labor productivity and, thus, to more output per worker. According to Smith and Ricardo view, supply creates its own demand based on the assumptions of efficient working market. Neoclassical economic models are also primarily based on the assumption that investment is financed from household savings (Flassbeck, 2008). Neoclassical approach emphasizes on the need for households saving and alternatively for developing countries to attract more foreign saving to finance fixed investments and promote economic development. Accordingly, capital accumulation and economic performance will be maximized by policies designed to promote domestic saving integrated with capital importation. Feldstein and Bcchetta (1991) concluded that an increase in domestic saving has a substantial effect on investment and hence on economic growth indicating that saving drives growth. This signifies crafting policies to promote saving, and hence growth (Attanasio *et al.,* 1998).

The saving to growth direction view, as some economists call it "Mill-Marshall-Solow view" or "Harrod-Domar-Solow" growth model (see Chakravarty, 1993; and Solimano, 1997) viewed the causality that all savings is automatically invested and translated into output growth under wage–price flexibility and full employment. As a result, in the Mill-Marshall-Solow approach savings leads economic growth (Solimano and Gutiérrez, 2006). Empirical evidences from various countries (see for example Lucas, 1988; Levine and Renelt, 1992) by Alguacil, Cuadros, and Orts (2004) and Singh (2009) are consistent with the endogenous growth theory and the hypothesis that higher saving rates promote economic growth. Jappelli and Pagano (1994) also claimed that saving contributes to higher investment and higher GDP growth in the short-run. Roux (2009) stated that saving plays an important role in economic growth with a different role at different levels, in contrast to international

capital flows dependent on political view, global economic stability, and absorbing capacity of hosting countries. According to Roux (2009), households (household saving), companies (companies saving) and government (government saving) should have sufficient savings to finance future planned expenses and capital projects essential to envisage economic growth, otherwise remain dependent on others, damper efficiency and growth potential or suffer in financing gap to finance fixed national investments on infrastructure.

The other school of thought argues the reverse order that it is the level of economic growth that drives saving, not saving that induces growth. The growth-saving direction approach backed by Keynes model (1936), and thus Keynesian model, assumes that if a country makes an extensive investment in human and material capital or scientific research and development, technological aspects and make its market international (the essence of open economy, not a closed one), economic growth increases. It is the hypothesis that innovation, enhanced exports, and foreign direct investment facilitate economic growth and economic growth creates employment opportunities, able to generate income, saves and channels for productive capacities. This approach commonly referred to as "Marx–Schumpeter-Keynes" view, claims that investment with an open economy flowing from anywhere in the world (Keynes, Marx), and innovation (Schumpeter, Marx) are the two ascertaining variables that drive out growth. This implies domestic saving is not significant to accumulate large sum of resource to finance investment that bring reckonable growth. In this case, growth leads to saving. Carroll and Weil (1994) also hypothesized that it is economic growth that contributes to saving, not saving to growth. In his study, Mühleisen (1997) also found significant causality from growth to saving but rejected causality from saving to growth for all forms of saving. Sinha and Sinha (2008), and Agarwal (2001) also examined the relationships among growth rates of the GDP, household saving, public saving and corporate saving for the period studied (1950 to 2001) in different panel of countries and found that economic growth precedes and Granger causes higher saving in various forms and never in the reversed direction. Modigliani (1970), in his hypothesis and study of cross-countries, confirmed the positive relationship between saving and growth, but in the direction that growth drives saving.

Christopher *et al.* (1994) who examined the association between saving rate and economic growth using a sample of 64 economies found conclusive evidence in support of the condition that economic growth precedes domestic savings rates and economic growth auto-regressively predicts future saving rates, contrary to the Solow growth framework. Again, focusing on the savings rate-economic growth nexus in Latin America, Gavin *et al.* (1997), further reached to a conclusion that sustained economic

growth precedes higher savings. In an estimation focusing on a similar causal relationship in the case of Nigeria, for example, Abu (2010) asserted economic growth Granger cause savings growth in the Nigerian economy, further supporting the evolving view that economic growth precedes or causes growth in domestic savings.

A third reciprocal view that there is a possibility of saving leading to growth and growth causing saving (the bi-directional causal relationship) is also evidenced. For example, Bassam (2010) found a bi-directional causal relationship between the variables in the case of Morocco. Sajid and Sarfraz (2008) who studied the same between domestic savings and output growth in Pakistan further supported the existence of significant bi-directional long run causal relationship. Likewise, Rumen (2005) reviewed empirical findings and found that there exists a positive causality both from savings to economic growth and from economic growth to savings. The reciprocal (bi-directional) relation between saving and economic growth is well documented, but remains debatable. Generally, either domestic saving and capital accumulation follows or leads economic growth, there is a positive and strong relationship between domestic saving, investment and growth and sustaining high rates of growth requires substantial levels of domestic saving and capital accumulation.

3. Financing investment and growth: The paradox of domestic vs foreign savings

Empirical evidences don't reach in an undisputable consensus about how the advanced economies reach to their today's state of development or the emerging nations (both in Asia and Latin America) are usually financing their huge fixed investment inducing economic growth. China's stride economic performance is massively mentioned in academic and study disputes. China has the highest saving rate from many perspectives including historical experience, international standards and the predictions of economic models. The aggregate marginal propensity to save in China is well above 50%, more than half of its GDP (Ma and Yi, 2010). It is the net saver in all the sectors: household, firms and government. If the reality goes with the notion that saving is the core driver for economic growth and development, then the main reason for China's high growth is because of its high domestic saving. However, Harbaugh (2004), Modigliani and Cao (2004), and Kraay (2000) indicate that it is after the 1970s following Deng Xiaoping's (the silent capitalist) economic reforms of opening the economy that higher economic growth was registered. This rise of economic growth with the support of demographic restructuring (the one child policy) brought about higher employment opportunities, higher income and investment.

According to Harbaugh (2004), China was a poor country with a very low saving status before 1970, questioning the so claimed saving "culture" of Chinese people. The growth pattern of China that higher growth rate leads to higher income and saving was earlier evidenced by high growth economies of Japan, South Korea and Taiwan and higher saving rates in Asia were happened only after economic growth took off (Kraay, 2000), so culture as a dominant factor for higher saving rates in China has no room. Others such as Kujis (2005), and Tyers and Lu (2008) assert that Chinese excess saving, after economic reforms and mainly in the 2000s, is meant happened due to government interventions, distortions and subsidies to its monopolized state-owned and private firms to promote growth and export. This shifts China from a net debtor position of 10% of GDP to a net creditor position of 37% within one decade (Ma and Zhou, 2009).

In contrary to the above argument, Fatás and Mihov (2009) argue for the misinterpretation of the commentators that China's growth is due to capital flow from abroad. Rather Chinese bulk of investment on buildings, equipments and factories is financed from domestic savings and its growth primarily depends on domestic resources, unlike to the United States that its economic performance is based on investment on human capital, innovation, exports and liberalization and empowerment of financial institutions. Lugauer and Mark (2011) backed the economic growth model that China's growth is derived from its domestic savings. They further explained that China followed a gradualism economic reform initially focusing on domestic reforms through downsizing the control of state-owned sector and promote the private sector to engage in massive business activities. Thus, China's growth was primarily funded by internally generated saving which household saving was the most important component. By this virtue, The evidence from Modigliani and Cao (2004) that rejects the idea on prima facie grounds from the observation that the household saving rate in the pre-reform era was very low, averaging 3.9% from 1959 to 1977 and hence the saving culture/habit of the Chinese household is low has no acceptance. They also defended that the low saving rate was during the central planning Mao era when people participated in an extensive social safety net provided by the state so there may have been few reasons to save.

Currently, the high saving rate of China is important in balancing the global economy by financing the struggling economies of the United States and European countries. Besides, for the fear that China's population is ageing, the higher saving rate is considered as a solution that pension funds are invested in higher return investment vehicles to finance the living costs of the unproductive age. Despite innovation, human capital, and institutional liberalization and empowerment derived the western

advanced economies, lower saving culture of citizens and old innovations do not prevent them from economic shocks and their citizens have been suffering from the financial economic crises (Tufano and Schneider, 2005). Thus, to further re-balance the global economy, the Americans must save more while the Chinese consume surplus saving.

From the above discussions and economic model disputes, the evidence on the association of GDP growth, domestic savings and foreign savings is mixed: there are episodes of high growth with relatively low levels of foreign saving rates, but high domestic savings (in East Asia) and episodes of low growth episodes and high foreign savings, but low domestic savings (low income countries in Africa and Latin America that receive sizeable levels of foreign aid) (Gutiérrez and Solimano, 2007). Sub-Saharan countries experiencing huge resource gap can learn much from China's technology adaptive and historic economic performance. According to Culpeper and Bhushan (2008), resources for development can be mobilized from both domestic and external sources, but for developing countries, the bulk of resource for development should be sourced from within since external sources are uncertain.

4. Why saving remains low in Africa? The chronic challenge in Africa's development

Even though, there are fast growing countries, today, Sub-Saharan Africa (SSA) is the poorest and least-developed region in the world with about three-fourths of the countries in it are classified in the low income category. Furthermore, among developing regions in the world, the subcontinent is the most dependent on official development assistance (ODA) (WB, 2007). The primary reason for this is political and economic instability, which weakens several sectors that can play an important role in strategic development (UNCTAD, 2009). WB (2007) also revealed that the SSA economy is underdeveloped because Agriculture, the mainstay of the region's livelihood, is highly dependent on traditional practices and erratic rainfall. Moreover, the overall share of exports from SSA, including South-Africa and Nigeria, is yet less than 2 percent of the global trade and the continent has the lowest income level in the world, thereby, enhancement of domestic saving is difficult.

Due to higher dependencies on external aid and borrowings, domestic resource mobilization (DRM) has been a relatively neglected factor in strategic development, especially in sub-Saharan Africa and contributes very less in the region's economic growth (Culpeper and Bhushan, 2008). WB (2007) indicated that one of the main problems in Africa's development is that sufficient domestic saving is not mobilized (17.6% of GDP) as compared to East Asia and Pacific countries (49.2% of GDP) and

Latin American countries (24% of GDP). According to World Bank report (2011) for Africa's development, domestic saving has declined from 25.3% (as percentage of GDP) in 1980 to 16% (as percentage of GDP) in the period 2000-09. This decline depicts that African countries discard domestic resource mobilization as a strategy for development and increasing their dependency on external financial sources. It is, therefore, not surprising that in Asia, most of the countries that were on a similar economic footing as Sub-Saharan countries in the early 1960s, have boosted their economic performance and made significant strides, while Sub-Saharan Africa has deteriorated (Aryeetey, 2009).

East Africa is among the fastest growing regions, but it is one of the poorest and unstable regions in the world. East African countries have the smallest share of exports, lower degree of financial deepening (thin financial products), lower levels of domestic savings, higher reliance on donor aid and borrowing, and limited physical infrastructure and human capital (IMF, 2012). While domestic savings are important to finance investments and narrow the financial gap (saving and investment gap), saving remains weaker (as percentage of GDP) in most East African countries with Ethiopia having 5.7%, Burundi (-12.3%), Eritrea (-29.2% o), Kenya (8.7%), and Uganda (9.5%) as compared to Angola (31.9%), Gabon (53.2%), Algeria (49.1%), and Cameroon (18.8%) in 2009 (WB, 2011).

Conclusively, volatile macroeconomic policies, structural constraints, political unrest, weak integration with international market, low income society, underdeveloped financial sector, limited financial access, lower financial education, abandoning of domestic resource mobilization (dependency on foreign aid) as development strategy, narrow tax base and inefficient tax administration, etc are cited, in several studies, as responsible factors for lower domestic saving (household, private and government) deterring the development of sub-Saharan Africa.

5. Why Africans seek for domestic resource mobilization to support their development?

Despite the debate about the causality of saving and growth, saving remains the principal factor in sustaining economic development. The study conducted by Abaidoo (2012) from 1977 to 2010 in African countries found a uni-directional causal relationship running from foreign aid and borrowing, foreign direct investment (FDI) and gross regional savings to regional GDP growth. FDI responds to the commercial profit opportunities of, and retained earnings flow to, foreign investors, while foreign aid and debt relief are often motivated by political objectives of the donors and creditors and may not coincide with domestic development objectives. This makes difficult and inevitably impossible to

achieve domestic development objectives principally through external financing sources (Culpeper and Bhushan, 2008). In poor countries, catching up of technology for growth requires huge investment and the cooperation of a foreign investor who is familiar with the frontier technology and a domestic entrepreneur familiar with local conditions. However, the foreign investor doesn't make investment unless the country has advanced infrastructure and promising market opportunities. Thus, the country's domestic saving matters for development and expansion of infrastructure, creation of market opportunities and encouragement of innovation, and therefore growth.

In the study by Aghion *et al. (*2009), a cross-country regression shows that lagged savings is positively associated with productivity growth in poor countries. The use of domestic resource mobilization (DRM) for development purposes in developing countries has also become, in recent years, significant as the access to foreign funds become difficult due to global financial crisis and economic debacles (Aryeetey, 2010). In this connection, Abaidoo (2012) suggested that policies geared towards promoting sustainable regional economic growth should be oriented to mobilize regional savings to support local investments as foreign direct investments may not be sustainable due to global economic and financial conditions. Experiences of past recent histories also shows us savings decline in Sub-Saharan Africa and rise in South Asia since 1980s, showing South Asia registered better economic performance. This reality leads to the conclusion that countries due to more saving and investment grow faster than countries highly dependent on foreign aid and borrowing.

As UNCTAD (2009) testified, African countries greatly focused on external source of development finance. Flows of external aids to Africa have increased since the late 1990s, but doubts increase on the quality, efficacy, predictability and the ability of donors to meet set targets. Similarly, doubts have been expressed about the quality of FDI flowing into Africa, its impact on development in terms of job creation, diffusion of technology and clarity of its agenda. The economic crisis broken out in 2007 highlights the problems associated with overreliance on external financial resources as donors, lenders and investors struggle to curve the economic and financial crisis at home. Remittances from western countries hosting large diasporas and exports to those economical smacked countries began to decline. Thus, UNCTAD (2009) rectified that domestic resource mobilization and efficient investment in areas that promote the structural transformation and sustainable development of African countries are of utmost importance.

In general, as the World Bank and UNCTAD put it, African countries to sustain and improve their current rate of growth should increase their investment rates. To finance the increment in investment and close the resource gap, the Sub-Saharan countries should look for domestic resource mobilization mainly domestic saving in all economic units like household, corporate and government for various concrete reasons including i) by enhancing domestic resources and its role in development, African countries reduce their dependence on external capital inflows such as official development assistance (ODA), foreign borrowing and foreign direct investment ii) by reducing the dependence on these inflows and their associated conditionality, domestic resources allow them to have more policy space (more flexibility and diversified policies tailored to specific country situation); and hence, they own and control their development process. This enable them to pursue truly nationally-owned development process iii) Domestically generated public resources are important in creating strong bondage between government and citizens, enhance civic consciousness that citizens are keen and alert to know how these resources are utilized iv) Domestic resources are relatively stable while external capital inflows are more likely to be volatile (FDI, foreign borrowings, and aids/donations are highly volatile, not easily predictable, attached with required rate of return of investors, political dogma of countries and global financial conditions) and v) Even in an open economy, international capital (capital importation) mobility is limited (failing to fill saving-investment gap), making the link between domestic savings and domestic investment strong.

6. Lessons and policy recommendations for Ethiopia

The World Bank's African development indicators (2011) averaged the Ethiopian real growth rate at 8.5% in 2009. Ncube, Lufumpa and Ndikumana (2010) (cited in Taddesse, 2011) averaged real GDP growth to 11.2 % per annum during the 2003/04 and 2008/09 period. Based on the latter or former growth rates, Ethiopia is placed among the top performing economies not only in Africa but in the world. Moreover, the average investment as a percentage of GDP increased from 12.9% in 1990 to 25.4% in 2004/05 and latter declined to 22.6% in 2008/09, but increased to 25.5% in 2010/11 (WB, 2011; MoFED, 2012). The average investment is above the SSA average which is about 18%. However, there is a saving-investment gap (resource gap). In 2008/09 and 2011, for example, domestic investment was in excess of domestic saving by 16.9% (22.6-5.7) and 16.7% (25.5-8.8), respectively, the gap financed through external sources. This reveals the country's high dependency on foreign aid/debt and exposed to risk of external shocks.

The other challenge for Ethiopia is the huge resource requirement to realize the objectives of the Growth and Transformation Plan (GTP) and construction of Abay Renaissance Dam. When officially announced in November 2010, stakeholders like the World Bank and IMF said GTP is very ambitious plan demanding huge resource for which the country can't afford. Thus, to fulfill the huge resource need, the country should engage on massive domestic resource mobilization (domestic saving) by fostering the saving culture of citizens, private firms and ensure public revenue-expenditure equilibrium. Furthermore, the Ethiopian government should strongly commit itself to integrate domestic saving, investments on human and physical capital, innovativeness and entrepreneurship and foreign savings as co-variables of development strategy. Improving domestic resource mobilization capacity of different actors/stakeholders is also fundamental. To improve the low domestic saving rate, the following measurements, among many, are worthwhile.

Ensure macroeconomic stability: Macroeconomic stability in a broader sense extends from preserving price stability and fiscal balance to avoiding swings in economic activity, employment, external accounts and the real exchange rate (Culpeper and Bhushan, 2008). Macroeconomic stability strongly influences the long-term growth performance of an economy. Designing policies (both monetary and fiscal) to control and maintain inflation at acceptable level is paramount to promote saving capacity of citizens. Setting policies that promote the ability to work, save and invest is another pillar to foster domestic saving. Hence, public expenditures should be allocated to foster entrepreneurship, encourage small-scale industries and create diversified employment opportunities.

Strengthen the financial sector and Enhance ease of access to saving vehicles: The financial sector plays a vital intermediary role in channeling resources from the unproductive use (resource suppliers) to its productive use (resource demanders). The system of financial intermediation can affect economic performance and growth directly through the role it plays in resource allocation. Financial sector development is at the heart of resource mobilization, industrialization, boosting investment and accelerating economic growth. In particular, the financial system can affect saving and investment decisions (and hence capital accumulation and technological innovation) by reducing information and transaction costs, creating mechanisms of risk sharing, facilitating trade and payments among economic agents and providing various supporting services. Therefore, Ethiopia should strengthen, modernize, and integrate its financial sector and bestow a ground for effective, thick (broad-based) and accessible financial system. Coverage of the financial sector and alternative saving products must

be improved. Easy of access to convenient and safe saving vehicles has considerable effect on increasing domestic savings.

Financial Education: In developing and transition economies where the saving habit of low income households is low, perpetual financial educations and modest interest rates at acceptable level of inflation help to attract higher rates of saving to promote capital accumulation and channel it for productive usages. As defined by OECD (2005), financial education is the process by which financial consumers/investors improve their understanding of financial products and concepts, and through information, instruction and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities, to make informed choices and decisions, and to take other effective actions to improve their financial management. In doing so, the sector should be professionalized by producing specialists and experts capable, competent and committed to analyze and interpret saving, saving mechanisms and benefits.

Increase the diversity of Financial Assets: At times real interest rates are negative, saving is not encouraging since interest rates on deposits do not compensate the high inflation rate. For example, in Ethiopia, the national bank has set the minimum interest rate on deposits at 5%, but inflation rate was fluctuating between 20% and 30% and even was beyond 30% in 2009 and 19.6% in 2012 (CSA, 2012). Due to this handicap, general observations indicate that households prefer to put their money either under their mattress or invest it in potential and less risky investment opportunities. This has become, in recent years, an advantage for initiators of incorporated companies to pool resources from small saver households to establish incorporated companies. The introduction of new and diversified financial assets where households can get alternatives to put their petty money is fundamental. Introduction of bonds (like the saving bonds introduced currently) can also be an efficient way for the government to raise long-term financing for infrastructure projects. However, floating medium to long term financial assets demand the government to promulgate legislation and develop efficient and liquid capital (bond and equity) markets.

Support and enhance the role of Microfinance Institutions: The Ethiopian financial system constitutes mainly banks (17), insurances companies (14) and microfinance institutions (30) (NBE, 2011). However, Ethiopia is still one of the most under banked countries in the world with 970 bank branches serving about 84,975,606 (WB, 2012) populations (one branch serving over 87,000 people). Bank branches are also unfairly distributed and concentrated in major cities and towns of the country. 38% of bank

branches are concentrated in Addis Ababa, the capital city, with residents only 2% of the country's population. Similarly, there are only 221 branches of 14 insurance companies that one insurance branch serves over 380,000 people in major cities. This reveals access to finance and saving instruments of the rural part of the country is limited. Since majority of Ethiopian population lives in rural areas, the expansion of MFIs, enhancing their outreach services, and introduction of financial vehicles convenient to the situation of and tailored to rural savers is imperative to promote rural saving and integrate them in the nation's development process. MFIs play significant role in accessing and enhancing the awareness of rural dwellers and mobilizing resources from rural households.

Improve tax revenues collection (public revenue mobilization and government saving): Effective and efficient tax administration (assessment, estimation, and collection) process is instrumental in the generation of sufficient public revenue to finance public expenditure. The existence of convenient, fair, equitable, diversified and economical tax administration helps to ensure voluntarily compliance of taxpayers, hence reduces tax administrative costs and maximize government revenue. Sufficient collection of taxes accompanied with putting public resources to the maximum advantage of the society leads to the virtue of government saving. In 2010/11, total tax revenue as percent of GDP has reached 11.5% from the level of 11.3% in 2009/10, but lower than the SSA average (16.3%).

Expanding the coverage of Contractual savings (Pension and Insurance coverage): Expanding the coverage of contractual savings like pension and insurance is crucial in domestic resource mobilization. For example, liability insurance (an insurance type that many countries make it compulsory is employer's liability insurance that requires every employer to insure against liability for bodily injury/disease of employees arising from their employment), education insurance coverage, etc. Since the performance of invested pension funds is also an important factor in improving domestic saving, pension funds should also be invested in safe and modest returns.

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Savings Mobilization through Saving and Credit Cooperatives in Ethiopia: Performance, Trend, Challenges and the Way Forward

Tezeta Ketema[1] and Deribe Assefa[2]
Manager, Joshua Multi-Purpose Cooperative Society Ltd, E-mail: ktezma@yahoo.com
[2]Lecturer, Ethiopian Civil Service University, E-mail: deribeassefa@yahoo.com

Abstract: *Saving policies would depend on the structure of saving in a given country. From the point of view of various characteristics of saving behaviour, economies can be divided into three sectors, namely, government, corporate and non-corporate. Savings mobilized from non-corporate sectors including saving and credit cooperatives (SACCOs) are crucial for economic growth in many developing countries like Ethiopia. The major asset of SACCOs is the money that their members deposit as savings for various purposes including safeguarding, interest earning and future investment. While savers can earn commensurate amount of interest on their deposit, those customers having long-term credit worthiness can borrow from the SACCOs. The objectives of this study were to map out the development trends, identify growth determinant and compare the performances of SACCOs in Ethiopia with Sub-Saharan African standards. Primary data were collected from randomly selected management members of SACCOs at both primary and union levels. And secondary data were collected from various documents of the selected SACCOs. Bench mark data were also collected from the database of World Credit Council (WCC). Descriptive statistics and correlation analysis were used for the study. Results revealed that membership and financial performance of the SACCOs had shown improvement over time. On the other hand, the study showed that lack of awareness, poor saving culture, weak organizational arrangement and governance, policy and regulatory environment, weak institutional capacity, low capital base, lack of differentiated products, inappropriate loan security requirements, and threats from other financial institutions were among the factors affecting the outreach and sustainability of SACCOs.*

Keywords: *Loans, SACCOs, savings*

1. Introduction

Saving is one of the important variables for economic development that has emerged as the central issue in developing countries at least for two reasons. First, foreign aid inflow to the developing economies has declined during recent years. Second, saving positively affects the growth and development. The greater is the saving rate, the higher is the growth rate a country can attain. For economic development, growth is a must which cannot be achieved without investment or capital accumulation and saving through investment plays a vital role in this process (Pollet, 2009).

Poor performance in economic growth for countries like Ethiopia is frequently attributed partly to low savings. On the other hand, the formal financial institutions in developing economies leave the poorest population tightly constrained in their access to financial services. It is also widely recognized that economic progress relies largely on access to financial services such as savings, insurance, and credit. Where formal financial institutions fail to serve the large majority of the poor population, there is evidence to support the proposition that credit unions can fill some of the gap (Hussain *et al.*, 2002).

An interesting alternative to formal banking that has emerged within the semi-formal sector is the saving and credit cooperatives (SACCOs) which have a wide outreach in most parts of the world. They are member-driven and democratically organized. SACCOs have developed and become a tool for mobilizing and increasing savings culture mainly for developing nations. Although the reliability of figures is poor, cooperatives appear to operate on a significant scale in developing countries: studies have shown that over seven percent of the African population is affiliated to primary cooperatives, and this number is increasing (Delvetere *et al.*, 2008; Pollet, 2009).

