Household Saving Behaviour and Determinants of Saving In Ethiopia

Wolday Amha[1] and Tekie Alemu[8 9]

Abstract

An unprecedented level of investment is required to implement the Growth and Transformation Plan (2010/11-2014/15) of Ethiopia. Much of the resource requirement is envisaged to be pulled from local savings. The Plan envisages a large level of expansion of domestic saving from a low historical record that would require unprecedented levels of saving mobilization by financial providers. This would need designing appropriate saving products. In this paper, we use data collected from 2,000 households and attempt to contribute towards understanding the saving behaviour of households in Ethiopia and identifying their specific needs to develop their saving culture. Our data show that most of our respondents currently save in cash. Also, the descriptive analysis reveals that male household heads had higher cash savings than female headed households. In terms of the difference in cash saving by marital status, widowed households had the lowest levels of saving. Households with illiterate heads had lower average cash saving. The study also indicated that lack of investment opportunities does not discourage households from saving in cash. A substantial proportion of the sample saved their liquid cash at home. Less than 20% of respondents saved their outstanding savings in MFIs and banks. Respondents demand secured and safe financial intermediaries that provide diversified and flexible saving products with good returns with client-friendly processes. Finance providers should therefore take note of these facts in designing their saving products.

Key Words: *determinants, saving behaviour, Ethiopia*

[8] Executive Director of the Association of Ethiopian Microfinance Institutions (AEMFI) and the Ethiopian Inclusive Finance Training and Research Institute (EIFTRI)

[9] Department of Economics, Addis Ababa University (AAU), currently on Sabbatical Leave working as a senior research fellow for EIFTRI

Introduction

Access to financial services in Ethiopia was largely, if not exclusively, limited to large urban centres prior to the introduction of Microfinance Institutions (MFI). Until 2010[1] only around 20% of the population had access to financial services despite unprecedented expansion of MFIs in the country for more than a decade.

It is starting from this level that Ethiopia's Growth and Transformation Plan (GTP) envisaged investment ventures on a number of large projects that were planned to be financed from domestic sources. The hitherto meagre performance of the financial sector and the anticipated demand for resources in the sector led the government to plan expansion of financial access to 67% of the population. Moreover, the Plan envisages attaining a saving to GDP ratio of 15% by 2010. Attaining these targets requires expansion of finance providing institutions and aggressive saving mobilization efforts.

Initially, much of the MFI expansion in Ethiopia focused on providing small loans to the rural population. Gradually, their activities started to include the Micro and Small Enterprises (MSEs) in urban areas. Much of the funds for such loans were obtained from sources outside the MFIs: loans from banks, government projects and donations. These sources are, however, unsustainable and are drying up. Yet, the five-year Micro and Small Enterprise (MSE) Development Strategy (2010/11 -2014/15) stipulates that MFIs would provide credit to the tune of Birr 11 billion to 2.2 million MSE operators during the GTP period. In addition, the demand for credit from the rural areas does not seem to be declining. Thus, despite the growth of MFI activities, they are facing immense challenges to meet the growing loan demand.

The focus on delivering "subsidized" credit to poor households must have led researchers and academics to concentrate their empirical work on the performance, impact and challenges of accessing micro-credit. As a result, savings were poorly studied and were considered as the "forgotten half" of finance during the 1980s; and one may also consider micro-insurance the forgotten third of finance during the 1990s (Zeller and Sharma, 2002). Moreover, concentrating efforts on only the credit side must also have led

the MFIs to ignore the formulation of saving services to their clients. In fact, the initial forms of saving instruments introduced by MFIs were forced saving that precedes the provision of loans to their clients. Thus, the initial saving instruments were anchored on the need to get credit and were not rationalized on its own right.

The starting point for saving is the act of holding resources back from day-to-day spending. Transforming these into cash is the avenue towards savings; depositing them into some form of saving instrument completes the act of saving. Savings are instrumental in transforming small cash flows into useful large lump sums. The literature groups savings into traditional savings (saving up), repayment of credit (saving down), insurance products and rotating saving clubs (saving through). All three transform small cash flows into lump sums (Melzer, 2007).

In general, absence of services from the formal financial sector to the poor resulted in the exclusion of a large proportion of the country's population. This must have led to the prevalence of thriving informal saving mechanisms and institutions that evolved overtime to meet local financial needs. Such interactions in the informal financial sector reflect the fact that the excluded part of the population is a reservoir of financial resources that can be tapped by the formal sector. Moreover, informal financial intermediation has its own limitations (Christensen, 1993). Essentially, the problem is then one of access to formal financial institutions that are supposed to collect these savings and make them available for investment and not that households in the country do not save.

Currently, there is a growing awareness from the part of formal financial institutions of this potential, which led them to develop standard saving products and expanding their branch networks. However, there is limited evidence and data in Ethiopia to show the saving behaviour of the financially excluded part of the population. To this effect, the objective of this paper is to shade some light on the saving behaviour of households and the factors that affect it. Saving is about choosing between current and future consumption; i.e., a current versus future allocation problem. Saving could be realized involuntarily, through taxes and other forms of "forced" transfers or voluntarily by individual choice. The scope of this paper is limited to identifying the factors affecting voluntary saving.

The data used in this paper were collected from 2,000 households residing in six regions (Afar, Amhara, Oromia, Somali, SNNPR, and Tigray) and two city administrations (Addis Ababa and Dire Dawa) of Ethiopia. We also included two towns, Gonder and Mekele, from Amhara and Tigray Regional States, respectively. The rural households were further classified into surplus grain producing, chronically food insecure, cash crop producing, and pastoralists.

The rest of this paper is organized as follows. Section 2 starts with a review of the literature; Section 3 introduces the data generated by the survey; Section 4 presets the econometric results on the determinants of saving; and Section 5 concludes the paper.