The work of Develtere *et al.* (2008) revealed that cooperatives in Africa are about to enter a phase of "renaissance", but need a favorable legal and institutional environment, greater visibility, a stronger voice, further diversification, improved governance, better management, solid horizontal networks and strong vertical structures, in order to make this a reality. In Ethiopia, savings and credit cooperatives (SACCOs) as financial intermediaries, are channeling savings into loans, provide saving opportunities for the poor, especially in the rural areas. But further improvements are necessary to make their services more efficient and sustainable. Thus, understanding the degree to which different obstacles limit the development of quality pro-poor saving facilities in developing counties like Ethiopia is crucial in designing appropriate policy and programmatic interventions. The main objective of this study, therefore, was to analyze the performance trend of savings and credit cooperatives in terms of their number, membership sizes, savings mobilization; and identifying the critical challenges and gaps that affect the growth and success of SACCOs in Ethiopia.

2. SACCOs in Ethiopia

The sources of finance are classified as formal, semi-formal and informal sources. Formal sources are providers of finance who are subject to banking laws of the country of operation and are engaged in loan extension to customers and diversified financial intermediaries. SACCOs are semi-formal financial institutions in the sense that they are registered entities and subject to all general rules, but are

not subject to the same prudential standards applicable to formal financial institutions. Unlike the commercial banks and MFIs, savings and credit cooperatives are not subjected to the rigorous supervision and regulatory rule of the National Bank of Ethiopia (Wolday, 2002).

The first savings and credit co-operative in Ethiopia was established in 1964 by employees of Ethiopian Airlines. During the same period, credit co-operatives were established by employees of the Ethiopian Road Authority and the Telecommunication Agency. Currently, SACCOs in Ethiopia operate within the framework of the proclamation No. 147/98 and the proclamation No. 402/2004 (amendment version of the latter).

The objective of this category of institution is mainly to provide savings facilities and granting short-term loans to members in various firms. The sources of funds of the cooperative include shares, special savings, entrance fees and dues. Entrance fees and weekly dues are used for the administration of these societies. Shares held by members represent the main source of the loanable funds. The special savings may be shared at a particular time or distributed in rotation, while loans are given to members on personal recognition and, or, guarantors could be demanded if the members total financial holding in the society is inadequate. Many of these societies give loans for businesses that yield quick return. It is administratively easy and cheaper for banks to deal with large group. This is because transaction costs are proportionately higher for all small borrowers, although it tends to vary little with size of loans. Similarly, farmers within a cooperative union are able to put forward viable projects that would be acceptable to the banks.

SACCOs are promoted not only for money, but also for its contribution to the promotion of total human development. SACCOs develop people's minds by providing motivation, creating initiative, promoting self-development and self-reliance and providing leadership. They also develop material well-being by raising the living standards of members, making possible regular savings and wise use of money, providing loans at low interest rate and by making possible economic emancipation of members (Wolff, et al., 2011). Another core benefit of cooperatives is the fact that cooperatives allow individuals to increase their bargaining power, through aggregation of their purchasing/selling power. However, in order for this to be effective, the cooperative itself must have skills in bargaining, negotiation and communication, in order to effectively represent its members (Rutherford, 2000).

SACCOs have been significantly contributing to employment, to the national economy, poverty eradication among SACCO's members, creation of wealth and new financial services to the customers.

For a number of years, savings and credit cooperatives societies have been at the heart of the development of communities by striving to make available financial resources based on the community's own resources (i.e. Member savings) and the safe recycling of this money (member loans) into the community's activities thereby making a significant contribution to the development of the environment and the well-being of the population in general.

SACOOs are widely seen to have potential to impact on development and poverty reduction. The UN has also acknowledged important direct and indirect impacts on socio-economic development in terms of promoting and supporting entrepreneurial development, creating productive employment, raising incomes and helping to reduce poverty while enhancing social inclusion, social protection and community-building (UN, 2009).

Savings and Credit Cooperatives (SACCOs) are increasingly popular and may soon be the most common form of cooperative within the African cooperative movement (Wolff et al., 2011). They are seen to expand poor people's access to financial services (loans and savings), support enterprise start-up and expansion, and reduce vulnerability by allowing the poor to accrue savings, build assets and smooth out consumption.

3. Methodology of the Study

In this study, mixed research methods were employed to utilize both quantitative and qualitative data on the issues. The quantitative data were obtained through secondary data collection checklists related with performance trends of SACCOs in terms of saving, membership and penetration ratio and these data were mainly obtained from Federal Cooperative Agency and WOCCU website.

The qualitative data were mainly collected through interview and focus group discussions conducted with representatives from Self-help Savings and credit union, Addis SACCOs union, Federal Cooperative Agency and six primary cooperatives (Ethiopian Airlines, Ethiopian Electric and Power Cooperation, Ethiopian Road Authority, Ethiopian Civil Service University, Addis Ababa University, and Joshua Saving cooperative).

The required data were also obtained from management members of some selected SACCOs at primary and union levels and their documentations. In addition, thorough literature review work has been done in order to develop conceptual framework for the study and to get best practices of SACCOs at international level. Policy and legislation on cooperatives in Ethiopia were also reviewed

as to evaluate the enabling environment at the country level. Both qualitative and quantitative data were analyzed using descriptive analysis techniques of content analysis, tabulation and graphical presentation tools with the help of Excel and SPSS.

4. Results and discussion

4.1. The legislative and policy context

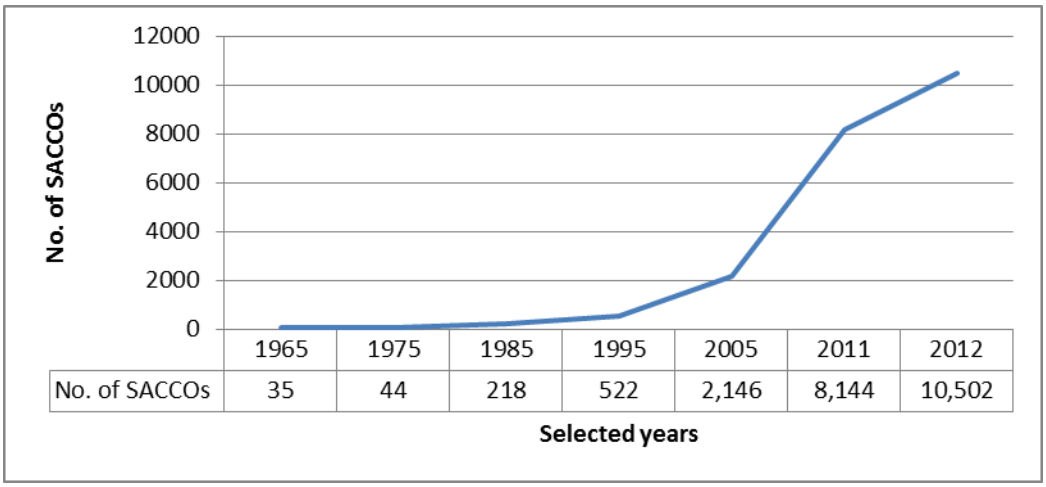
In cognizance of the importance of cooperatives for economic development in Ethiopia, the Government has increased its involvement in cooperative development through policy formulation, including a five year cooperative development plan and proclamations on cooperatives.

The Federal Democratic Republic of Ethiopia enacted legal framework for establishment and management of cooperative societies (proclamation No. 147/98). The preamble of the proclamation states that cooperative societies are formed by individuals on voluntary basis and who have similar needs for creating savings and mutual assistance among themselves by pooling their resources, knowledge and property. It provides enabling legal environment for cooperative societies to actively participate in the free market economic system. The proclamation also recognizes saving and credit cooperatives. It clearly sets out general provisions for registration of cooperatives, legal form of registered cooperatives, rights and duties of members, governance and management of cooperatives, special privileges of primary cooperatives, assets and funds of primary cooperatives, audit and inspection, dissolution of cooperatives and other miscellaneous provisions. This Proclamation conforms to the universal cooperative principles and the ILO Promotion of cooperative Recommendation (No. 193/ 2002).

In 2002, the Cooperatives' Commission Establishment Proclamation No. 274/2002 that created the institutional framework for promoting and supporting the cooperative movement in Ethiopia. Proclamation No. 147/98 was further revised in 2004 with the issuance of the Cooperative Society Proclamation (No. 402/2004). Regional states of the Federal Democratic Republic of Ethiopia have also enacted their own proclamations for the promotion of cooperatives. Particularly, three of the nine regions of Ethiopia, namely the Southern Nations Nationalities and People's Region (SNNPR), Tigray and Amhara have enacted their own cooperative proclamations.

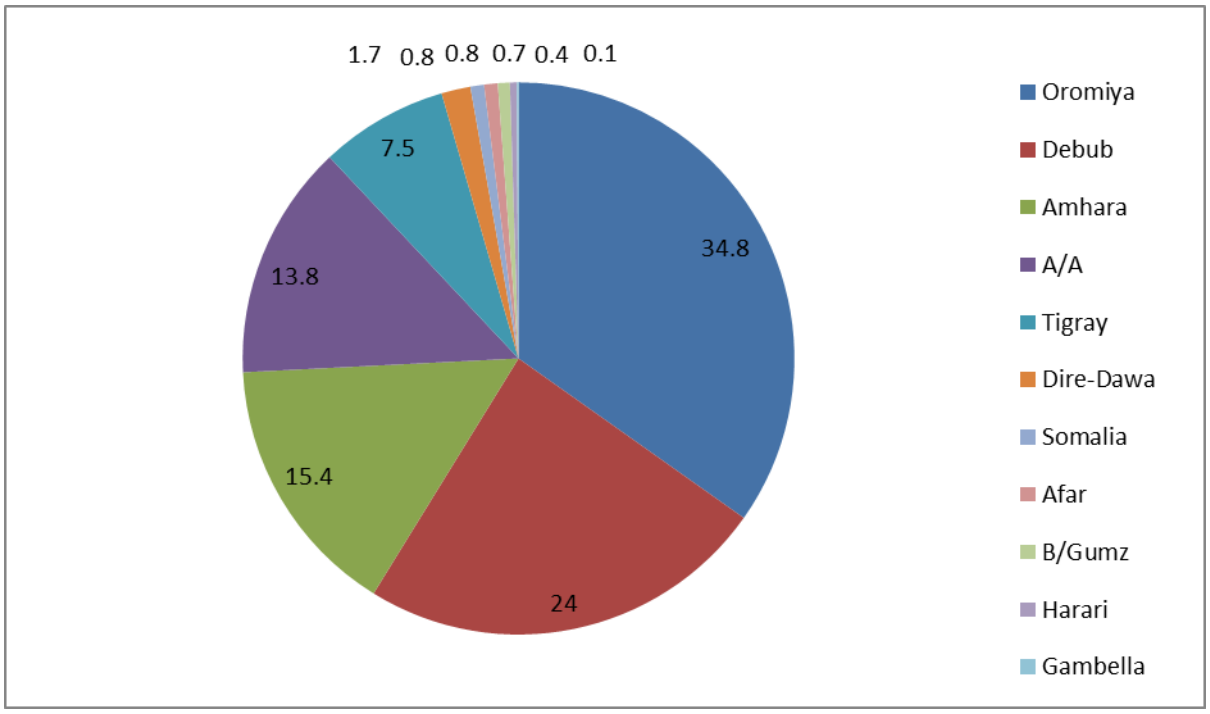
4.2. Performance trend of SACCOs in Ethiopia

Figure 1 depicted the development trend of SACCOs in terms of their number. The number of SACCOs has been growing fast since 2005. The decade between 1995 and 2012 has witnessed more than twenty-fold increase in the number of saving and credit cooperatives in the country with a corresponding increase in contributions and savings. For instance, by 2005, there were 2,146 SACCOs in the country comprising 155,120 members with savings amounting to 504.3 million Birr. By 2012, there were 10,502 SACCOs in the country comprising 885,777 members with savings amounting to 1.3 Billion Birr. Moreover, the number of SACCOs in 2011 increased by 280 percent from 2005. The annual rate of increment in number of SACCOs between 2011 and 2012 was 28%.



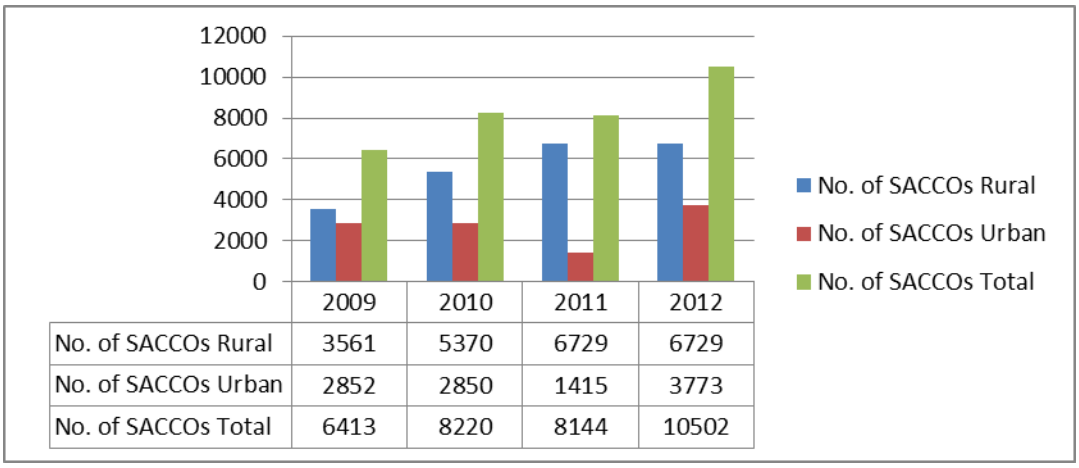
(Source: AEMFI, 2007 and Federal Cooperative Agency data base, 2012)
Figure 1: Trend in Growth of number of SACCOs in Ethiopia

Taking the number of SACCOs in Ethiopia in the year 2012, their distribution is uneven across the regions. The majority of SACCOs are found in Oromia (34.8%), SNNPR (24%), Amhara (15.4%), Addis Ababa (13.8%), and Tigray (7.5%). However, the numbers of SACCOs in other regions are almost negligible ranging from 1.7% in Dire Dawa to 0.1% in Gambella (Figure 2). This shows that the required attention has not been given by majority of the regions in the country.



(Source: AEMFI, 2007 and Federal Cooperative Agency data base, 2012)
Figure 2: Distribution of SACCOs by region for the year 2012.

One of the unique features of SACCOs as compared with other financial institutions like banks and micro-finance institutions (MFIs) is their local nature and accessibility to rural communities. Figure 3 indicated that more than 64% of the total SACCOs in the country are found in rural areas.



	2009	2010	2011	2012
No. of SACCOs Rural	3561	5370	6729	6729
No. of SACCOs Urban	2852	2850	1415	3773
No. of SACCOs Total	6413	8220	8144	10502

(Source: Federal Cooperative Agency data base, 2012)
Figure 3: Number of SACCOs by urban and rural areas, 2009-2012.

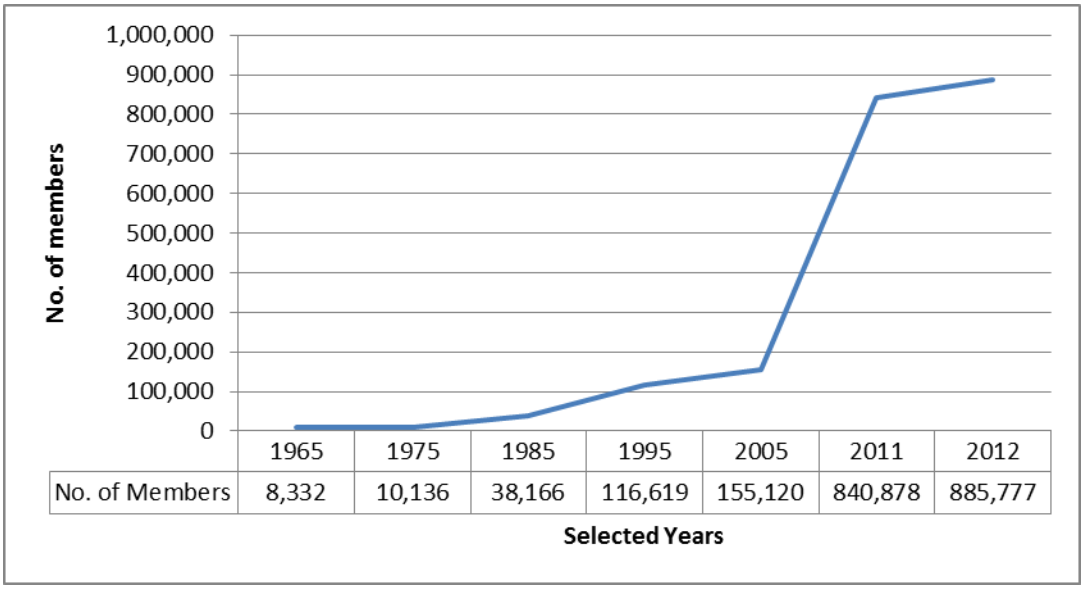
In addition the SACCOs movement in Ethiopia is also characterized by the formation of cooperative unions. By the year 2012, there were 69 unions of SACCOs in Ethiopia as revealed in Table 1. But, the proportion of primary SACCOs which are the members of unions is represented only by 20.6% from the total primary SACCOs in the same year. This clearly indicates that the movement of SACCOs in Ethiopia at the secondary level is very low. This was also confirmed by majority of interviewed individuals on the issue.

Table 1: Unions of SACCOs in Ethiopia for the year 2012

Categories of SACCOs	Number
Unions	69
Primary SACCOs in unions	2164 (20.6%)
Total primary SACCOs	10, 502

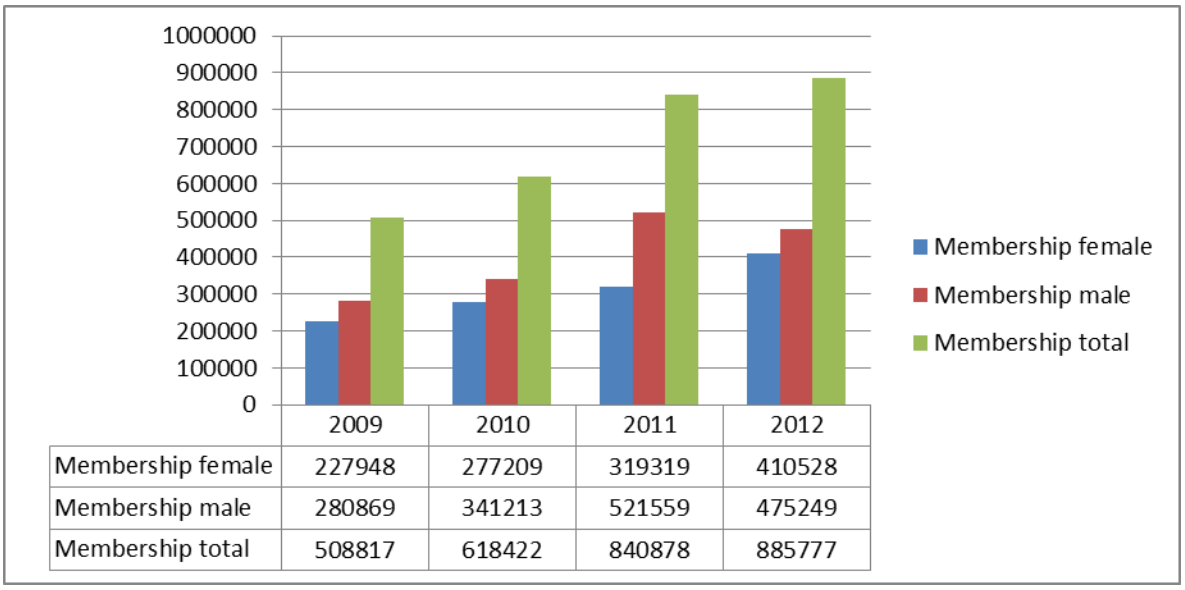
(Source: Federal Cooperative Agency data base, 2012)

In terms of the size of members, the growth of SACCOS in Ethiopia is also increasing from year to year at fast rate as indicated in Figure 4. For example, SACCOs memberships in 2011 (840,878) increased by more than fivefold in the size of members in 2005 (155,120). The annual rate of number of SACCOs membership between 2011 and 2012 was 5.3%.



(Source: AEMFI, 2007 and Federal Cooperative Agency data base, 2012)
Figure 4: Trend in Growth of SACCOs' members in Ethiopia

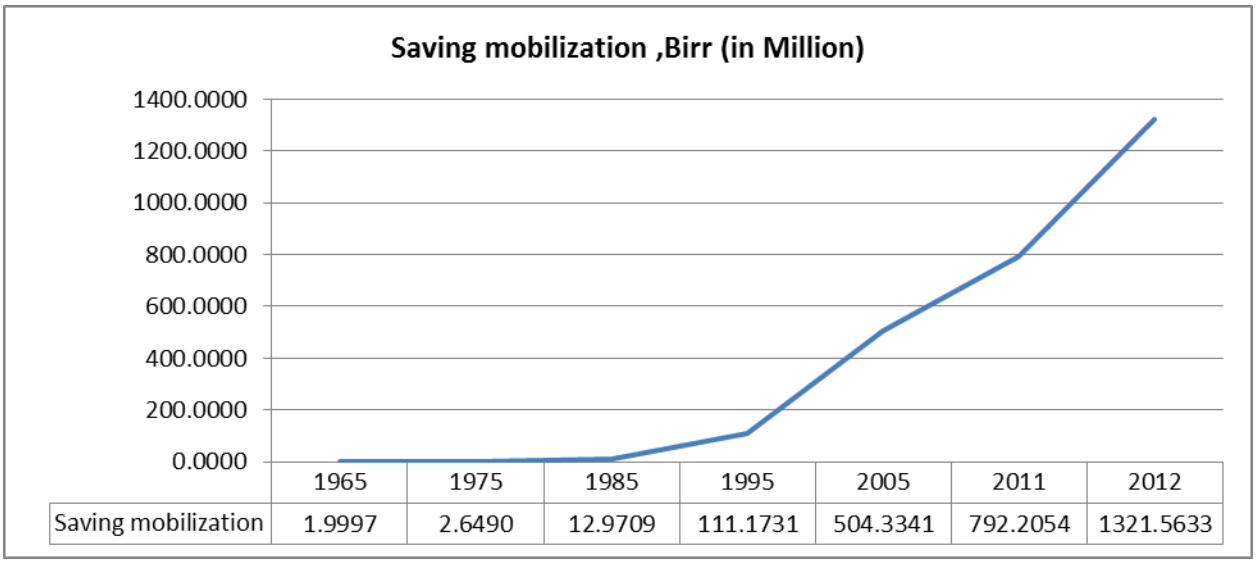
Regarding the role of SACCOs in benefiting both female and male members (the gender issue), it is promising as shown by figure 5.



	2009	2010	2011	2012
Membership female	227948	277209	319319	410528
Membership male	280869	341213	521559	475249
Membership total	508817	618422	840878	885777

Source: Federal Cooperative Agency data base, 2012)
Figure 5: Gender disaggregated members of SACCOs, 2009-2012.

SACCOs are one common mechanism of mobilizing saving. Figure 6 below revealed the capacity and contribution of SACCOs in terms of saving mobilization in Ethiopia since 1985 which improved dramatically. By the year 2012, the total saving of SACCOs in Ethiopia reached more than ETB 1.3 Billion.



	1965	1975	1985	1995	2005	2011	2012
Saving mobilization	1.9997	2.6490	12.9709	111.1731	504.3341	792.2054	1321.5633

(Source: AEMFI, 2007 and Federal Cooperative Agency data base, 2012)
Figure 6: Saving mobilization by SACCOs.

With respect to product diversification and innovation strategies of SACCOs, though the saving mobilization and culture has been improved, SACCOs have had no product diversification, and innovation strategies and mechanisms yet. As obtained from focus group discussion, the most common and possibly the sole saving product offered by SACCOs is saving deposit/accounts. This situation may not attract and satisfy the interests of the clients. There must be a shift from such single saving product to the use of a mix of saving products as indicated by the works of Wright et al. (2000) and WOCCU (2001).

Though the performance trend of SACCOs in Ethiopia has shown increasing trends in terms of their numbers, membership sizes and amount of contribution and saving, many experts on the areas underscored that the performance in terms of penetration rate, average membership and saving ratio is still very low as compared with Sub-Saharan African countries such as Kenya, Rwanda, Uganda, etc. The information obtained from WOCCU database also revealed this fact. As shown in Table 2, the penetration rate of cooperatives in Ethiopia is found to be 2% which is below the average penetration rate of cooperatives in Africa (7.7%). Hence, this figure implies that much work is needed in order to utilize SACCOs as an opportunity to mobilize savings and address the saving-investment gaps in the country.

Table 2: Penetration rate of some Africa countries, 2011.

Country	Penetration rate (%)
Ethiopia	0.6
Benin	32.6
Burkina Faso	18.2
Cameroon	3.5
Gambia	4.40
Ghana	2.10
Africa level[2]	7.7

(Source: WOCCU, 2012)

On the basis of the interview, focus group discussions and documentary analysis, SACCOs experience a wide range of problems partly owing to the fact that they target low income earners and have to establish a balance between serving them adequately and also meeting their operation costs. The major problems experienced by SACCOs are as follows in order of most recurrent problem.

Lack of SACCOs apex in the country: Ethiopia does not have cooperative apexes at all. However, the government is currently fulfilling the representative role and it is uncertain when and whether an independent confederation will emerge.

No comprehensive loan policy and procedures: Most SACCOs either have no loan policy and procedures or what exists is not very clear and comprehensive. There are cases where loan-aging analysis is hardly practiced, there are no provision for loan write offs and losses. No guidelines exist as to what to do in cases where a member defaults in loan repayment. Where they exist they are inadequate to serve the purpose as to why it is intended.

No special government incentives: There are no special incentives provided by government for SACCOs in Ethiopia. If any, it is usually to support the establishment of SACCOs. For instance, the government of Uganda has subsidized the founding of new SACCOs all over the country. Newly established SACCOs can apply for a start-up grant from the government owned apex-institution Microfinance Support Centre (MSC). MSC also gives out interest free loans to the SACCOs or other subsidized

[2] Average penetration rate of cooperatives in Africa for 2008 as studied by Pollet (2009)

loans. In addition to grants and loans, SACCOs can also receive operational support from the government. The government pays salaries and rent for the first two years after the start-up. These support schemes are important elements of the government's "One SACCO per sub-county" initiative, which is a part of the wider program "Prosperity for All" (Wolff et al., 2011).

No institutional capacity to introduce other products & services: Most SACCOs lack capacity to expand their product range because of lack of capital and lack of necessary management systems. They lack capacity for market research and product development to introduce other services that cover time deposit or term deposit, current account and special saving deposits.

Lack of sufficient funds for provision of services: Some SACCOs suffer from lack of sufficient funds to provide services especially loans to its members. Whereas waiting period for loans in some institutions could be 14-30 days, members have to wait for between 6-12 months to have access to the loans. Even seemingly organized SACCOs with comprehensive loan policies suffer from lack of enough capital for service provision.

No internal control systems put in place: For some SACCOs, there are no savings & internal control procedures in place. They lack from internal audit committee, no written audit policy and procedures. This is risky as it may encourage fraud within organization. Reconciliation of cashbook balances and actual cash in the safe is sometimes not done frequently. There is poor documentation of loans and other financial record.

Lacks of vision/strategy follow up: Some SACCOs lack a clear cut direction of where they are going, what they want to achieve or progress they are making towards their targets. They have no grass root structure to support effective delivery of services and supervision. They also lack in culture of using regular program reports to review direction. Very little or no market survey is carried out to have a feel of client needs. There are cases where disbursement targets have fallen behind growth targets. Systematic process towards product development or improvement is also lacking.

Weak participation in protecting the constituency's rights/social protection services & voice: Due to lack of effective representation systems, cooperatives are not involved in government policy as much as they could be. Cooperatives do not yet provided additional systems of social protection (other than traditional in-group mutual support), nor do they bring about a voice on behalf of their constituency. Likewise,

cooperatives are mostly not yet equipped to serve as a vehicle for life quality campaigns such as gender equality, environmental awareness or HIV/AIDS prevention.

5. Conclusions and the way forward

This study analyzed the performance trend of savings and credit cooperatives in terms of their number, membership sizes, savings mobilization, and identified the major challenges of SACCOs in Ethiopia. Accordingly, the growth of SACCOs in Ethiopia as semi-informal financial institutions is improving from time to time in terms of number of SACCOs, membership base and savings amount. Moreover, female participation in SACCOs has grown over time. Among the challenges that SACCOs face lack of SACCOs apex in the country, no comprehensive loan policy and procedures, no special government incentives, no institutional capacity to introduce other products & lack of sufficient funds for provision of services, no internal control systems put in place, lack of vision/strategy follow up and weak participation in protecting the constituency's rights/social protection services & voice are the major once. Hence, based on the findings of this particular study, the following recommendations are forwarded.

SACCOs as semi-informal financial institution should be given proper recognition and adequate consideration in the nation's financial system. To this effect, government should redesign the existing regulatory policies to formalize and standardize the operations of the major SACCOs. However, such regulations should not be framed in a way that will totally cripple or paralyze institutions' activities, but effectively enhance their performance for maximum contribution to development.

Serious efforts should be made by both the government and relevant institutions concerned to establish confederations and federation of SACCOs as apex structure which would contribute towards the international principles of cooperatives. In addition, it will represent the sector at national, continental and global levels. Cooperative federation/confederation should be established at the country level and should pursue the overarching goal of mobilizing the cooperative self-help mechanism in order to improve the governance, efficiency and performance of cooperatives, so that they may strengthen their capacity to create jobs, access markets, generate income, reduce poverty, provide social protection and give people a voice in society. The apex level of SACCOs would be of paramount importance because it facilitates and supports in networking both within country and through regional and North-South links.

SACCO's should engage with policy makers in identifying workable programs that address cross cutting issues in the society, thus empowering the community and making SACCOs relevant to the community. The national umbrella bodies in conjunction with the continental body can make this possible by working closely with various arms of government responsible for policy formulation.

SACCOs need to focus on all the three basic functions of saving mobilization: removal of the "savings constraint" on growth, the optimization of the saving pattern of the economy, and the transmission of savings to efficient investment.

SACCOs internal operations such as collection of money, loan management and searching for investment opportunities should meet international financial standards and cooperative principles. For instance, many SACCOs in Ethiopia do not issue shares, as a result their liabilities are by much greater than their capital.

SACCOs need to scale up their activities and expand market access. Thus, they have to diversify their offer in order to address special client segments (children, elderly, clubs and associations) or special purposes (pilgrimage, education, housing, retirement, marriage, emergencies, etc.) rather than providing the current very limited saving product. Other services and products that cover time deposit or term deposit, current account and special saving deposits should be introduced by them.

The Government and SACCOs organizing authority/FCA/ should emphasize on promoting the benefits of SACCOs and providing incentives for the transformation of SACCOs movement to union and federation levels, providing the relevant legal framework for SACCOs engagement in Bank and insurance services in order to enhance their loan provision capacity, and creating awareness for the importance of saving & saving culture (through SACCOs) especially for the low performing regions/city administration (Dire Dawa, Harari and the four emerging regions).

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Theme 4: Innovative Saving and Loan Schemes, Products and Services

Assessment of the Opportunities and Challenges for the Adoption of e-Banking Services in Selected Ethiopian Commercial Banks

Beza Muche
Lecturer, Department of Banking and Finance, Debre Markos University
E-mail:bezamt@gmail.com

Abstract: *Despite the growth of e-banking adoption worldwide, Ethiopian banks continue to conduct most of their banking transactions using traditional methods. The general objective of this study was to assess the extent, benefits, driving forces, opportunities and challenges of adopting e-banking system in Ethiopia. Primary and secondary data were collected from the selected commercial banks and analyzed using descriptive statistics. The findings revealed that balance inquiry, cash withdrawal, fund transfers and statement printing were among the major e-banking practices for the banks studied. The study also revealed that uses of automated teller-machine (ATM), debit card, credit card, salary card, visa card, master card, internet and mobile banking were initiated among the banks studied. Cost reduction, coverage of wider geographical area and customer satisfactions were indicated as the benefits of adopting e-banking system for the banks. On the other hand, the existence of high competition in the banking industry, the need to improve organizational performance, transaction cost reduction, wide geographical coverage and building organizational reputation were among the main driving forces that initiate banks to adopt e-banking services. Risk aversion behavior of banks, lack of suitable legal and regulatory framework, absence of financial networks that links different banks, low level of service quality and high internet cost, poorly developed telecommunication infrastructure and security concerns were among the major challenges for the adoption of e-banking services in the country. However, improvement in using the e-banking system among customers was the major opportunity for the adoption of the system in the banking industry. Based on the findings, it is recommended that all the stakeholders should give quick emphasis to strengthen the banking industry by introducing the system to make Ethiopian banks competitive both in the domestic and international markets.*

Keywords: *Commercial banks, e-banking*

1. Introduction

Financial services industry has recently been in historic transformation in terms of e-developments such as e-finance, e-money, electronic banking (e-banking), e-brokering, e-insurance, e-exchanges, and even e-supervision. The driving forces behind the rapid transformation of banks are influential changes in the economic environment: innovations in information technology, innovations in financial

products, the dynamic nature of customers demand, liberalization and consolidation of financial markets, deregulation of financial intermediation etc. The financial services market is continuing to change rapidly, which brings the question whether traditional banks, as they are now structured, will actually continue to exist in the context of changing economic environment (Olga, 2003). The evolution of e-banking started by the use of Automatic Teller Machines (ATMs) in Finland (Mishra, and Kiranmai, 2009) in order to provide efficient and effective service to their customers.

Electronic banking has been widely used in developed countries and is rapidly expanding in developing countries. However, the slow diffusion of e-commerce to African countries has been attributed to a number of issues some of which may be unique to the African Continent (Darley, 2001). Electronic banking (e-banking) is nothing but e-business in banking industry. It may also be referred as internet banking. The internet is transforming the banking and financial industry in terms of the nature of core products /services and the way these are packaged, proposed, delivered and consumed (Sathye, 1999).

In this era of globalization, with increased competition around the globe in all sectors, a strong banking industry is important in every country and can have a significant effect in supporting economic development through efficient financial services. As a result, many banks in the world are modifying their strategies to reach customers worldwide more easily and cheaply. Therefore, banks are developing the technologies that will help them deliver banking products and services by the most cost-effective channels and one of such channel is adoption of e-banking or internet banking. E-banking is a way to keep existing customers and attract new ones to the bank. In Ethiopia, the role of the banking industry needs to change to keep up with the globalization movement, both at the procedural level and at the informational level. This change will include moving from traditional distribution channel banking to electronic distribution channel banking. E-Banking transactions have opened up new window of opportunity to the existing banks and financial institutions. It permits business process re-engineering, serving borderless market, to achieve zero latency leading to improvements in customer service levels and better risk management because of real-time settlement. Since its evolution, it is having unprecedented growth. The growth rate is higher in developed countries, and comparatively lower in least developed countries (Chang, 2003 and Gallup, 2008).

Despite the growth of IT worldwide, electronic payment systems are at an infant stage. Certainly, the banking industry in Ethiopia is underdeveloped. Ethiopian commercial banks customers missed to

enjoy the technological advancement in banking sector, which has been entertained elsewhere in African and the rest of the world. It is difficult to withdraw money without presenting the passbook and money transfer is allowed only in between branches of the same bank. However, there is a strong need from the public and the economy for strengthening linkages among banks in order to allow healthy flow of financial resources among financial institutions and optimize the contributions of the entire financial system to the development processes as a whole (Gardachew, 2008). Every bank customer is highly dissatisfied by the disappointing status of financial development in Ethiopia. Hence, this study is aimed at exploring the practice, benefit and extent of current e-banking service, and assessing the challenges and opportunities of the adoption of e-banking service in Ethiopia.

2. E-banking in Ethiopia

E-banking is the modern delivery channel for banking services. According to Mohammed (2008), electronic Banking is transforming the financial services industry through various innovations. It provides the ability to create more effective systems of controls in individual institutions and in the market themselves. Compared to the paper based operation, Electronic Banking Systems, in its most proficient form, offer instant verification of transfer and reduces the flow of costly paper in the record keeping process. In addition, electronic banking could reduce operating costs for banks.

E-Banking channels include internet banking, electronic payment methods (ATM, E-cards), mobile banking, tele banking, home banking, Point of Sale Terminal and Society for Worldwide Inter-Bank, and Financial Telecommunication (SWIFT). According to Booz et al. (1999), "Internet banking" refers to systems that enable bank customers to access accounts and general information on bank products and services through a personal computer (PC) or other intelligent device. Based on the levels of access granted, internet-banking products are divided into 3 types. They are Information Only System, Electronic Information Transfer System, and Fully Electronic Transactional System. While mobile banking (also known as M-banking or SMS banking) is a term used for performing balance checks, account transactions, payments etc. via a mobile device such as a mobile phone.

Tele banking refers to the services provided through phone that requires the customers to dial a particular telephone number to have access to an account, which provides several options of services. On the other hand, home banking frees customers from visiting branches and most transactions will be automated to enable them to check their account activities, transfer funds and to open L/C sitting in their desk with the help of a personal computer and a telephone. An advanced payment system

enables customers to use an ATM card to pay for goods and services and it requires electronically debiting the cardholders account and crediting the account of the merchant (Rahman, 2006).

SWIFT is a bank owned by a co-operative based in Belgium servicing the financial community worldwide and non-profit making. It is a highly secured messaging network which enables banks to send and receive fund transfer, L/C related, and other free formal messages to and from any banks active in the network. Especially it will be of great help for clients dealing with imports and exports etc (Mohammed, 2008).

An exploratory research conducted by Mahdi (2004) in Iran indicate that the adoption status of e-banking is the transition of pre-development to development phase and the main drivers for adopting e-banking are downsizing, gaining competitive advantage, increasing market share and improving bank's image. The analysis further reveals that inefficient ICT infrastructure, political challenges and traditional organizational culture are barriers for adoption of e-banking.

In addition to the above factors, the case study conducted in China by Sherah, Fei, and Yi Ruo (2005) suggests that government support is strong driver for e-banking adoption. The government support is manifested in two ways. Firstly, the Government is establishing an electronic commerce (EC)-friendly environment in the country. The government in recent years to revamp the national ICT and logistic infrastructures has committed heavy investments. New EC laws and regulations have also been passed and adjusted to provide legal protections for EC activities in general. Secondly, the government also directly offers financial incentives to promote e-banking adoption.

3. Research methodology

Description of the Study Area: The study was conducted in Adiss Ababa where head office of each bank and the national bank of the country are located. Addis Ababa is the capital city of Ethiopia and the diplomatic capital of Africa with a population of greater than 3 million. In addition, employees have better understanding about e-banking as compared to other locations in the country.

Research Design: An exploratory research design was employed for this study as it is the most suitable approach in view of the nature of the problem being investigated. According to Zikmund (2000), exploratory research is conducted to clarify and research a better understanding of the nature of the problem. Consequently, it is appropriate to use when there is little prior knowledge of the problem

being researched. Saunders & Thornhill (2003) argue that exploratory research is advantageous because it is flexible and adaptable to change.

Sampling: Both private and public commercial banks were included as a target population. Purposive or convenience sampling technique was used to select the target population and all commercial banks that are currently providing service and have age of five and above in the banking business were included in the study. Accordingly, commercial bank of Ethiopia, Dashen bank, United bank and Zemen bank were included among those providing the service and six commercial banks such as Wegagen bank, Abyssinia bank, Nib international bank, Awash international bank, and cooperative bank of Oromia were included among those banks which are not providing the service.

Data Source and Method of Collection: The study was conducted by collecting data both from primary and secondary sources. Primary data were collected from the respondents using structured questionnaire and interview with the higher official of the National bank of Ethiopia and IT managers of respondent banks. Secondary data was collected from the websites of the respective commercial banks.

Method of Data Analysis: In order to meet the stated research objectives, descriptive type of analyses (tables and percentages) were employed to analyze the collected data.

4. Results and Discussion

As shown in Table 1, almost all banks except Zemen bank have an age of more than five years. The study used IT managers of the respective bank as respondent, all of whom have an experience of more than five years. With regard to sex, all respondents are male and the educational status of the respondents is BSc (66.7%) and MSc (33.3%). This implies that data were collected from employees who have good educational status.

Table 1: Demographic characteristics of respondents

Bank	Year of establishment	Job position	Experience	gender	Educational status
Commercial Bank of Ethiopia(CBE)	1980	IT manager	10	M	Degree
Awash international Bank(AIB)	1994	IT manager	10	M	Masters
Dashen bank(DB)	1995	IT manager	10	M	Degree
Wegagen Bank(WB)	1997	IT manager	12	M	Degree
Nib international Bank(NIB)	1999	IT manager	4	M	Masters
United Bank(UB)	1998	IT manager	12	M	Degree
Cooperative Bank of Oromia(CBO)	2004	IT manager	3.5	M	Degree
Zemen Bank(ZB)	2008	IT manager	14	M	Masters

Source: Own survey

Descriptive result of banks adoption of e-banking indicated that only four banks among those currently operating in the country are providing banking products to their customer through electronic channels but the remaining banks are not using electronic channels as a means of service delivery. However, they are planning to adopt the system and among these some banks are currently on the way of installing the system. For example, Wegagen Bank has signed an agreement with Technology Associates, a Kenyan based IT firm, for the development of the solutions for the payment system and installation of a network of ATMs on December 30, 2008.

In addition, the table also indicated that e-banking service is in an infant stage in the country since most banks did not yet adopted the system and even those banks that are currently providing the services have commenced the system after 2006 and did not fully adopted the technology because of different challenges.

Table 2: Banks adoption of e-banking

Banks providing e-banking service	Year of commencement of e-banking	Banks not providing e-banking service but planned to adopt
CBE	2001	AIB
DB	2006	WB
UB	2009	NIB
ZB	2009	CBO

Source: Own survey

Among the total branches of the CBE, only 35 (16.7%) branches are currently providing ATM service to their customers. All the branches of Dashen bank are providing ATM services but only selected banks are delivering electronic point of sale service. With regard to United bank, 38 (92.7%) branches are currently providing e-banking services to their customers but only three of them (7.3%) are not. In addition, Zemen bank is currently providing the service with its single branch located in Addis Ababa. The difference in the adoption of e-banking service among the branches is due to the difference in the availability of ICT infrastructure among the branches in different locations and lack of customer awareness on the service especially with those branches located in the rural areas (Table 3).

Table 3: Number of branches providing e-banking services

Bank	Total branch	Number of branches providing the service
CBE	209	35
DB	54	54 (ATM), selected for POS
UB	41	38
ZB	1	1

Commercial bank of Ethiopia is providing only ATM services for the customer. Undeniably, the largest state-owned bank, CBE, is the pioneer in introducing ATM service for local users in 2001 with its fleet of eight ATMs located in Addis Ababa. Moreover, CBE has had Visa membership since November 14, 2005. However, due to lack of appropriate infrastructure, it failed to reap the fruit of its membership.

Despite, being the pioneer in introducing ATM based payment system and acquired Visa membership, CBE lagged behind Dashen Bank, which worked aggressively to maintain its lead in electronic payment systems. Dashen bank, a forerunner in introducing e-banking in Ethiopia, has installed ATMs at convenient locations for its own cardholders. At the end of June 2009, Dashen bank has installed more than 40 ATMs in its area branches, shopping malls, restaurants and hotels. Expanding its leadership, Dashen Bank has begun accepting MasterCard in addition to Visa credit cards. Dashen won the membership license from MasterCard in 2008. In addition, Dashen Bank also introduced salary cards to companies and started issuing debit cards to access one's account.

The younger single-branched Zemen Bank launched multi-channel banking (MCB) services in Ethiopia, which includes ATMs, Internet Banking, Banking through Call Centre and SMS banking. These services introduced by Zemen Bank makes it the first in its kind in Ethiopia to introduce fully IT supported and 24/7 customers services. Currently, it is the only bank in the country offering ATM, SMS and internet banking services all at the same time. Zemen's new services would enable customers of the bank to get the services listed in Table 4.

United is the first bank to introduce the MCB for the first time in Ethiopia in August 2008. This service enables customers to get banking services without a need to physically visit branches of the Bank. Customers can get a 24/7 service anywhere as long as they have an internet access. A customer who subscribe to the internet banking service of the bank can enjoy the services listed in Table 4. As United strides forward to develop new products, it introduced SMS Banking service in September 2008. Like Telephone Banking, Internet Banking and BLMT services, United is a pioneer to introduce SMS banking. Like the internet banking service, customers can get a 24/7 service using SMS banking. Broadband local money transfer (BLMT) is one of the peculiar services of United Bank S.C. The introduction of this electronic money transfer service, which uses a broadband connection, is quiet a departure from a transfer service given by using telephone lines.

In general, as shown in Table 4 the most dominant e-banking channel among those banks, which are currently providing the service, is ATM card, which is the first generation of electronic banking channel. Therefore, it is possible to conclude that even banks that are providing the service did not sufficiently adopted the latest e-banking channel such as internet and mobile banking.

Table 4: Extent and Practices of e-banking in Ethiopia

Bank	e-banking channels	Services /transactions available
CBE	ATM, credit card and debit card	Balance inquiry, cash withdrawal, and statement printing
DB	ATM, master card, visa card, salary card, debit card, mobile or SMS banking and electronic point of sale (POS)	Balance inquiry, cash withdrawal, statement printing, fund transfer, PIN change, purchase of goods or services, accessing his/her accounts 24*7
UB	Internet banking, phone banking, mobile /SMS banking and BLMT	Balance inquiry, fund transfer, mini-statement or view account statement, information about the exchange rate of major currencies, purchase of goods or services, request a new cheque book, make a stop payment order, accessing his/her accounts 24 hours a day, 7 days a week, and 365 days a year, cheque-status enquiry, view account transaction, view loan status
ZB	Internet banking, phone banking, mobile /SMS banking, SWIFT, ATM-credit card and debit card	New account set up, credit application, Balance inquiry, fund transfer, mini statement, information about the exchange rate of major currencies, purchase of goods or services, request a new cheque book, make a stop payment order, accessing his/her accounts 24 hours a day, 7 days a week, and 365 days a year, bill presentment and payment, password change and management features, cheque-status enquiry, and credit-card payments

Source: Own survey

Regarding operational issues, all banks check their links and interactive programs periodically for its accuracy and functionality since this helps banks to take corrective measures timely. In addition, to prevent the web site information from being altered, security measures like firewall and secure socket layer (SSL) is being taken by all banks except that of the commercial bank of Ethiopia. Though it is not satisfactory, banks put in place using passbook and checkbook when there is an interruption in the service of e-banking for customers. Pertaining to providing electronic banking training to employees, all banks trained their staff. However, it is not sufficient and confined to the ICT personnel's of each bank.

Addressing banking activities beyond the traditional trade area is one among the different driving forces of delivering banking products to the customer through electronic channels. In this regard, all banks have policies and procedures in place to address this activity. Moreover, with respect to target market or trade area, all banks have target market area for ATM services.

Table 5: Operational issues related to e-banking service

S.No.	Operational Issues	CBE	DB	UB	ZB
1	Are links and interactive program's check for accuracy and functionality?	yes	yes	yes	Yes
2	Are security measures in place to prevent the website information from being altered?	No	Yes	yes	Yes
4	Does the bank have procedures in place for when there is an interruption in service of e-banking for customers?	yes	yes	yes	Yes
5	Is electronic banking training provided to employees?	yes	yes	yes	Yes
6	Are any policies and procedures in place to address activities beyond the traditional trade area?	yes	yes	yes	Yes
7	Do the banks have a target market or trade area for e-banking?	yes	yes	yes	Yes

Source: Own Survey

As reported in Table 6, all banks (100%) believe that providing banking products to the customer by using electronic channels have the benefit of building good image, load reduction that enables bank employees to focus on strategic issues instead of focusing on traditional activities and improvement of organizational performance.

Table 6: Benefits realized by banks from the adoption of e-banking service

Bank	Benefits
CBE	Enhanced image, improvement of organizational efficiency, and load reduction.
DB	Attracting high value customers, enhanced image, cost reduction, improvement of organizational efficiency, high foreign currency earning, and low risk of cash management, load reduction.
UB	Attracting high value customers, enhanced image, cost reduction, Improvement of organizational efficiency.
ZB	Attracting high value customers, enhanced image, larger customer coverage, cost reduction, improvement of organizational efficiency, better monitoring of their customer base, and load reduction.

Source: Own Survey

Even though there are some sort of differences regarding the driving forces that initiate for the adoption of e-banking service in each bank, the existence of high competition in the banking sector, rapidly changing customers' needs and preferences, desire to improve organizational performance, desire to improve the relationship with customers, desire to reduce transaction cost, desire to build organizational reputation, and desire to satisfy customers are the major common driving forces that initiate banks for the adoption of e-banking as a means of service delivery to their customers (Table 7).

Table 7: Driving forces that initiate banks to adopt e-banking services

Bank	Driving forces
CBE	Rapidly changing customers' needs and preferences, desire to improve organizational performance, desire to improve the relationship with customers, desire to reduce transaction cost, desire to cover wide geographical area, desire to build organizational reputation and desire to satisfy customers.
DB	Existence of high competition in the banking industry, desire to improve organizational performance, desire to improve the relationship with customers, desire to reduce transaction cost, desire to cover wide geographical area, desire to build organizational reputation, desire to satisfy customers, to keep the international banking standard, and rapidly changing customers' needs and preferences.

UB	Desire to improve organizational performance, desire to improve the relationship with customers, desire to reduce transaction cost, desire to cover wide geographical area, desire to build organizational reputation, desire to satisfy customers.
ZB	Existence of high competition in the banking industry, desire to improve organizational performance, desire to improve the relationship with customers, desire to reduce transaction cost, desire to cover wide geographical area, desire to build organizational reputation, desire to satisfy customers and rapidly changing customers' needs and preferences.
CBO	Existence of high competition in the banking industry, desire to improve organizational performance, desire to improve the relationship with customers, desire to reduce transaction cost, desire to cover wide geographical area, desire to build organizational reputation, desire to satisfy customers, to withstand the prospective competition with the foreign banks provided that if they are tolerated to operate in Ethiopia and rapidly changing customers' needs and preferences.
NB	Existence of high competition in the banking industry, desire to improve organizational performance, desire to improve the relationship with customers, desire to reduce transaction cost, desire to cover wide geographical area, desire to build organizational reputation, desire to satisfy customers and Rapidly changing customers' needs and preferences.
WB	Existence of high competition in the banking industry, desire to improve organizational performance, desire to improve the relationship with customers, desire to reduce transaction cost, desire to cover wide geographical area, desire to build organizational reputation, desire to satisfy customers and rapidly changing customers' needs and preferences
AIB	Existence of high competition in the banking industry, desire to improve organizational performance, desire to improve the relationship with customers, desire to build organizational reputation, desire to satisfy customers and rapidly changing customers' needs and preferences

Source: Own Survey

Table 8: Challenges for the adoption of e-banking service in Ethiopia

Bank	Major challenges
AIB	Chances of risk, lack of suitable legal and regulatory framework, lack of government initiation or lack of government prioritization, absence of financial networks that links different banks, low level of internet penetration and poorly developed telecommunication infrastructure, high cost of internet, security issues.
WB	High installation cost, chances of risk , lack of suitable legal and regulatory framework, high rate of customer illiteracy, non-readiness of banks to adopt the system, lack of government initiation or lack of government prioritization, absence of financial networks that links different banks, low level of internet penetration and poorly developed telecommunication infrastructure, high cost of internet and security issues.
NIB	High installation cost, chances of risk, lack of suitable legal and regulatory framework, non-readiness of banks to adopt the system, lack of government initiation or lack of government prioritization, absence of financial networks that links different banks, low level of internet penetration and poorly developed telecommunication infrastructure, high cost of internet and security issues.
CBO	Chances of risk, lack of suitable legal and regulatory framework, high rate of customer illiteracy, non-readiness of banks to adopt the system, lack of government initiation or lack of government prioritization, absence of financial networks that links different banks, low level of internet penetration and poorly developed telecommunication infrastructure, low level of initiation on the side of the shareholders to adopt the system, high cost of internet and security issues.
CBE	Chances of risk, lack of trained and efficient staff in e-banking context, lack of suitable legal and regulatory framework, absence of financial networks that links different banks, low level of internet penetration and poorly developed telecommunication infrastructure, high cost of internet and security issues.
DB	Chances of risk, lack of trained and efficient staff in e-banking context, lack of suitable legal and regulatory framework, absence of financial networks that links different banks, low level of internet penetration and poorly developed telecommunication infrastructure, high cost of internet and security issues.
UB	Security issues, lack of public awareness on the use of e-banking service.
ZB	Security issues, lack of public awareness on the use of e-banking service.

Source: Own Survey

The major challenges identified in this particular study in the industry are: chances of risk (such as operation, security and reputation risk as stated by both banks), lack of suitable legal and regulatory framework that govern and regulate e-banking transaction in the country, absence of financial

networks that links different banks, lack of government initiation or lack of government prioritization, high cost of internet, low level of internet penetration and poorly developed telecommunication infrastructure are the major common challenges for the adoption of e-banking service in the country's banking industry.

The study identified the existing opportunities in the country for the adoption of e-banking. These are improvement in the banking habit of the society, sustainable economic growth in the country, increment of tourist inflow to Ethiopia, commitment of the government to facilitate the expansion of ICT infrastructure, and willingness among banks to cooperate in building infrastructure. Moreover, cooperation among banks for instance three private commercial banks (Awash International Bank S.C., Nib International Bank S.C, and United Bank S.C.) to launch an Automated Teller Machine (ATM) and Point of Sale terminal (POS) network is encouraging strategy to improve electronic payment system in Ethiopia. In addition, the commitment of the government to strengthen the banking industry is a good opportunity for the adoption of e-banking service in the country.

Table 9: Existing opportunities for the adoption of e-banking services

Bank	Opportunities
CBE	Late adopter opportunities, commitment of the government to facilitate the expansion of ICT infrastructure, improvement in the banking habit of the society, sustainable economic growth in the country, increment of tourist inflow to Ethiopia and willingness among banks to cooperate in building infrastructure.
DB	Late adopter opportunities, commitment of the government to strengthen the banking industry, commitment of the government to facilitate the expansion of ICT infrastructure, improvement in the banking habit of the society, sustainable economic growth in the country, increment of tourist inflow to Ethiopia and willingness among banks to cooperate in building infrastructure.
UB	Late adopter opportunities, commitment of the government to facilitate the expansion of ICT infrastructure, improvement in the banking habit of the society, sustainable economic growth in the country, increment of tourist inflow to Ethiopia and willingness among banks to cooperate in building infrastructure.

ZB	Late adopter opportunities, commitment of the government to strengthen the banking industry, commitment of the government to facilitate the expansion of ICT infrastructure, improvement in the banking habit of the society, sustainable economic growth in the country, increment of tourist inflow to Ethiopia and willingness among banks to cooperate in building infrastructure.
WB	Late adopter opportunities, commitment of the government to facilitate the expansion of ICT infrastructure, improvement in the banking habit of the society, sustainable economic growth in the country, increment of tourist inflow to Ethiopia and willingness among banks to cooperate in building infrastructure.
NIB	Commitment of the government to facilitate the expansion of ICT infrastructure.
AIB	Late adopter opportunities, commitment of the government to strengthen the banking industry, commitment of the government to facilitate the expansion of ICT infrastructure, improvement in the banking habit of the society, sustainable economic growth in the country, increment of tourist inflow to Ethiopia and willingness among banks to cooperate in building infrastructure.
CBO	Late adopter opportunities, commitment of the government to strengthen the banking industry, commitment of the government to facilitate the expansion of ICT infrastructure, improvement in the banking habit of the society, sustainable economic growth in the country, increment of tourist inflow to Ethiopia and willingness among banks to cooperate in building infrastructure.

Source: Own Survey

5. Conclusion and Recommendation

The Ethiopian banking system is at an infant stage in terms of providing e-banking compared to the rest of the world. Cash is still the most dominant medium of exchange. ATM, Credit Card and debit card services, internet banking, mobile banking and other electronic payment systems are at infant stage. In general, the most dominant e-banking channel among those banks, which are currently providing the service, is ATM card, which is the first generation of electronic banking channel. In view of the extent of e-banking adoption, majorities of the banks have not adopted this technology and are using traditional services to reach and serve their clients. In general, banks in Ethiopia are trailing behind in acquiring the required quality of banking services to effectively compete in the global market.

Adoption of e-banking service have the benefit of attracting high value customers, enhanced image, larger customer coverage, cost reduction, improvement of organizational efficiency, and load reduction etc from the view point of the bank. Moreover, important perceived benefits of using e-banking among those banks that are not currently providing the service but are planning to adopt the system were relative advantage, organizational performance, customer relationship and perceived ease of use.

Chances of risk, lack of trained and efficient staff in e-banking context, lack of suitable legal and regulatory framework, absence of financial networks that links different banks, low level of internet penetration and poorly developed telecommunication infrastructure, high cost of internet, lack of customer awareness and security issues are the main challenges for adoption of e-banking in Ethiopia. On the other hand, commitment of the government to facilitate the expansion of ICT infrastructure, improvement in the banking habit of the society, sustainable economic growth in the country, increment of tourist inflow to Ethiopia and willingness among banks to cooperate in building infrastructure are among the major opportunities for the adoption of e-banking in the country. Based on the findings of this study, the following recommendations are forwarded in order to promote and develop viable e-banking service in Ethiopia.

Although the Government of Ethiopia is making efforts to expand basic communication technology to the country, more efforts should be made to expand modern telecommunication network to the country. Therefore, government should implement the national ICT policy as quickly as possible so that the ICT infrastructure at ETC should be available.

With regard to capacity building, the National Bank of Ethiopia should prepare various capacity building activities for banks regarding e-banking operation and provide incentives for banks to invest rigorously on ICT and use of e-banking. In addition, each bank should strengthen its ICT department through providing training to IT personnel and procuring required hardware and software. The government of Ethiopia should consider the liberalization of the banking industry to foreign bank entry to enhance the introduction of modern technology in the banking sector. Banks that are currently providing the service should promote the system in order to raise public awareness on the use of e-banking service. Furthermore, as mobile banking is the latest electronic banking channel, it is important for each bank to formulate relevant acts, policies, and adopt operative guidelines.

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Theme 5: Loan and Saving in Agriculture and Pastoralism

Impact of Microcredit on Farm Productivity: The Case of Deder and Goro Gutu Districts, East Hararghe Zone, Ethiopia

Melkamu Belina[a] and Mengistu Ketema[a]
[a]School of Agricultural Economics and Agribusiness, Haramaya University
E-mail: melkizan@fastmail.fm and mengistuket@gmail.com

Abstract: *This study evaluated the impact of micro-credit on farm productivity in Deder and Goro Gutu districts of East Hararghe zone. For the analysis, a total of 180 (micro-credit beneficiary and non-beneficiary) households were randomly drawn and cross-sectional data were collected from these households using a structured questionnaire. The collected data were analyzed using descriptive statistics and econometric tools. Propensity score matching (PSM) method was employed to analyze the impact of micro-credit on farm productivity of households in the districts. The PSM method was checked for covariate balancing, t-ratio, and joint significance level tests. Additionally, sensitivity analysis was done to check the existence of hidden bias due to unobserved confounders using Rosenbaum bounds approach. The results obtained from PSM technique showed that education of the household head, improved seed usage and amount of fertilizer usage were found to have positive relationship whereas religion, livestock holding, and off/non-farm income were found to have negative relationships with participation in micro-credit and farm productivity. In addition, the PSM result showed that participation in micro-credit had a positive and significant impact on farm productivity as measured by value of crop production per hectare. Participation in micro-credit was found to have increased the value of crop production per hectare by 2,067.52 Birr for beneficiary households as compared with non-beneficiary farm households. Therefore, the study recommends promotion of education, improving use of and access to seed and fertilizer inputs, and provision of the option of non-interest bearing loans based on Islamic principles by microfinance institutions in the study districts.*

Keywords*: Farm productivity, impact evaluation, micro-credit, PSM*

1. Introduction

Agriculture is the backbone of Ethiopian economy, the main source of foreign exchange and employment (Shimelles and Zahidul, 2009). Hence, the ability of the nation to address food and nutritional insecurity, poverty, and to stimulate and sustain national economic growth and development is highly dependent on the performance of the sector. Yet, achieving higher and sustained agricultural productivity growth remains one of the greatest challenges facing the nation (Spielman *et al.*, 2010).

Agricultural growth depends on increased use of improved agricultural inputs, technological change and technical efficiency. Technical efficiency with which new technology is adopted and used more rationally is affected by the flow of information, better infrastructure, and availability of funds and managerial capabilities (Muhammad *et al.*, 2003). Rural credit in the form of loans, cash or commodity improves farm productivity (Jaffar *et al.*, 2006).

Currently, the government of Ethiopia is promoting micro-credit service. Following these, 31 microfinance institutions (MFI) are operating in the country. Oromia Credit and Saving Share Company (OCSSCO) is among these MFIs and the only MFI in the study districts. To the best of the researchers' knowledge, no work has been done on the impact of micro-credit on farm productivity in the country as well as the study districts. Hence, the study was aimed at assessing the impact of micro-credit on farm productivity in the study districts using value of crop production per hectare as an impact indicator.

2. Materials and Methods

Study Area: Deder and Goro Gutu districts are found in East Hararghe Zone of Oromia National Regional State (ONRS). Deder district is located in the northwestern part of East Hararghe zone. The district has an area of 877.6 square kilometer. Goro Gutu district is found in the north western part of East Hararghe zone and covers an area of 531.2 square kilometer (ONRS, 2011).

Sample Size and Method of Sampling: A two stage sampling technique was adopted to collect the required primary data. First six kebeles where selected out of 114 kebeles based on the distribution of micro-credit in the kebeles. Then, households were stratified as micro-credit beneficiary and non-beneficiary in the selected kebeles. Finally, 90 households from beneficiary and 90 households from non-beneficiary, totally 180 households were used in this study.

Method of Data Analysis: The study employed both descriptive statistics and econometric method to analyze the collected data. To assess the impact of micro-credit on farm productivity, propensity score matching (PSM) method was employed. PSM is chosen among other methods because it does not require baseline data and considered as second-best alternative to experimental design in minimizing selection biases (Baker, 2000). For comparative computational simplicity logit model was used to estimate propensity scores (Rosenbaum and Robin, 1983) and matching is then performed using propensity scores of each observable characteristics. These characteristics include covariate variables

that influence the participation decisions and the outcome of interest. The mathematical formulation of the logit model is as follows:

$$P_i = \frac{e^{Z_i}}{1 + e^{Z_i}} \quad ,$$

Where: P_i is the probability of participation in micro-credit for the i^{th} household and it ranges from 0 to 1,

Z_i: is a function of N-explanatory variables which is also expressed as:

$$Z_i = \beta_0 + \Sigma\beta_i x_i + U_i$$

Where, $i = 1, 2, 3 \ldots n$

β_0 = intercept,

β_i = regression coefficients to be estimated or logit parameter,

U_i = a disturbance term, and X_i = explanatory variables.

Table 1: Variable definitions and measurement

Variable	Types and definition	Measurement
Participation	Dummy, micro credit beneficiary	1 if yes, 0 otherwise
Value of crop production per hectare		
SEXH	Dummy, sex of household head	1 if female, 0 otherwise
AGE	Continuous, age of household head	years completed
FSHH	Continuous, family size	family member's number
DEPRATIO	Continuous, dependency ratio	ratio of family members
EDLHH	Dummy, education of household head	1 if literate, 0 otherwise
RELG	Dummy, religion	1 if Muslim, 0 Christian
FARMSIZE	Continuous, farm size	Hectare
LH	Continuous, tropical livestock holding	TLU
IMPSEED	Dummy, improved seed usage	1 if usage, 0 otherwise
ACCIRRI	Dummy, access to irrigation	1 if access, 0 otherwise
AMTFERTI	Continuous, amount of fertilizer used	kg
FRQYEXT	Continuous, frequency of extension	number of days /month
OFFINCOM	Continuous, off/non farm income	birr

3. Results and Discussion

Description of Sample Households' Characteristics

Non-beneficiary households have relatively larger land and livestock holdings as compared to the beneficiary households. Beneficiary households, on the other hand, used more fertilizer and have relatively frequent extension contacts as compared to the non-beneficiary households.

Table 2: Descriptive and inferential statistics for continuous variables

	Beneficiary (N = 90)		Non-beneficiary (N = 90)		Total (N = 180)		
Variable	Mean	SD	Mean	SD	Mean	SD	t-test
Age	35.5	9.1	37.2	7.6	36.3	8.4	1.4
Family Size	5.8	1.9	5.9	2.2	5.8	2.1	0.2
Dep. Ratio	1.4	1	1.3	0.8	1.4	0.9	-1.4
Farm Size	0.27	0.1	0.34	0.2	0.31	0.2	2.7***
LH	2	1.8	2.7	2	2.4	1.9	2.6***
Fertilizer	11.2	10.1	5.6	9.9	8.4	10.4	-3.8***
Extension	2.6	0.9	2.4	0.9	2.5	0.9	-1.8*

*** and * means significant at 1% and 10% probability levels, respectively.

The proportion of female beneficiaries is larger than that of female non-beneficiaries. Furthermore, literate members are larger in beneficiary households as compared to that in non-beneficiary households. The differences in terms of other variables are as indicated in Tables 2 and 3.

Table 3: Descriptive and inferential statistics for discrete variables

Variable	Category	Beneficiary (N = 90)		Non-beneficiary (N = 90)		Total (N = 180)		χ2-value
		N	%	N	%	N	%	
Sex	Male	72	47.1	81	52.9	153	85.0	3.53*
	Female	18	66.7	9	33.3	27	15.0	
Education	Literate	66	58.9	46	41.1	112	62.2	9.45***
	Illiterate	24	35.3	44	64.7	68	37.8	
Religion	Muslim	53	54.1	45	45.9	98	54.4	1.43
	Christian	37	45.1	45	54.9	82	45.6	
Improved seed	Yes	45	63.4	26	36.6	71	39.4	8.39***
	No	45	41.4	64	58.7	109	60.6	
Access to irrigation	Yes	38	52.8	34	47.2	72	40.0	0.37
	No	52	48.1	56	51.9	108	60.0	

*** and * means significant at 1% and 10% probability levels, respectively.

Impact estimation

Before impact estimation, logit model is fitted to estimate the probability of participation of sample respondents in the intervention. The estimated model coefficients in Table 4 show that participation in micro-credit was significantly influenced by independent variables such as education, religion, livestock holding, improved seed usage, amount of fertilizer usage and off/non farm income.

Table 4: Estimates of the Logit model

Variables	Coef.	S.E	z	p> |z|
Sex	0.202	0.541	0.37	0.710
Age	-0.036	0.023	-1.62	0.105
Family size	0.007	0.103	0.07	0.944
Dependency ratio	0.276	0.240	1.15	0.251
Education	0.819	0.388	2.11**	0.035
Religion	-0.892	0.395	-2.26**	0.024
Farm size	-1.481	1.221	-1.21	0.225
Livestock holding	-0.222	0.112	-1.99**	0.047
Improved seed	0.690	0.399	1.73*	0.084
Fertilizer usage	0.044	0.019	2.38**	0.017
Access to irrigation	-0.206	0.381	-0.54	0.588
Extension contact	0.300	0.188	1.6	0.111
Off/Non-farm income	0.000	0.000	-2.29**	0.022
Constant	1.753	1.177	1.49	0.136
Number of obs = 180		Prob > chi2 = 0.0000	PseudoR^2=0.20	
LR chi2(13) = 50.70		Log likelihood =-99.42		

Source: Own estimation result; ** and * means significant at 5% and 10% probability levels, respectively.

Propensity score matching result showed that micro-credit have statistically significant impact on farm productivity as demonstrated by value of crop production per hectare increments (Table 5). The value of crop production per hectare has increased by Birr 2,067.52 for the beneficiary households and statistically significant at less than 1% probability level. The sensitivity analysis also indicated that the impact estimates (ATT) are not affected by the unobserved covariates.

Table 5: Average treatment effect on the treated (ATT)

Variable	Treated	Control	Difference	SE	t-value
Value of crop production per hectare (Birr)	10,685.89	8,618.37	2,067.52	472.16	4.40***

Source: Own estimation result; ***Significant at 1% probability level.

4. Conclusion and Recommendations

Being micro-credit beneficiary as well as farm productivity was affected by six explanatory variables. These variables were education, religion, livestock holding, improved seed usage, fertilizer usage, and off/non-farm income. Furthermore, the study found that, on average, micro-credit has an impact on farm productivity measured in terms of value of crop production per hectare by Birr 2,067.52, which is statistically significant at 1% probability levels. This implies that micro-credit is playing a great role in enhancing farm productivity in the study districts. Therefore, it is necessary to give due emphasis for the microcredit institutions. In the study, religion is found significant in micro-credit participation. Therefore, OCSSCO which is the only MFI in the districts need to adopt non-interest bearing loan based on Islamic principles. Besides, attention should be given in promoting and encouraging the farmers to use improved seed and fertilizer in the study districts.

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Determinants of Loan Repayment Performance of Smallholder Farmers: The Case of Soro Woreda, Hadiya Administrative Zone, Southern Nations, Nationalities and Peoples' Regional State, Ethiopia

Ayalew Mekonnen[1] and Lemma Zemedu[2]

[1]MSc Student, School of Agricultural Economics and Agribusiness Management, Haramaya University Email: ayalew2@yahoo.com
[2]Assisstant Professor, School of Agricultural Economics and Agribusiness Management, Haramaya University Email: zemedul@yahoo.com

Abstract: *Improved agricultural technologies, knowledge and inputs such as fertilizer, improved seeds and pesticides that help to boost production and productivity are needed by smallholder farmers to transform their farm structure and capacity. But access to these is limited due to various reasons among which financial problems are the dominant. The Government of Ethiopia has put various efforts to solve rural financial problems by extending rural financial institutions. However, due to social, economic and institutional factors, a number of farmers turned out to be defaulters. As a result, the lending institutions faced problems of self-sustainability. The main objective of this study was to analyze the determinants of loan repayment performance of smallholder farmers in the study area. Primary data were collected from 125 randomly selected borrowers using a structured questionnaire. Two-limit Tobit regression model was used to identify factors influencing loan repayment performance and intensity of loan recovery among smallholder farmers. Results indicated that out of the total of 13 explanatory variables tested, 5 of them including total number of livestock, experience in extension services, source of loan, expense in social ceremony and amount of cash borrowed were found to be statistically significant in affecting loan repayment performance. Hence, to undertake effective actions with the aim of improving loan repayment performance in the study area, careful consideration of these factors is very important for policy makers and lenders in their attempt to minimize default risk.*

Keywords*: Defaulters, loan repayment, smallholder farmers, two-limit Tobit*

1. Introduction

In Ethiopia, agricultural sector has been unable to produce sufficient quantities to feed the rapidly growing population. The reasons for low productivity of the agricultural sector and the growing gap between the demand and the supply of agricultural products are many in number and different in character. These include poor and backward technology, limited use of modern inputs, lack of transportation and storage facilities, inadequate extension and credit facilities and natural calamities such as drought and ecological degradation (EEA, 2007). Similar to other parts of the country,

agriculture is the mainstay of Southern Nations, Nationalities and Peoples Regional State from which about 90% of the population earns their livelihood accounting for 70% of the regional GDP. It is dominated by a small-scale farming which accounts for about 98% of the total agricultural production in the regional state. Wheat, maize, *teff*, barely and sorghum are the principal crops that are grown under rain fed.

Development and adoption of new agricultural technologies and the use of credit facilities is vital for rapid growth in agricultural productivity. However, with the introduction of new production technologies, the financial needs of farmers increased by many-fold. Steady agricultural development depends up on the continuous increase in farm investment. Large investment cannot be made by the farmers out of their own funds because of their low level of incomes. Thus, here comes the importance and significance of the availability of rural credits to bridge the gap between owned and required capital (Gebrehiwot, 2007).

The delivery of efficient and effective credit services to the poor requires favorable micro-economic policies and the establishment and enforcement of legal and regulatory frameworks of a country. An effective financial system provides the foundation for successful poverty alleviation program (Wolday, 2000). This is because low repayment performance discourages the lender to promote and extend credit to large and fragmented farm households. Therefore, a thorough investigation of the various aspects of loan defaults, source of credit and condition of loan provision are of great importance both for policy makers and lending institutions.

Failure by farmers to repay their loans in time or to repay them at all is a serious problem facing both agricultural credit institutions and smallholder farmers. According to Hunte (1996), loan default is a tragedy because failing to implement appropriate lending strategies and credible credit policies often result in demise of credit institutions.

In Hadiya Zone, Soro *Woreda*, the regional government and a non-governmental organization extend credit facilities to farming households to narrow the gap between the required and the owned capital to use improved agricultural technologies that would increase production and productivity. However, there is a serious loan repayment problem in the area, where about 40% loan given in 2009/10 was not been repaid on time (SWAO, 2011).

Although there are such severe problems, factors that affect loan repayment performance of smallholders from formal sources have not been studied in the area. Therefore, this study was initiated with the main objective of analyzing the determinants of formal source of loan repayment performance of smallholder farmers in Soro Woreda, Hadiya Administrative Zone.

2. Methodology

Description of the study area: Soro is one of the 10 *Woredas* in Hadiya zone, Southern Nations Nationalities Peoples Regional state, located about 262 km from Addis Ababa. It is the largest *Woreda* in the zone with an area of 58,000 ha and cultivable land of 38,000 ha. Currently, the Woreda is divided into 47 *kebeles*. The elevation of the Woreda ranges between 1500-2300 m.a.s.l. The Woreda encompasses three agro-elological zones, namely dega, woina dega and kola covering 15.5%, 53% and 31.5% of the Woreda, respectively.

Sample size and Method of Sampling: A two-stage sampling method was used to select the sample respondents. In the first stage, from 47 *Kebeles* found in the Woreda 6 *kebeles* were selected using stratified sampling technique. The three agro ecological zones (Dega, Woinadega and Kola) were represented with two, three and one *kebeles,* respectively, in the strata. In the second stage the list of farmers who have obtained loans from formal credit sources were recorded from each kebeles and a total of 125 farm households were selected randomly based on probability proportional to sample size as indicated in Table l.

Table 1: Proportional allocation of sample size

Name of Kebele	Strata	No. of borrowers	Number of sampled borrowers
Sundusa	Woinadega	634	25
Arrara	Dega	473	20
Segeda	Dega	446	20
Harcheuyaya	Woinadega	715	28
Bonadebero	Woinadega	378	14
1st Hangota	Kola	451	18
Total		3097	125

Methods of Data Collection: Information pertaining to respondents, socio-economic characteristics, institutional situations, and other related issues were obtained directly through the structured questionnaire interview, which was conducted at household level. Secondary data were obtained from government offices and other relevant organizations.

Methods of Data Analysis: Descriptive statistics such as mean, standard deviation and frequency distribution were used to compare and contrast different categories of sample units (in this case farm households) with respect to the desired characters so as to draw some important conclusions. Moreover, chi-square and t-test were applied to test for statistical significances. In addition, a Tobit regression model was used to identify the determinants of loan repayment performance. The use of Tobit model to study censored and limited dependent variables has become increasingly common in applied social science research (Smith and Brame, 2003). Tobit is an extension of the probit model and it is one approach of dealing with the problem of censored data (Johnston and Dinardo, 1997).

In this study, the value of the dependent variable is repayment ratio that has been computed as the ratio of amount of loan repaid to the total amount borrowed from formal sources of credit. Thus, the value of the dependent variable ranges between 0 and 1 and a two-limit Tobit model has been chosen as a more appropriate econometric model. The two-limit Tobit was originally presented by Rossett and Nelson (1975) and discussed in detail by Maddala (1992) and Long (1997). The model derives from an underlying classical normal linear regression and can be represented as:

$$y^* = \beta' x_i + \xi_i, \qquad \xi \approx [0, o^2]$$

Denoting Yi as the observed dependent (censored) variable

$$Yi = \begin{cases} L & if\ Y^* \le L \\ Y^* = X\beta + \xi_i & if\ L < Y^* < U \\ U & if\ Y^* \ge U \end{cases}$$

Where, y_i=the observed dependent variable, in our case repayment ratio (ratio of amount repaid to the amount borrowed), y_i^*=the latent variable (unobserved for values smaller than 0 and greater than 1). X_i =is a vector of independent variables (factors affecting loan repayment and intensity of loan recovery).

β_i =Vector of unknown parameters. ξ_i =Residuals that are independently and normally distributed with mean zero and a common variance σ^2, and i = 1, 2, ….n (n is the number of observations).

The log likelihood function for the general two-limit Tobit model can be given as follow:

$$\log\ l = \frac{1}{2}\sum_{j\xi c} wj \left[\left(\frac{y_i - x\beta}{\sigma}\right)^2 + \log\ 2\Pi\sigma^2\right]$$

$$+ \sum_{j\xi L} w_j\ \log\ \phi\left(\frac{y_{Lj}\ - x\beta}{\sigma}\right) + \sum_{j\xi R} w_j \log\left[1 - \phi\left(\frac{y_{Rj}\ - x\beta}{\sigma}\right)\right]$$

$$+ \sum_{j\xi I} w_j\ \log\left[\phi\left(\frac{y_{2j}\ - x\beta}{\sigma}\right) - \phi\left(\frac{y_{1j}\ - x\beta}{\sigma}\right)\right]$$

Where C's are point observations, L's are left censored observations, R's are right-censored observations, and I's are intervals, ϕ is the standard cumulative normal distribution, and the w_j is the normalized weight of the j^{th} observation.

The Tobit coefficients do not directly give the marginal effects of the associated independent variables on the dependent variable. But their signs show the direction of change in probability of being non-defaulter and marginal intensity of loan recovery as the respective explanatory variable change (Amemiya, 1984; Goodwin, 1992; Maddala, 1985). The Tobit model has an advantage in that its coefficients can be further disaggregated to determine the effect of a change in the i^{th} variable on changes in the probability of being non-defaulter (Mc Donaled and Moffit, 1980) as follows:

1. The change in the probability of repaying the loan as an independent variable X_i changes is:

$$\frac{\partial\phi(\delta)}{\partial Xi} = \phi(\delta)\frac{\beta_i}{\sigma} \qquad (4)$$

2. The change in intensity of loan recovery with respect to a change in an explanatory variable among non-complete defaulters is:

$$\frac{\partial E\left(Y_i / U > Y_i^* > L,\ X\right)}{\partial X_i} = \beta_i \left(1 + \frac{\delta_L \phi\left(\delta_L\right) - \delta_U \phi\left(\delta_U\right)}{\Phi\left(\delta_U\right) - \Phi\left(\delta_L\right)} - \left[\frac{\phi\left(\delta_L\right) - \phi\left(\delta_U\right)}{\Phi\left(\delta_U\right) - \Phi\left(\delta_L\right)}\right]^2\right) \quad (5)$$

3. The marginal effect of an explanatory variable on the expected value of the dependent Variable is:

$$\frac{\partial E\left(Y / X_i\right)}{\partial X} = \beta i\left(\Phi\left(\delta_U\right) - \Phi\left(\delta_L\right)\right) \quad (6)$$

Where, Xi=explanatory variables, $\Phi(\delta)$ = the cumulative normal distribution, $\delta = \frac{\beta_1 X_i}{\sigma}$ = the Z score for the area under normal curve, βi = a vector of Tobit maximum likelihood estimates, σ = the standard error of the term, $\delta_L = \frac{L - X_i \beta}{\sigma}$, $\delta_U = \frac{U - X_i \beta}{\sigma}$ where, L and U are the threshold values (L=0 and U=1), ϕ and Φ are probability density and cumulative density functions of the standard normal distribution, respectively.

3. Results and Discussion

Descriptive Statistics Results: The descriptive statistical analysis results given in Table 2 describe the socioeconomic and institutional characteristics of sample households. Out of the total interviewed households, 52.8% were non-defaulters and the remaining 47.2% were defaulters. Among the defaulters, 25% were complete defaulters while 75% repaid 35 to 98% of the total loan of which they borrowed.

The average age of household heads was 50.45 years with the minimum and maximum ages of 26 and 85 years, respectively. The average age of non-defaulter household heads was 56.43 years, while that of defaulters was 43.97 years with significant mean difference at 1%. On the other hand, the average family size of the sample households was 7.77. The largest family size was 13 and the smallest was 2. The average family size of non-defaulters was 8.09, while that of defaulters was 7.42 with no significant difference between means of the two groups.

The result also revealed that 47.2% of the sample household heads were illiterate whereas 52.8% of the household heads were literate (Table 2). Of the total sample respondents, 43.1% of the non-defaulters and 51.7% of defaulters were illiterate, respectively. There was no significant difference between defaulters and non-defaulters in terms of their literacy level. The sample was composed of

both male and female headed households. Of the total sample household heads, 97.6% were male household heads and 2.4% were female household heads. About 1.7% of the defaulters and 3.1% of the non-defaulters were female-headed households, respectively. The average distance traveled by the respondents to the market was about 6.39 km. On average non-defaulters traveled about 3.89 km while the defaulters traveled on average about 9.08 km. This difference between the distances covered by non-defaulters and defaulters was statistically significant at 1% level of probability (Table 2).

Land is the basic asset of farmers. The average size of cultivated land owned by the sample households was nearly 1.54 ha. Non-defaulters cultivated on average larger area of land (1.61 ha) than defaulters (1.47 ha). There was no significant difference between defaulters and non-defaulters in terms of cultivated land ownership. Nearly 4% of the sample households cultivated farm plots by renting in from relatives, neighbors and others. On the other hand, nearly 1.6% of the sample households indicated that they rented out their cultivated land. However, there was no significant difference between defaulters and non-defaulters with regards to land rented-in or rented-out.

Table 2: Sampled household characteristics for continuous variables in the study area

Characteristics	Non-defaulters (N=65)		Defaulters (N=60)		t value	Total sample (N=125)	
	Mean	St.dev	Mean	St.dev		Mean	St.dev
Age (year)	56.43	9.93	43.97	11.33	6.549***	50.45	12.30
Family size (Number)	8.09	2.303	7.42	2.227	1.66	7.77	2.283
Total livestock (TLU)	7.055	2.022	3.591	1.931	9.777***	5.39	2.63
Total cultivable land (Ha)	1.61	1.01	1.473	0.792	0.823	1.54	0.91
Shared cultivable land(Ha)	0.457	0.63	0.523	0.62	0.585	0.48	0.62
Rented out land (Ha)	0.007	0.062	0.013	0.100	0.358	0.010	0.083
Rented in land (Ha)	0.011	0.068	0.050	0.204	1.42	0.03	0.151
Expense for ceremony	404.78	974.70	518.55	1379.49	0.538	459.11	1182.84
Amount of loan in cash	906.31	544.37	962.18	606.95	0.542	933.12	573.60
Extension contact/month	2.17	0.77	1.033	0.901	7.629***	1.624	1.01
Yr. of extension experience	14.28	1.56	6.933	4.066	13.55***	10.76	4.77
Input market distance	3.89	2.13	9.08	4.24	8.718***	6.39	4.20

*** represents level of significance at 1 % level

Crop and livestock production activities were the common agricultural practices in the study area. From the survey data, it was found that all the respondents owned and keep livestock for various economic and social reasons including generation of draught power, earning cash income, food and animal dung (organic fertilizer and fuel). Using Stork *et al.* (1991) standard conversion factor and the Tropical Livestock Unit (TLU), on average a household have 5.39 TLU with standard deviation of 2.63 (Table 2). Non-defaulters owned a larger number of average livestock (7.05 TLU) compared to the defaulters (3.59 TLU) with a significant mean difference at 1%. The implication is that non-defaulters have more access to financial capital by selling their livestock to recover their loan (Table 2). Similarly, the average expenditure on social festivals was higher for the defaulter group than the non-defaulter although the difference was not found to be statistically significant (Table 2).

Experience in agricultural extension package varied among the sample borrowers from minimum value of 2 year experience to a maximum of 15 years experience. Non- defaulters participated on average for higher number of years (14.28) as compared to the defaulters who participated on average for 6.93 years (Table 2). The mean difference between the two groups was significant at 1% level. That is, farmers' experience in agricultural extension services has significant role in loan repayment performance.

The results of the survey also indicated that 84% of the respondents had extension contacts while 16% did not have any contact with extension agents. The frequency of monthly extension contacts were 2.17 for non defaulters and 1.03 for defaulters. The difference between the two groups was significant at 1% level.

The average amount of money borrowed by sample households was 933.12. The survey result also revealed that on average Birr 906.31 and Birr 962.18 was borrowed by non-defaulters and defaulters, respectively, with no significant mean difference among the groups (Table 2). With regard to sources of credit, out of the total respondents 34.4% borrowed from Omo- microfinance and 65.6% borrowed from cooperatives. The performance of credit repayment varied with respect to sources of loan. Larger proportion of defaulter households (61.7%) borrowed from cooperatives as compared to Omo-microfinance (38.3%).

On the other hand, off-farm activities were additional income sources for the farmers of the area. About 52% of the sample household heads reported that at least one of their family members was engaged in off-farm activities which helped them to earn additional income. The survey results also

indicated that larger proportion of non-defaulter households (55.4%) sent their members to off-farm activities as compared to the defaulter households (46.4%). About 16% of the sample households have responded that they have good traditions of putting money aside for future use. However, there was no significant difference in saving behavior between the defaulters and non-defaulters.

The sample households usually borrowed money for a wide range of purposes. About 69% and 60% non-defaulters and defaulters, respectively, used the money they borrowed for purchase of agricultural variable inputs. However, the difference between the two groups with respect to this variable was not significant. The sample farmers were asked about their perception of the benefit of loan. Out of the total respondents, 84.6% of the non-defaulters and 78.3% of defaulters replied that they have benefited from the loan service. The difference in perception of loan benefits was not significant between the two categories.

Determinants of probability of being defaulter and degree of loan recovery: Results of the two limit Tobit model that indicate probability of being non-defaulter and intensity of loan recovery among the sample farm households is indicated in Table 3 and Table 4, respectively. A total of 13 explanatory variables were considered in the model out of which 5 variables significantly influenced the probability of being non-defaulter and intensity of loan recovery among the farm households.

Table 3: Two-Limit Tobit Model Maximum Likelihood Estimates and the effects of explanatory variables on probability of being non-defaulter

Variable	Coefficient	St. Error	t-ratio	Effect of change in independent variable on probability of being non-defaulter $\frac{\partial \Phi(\delta)}{\partial x_i}$
Age	0.00039	0.00748	-0.05	-0.00004
Educl	0.05293	0.05411	0.98	0.00586
Famlyz	0.03609	0.02984	1.21	0.00400
Cult land total	-0.03551	0.09283	-0.38	-0.00393
TLU	0.10921	0.04399	2.48**	0.01210
Extcon	-0.03405	0.08299	-0.41	0.00377
Expext	0.07417	0.02803	2.65***	0.00821
Souce-loan	0.37734	0.28867	1.31*	0.04180
Amt-cash	0.00012	0.00013	0.90	0.00001
Purp-loan	0.37518	0.28787	1.30	0.05289
Dist–input-m	0.01084	0.02339	0.46	0.00120
Offarm-income	0.04553	0.13004	0.35	0.00506
Expens-Cero.	-0.00006	0.00005	-1.13*	-6.80e-06
Constant	-1.52795	0.81534	-1.87	

Number of observations=125

Threshold values for the model: Lower=0, Upper=1

Log likelihood function=-76.33

Uncensored observations=45

Left-censored observations=15

Right-censored observations=65,

***, ** and * represent level of significance at 1 %, 5% and 10 %, respectively.

Total livestock owned (TLU) is positively and significantly related to the probability of being non-defaulter at 5% level of significance. Each additional increase in TLU increases the probability of being non-defaulter by 1.2%. For each additional unit of TLU, the rate of loan repayment increases by

0.0241 among the whole borrowers and by 0.1092 among non-complete defaulters. The implication is that livestock are sources of cash in rural Ethiopia and serve as security against crop failure. Farmers who owned more livestock are able to repay their loans even when their crops fail due to natural disaster. Moreover, due to oxen ownership, the result suggests that farmers who have larger number of livestock have sufficient number of oxen to plough their field timely and as a result obtain high yield and income to repay their loans.

Years of experience in agricultural extension services was positively and significantly related to the dependent variable loan repayment performance at 5% level. Each additional year of agricultural extension package experience increases the probability of being non-defaulter by 0.82%, and on average, one year additional participation experience in the extension package increases rate of loan repayment by 0.0164 among the whole respondents and by 0.0741 among non-complete defaulters, *citrus paribus*. This implies that experienced farmers in extension programs have developed their credit utilization and management skills that helped them to pay loans timely. In addition, as a result of their participation in extension for a number of years, these farmers are the beneficiaries of the use of improved agricultural technologies that would increase their income generation capacity and loan repayment performance.

Source of loan was an institutional factor which was positively related to the loan repayment performance at 10% level. The formation of borrowers group, monitoring and the use of group responsibility are the main principles guiding financial transactions of Soro Woreda micro-finance. Better repayment achievement was due to group lending programs, careful screening of borrowers, monitoring and enforcement of repayment. Therefore, group lending might be the case for better repayment performance of borrowers of Soro Woreda microfinance. The probability of being non-defaulter of borrowers of microfinance institutions was 4.17%, which enhanced the loan repayment rate by 0.0835 for the whole sample and by 0.2298 among non-complete defaulters.

Expense on social ceremony was negatively related to the loan repayment performance at 10% level. The model output also revealed that less expenditure on social ceremonies enables borrowers to repay their loan on time, thus, increases the probability of being non-defaulter.

Table 4: Marginal effects of independent variables on rate of repayment

Variables	Effect of change in independent variable on dependent variable			
	for observations at the lower limit (N=15) $L - E(Y)\ )\frac{(\partial\Phi(\delta))}{\partial x_i}$	for observations at the upper limit (N=65) $(E(Y)-U\ )\left(\frac{\partial\Phi(\delta)}{\partial xi}\right)$	For non-complete defaulters (N=45) $\frac{\partial E(Y/U>Y>L,X)}{\partial xi}$	for all observation (N=125) $\frac{\partial E\ (Y_i)}{\partial x_i}$
Age	-0.0002712	0.0008185	-0.0003878	-0.0000858
Educl	0.0158471	0.0454964	0.0529258	0.0117152
Famlyz	0.0142315	0.0284267	0.0360857	0.0079876
Cult land total	-0.0241514	-0.0244351	-0.0355075	-0.00787596
TLU	0.0325962	0.0830212	0.1092092	0.0241736
Extcon	-0.0281375	-0.0183372	-0.0340491	-0.0075368
Expext	0.0371455	0.0589319	0.074172	0.016418
Souce-loan	0.2298666	0.2867927	0.3773424	0.083525
Amt-cash	0.0000837	0.0000559	0.0001198	0.0000265
Purp-loan	0.1695236	0.2863279	0.3751796	0.0848909
Dist–input-m	0.0004726	0.011293	0.0108355	0.0023984
Offar-income	0.0160563	0.0359825	0.0455336	0.0100811
Expens-	-0.0000454	0.0000324	-0.0000614	-0.0000136

4. Conclusion and Recommendations

The descriptive results showed that 48% of the sample households defaulted on the loans they obtained. Of these, 25% were complete defaulters and the remaining 75% repaid 35 to 98% of the loan they received.

There were significant differences between defaulters and non-defaulters with respect to age, total amount of livestock owned (TLU), extension contact days in a month, experience in agricultural extension, and distance from market for inputs. On the other hand, from a total of 13 explanatory variables used in the two-limit Tobit regression model, amount of livestock owned (TLU), experience in agricultural extension, source of loan, expenditure in social ceremony, and amount of cash

borrowed had statistically significant influence on the loan repayment performance of the sample households.

Results of the two-limit Tobit model showed that farmers who had larger number of livestock were relatively non-defaulters than those who had less number of livestock. Therefore, it is indispensable that more consideration be given to the livestock sector to improve livestock holding of the households.

Experience in agricultural extension services was also positively related to loan repayment performance. This could be because of the fact that those farmers who have participated in the extension package had developed the skills of using new agricultural technologies that would enhance their income and hence repayment capacity. Moreover, farmers who were regular participants in the extension package were aware of the credit for the next production season and were likely to make conscious decision to repay loan timely.

Farmers who had taken loan from Soro Woreda microfinance branch office were relatively non-defaulters than those who borrowed from multi-purpose cooperatives. Formation of borrowers' group, use of group responsibility and equal monitoring are the principles guiding financial transaction in Soro Woreda microfinance. Loan given to group borrowers has high repayment performance than that given to individuals. Loans given to groups reduce the information asymmetry between the lender and the borrower. Because of this, adverse selection and moral hazard are reduced in such ways. Then, the joint liability mechanism in group lending brings group pressure on members to repay loans timely and would increase the repayment rate. Due to this, loan given in the area should target group lending as it would increase the likelihood of loan repayment by group members.

The other important point is that expenditure on social ceremony was one of the defining features of smallholder farmers in the study area. The result of the study showed that individuals who spend less on social ceremony had better repayment performance than those who spend more. Therefore, the government should create awareness and encourage smallholder farmers to save their money rather than spending too much on social ceremonies.

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Determinants of Microfinance Loan Repayment Performance of Smallholder Pastoral/Agro-pastoral Farmers in Ethiopia: The Case of Dire Microfinance Clients in Shinile District of the Somali National Regional State

Temesgen Keno
Assistant Professor, College of Business and Economics, Haramaya University,
Email: temesgenkenobelissa@yahoo.com

Abstract: *Over the last two decades or so, provision of adequate microfinance service to the poor rural farm households has been hotly persuaded as a promising pro-poor financing strategy in Ethiopia. However, because of the poor loan repayment performance of the smallholders, significant outreach of microfinance credit delivery has become a problem-plagued undertaking in the country. Particularly, among pastoral/agro-pastoral households, loan default and low intensity of loan recovery is evidenced to have acute effect on financial self-sufficiency and operational sustainability of lending institutions that in turn put outreach decisions to trade-off with survival and impact. Identification of determinants that largely influence timely repayment of loans disbursed to borrowers, thus, enables effective credit targeting to enhance both outreach service to large class of customers and sustainable operation of the credit institutions. Hence, this study was aimed at identifying the demographic, socio-economic and institutional factors that limit loan repayment capacity of smallholder agro-pastoral farmers in eastern Ethiopia. Using a structured questionnaire, primary data were collected from a random sample of 162 households in Shinile district who often use Dire Microfinance as a formal source of credit. Two-limit Tobit censored regression model was employed to analyze the determinants of loan repayment performance and intensity of loan recovery. Using this model, the dependent variable loan repayment performance was framed as the rate of the amount of loan repaid by individual farm households out of the total amount of loan disbursed to them. Sixteen explanatory variables were tested, out of which eleven were statistically significant in determining the loan repayment performance of the sample farm households. Gender of the borrower household head, off/on-farm income, size of land holding, number of heads of livestock owned, loan usage experience, loan size, loan due date, customer loyalty, credit policy and peer monitoring were observed to be positive while family size, expenditure on social festivals, availability of alternative credit sources, household shocks and drought-induced risk perception about future crop/livestock collapse were negative in affecting loan repayment performance of the households. The findings of the study imply that household socio-economic factors and credit policy instruments from demand and supply side, respectively, should be coupled with predictions on external shock factors in crafting polices aimed at minimizing loan default risk in microfinance service in the study area.*

Keywords*: Loan repayment, microfinance, pastoral economy, Somali, two-limit Tobit*

1. Introduction

A well functioning financial system is crucial for stimulating economic growth. However, fitting a feasible financial scheme in a particular socio-economic set-up is very challenging. For instance, the Ethiopian economy is predominantly based on agriculture which accounts for nearly 85% of labor force employment, 48.6% of GDP and 90% of foreign exchange earnings (MoFED, 2006; Moges *et al.*, 2007). But, formal financial services like banks exclude the smallholders engaged in this sector as non-credit worthy, due to nature and seasonality related risks prevailing in the agricultural sector. As a result, farmers face acute shortage of access to financial capital to acquire agricultural inputs and adopt modern technologies, and this makes them to yield a very low rate of return on their investment. The Ethiopian financial sector is, thus, ill-suited to support the dominant economic sector, thus, the contribution of the financial sector to the overall economy is minimal. In attempts to overcome this problem, the government of Ethiopia has taken practical and timely steps to provide policies and legal framework services that promote rural financial intermediation. In this regard, 31 microfinance institutions (MFIs) were promoted and various rural saving and credit cooperatives were established to provide credit, saving and insurance services to the poor farm households. The promotion of MFIs in Ethiopia and other parts of the world was based on successful social experiments and evidences in Asia and the Caribbean like the Grameen Bank in Bangladesh and Bank Raykat in Indonesia (Hossain, 1998). Modern microfinance as an effective rural finance system has gone through many subsequent paradigm shifts including agricultural credit era (1950–1985) to donor microfinance era (1980–2000), commercialization of microfinance services (2000–to present) and value chain finance (2005– to present). This indicates the gradual move of pro-poor finance towards the creation of inclusive financial systems that operate in accordance with the dynamics in the global financial market. Today, the microfinance revolution is proved to be a successful pro-poor finance and anti-poverty tool with significant impacts in increasing household income, smoothing consumption, generating employment and reducing risks through easing liquidity constraints in production (Barbara and Dunford, 1998). Thus, microfinance contributes to the overall economic growth, poverty reduction and the creation of a more equitable society.

In developing countries where agriculture remains the mainstay of their economy, the rise in price of inputs leads to substantial dependency of farmers on financial institutions for credit (Akram *et al.*, 2008). But the lending terms, regulations and pre-conditions of banks do not allow smallholders, land less poor and women farmers to borrow. Banks require collateral assets and sound business plans.

Moreover, formal banks are concentrated in urban areas where infrastructures are well established (Wolday, 2006). These imply that the rural credit market is improperly functioning. Among others, imperfect repayment and asymmetric information are the functioning limitation. The problems that arise can often be characterized by a borrower's inability to commit to fulfilling a debt contract. Debtors cannot credibly reveal their borrower's type truthfully (adverse selection), promise to exert effort so that their production enterprise does not fail (ex-ante moral hazard), report their production output honestly (ex-post moral hazard), or promise to repay the loan even when output was sufficient (opportunistic default). To serve this purpose, MFIs have three basic goals, often called the 'triangle of microfinance': Outreach, sustainability, and Impact. In this regard, the microfinance industry faces a number of challenges providing adequate capital to the needy given that the majority is in acute shortage of capital, in directing the loan to be invested for productive purposes and generate additional income to be repaid to the lending institutions to have sustainable and viable production processes. Default rates are very high (about 30%) which discourages the lenders to promote and extend credit to large and fragmented households. These problems are reported to be very immense among pastoral/agro-pastoral households. For instance, in Dire Microfinance, loan default and low intensity of loan recovery is evidenced to have acute effect on financial self-sufficiency and operational sustainability. Thus, outreach decisions are indicated to make a trade-off with survival and impact in loan provision. The underlying factors for such low repayment rate are not thoroughly investigated. This study was, thus, aimed at identifying the demographic, socio-economic and institutional factors that limit loan repayment capacity of smallholder agro-pastoral farmers being served by the MFI. Identification these factors was expected to generate useful information that help for effective credit targeting, enhanced outreach service to large class of customers, and sustainable operation of the institution to bring the desired poverty reduction impacts.

2. Methodology

Data: Data for this study were collected from both primary and secondary sources. Primary data were collected through a formal household questionnaire survey, key informant interviews and focus group discussions. A multi-stage random sampling technique was employed to select the final observations. Firstly, *Shinile* zone was purposively chosen among the nine zones of the Somali region due to its geographical bordering with different regional states of Ethiopia where financial services were better developed. Secondly, the *Shinile* district which is at the center of the *Shinile* zone was selected as it holds the common socio-economic characteristics of all the districts in the zone. Thirdly, *kebeles* (local

administrative units) were categorized as pastoral, agro-pastoral and sedentary farming areas in discussion with the district bureau of agriculture. Finally, proportionate random samples of 162 households were chosen from the three categories. A structured questionnaire was designed to elicit information on a wide variety of topics including household socio-economic and demographic characteristics that determine their demand for microfinance, saving and credit experience, household enterprises as well as the sources and uses of financial resources. In administering the questionnaire, enumerators who have experience in socioeconomic surveys were employed and were also introduced to the purpose of the study. The survey questionnaire was pre-tested and actual field survey was done from October 2010 to March 2011. Then, updated secondary data were collected from financial institutions, regulatory agencies and government development finance structures. Proclamations and directives of the National Bank of Ethiopia, Five Year Development Plans, policies, strategies and programs of government were considered. As microfinance service development was evidenced to be largely determined by socio-cultural factors like religion in the study area, the collected data was critically analyzed using qualitative approaches and descriptive statistics.

Empirical Model: In this study, the dependent variable loan repayment performance (Y_1) was framed as the rate of the amount of loan repaid by individual farm households out of the total amount of loan disbursed to them. This is a repayment ratio that has been computed as the ratio of amount of loan repaid to the total amount borrowed from formal sources of credit. Thus, the value of the dependent variable ranges between 0 and 1 and a two-limit Tobit model has been chosen as a more appropriate econometric model (Rossett and Nelson, 1975; Maddala, 1997; Long, 1997). Censored regression models refer to a model in which we observe the dependent variable only if it lies above or below some cut off level. The Tobit model is one of the censored regression models that arise when the dependent variable is limited (or censored) from above and/or below. It is a nonlinear model and is estimated using maximum likelihood estimation techniques. It was used to analyze factors that influence loan recovery rate of borrowers of the two lending institutions. This method estimates the likelihood of default and the extent (i.e., intensity) of default. The Tobit approach has been applied in previous studies of loan repayment performance (Oke *et al.*, 2007; Godquin, 2004).

The model derives from an underlying classical normal linear regression and can be represented as:

$$Y_i^* = \beta' X_i + \varepsilon_i$$

whereas Y_i^* is a latent variable (unobserved for values smaller than 0 and greater than 1) representing loan recovery rate, X_i is a vector of independent variables, representing factors affecting loan recovery rate, β is a vector of unknown parameters and ε_i is a stochastic (disturbance) term assumed to be independently and normally distributed with zero mean and constant variance σ^2. Denoting the proportion of the loan recovered as observed dependent variable by Y_i, then, the two limit model can be specified as:

$$Y_i = \begin{cases} 0, & if\ Y_i^* \leq 0 \\ Y_i^* & if\ 0 \leq Y_i^* \leq 1 \\ 1 & if\ Y_i^* \geq 1 \end{cases}$$

Understanding the marginal effects of changes in explanatory variables on the loan repayment performance requires considering the fact that each marginal effect includes both the influence of the explanatory variable on the probability of default as well as on the intensity of default. More explicitly, the total (marginal) effect takes into consideration that a change in an explanatory variable will affect simultaneously the number of defaulters and the extent of default by borrowers. The most common method for marginal analysis in this case is the McDonald-Moffit decomposition method for a two-limit Tobit which is indicated as follows.

Based on the assumption that the stochastic error term ε_i is independently and normally distributed with zero mean, the expected value of the latent variable for the two-limit Tobit can be given as

$$E(Y_i^*/x) = \beta x \text{ and } \partial E(Y_i^*/x)/\partial x_k = \beta_k$$

However, the conditional expected value of the truncated outcome is:

$$E(Y_i/x; 0 \leq Y_i^* \leq 1) = \beta x + \sigma \frac{\varphi(z_L) - \varphi(z_U)}{\Phi(z_U) - \Phi(z_L)}$$

whereas L and U denote the lower and upper limit, respectively; $Z_L = (L - \beta x)/\sigma$ and $Z_U = (U - \beta x)/\sigma$. And, $\Phi(.)$ and $\varphi(Z)$ are the cumulative distribution and density function for the standard normal distribution. Similarly, the expected value of the dependent variable (observed outcome) can be given as:

$E(y/x) = [L.\Pr(y = L/x_i)] + E(y/x,\ L \le Y_i^* \le U/x.Pr.(L \le Y_i^* \le U/x_i) + U.\Pr(y = U/x_i)$, and by Substituting the expressions, $\Pr(y = L/x_i)\ by\ \Phi(z_L)$ and $\Pr(y = U/x_i)\ by\ 1 - \Phi(z_U) = \Phi(-z_U)$, then,

$$\partial E\left(\frac{Y_i^*}{x}\right)/$$

$$\partial x_k = E(y/x), L \le Y_i^* \le U).\left[\partial \frac{\Phi(z_U)-\Phi(z_L)}{\partial x_k}\right][\Phi(z_U) - \Phi(z_L)].\left[\frac{\partial\left(E(Y_i^*/x, L \le Y_i^* \le U)\right)}{\partial x_k}\right] + \frac{\partial \Phi(-z_U)}{\partial x_k}$$

The last equation is the extension of the McDonald-Moffit decomposition for the case of a two-limit Tobit. It decomposes the total marginal effect of a change in an independent variable x_k on the expected value of the extent of loan recovered (i.e., the percent of the loan recovered) into three components as i) the change in the probability of non-default weighted by the conditional expected value of the percent of the loan recovered that had been borrowed by the farmers ii) the change in the percent loan recovered for farmers that are already borrowing weighted by the probability of non-default and iii) The change in the probability of recovering on 100% of the loan on due time. These three components explicitly indicated as follows.

1. The change in the probability of repaying the loan as an independent variable X_i changes is:

$$\frac{\partial \Phi(\delta)}{\partial X_i} = \varphi(\delta)\frac{\beta_i}{\sigma}$$

2. The change in intensity of loan recovery with respect to a change in an explanatory variable among non-complete defaulters is:

$$\frac{\partial E(Y_i/U > Y_i^* > 1)}{\partial X_i} = \beta_i\left[1 + \frac{\delta_L\varphi(\delta_L) - \delta_U\varphi(\delta_U)}{\Phi(\delta_U) - \Phi(\delta_L)} - \left(\frac{\varphi(\delta_L) - \delta_U(\delta_U)}{\Phi(\delta_U) - \Phi(\delta_L)}\right)^2\right]$$

3. The marginal effect of an explanatory variable on the expected value of the dependent variable is:

$$\frac{\partial E(Y_i/X_i)}{\partial X_i} = \beta_i[\Phi(\delta_U) - \Phi(\delta_L)]$$

whereas $X_i =$ represents a vector of explanatory variables, $\Phi(\delta) =$ the cumulative normal distribution, $\delta = \frac{\beta_i X_i}{\sigma} =$ represents the Z-score values for the area under the normal curve, $\beta_i =$ is the vector of Tobit maximum likelihood estimates, $\sigma =$ is the standard error of the error term, $\delta_L = \frac{L-\beta_i X_i}{\sigma}$, $\delta_U = \frac{U-\beta_i X_i}{\sigma}$, L and U are the threshold values ($L = 0$ and $U = 1$), φ and Φ are probability density and cumulative density functions of the standard normal distribution, respectively.

Variables and hypotheses: In this study, the dependent variable loan repayment performance (Y_i) was defined as the rate of the amount of loan repaid by individual farm households out of the total amount of loan disbursed. A number of explanatory variables that are believed to have significant influences on the dependent variable were identified and summarized in Table 1.

Table 1: Definition of hypothesized explanatory variables included in the empirical models

Variables	*Code*	*Variable Type*	*Hypothesis (H_0)*	*Measurement*
			Y_i	
Age of the borrower household head	AGE/AGE^2	Continuous	-	Age of the household head in years
Gender of the borrower household head	GENDER	Dummy	-	1 for male headed, 0 otherwise
Family size	FAMSIZE	Continuous	-	number of household members
Education of household	EDUCATION	Continuous	+	Formal education of the household head in years
Access to irrigated Land	LNDHOLD	Continuous	+	Irrigated land of the household in hectares
Livestock holding	TLUOWNED	Continuous	+	Number of live stock in TLU
Non-farm income	NONFARMICM	Continuous	+	Yearly income from non-farm activities
Access to extension services	EXTENSION	Dummy	+	1 if the household has extension service experience, 0 otherwise
Distance from the market	DISTMARKET	Continuous	-	Distance measured in walking hours
Access to alternative credit	ALTRNTCREDIT	Dummy	-/+	1 if the household has other credit source than DMFI, 0 otherwise
Frequency of shocks	SHOCKFREQ	Continuous	+	Number of shocks per year like crop or livestock losses
Drought-induced risk perception	RISKPERCV	Dummy	-	1 if the household perceives risk of losing crops/livestock, 0 otherwise
Loan size	LOANSIZE	Continuous	-	The amount of the loan borrowed in ETB
Loan due date	DUEDATE	Dummy	+	1 if the repayment schedule is more than 6 months, 0 otherwise
Group solidarity and peer monitoring	SOLIDARITY	Dummy	+	1 if loans are provided in group, 0 otherwise
Loan purpose diversion	LONDIVERSION	Dummy	-	1 if loans are used for the meant purpose, 0 otherwise
Membership Duration	DURATION	Continuous	+	The number of years that the borrowed is served with DMFI
Loan screening based on customer loyalty	LOYALITY	Dummy	+	1 if loan provision is based on screening based on loyalty, 0 otherwise
Fictitious Loan	FICTITIOUSLON	Dummy	-	1 if loans are provided by the name of HH, 0 otherwise
Training on use of credit	TRAINING	Dummy	+	1 if HH is ever trained for appropriate use of loans, 0 otherwise
Expenditure on festivals	CRMEXPNS	Continuous	-	Total annual expenditure on social/religious ceremonies in ETB

3. Results and Discussion

Characteristics of sample households: The descriptive statistics showing the characteristics of the sample households is given in Table 2.

Table 2: Definition of hypothesized explanatory variables included in the empirical models

Variables	Defaulters (n =28)		Non-defaulters (n = 92)		Non-complete Defaulters (n=42)			Total (N=162)	
	Mean	Stand. Dev	Mean	Stand. Dev	Mean	Stand. Dev	F-value	Mean	Stand. Dev
Age of the borrower household head in years	35.11	3.83	39.82	6.48	37.99	4.88	2.95**	38.19	5.77
Dependency ratio	0.29	0.53	0.60	0.82	1.25	0.95	2.47	0.42	0.86
Education of household heads years	0.57	0.72	1.1752	1.236	1.68	0.896	4.416	1.12	1.08
Land holding in hectares	0.54	0.65	3.33	1.42	1.93	1.03	27.04***	0.13	1.58
Livestock holding in TLU	2.13	1.94	9.86	4.19	5.71	3.05	80.11***	3.72	4.69
Non-farm income in ETB	118.08	248.68	4213.39	2639.082	1517.496	2025.1512	30.2736**	2273.06	2731.09
Distance from the market	12.12	2.66	9.43	2.60	13.16	5.54	4.76*	11.04	3.86
Frequency of shocks in year	3.02	1.10	5.80	1.96	5.80	2.06	11.08**	5.10	2.15
Loan size borrowed from DMFI in ETB	1246.86	707.47	1956.68	989.16	2190.53	1262.94	3.00*	1837.69	1047.59
Membership Duration in years	4.29	1.536	9.51	2.69	7.53	2.76	27.99**	3.51	3.25
Yearly expenditure on social festivals in ETB	723.98	874.18	216.58	495.62	44.88	108.56	5.36***	2541.62	606.48

***, ** and * represent significance at 1%, 5% and 10% probability levels, respectively

As the table reveals, an average sample household was headed by a 38-year-old person who attended about 2.12 years of formal education, having a household size of about seven persons, three of whom were in the productive age while the rest were school or pre-school dependents. In terms of resource endowment, the average household owned about 3.72 TLU of livestock and operated 0.13 hectares of irrigated land. The average household generates annual non-farm income of about 2273.06 Birr but the household's annual expenditure on social festivals was significant as compared with its income amounting to 2541.73 Birr. As an indicator of degree of access to infrastructures, the household was far away from the nearby town market center at an average distance of 11.04 kilometers. The average household faces shocks of covariate nature almost very frequently because of the recurrence of climate change induced drought. The average household has been served for the last 3.5 years and borrowed about 1047.59 ETB from Dire MFI.

Determinants of loan repayment performance: The Two-limit Tobit result of the maximum likelihood estimation for determinants of loan repayment performance is indicated in Table 3. Gender of the

borrower household head was found to be negatively significant in affecting loan repayment performance indicating that male-headed households have no better loan repayment performance as compared with their female counter parts. The marginal effect also indicates being a male headed borrower reduces the probability of loan repayment by a factor of 0.0762 and this is in line with various findings in microfinance that gender differentials were proved to have varying effects of success. Similarly, the size of the family of the borrower households was also observed to have a negative and significant impact on loan repayment performance.

Table 3: Two-limit Tobit estimates of determinants of loan repayment performance

Variables	Coefficients	T-ratio	Standard error	$\frac{\partial E(Y_i)}{\partial X_i}$	$\frac{\partial \Phi(\delta)}{\partial X_i}$
AGE	0.0086	0.4784	0.0012	0.1136	0.0762
GENDER	-0.0092	-0.2310**	0.0008	-0.0762	-0.6235
FAMSIZE	-0.0940	-0.03867***	0.0834	-0.0480	-0.9074
EDUCATION	0.0031	0.0606	0.0071	0.0054	0.1084
LNDHOLD	0.0068	0.0386*	0.0065	0.0015	0.7621
TLUOWNED	0.0834	0.8414***	0.0067	0.0680	0.6412
NONFARMICM	0.0072	0.0064***	0.0091	0.0619	0.0263
EXTENSION	0.3120	0.0741	0.4382	0.0125	0.0520
DISTMARKET	-0.0065	-0.0827	0.0831	-0.0372	-0.0048
ALTRNTCREDIT	-0.4539	-0.8645*	0.8626	-0.0175	-02346
SHOCKFREQ	-0.0510	-0.0274**	0.8201	-0.0514	-0.5034
RISKPERCV	-0.0821	-0.1840***	0.0001	-0.0606	-0.5321
LOANSIZE	-0.6521	-0.6234*	0.0021	-0.0113	-0.7862
DUEDATE	-0.4520	-0.7621*	0.4539	-0.0551	-0.1074
SOLIDARITY	0.0931	0.0432**	0.1204	0.0054	0.2041
LONDIVERSION	-0.0309	-0.4010	0.0609	-0.0001	-0.3102
DURATION	0.0400	0.8210**	0.1952	0.0015	0.0074
LOYALITY	0.0751	0.0431***	0.6241	-0.0011	-0.0027
FICTITIOUSLON	0.0412	0.0390	0.0042	0.0619	0.0024
TRAINING	0.0032	0.0086	0.0041	0.0125	0.0019
CRMEXPNS	0.8741	0.0742***	0.0062	0.0038	0.0072
constant	0.0084	0.0629	0.09020	0.0721	0.0065
Number of observations = 162					
Log likelihood = -32.2618					
Restricted l Log likelihood = -51.7920					

***, ** and * represent significance at 1%, 5% and 10% probability levels, respectively

$\frac{\partial \Phi(\delta)}{\partial X_i}$ = the effect of change in independent variable on the probability of being default

The marginal effects show that each additional person to a family decreases the rate of repayment by a factor of 0.048. On the other hand, non-farm income was observed to have a positive and significant impact on the dependent variable and the marginal values indicate that each additional Birr generated from non-farm activities increase the loan repayment rate by a factor of 0.0619. Access to irrigated land has positive impact on loan repayment performance and this might be the effect of the income

generated from crop selling or the effect of using own produce for consumption and using the microfinance loan for the meant purpose including loan repayment.

Similarly, livestock holding positively and significantly related to loan repayment rate. An increase in livestock holding by one TLU increases the rate of repayment by 0.068 for the total sample borrowers. The model result also indicated that household's drought-induced risk perception affects the loan repayment performance implying that uncertainty about the effect of changing climate affects households' decision to discharge their loan on time. Access to alternative credit sources was observed to have negative and significant effect on loan repayment performance. Similarly, the size of loan borrowed is negatively related with the LRR. As loan size increases by a unit, LRR reduces by a factor of 0.011. Loan due date was also negatively affect loan repayment rate. As the loan repayment schedule increases by one month, the LRR reduces by 0.055. Peer monitoring is positively affected LRR performance. Membership duration was positive and significant and this is the indication of customer loyalty.

4. Conclusion and Policy Implications

This study has indentified demographic, socio-economic and institutional factors determining the probability and intensity of loan repayment performance among pastoral/agro-pastoral households that usually borrow from Dire Microfinance Institute in Ethiopia. Accordingly, gender differentials, family size, generation of non-farm income with the availability of irrigated land and increased livestock were indentified to have significant potential to improve loan repayment performance of microfinance beneficiaries. Hence, lending institutions can be targeted to female headed households who can be engaged in diversified income generating activities. Those having reduced family size, access to irrigation and increased livestock number should be given due attention in loan provision decisions. From the perspectives of the MFIs, it should be noted that customers that have no alternative borrowing sources and those that develop long term loyalty through membership durations should be given priority for effective loan recovery. Package of loans should be designed in small amounts for those who can form a cohesive group for peer monitoring and social collateral in the events of default. On top of this**,** predictions on external shock factors like climate change-induced risks of probable crop or livestock loss should be coupled with the above socio-economic and institutional factors in crafting polices aimed at minimizing loan default risk of microfinance services in pastoral/agro-pastoral areas of the country.

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Theme 6: Information Asymmetry and Credit Risk Management

Determinants of Loan Repayment Performance of Beekeeping Cooperatives in Kilte-Awlaelo District, Tigray Region, Northern Ethiopia

Zafu Hailesilase[1] and Abadi Teklehaimanot[2]
[1]MA Student, College of Business & Economics, Mekelle University, Ethiopia
[2]Assistant Professor, College of Business & Economics, Mekelle University, Ethiopia
Email: abatekle@gmail.com

Abstract: *Credit provision is one of the principal components of rural development, which helps to attain rapid and sustainable growth of agriculture. Agricultural lending involves giving credit (in cash and kind) to small-scale farmers. There is no doubt about the crucial roles of credit in economic development. In spite of the importance of loan in agricultural production, its achievement and repayment are burdened with a number of problems especially in the smallholder farmers organized as cooperatives. Currently, there are different organizations involved in providing credit to beekeeping cooperatives of the Kilte-Awlaelo District. These organizations are trying to organize and promote beekeeping cooperatives to improve their traditional beekeeping practices by providing credit which is expected to be repaid on time. Organizing beekeeping farmers as cooperatives in the study area is for the purpose of improving living standards and market access of their members. However, the cooperatives were unable to payback their credit as per the contractual agreement due to various reasons for which the underlying factors were poorly understood. Therefore, this study was aimed at analyzing and examining the determinants of loan repayment performance of beekeeping cooperatives. Multistage sampling and simple random sampling methods were employed to select sample beekeeping cooperatives and sample cooperative members, respectively to collect the data using a structured questionnaire. Besides, key informant interview and focus group discussions were held. A total of 170 respondents were included in the study. The analysis was made using descriptive statistics and logistic model. The result revealed that age, family size, annual income, livestock ownership, access to additional source of credit, loan size and supervisory visit were found statistically significant to enhance loan repayment. However, being male headed member of the cooperatives and number of dependent family members significantly increased the probability of loan default. Therefore, based on the results, it is recommended that credit institutions or lending agencies should consider the above demographic and socio-economic characteristics that significantly influence loan repayment before granting loans and advances to beekeeping cooperatives to reduce the incidence of loan defaults. Besides, effective supervision, training, lending appropriate amount of loan and promoting woman participation in beekeeping cooperative should be given due attention in order to minimize loan default.*

Keywords: *Credit institution, farm business, loan repayment, logistic regression model, microfinance*

1. Introduction

Ethiopia is one of the lowest income countries in the world. Its economy, which is mainly dependent on agriculture, where this sector provides 85% of the employment, 50% of the GDP and about 90% of export revenue. In spite of the fact that agricultural has huge potential, the growth in agricultural production has not been able to keep pace with ever increasing demand due to variety of factors.

Lack of access to credit was one of the shocks the economy has been experiencing. Generally the accessibility of a good financial service is considered as one of the engines of economic development. In the recent years, however, some NGOs have been providing credit to poor households in some parts of the country, side by side with activities like delivering relief and development services. The loans given by these NGOs are very small, in short term period, with in short period repayment system and with no need of collateral. Therefore, these NGOs are facing the challenges of beneficiaries to repay back the credit according to the contract. So they find themselves unable to continue providing credit service.

Credit provision is one of the principal components of rural development, which helps to attain rapid and sustainable growth of agriculture. There is no doubt about the crucial roles of credit in economic development. In spite of the importance of loan in agricultural production, its achievement and repayment are burdened with a number of problems especially in the smallholder farmers organized as cooperatives. Most of the defaults arose from poor management procedures and unwillingness to repay loans. Currently, there are eighteen beekeeping cooperatives having legal recognition with about 552 members organized by Kilte-Awlalo District Agricultural and Rural Development Office. The main objectives of these cooperatives are to improve the living standard and markets access of the members and repay their credit on time. However, the cooperatives are unable to pay back their credit according to the contract due to many factors. Therefore, this study was aimed at analyzing and examining the determinants of loan repayment on beekeeping cooperatives of Kilte–Awlaelo District as there was no adequate study previously conducted.

2. Methodology

Description of the study area: The particular study site, Kilte Awlaelo District is located in Eastern Zone of Tigray, at about 50 kms to the North of Mekelle (Regional capital) along the Mekelle-Adigrat main road. Kilte Awlaelo District has 18 rural administrative localities called 'tabias'. The total area of the

District is 100,556 hectare. The altitude ranges between1900-2300 m.a.s.l. The mean annual rainfall falls between 400mm-600mm and the temperature ranges from 16^0C-27^0C. There are eighteen honey producing Tabias (Villages) in the District, with eighteen beekeeping cooperatives with total of 552 membership. Currently, honey is the most important cash generating commodity in the District with an annual output of 234.61 metric tons (MTs) of both traditional and modern beehives. Out of the total production 95% is supplied to the markets of Wukro, Atsbi Womberta, Hawzen and Mekelle. The total population of the District is estimated to be 117,862 out of which 60,330 (51.2%) were female. The total households are 24,253; out of which 3,647(15%) are women headed households. The age distribution of the population in the District was 44.3% under 15 years, 52.2% between 15-64 years and 3.5% were 65 and above.

Selection of the Study Area: The study area was Kilte Awlaelo District which is purposively selected by considering its potential for beekeeping. The woreda has higher number of beekeeping cooperatives, and beekeeping is also being practiced as a means of income generation and improving household food security.

Data source and collection: The study included both primary and secondary data. The primary data was collected using, questionnaire survey, focus Group Discussion, and key informant interview. While the secondary data was collected from, different organizations, researches and other related literatures.

Sampling method and sample size: Multi-stage sampling technique was adopted in selecting the respondents. The first stage involved purposive selection of six Tabias in the District where there is preponderance of beekeeping cooperatives that obtained loans for agricultural purposes. The second stage involved a simple random selection of one beekeeping cooperatives from each of the six selected Tabias. The third step involved adopting simple random sampling technique to select respondents from each cooperative. From the total 269 members of the selected cooperatives 44% that is 120 members were selected as respondents. Three members of management of each cooperative were taken as key informants. And Five to Eight members from each cooperative were included in focus group discussion.

Data Analysis: Descriptive statistics method was used to describe and analyze the characteristics of the population under study such as mean, percentage, standard deviation, tabulation, and frequency distribution. Econometric model, specifically Logit model, was applied to estimate the effect of hypothesized variables on loan repayment. The cumulative logistic probability model is specified as :

$$P_i = F(Z_i) = F(\alpha + \sum \beta_i X_i) = \frac{1}{1+e^{-Z_i}} \quad \text{.....(1)}$$

Where, P_i = is the probability that an individual will repay or does not given X_i;

e = denotes the base of natural logarithms, which is approximately equal to 2.718;

X_i = represents the i^{th} explanatory variables; and

α and β_i = are parameters to be estimated

- The logit model could be written in terms of the odds and log of odds.
- The odds ratio implies the ratio of the probability (P**i**) that an individual would choose an alternative to the probability (1-P**i**) that he/she would not choose it.

$$(1-P_i) = \frac{1}{1+e^{Z_i}} \quad \text{.....(2)}$$

Therefore,

$$\left(\frac{P_i}{1-P_i}\right) = \left(\frac{1+e^{Z_i}}{1+e^{-Z_i}}\right) = e^{Z_i} \quad \text{.....(3)}$$

- Taking the natural logarithm of equation (3)

$$Z_i = Ln\left(\frac{P_i}{1-P_i}\right) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_m X_m \quad \text{.....(4)}$$

- If the disturbance term (ui) is taken into account, the logit model becomes

$$Z_i = \alpha + \sum_{i=1}^{m} \beta_i X_i + u_i \quad \text{.....(5)}$$

3. Results and Discussion

From the total sample size about 24% (n=29) are female while the remaining 75.83% (n=91) are male members. This indicates that proportion of male member of cooperative are higher than female members. Looking at the educational status of the sample respondents, illiterate accounts 25.83% (n=31) , basic education accounts 6.67% (n=8), primary accounts 58.33% (n=70), high school accounts 6.67% (n=8) and diploma accounts 2.5% (n=3). Looking at the occupation of the

cooperative members, 87.5% (n=105) are farmers, 7.5% (n=9) are involved in trading and the rest 5% (n=6) are civil servants.

Loan repayment with respect to sex of the cooperative members: The sex of the cooperative members is one of the most important factors that determine loan repayment. From the total respondents twenty nine female members **65.5% (n=19)** have repaid their loan. On the contrary, out of the total ninety nine male members **62.7% (n=57)** have repaid their loan. This indicates that there is a positive relationship between female membership and better loan repayment status.

Loan repayment with respect to Age of the cooperative members: Age of the cooperative members is one of the factors which is expected to affect loan repayment. The age between 56-70 years and above 71 years has repaid 100%. This indicates that as the age of the respondents increases the repayment capacity also increases.

Loan repayment by Educational status of cooperative members: Education is also one of the key variables that influence the behavior and attitude of borrowers in loan repayment. It was assumed that the higher the educational status, the better would be the knowledge and awareness level on efficient utilization of loan. However, coming to the actual ground of the cooperative members the repayment rate decreases as level of education increases. Looking at their repayment rate 70.9% of the illitarate has repaid their loan, but only 33.33% of those who had college diploma has repaid their loan. In line with this it was explained in the focus group discussion that, as the educational status of members increased the probability of loan diversion increase. Thus, probability of loan repayment will decrease.

Loan repayment by total family size and number of dependents: The other important factor that features remarkable difference on loan repayment is family size and number of dependents in the household of cooperative members. The result in the above table shows that with increasing family size the probability of loan repayment increased. The result in the above table shows that with increasing family size the probability of loan repayment increased. As explained in the focus group discussion, it was raised that those households with larger family size able to generate higher income from off farm and nonfarm activities and will possibly repay their loan as compared to the households with smaller family size. This is also true that with increasing number of dependents in the household the repayment status is also better off.

Annual Income of cooperative members and loan repayment: It is important to point out here is that the total income from the different sources (off farm, non-farm and farm income) is considered as a determinant of loan repayment. The result indicates that, probability of repayment increase as the annual income of the cooperative increases.

Land holding and Access to irrigation with respect to loan repayment: The size, location and quality of land is considered as a major factor that determines the annual farm income of households'; hence loan repayment. The result indicates, size of land owned by a farm household has a positive relationship with the household's loan repayment performance. This implies that landless households and households with small size of land are more or less unable to repay their loan. The same is true for access to irrigation.

Livestock holding with respect to loan repayment: Livestock represents the most important livelihood resource. Thus determines loan repayment status of cooperative members. The indication here is the cooperative members who do not own livestock were less able to pay their loan as compared with those members who own livestock.

Access to additional credit sources with respect to loan repayment: Access to additional credit sources is determinant factor for loan repayment. If the members have other sources of loan, they may use these sources to be able to settle their loan obligation in case they are forced to repay. The result provides evidence that, access to additional credit services have significant influence on loan repayment capacity of the cooperative members.

Participation of cooperative members in local social institutions: Participation and access to local institutions (Ekub, Edir, farmers association, spiritual/religious associations *(Tsebel), and other associations)* are significant determinants of loan repayment. The result shows, those households who are members of a given association seem to have a better repayment capacity.

Loan repayment with respect to supervision by loan organization: Sufficient number of supervision by loan officer on loan utilization is an important factor contributing to a better loan repayment. The result shows that supervision by loan organization is positively related to loan repayment performance as the percentage defaulter not supervised is more than twice of defaulter who are supervised.

Loan repayment and composition by training given before loan: Training increases the awareness of the borrowers and would increase the exposure to information, opportunities, and working environment.

And it is expected to have positive impact on loan repayment. The result indicates 64.1% of those who have got training have repaid their loan while only 33.33% of those who have not taken training were able to repay their loan. This shows the existence of positive relationship between training before loan and loan repayment.

Loan repayment composition by loan size and Interest rate: If the amount of loan released is enough for the intended purpose, it will have a positive impact on the capacity of repayment. On the contrary, if the amount of loan exceeds, it will be more of burden than be of assistance; there by loan repayment will decline. The result indicates there is only small difference in repayment as the loan of the cooperative increases. The same is true for interest rate.

Determinants of loan repayment: A logistic regression model was used to determine factors affecting loan repayment capacity of beekeeping cooperatives of Kilte-Awlaelo District. The logit result revealed acceptable log likelihood of 38.26. The maximum likelihood estimate of the logistic regression model result shows that repayment was influenced by 9 variables out of fifteen variables used to fit the logistic model estimation. Sex, age, family size, number of dependents, livestock ownership, annual income, loan size, access to additional source of credit and supervision by lending organization are found to affect the probability of loan repayment.

Hence, sex of a cooperative member, number of dependents affect loan repayment negatively and significantly while age, family size, annual income, loan size, availability of other source of credit and supervision by lending organization affect loan repayment positively and significantly. Meaning those beekeepers who are female headed, older age, have larger family size, fewer numbers of dependents, higher annual income, higher loan size, availability of other source of credit and those having supervision by lending organization has high chance of repaying loan (Table 1).

Table 1 Logistic regression model estimation

Variables	Coefficients	S. E.	P-Value
Sex	-2.93	1.63	0.073*
Age	0.31	0.12	0.009***
Education			0.91
Education (1)	1.76	4.55	0.69
Education (2)	-0.42	4.85	0.93
Education (3)	0.92	4.48	0.84
Education (4)	1.17	5.08	0.82
Family size	1.02	0.48	0.03**
No. of Dependents	-0.84	0.47	0.07*
Livestock ownership (1)	5.30	2.81	0.06*
Annual income	7.15	2.03	0.000***
Access to irrigation	-0.37	1.15	0.74
Land Holding	-1.65	1.07	0.12
Loan Size	0.00	0.00	0.03**
Interest rate	-0.15	0.13	0.23
Additional source of credit	2.66	1.44	0.06*
Participation of cooperative members in local social institutions	0.00	0.00	0.46
Training given before loan	3.23	5.20	0.53
Supervision by lending org.	4.34	2.15	0.04**
Constant	-13.81	7.72	0.07*
-2 Log likelihood	38.23		
R-Square	0.862		
Chi-square	119.46		

Source: ***, ** and* means significant at 1%, 5% and 10% probability levels, respectively.

Conclusion

This study determined factors affecting loan repayment performance of beekeeping cooperatives in Kilte-Awlaelo District, Eastern Zone of Tigrai Region, Northern Ethiopia. Accordingly, efforts have

been made to assess the demographic characteristics, socio-economic characteristics of cooperative members and institutional factors which affect loan repayment of the cooperative members. Moreover, the results indicated that age, family size, livestock ownership, annual income, loan size, access to additional source of credit and supervision by lending organization are found to affect loan repayment positively and significantly. While sex of cooperative members' and number of dependents are found to affect loan repayment negatively and significantly. Thus it can be concluded that, age, family size, livestock ownership, annual income, loan size, access to additional source of credit and supervision by lending organization are factors that significantly enhance loan repayment . Besides, sex of cooperative members' and number of dependents are factors that significantly undermine loan repayment.

Based on the findings of this study number of recommendations are given on how to promote loan repayment on beekeeping cooperative with particular reference to the study areas. Credit institutions or lending agencies should also look out for the demographic, socioeconomic characteristics that significantly influence loan repayment before granting loans and advances to beekeeping cooperatives to reduce the incidence of loan defaults. In the study area, female are observed to be less likely to participate in beekeeping cooperatives as compared to male members. Therefore, efforts should be made to enhance women's involvement in beekeeping cooperative activities, which in a way strengthens and bring about better loan repayment status. Age, family size, annual income, loan size, availability of other source of credit and supervision by lending organization were identified among the major factor that enhance cooperatives from becoming profitable and repaying their loan. Thus, efforts should be to consider and take in to account of this factors while providing loans for better repayment performance. Finally, further research is needed to establish whether or not there are regional differences in the loan repayment status of the sample cooperative members.

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Information Asymmetry and Credit Risk Management Practices in the Ethiopian Banking Business

Wolde Bulto
Director, Department of Credit Management, Oromia International Bank,
Email: woldebi@yahoo.co.uk

Abstract: *The objective of this study was to identify problems pertinent to exercising prudent lending in banking business in Ethiopia. Special emphasis was given to assessing the degree of information asymmetry and credit risk together with mechanisms that Ethiopian commercial banks use to mitigate the risks. A combination of qualitative and quantitative approach was deployed to address the problem. The finding of the research entails that commercial banks operating in the country were suffering from the prevalence of high degree of information asymmetry both before and after disbursement of loans, as a result of which they were forced to mostly depend on tangible collateral for the loan they provide to borrowers. In this process, borrowers with viable business propositions but with no tangible collateral are not mostly getting loans. Thus, in order to encourage commercial banks to lend loans based on business viability and cash-flow of the business and enhance investment in the country, there should primarily be comprehensive national database of all citizens of the country from which banks could obtain relevant information and data of the borrowers at a reasonable cost and time to minimize the existing information asymmetry. Commercial banks shall also work hard to capacitate their concerned employees in charge of handling due-diligence assessments and analyses.*

Keywords: *credit risk, information asymmetry, prudent lending*

1. Introduction

Lending in Ethiopia has been both a controversial and a difficult matter. On the one hand, firms complain about lack of credit and the excessively high standards set by banks. On the other hand, banks have been suffering from losses[3] on bad loans. Lending inherently requires that the lender trust the borrower to repay the loan at a later date. For the lender to be able to trust the borrower, the lender must have means of screening out incompetent and untrustworthy borrowers. However, one chooses to put it, the bank's problem is to distinguish between good and bad firms (or projects), and good and bad character. By good and bad firms (or projects)-mean expected return and risk. Moreover, good and bad character refers to the borrower's honesty.

[3] In the past, there were times when non-performing loans to total loans and advances of some banks reached 50%.

The review shows that Ethiopian banks have trouble distinguishing the good from bad in both firms and character. This is partly due to intrinsic problems in Ethiopia, and partly due to their own methods. In this perspective the review indicates that solutions adopted by banks often seemed inefficient from the perspective of a profit-maximizing bank. Probably, this reflects both incomplete learning by banks about the most effective way to make loans, and internal incentive problems that banks have not solved. The objective in conducting the research is to identify problems pertinent to exercising prudent lending in Ethiopian banking business.

Therefore, the main purpose of this paper is reviewing pertinent documents on conceptual and empirical discussion of the lending problem, how they try to determine who is creditworthy and who is not, and the problems they face, how banks use the mechanisms of reputation, collateral and punishment to influence who will approach them for loans, and to encourage repayment and to limit their losses when loans go bad, etc.

2. Discussion

Banking Business in Ethiopia[4]*:* The history of banking in Ethiopia dates back to the turn of the century, when in 1905, the Bank of Abyssinia was established in Finfinne under the regime of Menelik II. This event marked the introduction of banking in the country. National Bank of Egypt was entrusted for the project and the new institution was chartered in Cairo and its shares were subscribed in a number of countries besides Ethiopia. The Bank of Abyssinia was given a 50-years concession and was engaged in issuing notes, collecting deposits and granting loans, but its clients were mostly foreign businessmen and wealthy Ethiopians. A few years later, disappointed by the behavior of this bank, mainly devoted to profit-making rather than promoting economic development, the Emperor is asserted to support the establishment of a wholly Ethiopian bank, the Société Nationale d'Ethiopie pour le Dévéloppement de l'Agriculture et du Commerce. Haile Sellassie, after acceding to the throne in 1930, could not accept that the country's issuing bank was foreign-owned and in agreement with National Bank of Egypt, decided liquidation of the Bank of Abyssinia.

A new bank, the Bank of Ethiopia, under Government control, was established in 1931 and retained management, staff, premises and clients of the old bank. Italian occupation in 1936 brought the liquidation of the Bank. This bank was later disintegrated into two different banks forming the

[4]Most of the facts presented under this title can be accessed at http://www.nbe.gov.et/History/history.htm

National Bank of Ethiopia and the Commercial Bank of Ethiopia. Through time, more foreign and domestic banks were established. To name a few: Banco di Roma, Banco di Napoli, Banca Nazionale del lavoro and Agricultural Bank were the prominent ones.

The first private Ethiopian bank was Addis Ababa Bank Share Company, which was established by Ethiopians initiative and started operation in 1964 with a capital of 2 million in association with National and Grindlay Bank, London which had 40% of the total share. However, the banking business could not move further because of the institutionalization of private investments by the Socialist regime that came into power leaving only three government banks; the National Bank of Ethiopia, the Commercial Bank of Ethiopia and Agricultural and Industrial Development Bank. This was reversed when the Socialist regime was overthrown in 1991 and the issuance of proclamation for licensing and supervision of banking and insurance business, which led to the beginning of a new era. Subsequent to enactment of the proclamation, private banks and insurance companies began to flourish.

Brief Review of Related Literature: Banks very often suffered from what we would consider today lack of prudent lending practices. The banks appeared to have had concentrated loan portfolios, with a large share of loans being made to business associates of the bank officers and directors[5]. The banks often provided long-term finance (debt and equity) to intrinsically risky industrial ventures such as railroads, mines or textile mills. Apparently, the lack of adequate capital markets created a vacuum that the banks stepped in to fill.

However, in providing long-term capital, the banks performed a function that they were ill-equipped to perform. In making "insider" loans, the information about the borrower's character available to the banker may have been more accurate than information about "outside" lenders. This was, after all, before the development of financial accounting standards or independent accounting firms. However, insider loans may have been subject to a bias with respect to judgments about the quality of the investment project. Normally arms-length bankers ask skeptical questions that optimistic firms do not, forcing firms to be more cautious. However, apparently on insider loans, the lenders frequently put the cautious external perspective into abeyance.

[5] This is mainly holds true for private banks

Two particular examples (the US and Japan) may help elucidate the strengths and weaknesses of insider lending. Lamoreaux (1991 & 1994) has argued that insider arrangements were common in the early United States, specifically in New England. Between 1820 and 1850, merchants in New England established banks with the goal of providing loans to themselves. The banks then also provided loans to business associates of the owners. The system worked fairly well. The insiders watched each other to assure competence and honesty, as they were collectively responsible for the success of the bank.

In the absence of accounting systems, personal knowledge of each other gained from years of contact in schools, social activities and business was probably the best source of information. Also, the merchants were descendants of New England puritans and were extremely concerned about their personal reputations for honesty. In describing banking in Japan, Tamaki (1995), and the authors in Aoki and Patrick (1995) and Aoki and Kim (1995), describe institutions substantially different from either the Anglo-Saxon or German forms of banking. In Walter's (1992) terminology, the Japanese financial system is an ultra-insider system and stands in contrast to the Anglo-American outsider system and the Franco-German insider system.

In the pre-World War II Japanese *zaibatsu* system, family-owned holding companies owned both a bank and industrial companies. The bank then lent primarily to group companies. During the post-World War II Japanese *kigyo shudan* system consists of mutually exclusive groups of firms that own shares in each other and in a bank, with the bank also owning shares in the firms. Because the bank lends to firms in which it owns shares and that own its shares, loans to related parties are *de facto* standard. These *zaibatsu* and *kigyo shudan* lending arrangements has been successful overall in terms of creating incentives to repay, but have been less effective in ensuring that lenders receive arms-length information about the merits of loans and investments.

Also, government has acted to enforce rules and often to rescue failing banks. We can sum up this historical record as showing two things. First, in developing and developed economies, banking crises are common and banks often make serious mistakes in lending[6]. Second, insider or "connected" borrowers are common and represent a substitute for objective financial or accounting information. In fact, evidences show that many countries in the world have credit bureaus although the form of the bureaus' establishment and the quality and comprehensiveness of the data supplied by these bureaus to financial institutions vary from country to country.

[6] The cause of almost all financial crises in the past was traced back to credit risk.

Coming back to Ethiopian specific, as far as the knowledge and assessment of the researcher goes, there is no related literature except Directives of National Bank of Ethiopia issued in 2003 and subsequent amendment in 2012 to force banks operating in the country to share information of borrowers maintained at their end via National Bank of Ethiopia. Therefore, lenders mostly depend on information gathered from borrowers with very little additional data to decide on credit propositions.

The Lenders' and Borrowers' Problems, and the Equilibrium: The researcher reviewed by dividing the lending process into two stages: the decision to lend and the response if problems occur. In the first stage, the basic problem is information. The bank wishes to screen-out bad borrowers (borrowers likely to default), and for this it needs information. However, whenever a borrower presents himself, there is an asymmetry: the borrower knows more about himself, his firm and his project than the bank knows. Although the bank can demand that the borrower disclose information as a condition for making the loan, the borrower has an incentive to conceal any potentially deleterious information. Still, at this stage the bank has the money and the borrower is a supplicant.

Once the bank has made loans, the situation changes. Now the borrower has the money and the bank must depend on the borrower's willingness and ability to repay the loan. If the borrower is unwilling or unable to repay, the bank will suffer a loss. The bank's problem is two-fold. First, it must create incentives to discourage borrowers who are able to repay from defaulting. Second, the bank must minimize its losses in cases where the borrower is willing to pay but unable to do so. Spot contracts can solve many contracting problems between firms though at the cost of some loss in efficiency (Koford and Miller 1996).

However, bank lending exists precisely to reduce these inefficiencies. The production of goods takes time, in the absence of intermediaries or capital markets, entrepreneurs would have to save the entire initial investment themselves before commencing production. Bank loans, the savings of others, bridge the time gap between production and sale. The following simple Gibrat model (Sutton, 1997) of the growth of the firm and the lending decision may help provide a starting point for understanding the banker's problem with respect to selecting good firms to which to lend. The model has its limitations and we will return to these later in the discussion. For now, let us assume the following model of the growth of the firm's assets:

$$\mathbf{lnA}_{t+1} = \mu + \mathbf{lnA}_t + e_t$$

Where, $\ln A_t$ is the natural logarithm of the assets at time *t*, **μ** is the expected growth of the assets, and e_t is the firm's overall luck. Luck depends on many factors and is equally likely to be good or bad. We, therefore, assume that it has a Gaussian distribution with mean (0) and variance (s^2).

The growth of the firm's assets depends on its expected profitability and its luck. The firm's assets grow with its undertaking projects that it correctly expects to be profitable on average and with good luck. The firm's assets decline with losses which are attributable to bad luck. The firm can increase its assets by borrowing. This gives rise to a third parameter of interest to the banker that we call D_t-- the amount by which the firm's assets exceed its liabilities.

The probability of default depends on **μ**, s^2 and D_t. We may put this more formally. Insolvency occurs at the point at which liabilities exceed assets ($D_t < 0$). Then the firm's expected first passage time to the point of insolvency increases with **μ** and D_t, and decreases with s^2. The more profitable the firm, and the less risky and levered the firm, the lower the probability that the firm will go bankrupt during any given period. The banker wants to find firms that have a high **μ** (expected profitability), low s^2 (low risk), and high D_t (low leverage). The banker also does not want the firm to take any actions that would reduce **μ** or D_t or increase s^2 after he has made the loan. This is the moral hazard problem in lending. To reduce the moral hazard problem, the bankers will demand loan covenants that enjoin the borrower from actions that worsen the banker's claim. One forbidden action is taking on debt that is senior to the bank loan in the event of bankruptcy. Another forbidden action is a material change in the business of the firm. Actions that reduce the probability of default are, of course, welcome. The banker has to estimate the three parameters to determine the probability of a loss. Estimating D_t is relatively straightforward.

The banker needs balance sheet data that shows all the outstanding claims against the firm. Obviously the banker will prefer situations where an auditor has certified that the firm has correctly prepared the accounting data. It is in estimating **μ** and s^2 that problems of information asymmetry are most severe. The borrower generally will know more about his business, industry and prospects than the lender does. The lender, if his scale is large enough, can mitigate the problem somewhat by letting loan officers specialize in certain industries but the problem of knowing the borrower and his firm remains area of problem.

The banker takes into account **μ**, $\mathbf{s}^2$ and $\mathbf{D}_t$, together with an assessment of the risks of information asymmetry; moral hazard and adverse selection to calculate the likelihood that the loan will get into

trouble. The lender then wishes to charge an interest rate that is high enough or the earnings on good loans to offset the losses on bad ones. The gains on all the loans that do not get into trouble pay for the losses on the few that do. The lender does not have a free hand to set interest rates. The bank not only competes with other lenders but also it needs to understand that the more it charges, the lower **μ** will be. Some potential loans are so risky that attempting to price to take the risk into account becomes a self-fulfilling prophecy. In that case the banker will refuse to lend, even if the borrower expresses a willingness to accept the rate.

The willingness to accept the rate is itself an adverse signal about the borrower. The result is that the lender rations the borrower out of the market. The problem of distinguishing good firms from bad continues after the bank has made the loan. If the banker could monitor the firm continuously and accurately the banker could close the firm the minute $D_t = 0$. When Dt = 0, the firm's assets exactly cover its debts. When the borrower has difficulty in paying, the bank has to determine if the situation is one of illiquidity, i.e., cash-flow, or insolvency, i.e., $D_t < 0$. The key insight for the banker is to realize that as long as $D_t > 0$, the borrower has equity in the firm and does not want to surrender the firm to the lender.

Also, the lender can demand collateral. The transaction costs to establish collateral reduce the return to the bank and to the firm. However, collateral gives the bank first claim to the pledged assets in the event of default. Even if the firm is insolvent, if the collateral is adequate the bank recovers its loan in full. On default, the bank seizes and liquidates the collateral. The bank uses the proceeds to pay of its loan and returns any surplus to the other creditors. So far, we have assumed that the only estimation problem that the banker faces is one of inaccuracy in its assessment of the borrower's firm.

The discussion of the historical evidence suggests that in the case of insider loans, lenders and borrowers do not make independent assessments. Instead they may make a joint estimate in which they overestimate ^{2}**μ** and underestimates s^2. Apparently in some circumstances, a community of opinion or information cascade may be formed (Bikhchandani *et al.*, 1992 and Orléans 1995). In the banking context, particularly in the case of lending to related parties, the result is that the bank's officers suspend their normal good judgment.

Many of the governance mechanisms that banks and regulators apply such as ex ante lending limits on loans to related parties, to particular firms, or particular sectors, are a form of tying oneself to the mast or putting wax in one's ears. Dörner (1996) points out that one problem with safety rules is that

breaking safety rules is frequently reinforced, i.e., it pays off. Safety rules impose a constraint and generally at a level well before crisis stage. Ignoring the rules gives the actor an increased freedom of action and generally an improved immediate result, with no immediate adverse consequences. In the banking context, ignoring the safety rules leads to higher profitability for long periods before disaster strikes. That is why it is important that regulators who have little stake in **μ** but a great concern with s^2, enforce the bank's own safety rules.

Moreover, there is the issue of the maturity of the loans. Although it is not a part of the model, I have treated loans as being discrete, long-term contracts. Actually, a major role of banks is to fund working capital requirements. Usually the bank funds working capital with a line of credit or overdraft line, repayable on demand. The "on demand" feature merely allows the banker to call in the loan at the first sign of insolvency rather than having to wait for default. From the firm's point of view, working capital is essential to the operation of the business and so the need is long-term. Only the amount required fluctuates, and that around some long-run, growing level as the firm grows.

Before we leave the model and turn to the problem of ensuring that the borrower pays the loan, it is important to note that the two stages of whether or not to lend and how to ensure repayment are not independent. The bank's own policies will affect which borrowers will approach it for loans. If the bank does a good job of creating incentives, it will discourage potential bad borrowers from even applying and will encourage possibly borderline borrowers to bond themselves to be good. In the discussion below we emphasize the issues of creating incentives that will induce the borrower to repay; we neglect the issue of the borrower's ability to repay. We believe that this is the correct way to consider the incentive issue. Ability to repay ex ante is rarely a matter of certainty: the reason that borrowing is an interesting issue is that there is risk that bank and borrower evaluate. Ability to repay ex post is also commonly not a matter of certainty: with sufficient time and inducement to effort, borrowers will repay many apparently bad loans.

However, there are two key reasons that ability to repay is not an incentive issue. One reason is that as a first order approximation we can take ability to pay as being outside the control of borrower or lender. The second reason is that if the borrower intends to defraud the lender, ability to pay is irrelevant. The third reason is that honest borrowers expect to be able to repay. If the firm fails, the borrower loses his investment in the firm but if the firm does well, the borrower keeps all the profit net of the loan repayment.

Banks have several ways to ensure that borrowers repay their loans. The three mechanisms discussed briefly below and again in part 5 are reputation, collateral, and punishment for fraud. All can and may involve court action. For both the lender and borrower the value or cost of civil action depends upon the probability of collection and the costs of legal action. In brief, default incurs reputation costs to the borrower of which the most important is the effect on the borrower's ability to borrow in the future. This includes not only the ability to borrow from the bank in question, but also from other banks, from suppliers in the form of trade credit, and even from the firm's own workers in the form of the time between paychecks. Furthermore, a firm known to be in trouble will have difficulty securing the long-term contracts on which it may depend. An important social variable (a constant for the bank and firm) therefore, is how public is the knowledge of default likely to be and how harmful will that knowledge be to the firm's owners. If a loan goes bad, the lender's first line of defense in Ethiopia is to publicize and sell the collateral. Publicizing and foreclosing collateral results in explicit and implicit costs. The explicit costs are the (minimal) legal costs.

The implicit costs are the possibility that legal action against collateral may turn a situation of illiquidity into one of insolvency; publicizing and foreclosing of collateral may make it impossible for the firm to operate and so force it into bankruptcy. The bank must compare these costs with the expected loss from waiting in the hope that the borrower will eventually be able to repay. The final recourse for a bank upon discovering of fraud is court prosecution. The effectiveness of recourse to courts in this case depends on whether the legal system treats this as a civil or criminal matter and whether the court system assigns it a priority or not. On the other hand, if the least cost combination is ineffective, then the bank must rely more heavily on another combination at an overall higher cost. If one mechanism becomes less effective, the bank may turn down potentially problematic loans until the expected probability of repayment reaches an acceptable level.

Alternatively, the bank may make other adjustments to increase the probability of repayment. This of course increases costs and so reduces the amount of lending. Most importantly, if practices and institutions reduce information asymmetry, this allows the lender to adjust other margins as well. Then the price of loans will fall and the total amount of lending in the economy will rise. In the present analysis, there are two over-riding problems. The first is the banks' ability to distinguish good and bad loans due to lack of adequate experience. The second is limitations on the social and legal costs of failure to repay. For both problems the banks' solution involves increased reliance upon collateral with all its costs for the banks, firms and society.

Separating the Wheat from the Chaff: Banks usually try to avoid making bad loans. Loans go bad for one of two broad reasons; the firm runs into difficulty or the borrower has engaged in fraud. Petersen and Rajan (1995) put the issue another way. They suggest that the three character defects of greatest concern to bankers are competence, laziness and dishonesty. Incompetence and laziness result in waste and missed opportunity. The incompetent or lazy harm the banker by reducing the firm's expected profitability and hence the firm's ability to service the loan. The dishonest steal, either directly from the banker, or indirectly by stealing from the firm and hence imperiling the loan. The discussion in this section is separated into two parts. The first part represents the banker's task of avoiding firms that are likely to run into trouble whether because of incompetence or laziness, or simply great risk. The second part represents the banker's task of avoiding crooks.

Good Firms and Bad Firms: The firm may run into difficulty because of **μ**, s^2 or D. That is, the firm may pick poor projects in which to invest, it may be unlucky, or it may be indebted to the hilt. It is the banker's job to avoid lending to firms that have or are picking bad projects. Luck is ex post; by definition there is nothing that the banker can do to determine whether a firm will be lucky or unlucky, beyond remembering the adage, "Fortune favors the prepared." Bankers can however estimate variance and select against companies that are taking too much risk for the expected return. Bankers can also determine the firm's leverage and refuse to lend to firms that have too much debt outstanding. In developed countries banks use the device of asking for several years (3-5) of audited financial statements as the first screen to separate into good from bad firms[7].

As Diamond (1984) points out in his seminal article, the passage of time helps to separate good firms from bad firms that have simply been lucky. If a firm has operated successfully for several years this is a sign that management has been picking good projects and is competent. The longer the firm has been operating successfully, the less likely it is that the firm's past success has been due to luck. Audited statements are a sign of well constructed accounting systems and some openness to disclosure.

Most small to moderate-sized Ethiopian firms are unable to provide several years of good financial records and they generally do not have well-audited financial records. First, the firms are almost all young. Second it is very expensive to use accounting firm. Most firms use less reputable local accountants. Bankers allege that these local accountants are willing to be generous to a firm if it

[7] Zeller, Manfred. 2010 PP 23-29

"suggests" that good numbers would be appropriate. Still, it is also practical experience of bankers in the country that borrowers don't want to be asked to present audited financial statements.

A second screen that bankers in some developed economies use is the reports of commercial credit reporting firms. In Ethiopia, as in other less developing economies, the information available on firms from other sources is poor. This makes it hard for banks to learn whether firms are paying their trade debts on time or not. The lack of trade credit information deprives the banker of a useful early warning signal. The signal arises from the fact that firms in difficulties are more likely to delay their payments to their trade creditors than they are to delay their payments to their bankers.

A third screen is to visit the premises of the borrower. By visiting the premises, an experienced banker can get some sense of whether the firm is busy, well-organized, and appears successful without being spendthrift. The banker can also find out whether or not the firm exists. Bankers visit firms as a matter of course, both before making a loan and during the life of the loan. They might make several visits before approving a loan. However, not all borrowers welcome the visits. Some borrowers regarded visits as unwarranted intrusions on the borrower's privacy. It is also possible that individuals and firms in Ethiopia, as in many other countries, see themselves as existing in a non-cooperative, predatory environment. Cooperation, in such an environment, leads not to reciprocal cooperation but to exploitation.

As part of their credit evaluation, many banks require prospective borrowers to provide a business plan and the credit officers evaluate the plan. However, many of their clients had no idea how to write a business plan and the officers themselves ended up teaching the borrower. Also, some firms resorted to consultants who would provide a generic and hence meaningless business plan. Still, the requirement of a business plan acted as another screen against fraudulent borrowers and poorly managed firms. There is a second problem that bankers reported regarding business plans. The bankers claimed that business plans did not deal seriously with the possibility of bad events, particularly of bad macroeconomic events. It appeared that the problem was inexperienced business people. The business people had never weathered hard times and did not naturally think about how to respond to adversity. The result was that the business plans were not very useful.

While the plans could show realistic cash flows under good conditions, if conditions worsened significantly the businesses were unprepared with a contingency plan and so were immediately in trouble. The borrowers' reluctance to present pessimistic scenarios may also have been another

example of the operation of information asymmetry. The borrower may know more than the bank about possible risks and be reluctant to reveal them to the less knowledgeable loan officer. The borrowers may fear that revealing the risks they face will increase the probability that the bank will refuse to lend to them. Bankers consider the information problems associated with lending working capital to be large. Firms are typically unwilling to describe their business in realistic detail.

Good Character and Bad Character: An assessment of the borrower's character is critical in the loan decision. Default would embarrass the borrowers too much. Generally though banks made substantial efforts to learn whether the borrower was of a "type" that would want to pay off the loan. Although they wanted to determine the borrower's true type, doing so was difficult. The devices that help a banker screen out incompetent borrowers obviously also help in screening out the dishonest. A history of successful operation, credit reports, company visits, and business plans all provide useful information on honesty as well as competence.

Visiting companies and requiring business plans of borrowers however were possible and the bankers we spoke to do use them. Visiting the premises of firms obviously helps but was not fool-proof in ensuring that the bank would not suffer losses on loans to "credit millionaires". Some entrepreneurs set up paper firms just to capture credits. After the bank made the loan, the credit millionaires simply ignored demands for repayment while living well. Some borrowers simply disappeared.

Minimizing the Impact of Information Asymmetry: Encouraging loan repayment involves three incentive mechanisms: reputation, collateral and legal punishment. First, does a defaulting borrower suffer a reputation cost that reduces the gains from default? Second, does a defaulting borrower forfeit collateral that is sufficiently valuable and marketable to pay off the value of the loan? Third, does a fraudulent borrower suffer legal punishment sufficient to deter fraud? Again, the sign that the mechanisms work well is that the problem of an unwillingness to pay crops up rarely.

Recourse to legal action may be part of any one of our three incentive mechanisms. First, the firm can go to court to win a judgment that harms the borrower's reputation. Second, the firm may go to court to establish title to collateral, or in the event there is no specific collateral, to take its place in the queue of claimants. A judgment is also necessary to enlist the court's assistance in seizing assets. Third, the firm may go to court to punish fraud with a view of discouraging others from attempting fraud in the future. Large banks have lawyers on their staffs so they argue that their marginal cost is only court fees. If they win the judgment then their fees become part of their claim. Instituting a civil claim is

thus the natural response to default and insufficient collateral. Bankers and firms in Ethiopia often do resort to the courts, though all assert that courts are slow and inefficient (Koford and Miller, 1995).

Reputation: Borrowers with poor reputations would have difficulty in getting new loans or would get new loans only with more onerous conditions and restrictions. A poor reputation may encompass a history of slow payment or even just a general lack of cooperation and openness. For reputation to work as a general incentive, the borrower has to know that his lender's experience with him will become public knowledge. Other banks and firms must be able to find out easily whether someone is a good payer or not. In this respect, there is no comprehensive database maintained for such and other related purposes.

Ethiopian banks pointed out that the bank secrecy law prevented them from informing the public about problem borrowers. In principle, the law allowed them to inform other bankers of certain facts about borrowers, through a system that the National Bank of Ethiopia established: Credit Reference Bureau System. Firms had great trouble in showing that they deserved a good reputation, and bad firms could easily claim to be good. Often, people express the issue to us in cultural terms: information is very valuable, and so should not be passed around. Holding unique information gives power.

The lack of good objective information about businesses in Ethiopia (balance sheets, past cash flows, value of capital, and history of paying debts) suggests that informal information through close personal relations should be more important. The implication is that one could readily find out about people; still gossip was more effective in towns rather than cities. A mechanism that one observes in situations where business information is difficult to obtain is that businesses typically operate through close-knit "groups" where trust will be better. When objective data is not available, knowledge of individual personalities is a partial substitute. Moreover, when one works with a small, intimate group of other business-people, violating an agreement should bring a collapse of business relations.

Collateral: Requiring collateral can also reduce information asymmetry risks. Collateral reduces adverse selection by requiring a specific value of collateral. After all, look what happened when mortgage lenders were offering nothing-down loans—the credit crises of 2008 and 2009. Collateral also lowers moral hazard risk because the borrowers stand to lose their collateral if they do not make the required payments. Requiring a certain amount of net worth also reduces adverse selection because only those individuals or businesses with sufficient assets over liabilities will be considered for a loan. Moral

hazard is reduced because the borrower can be sued if they fail to make timely payments on their loans. Bankers often describe the lending system as being based on the guarantee that even in default the lender would remain whole. In practice, this was neither a very efficient nor effective system.

Legal Action: The simplest form of private enforcement if the borrower just fails to repay, is a call or visit by the lender to "discuss" the matter with the borrower. The discussion will certainly be unpleasant, especially if the borrower has not warned the lender that difficulties were starting to develop. Lenders may call the borrower regularly to "remind" the borrower of the obligation. After all possible amicable resolutions of the loan collection have been made, banks resort the case to legal action. Therefore, taking timely, proper and appropriate legal action against such defaulter definitely minimizes default by other borrowers.

3. Conclusion

Overall assessment reveals that prevalence of information asymmetry between the borrower and the bank, which is reflected in adverse selection during sanctioning and moral hazard after disbursement of the loan has forced commercial banks to excessively rely on collaterals to manage associated risks. Banks could deploy different types of screening mechanisms of good firms and character from the bad ones to minimize the possible adverse impact of information asymmetry. Moreover, the customized Gibrat model also implied the possibility of using the amount by which the firm's assets exceed its liabilities, expected profitability and luck of the firm to help banks to screen the wheat from the chaff. However, it is the implication of the review to capacitate personnel engaged in credit operations and working towards maintaining comprehensive citizens' database to enhance investment in the country and minimize the information asymmetry.

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DISCUSSIONS, VIEWS AND REFLECTIONS

Saving

The saving rate in Ethiopia is considered to be very low even by the sub-Saharan African standards. Discussions were made at length on the underlying factors for poor performance of this macroeconomic variable and mechanisms of improving the Ethiopian saving rate.

It was indicated that improving saving conditions should take into account the nature of consumption in a community. However, the concept of consumption was obscured during the conference since it is difficult to put effective saving in place without accounting for consumption. Therefore, the discussants emphasized the need to include the concept of consumption into themes in a conference to be organized on the same topic in the future. It was noted that saving could be mobilized by reducing the inflation rate, the tax rate, and by increasing real income.

The negative effect of inflation on saving was emphasized. It was argued that inflation severely affects household capital accumulation, which further depletes the saving margin. Thus, it was noted that all stakeholders such as higher learning institutions, financial institutions, government, and public financial agencies should come up with innovative and effective mechanisms of saving mobilizations.

It was also opined that absence of diversified saving products such as saving for real estate development in Ethiopia adversely affected the intrinsic saving motive of individuals. Absence of long term loan provision as one of the reasons for low saving among citizens and lack of access of citizens to different saving packages was underlined to be the major factors having important bearings on the low level of saving in the country.

The issue of aggregate saving in Ethiopia including household savings, business savings, and government savings was addressed and noted that it is within a single digit rate. In this regard, participants noted to critically see the effect of inflation on the overall saving. Accordingly, the effect of inflation on aggregate saving was suggested to be not as such significant. It was reiterated that low savings could be attributed to many factors and it was argued that the effect of inflation was negligible. On the whole, undertaking a thorough investigation into the macro and micro level factors as well as multidisciplinary perspectives involving sociological, anthropological and religious issues was indicated to provide the answer to the questions why the saving rate in Ethiopia is low and how the saving culture could be promoted. Moreover, further research on the effect of inflation on saving

mobilization and behavior was suggested to test the hypothesis that inflation negatively affected savings mobilization. Furthermore, it was suggested that the feasibility of institutional or forced savings in Ethiopia should be thoroughly studied. It was also mentioned that financial institutions are expected to play key roles in setting research agenda and supporting research endeavors in the area of loan and saving mobilization. The participants recommended that research should be conducted to come up with policy recommendations that promote saving in the country in case there are any policy gaps that discourage it.

Financial sector development and infrastructure

Participants of the conference argued that the underdevelopment of the financial sector in Ethiopia including lack of efficient banking services, low access to financial services, poor infrastructural development, lack of liberalization of financial sector and entry barriers, and lack of diversified saving schemes and opportunities are the major problems constraining saving mobilization in the country. It was noted that most of the banks in the county are inefficient in service delivery, particularly public banks. Specifically, the services are limited in scope and delivery is slow. There was a general notion that the government would have to influence these financial institutions to become efficient operators. In addition, it was stressed that there is limited access to financial services due to limited availability of financial sector infrastructure. For example, it was noted that there are limited banking services in rural Ethiopia. Moreover, it was opined that lack of capital or secondary markets and absence of foreign banks in the country is also another factor limiting access to financial services. This was attributed to the low level of liberalization of the financial sector. Participants noted that the poor availability of ICT and other supportive infrastructure is also a factor that contributed to the limited services extended to savers. It was also commented that the limited availability of alternative investment opportunities that would promote saving also contributes to the poor availability of saving products and schemes in the country.

In regard to the ways of creating a well functioning financial system in Ethiopia, notable arguments were made by participants. Some participants suggested opting for full liberalization of the Ethiopian financial sector, initiation of the financial markets, and dollarization of deposits would be the best ways forward for attaining a well functioning financial system. They supported their views with the notion that liberalization would enhance financial sector efficiencies. However, these arguments were refuted by some other participants with the view that liberalization of the financial sector has its own

negative implications on the economic and political sovereignty of the country. Participants supporting this position further explained that allowing foreign investors into the financial sector of the country would have detrimental effects: i) Since most of the commercial banks in Ethiopia are inefficient and have limited capital base, inviting foreign banks into the system would threaten the survival of the local private and government banks; ii) The limited capacity of the National Bank of Ethiopia (NBE) to supervise experienced foreign banks may also pose other challenges; and iii) Overseas banks virtually have the desire to skim the market and they do not have the interest in moving closer to the rural communities, where the country has limited financial infrastructure.

The opening up of stock exchange markets was also discussed by the participants and it was argued that the project would not be feasible at least within the coming couple of years given the context of Ethiopia. Participants from the private sector and invited practitioners also emphasized the low level of empowerment of savers in using their money and argued for the need to empower them. It was remarked that allocating resources of savers need to be made with the knowledge and involvement of the savers. The savers would have to be partners in the decision making process without ignoring the challenges posed in its implementation. Participants also indicated that there would have to be institutionalized system of incentivizing top savers.

Participants stated that the financial sector strategy of Ethiopia, if implemented properly, would have the potential to solve problems related to financial services and accessibility in the country. It was stated that, presently, only 25% of the banks exist in the rural part of the country, limiting most financial services to urban areas. However, participants argued that, in the future, there would be a possibility to capitalize on the introduction of electronic banking, mobile banking, agent banking, and Islamic Banking to widen the scope in both rural and urban areas.

Innovations in the financial sector development

Networking and collaboration among stakeholders including the financial sector, the private sector, public sector, research organizations, and higher learning institutions was given emphasis during the discussion. This aspect was stated as one of the leverage point for innovations in the financial sector of the country. Particularly, the roles of public-private and civil society partnerships (PPCP) were emphasized. On the other hand, the importance of PPCP and the role of NGO in Ethiopia and Africa were questioned.

Participants suggested that networking would have to be done through the National Bank of Ethiopia (NBE). This would require a new approach and "out of the box thinking" with the already existing facilities and infrastructure. It was also argued that the roles of key players and actors would have to be identified. One important benefit of networking is information exchange. A striking question was raised by one of the participants as to which data would be accessible in the National Bank of Ethiopia. Participants from the bank argued that only aggregate data rather than detailed data would be provided for researchers. In this regard, the problem of information asymmetry was emphasized. It was noted that there is no audited and standardized borrowers' information system that describes the history of the borrowers before extending the next loan services. It was pointed out that this should call for the establishment of a national database system that would provide standardized information for financial service providers in the country.

Research and development

A key question arose as to how far both the financial sector and higher learning institutions are prepared to open-up their doors for research and development. In this regard, participants argued that financial institutions would not be prepared to support/fund research projects. In line with this, participants critically evaluated the roles of research and development in the financial sector. Given the three mandates of Universities, namely, teaching, research, and community services, a number of issues were required to be addressed. These included:

1. The status of financial institutions in supporting research. It was questioned whether or not financial institutions have appropriate policies for supporting research projects.
2. It was also inquired how the financial institutions would collaborate with Haramaya and other public Universities in developing the capacity of the sector.

Regarding the collaboration between Universities and the financial sector the following points were forwarded by the participants:

- Establishing joint research themes and teams;
- Formulating and offering different courses that would build the capacity of the financial sector, for example, supervision courses in the areas of Insurance, SACCOs, MFI and Banks, etc;

- Inviting practitioners and experts to share practical insights, expertise, and lectures to students in the higher learning institutions;
- Seeking funds from financial sectors for training, consultancy, and research;
- Establishing a joint team with members drawn from Haramaya University and the financial sector under the coordination of the College of Business and Economics of the University that would play the role of setting up partnerships.

With respect to the linkage between Universities and financial institutions, it was urged that universities take the lead in strengthening the collaboration. It was also recommended that Universities ponder over the quality of their graduates and the relevance of their curricula in view of harmonizing the imparted skills and knowledge with the existing realities of the financial sector in the country. It was emphasized that subjects taught at Universities should generate relevant knowledge and skills that would support the economy. Similarly, research done at Universities should be demand driven and problem solving. Some conference participants opined that the lagging of Universities behind practitioners in terms of generated knowledge and imparted skills would have a detrimental effect on their future. Therefore, it was suggested that Universities should develop their capacities commensurate with the needs of the financial sector. It was also stressed that collaboration between senior and junior researchers, as evidenced in the conference should be promoted. As a whole, the conference was lauded as a fruitful scientific forum that brought forth a number of issues for discussions and actions. Therefore, participants suggested that such a conference should be continued at regular intervals so as to deal with existing and emerging issues of the country's financial sector for enhancing socio-economic development.

Closing Remark

Dr. Fekadu Beyene, Vice-President for Administration and Student Affairs

Dear invited guest, participants, colleagues, ladies and gentlemen,

I feel honored to make a concluding remark upon the successful completion of the national conference on loan and saving.

Over the last two days, we deliberated on a wide range of issues related to loan and saving. Several scientific papers were presented and discussed; some covering macro and others micro perspectives. These deliberations have motivated participants to raise a number of critical issues related to loan and saving, culture of saving and how saving and investment are useful for a developing nations like ours. Addressing these issues would in fact enable us to overcome social and economic challenges and move smoothly and become more confident than ever before to realize the millennium development goals. I believe that the papers presented enabled all of us to capture the essential strategies that state and non-state actors need to put in place to improve efficiency of the financial sector and institutions operating in the sector. An important challenge associated with loan and saving is embedded in the culture in which institutions operate, bureaucratic barriers they introduce to overcome risks, and at large lack of adequate insurance mechanisms to encourage investment, particularly in the agricultural sector. The underdevelopment of the culture of saving and the fact that low income households undermine the contributions of smaller savings to their economy has reduced the amount of loan available for investors in the financial institutions. This indicates that strategies for mobilization of savings need to be introduced by each financial institution, both in the private and public sectors.

Ladies and gentlemen, we are really gratified to host such a timely conference where researchers from Universities, other organizations and practitioners from the different financial institutions have come together to discuss on the practical problems of the financial sector and search for solutions jointly to improve the competitiveness of our economy. Ethiopia has for more than a decade shown a remarkable progress in the economy partly because of the effective policies supporting the performance of the financial sector. In the event that unstable exchange rate and inflation have challenged growth of our GDP, the stabilization strategies introduced by the government in controlling monetary flow and the illegal foreign exchange markets have brought successes to our economy. I believe that further institutional reforms and organizational changes that took place in the financial sector in the delivery of public services have played a vital role in boosting GDP growth. From these developments, we could expect that further research efforts and deliberations, such as what we have exercised in this conference, are instrumental in exploring better ways of dealing with the problems. There is no doubt that development strategies that do not take full account of how to mobilize saving and improve availability of loans for business entrepreneurs are doomed to fail. I hope, my colleagues will agree with me that Haramaya University would take the responsibility to strengthen academic and research endeavors in collaboration with professionals working in the different financial institutions. I am sure that the National Bank of Ethiopia, Commercial Bank of Ethiopia, Development Bank of Ethiopia, Construction and Business Bank, Ethiopian Insurance Company and other financial institutions will benefit from our efforts provided that they commit themselves to contribute to our research endeavors. As you noticed during our two-day deliberations, we did have a number of young scholars who have the inspiration to take up the challenges in the research and development processes.

With this brief remark, I declare that the workshop is closed.

Thank you for your attention!

List of Participants

1. Dr. Nigussie Dechassa
2. Dr. Mengistu Urge
3. Dr. Mengistu Ketema
4. Mrs.Yemisrach Getachew
5. Mr. Abebe Ambachew
6. Mr. Mulugeta Yitayih
7. Mr.Zelalem Bayissa
8. Dr. Endrias Geta
9. Mr. Mengistu W/hana
10. Mr. Kassahun Mamo
11. Mr. Muzeyin Hussein
12. Mr. Kifle Tesfamariam
13. Mr. Aron Hailesellasie
14. Mr. Ayalew Mekonnen
15. Mr. Beza Muche
16. Mr. Endalew Wale
17. Mr. Gebeyehu Raba
18. Mr. Hailemichael Tesfay
19. Mr. Mebratu Leake
20. Mr. Melkamu Belina
21. Dr. Ramesh Rengasamy
22. Mr. Sefiager Alem
23. Mr. Tamiru Belete
24. Mr. Temesgen Keno
25. Mr. Deribe Assefa
26. Mr. Wolde Bulto
27. Mr. Yonas Mekonnen
28. Dr. Abadi Teklehaimanot
29. Dr. Fekadu Beyene
30. Dr. Workneh Kassa
31. Dr. Belaineh Legesse
32. Dr. Lema Zemedu
33. Dr. Endrias Geta
34. Dr. Jemal Yosuf
35. Mr. Jebessa Teshome
36. Mrs. Mesay Tiku
37. Mr. Meles Sitotaw
38. Mr. Jemal Mohammed
39. Mr. Mohamedamin Hussein
40. Mr. Abdurahman Aliyi
41. Mr. Mulugeta Damie
42. Dr. Bobe Bedadi
43. Mrs. Mulu Birhanu
44. Dr. Girma Goro
45. Dr. Abi Tadesse
46. Dr. Getnet Demissie
47. Mr. Sileshi Yilma
48. H.E. Dr. Sintayehu Woldemichael
49. Mr. Sewagegn Chane
50. Mr. Gebre Erkalo
51. Mr. Ermias Mebratu
52. Mr Solomon Desta
53. Mr. Solomon Tadesse
54. Mr. Betrework Asefa
55. Mr. Asmamaw Yeshanew
56. Mr. Frew Kassa
57. Mr. Kifle Alula
58. H.E. Mr. Murad Abdulhadi
59. Mr. Abdurahiman Abdella
60. Mr. Haimero Limenih
61. Mr. Ambaye Merga
62. Mr. Admasu Akale
63. Mrs. Kidist Mamo
64. Mr. Hailu Tadesse
65. Mr. Afework Abebe
66. Mr. Alemshet Teshome
67. Mr. Wasihun Mohammed
68. Mr. Sisay Diriba
69. Mr. Amare Mebre
70. Dr. Kesari Polsheti
71. Mr. Amdemichael Abera
72. Mr. Ermias Bogale
73. Mr. Yonas Niguse
74. Mr. Dakito Alemu
75. Mr. Melsew Gessesse
76. Mr. Takele Teshome
77. Mr. Ketema Bekele
78. Miss Kiros Gitet
79. Mr. Tesfaye Guta
80. Mr. Freyihun Fikru
81. Mr. Mohammed Aman

Representatives from Financial Institutions

Prof. Chemeda Fininsa, Vice-President for Academic Affairs, Hararmaya University

Some of the presenters