Literature Review

From the individual or household point of view, the decision to save or not is influenced by diverse motives. Browning and Lusardi (1996) based on the classical work of Keynes (1936) list the following main motives: building reserve against unforeseen contingencies, providing for anticipated future relationship between the income and needs, obtaining interest and appreciation of the value from saving, improving ones living standard, ensuring sense of independence and the power to do things, carrying out speculative or business projection, bequeathing, and satisfying pure miserliness.

According to Browning and Lusardi (1996), since 1936, it is only the improvement motive (accumulating deposits or down payment for lump sum purchases) which is added to the list developed by Keynes. Moreover, it is unlikely that a single explanation will suffice in explaining the motives for saving for all members of a population at any given time, or even for the same person over a long stretch of time. Some motives might be complementary and some are difficult to rationalize with traditional economic models.

Saving functions are derived by specifying inter-temporal maximization problems subject to asset flow constraints. Imposing different assumptions on behaviour and kinds of household members into the model leads to different results. The early inter-temporal models of resource allocation, based on the assumption that atomistic decision makers would tend to

maximize their lifelong welfare, led to what is known as the permanent income hypothesis (Friedman, 1957; Modigliani, 1966). Such models predict that current consumption is not related to current but to long-term estimates of income (Ashraf et al., 2003). The underlying assumptions here are: the existence of a perfect capital market, a constant rate of interest, and that the decision maker has rational expectations regarding the income generation process. Fluctuations in current income are then smoothened evenly by borrowing and lending (Hall, 1978).

Empirically, the model's predictive success in low-income countries is dismal. Deaton (1989) provides three main reasons why these theories might be of limited use in developing countries. First, household sizes in typical developing country settings are much larger with greater age variation compared to a typical household in a developed country. Intergenerational transfers within a household in developing countries would diminish the need to save. Second, households' flow of income in developing countries is highly uncertain and cyclical, making estimation of long-term income flows difficult. Finally, credit is hardly available for smoothing consumption. The combined effect of these factors suggests that savings in developing economies often play an important role in buffering between income and consumption: individuals save small amounts at frequent intervals to smooth income, rather than accumulate or save for retirement.

Another problem with these models is their choice of exponential discounting future income. This implies a constant marginal rate of substitution among future periods, all else equal (Ashraf *et al.,* 2003). However, a long list of literature suggests that many individuals suffer from a time inconsistency problem and do not discount the future exponentially (O'donahue and Rabin, 1999; Laibson, 1997; Thaler, 1992 and 1990; Lowenstein and Thaler, 1989). Experimental evidence indicates that many individuals have preferences that reverse as the date of decision making nears. Psychological experiments suggest that preferences are hyperbolic in shape, implying a high discount rate in the immediate future, and a relatively lower rate for periods that are further away (Ainstie, 1992; Lowenstein and Prelec, 1992).

Recently, there is a transition of interest towards a more holistic approach in the finance literature that goes beyond micro-credit: this is called inclusive

finance. In his study of determinants of uptake of financial services using data from two villages in the Central Region of Ghana, Bending *et al*. (2009) found that educational level, asset endowment and regular (formal) employment enhance financial service uptake. The study does not confirm to the "life-cycle hypothesis". Even though proximity to the financial institution plays a role in the demand for financial services, trust in the institution in general, and its staff in particular, are even more important. The study concludes that it may not be sufficient to increase the availability of financial intermediaries only: it may be equally important to build trust and enhance financial literacy.

Melzer (2007) in a study on saving behaviour for Zambia identifies various ways of savings used in Zambia. These include formal products offered by banks and insurers, and informal products such as '*chilimbas*' The study found that only 14.4% of the adult population saved in banks; 6.3% used other formal saving products such as insurance; 5.8% of the adult population used informal saving products; and the remaining 73.5% were financially excluded. Despite this however, the study shows that domestic savings are a critical source of funding in Zambia as about 47% of the homeowners used savings to pay for their homes and about 60% of business owners used savings to finance the start-up of their businesses.

The CGAP country-level savings assessment of Philippines conducted by Gardiol *et al.* (2005) suggests that poor and low income Philipinos save using informal mechanisms such the Rotating Saving Credit Associations (ROSCAs) or stashing money into bamboo poles at home. Even most (two-thirds) dwellers in smaller cities of the Philippines keep their money at home. Only 9.7% save in rural banks, 2.2% in commercial banks, and 9.4% in cooperatives. Most people save mainly for emergencies (precautionary motive and to cover educational expenses of children).

Musoke's (2004) study shows that many Ugandans value savings more than loans: 57% of the respondents said a secure and convenient place to save money was important than the ability to obtain a loan. Pelrine and Kabatalya (2005) reported that 80% of the sampled rural households had saved money in the past year using a combination of formal and informal mechanisms. Their survey indicates that respondents ranked paying school fees and covering medical expenses as the motives for savings. Moreover, they saved in cash or in kind at home (81%), ROSCAs (7%), banks (6%), Saving and

Credit Cooperatives (SACCOs) (4%) and MFIs (2%). About 60% of the respondents ranked security as their top priority in saving their money in a given financial institution. Many Ugandans indicate that they have limited trust on the financial institutions. From a survey of 1,500 people Graham and Mutesasira (2001), found that 99% of the respondents who saved in the informal sector had lost some money in the past year, as had 26% of savers in semi-formal institutions (MFIs and SACCOs). The top qualities that poor Ugandans seek in a savings mechanism are security and accessibility - both physical (proximity) and financial (affordability).

Kiiza and Pederson (2002) showed that the decision to hold a bank savings deposit in Uganda is positively related to the information available to the household on the respective banking system, the level of education and work experience of the household head, and the proximity to the financial institution. The level of net deposits is further influenced by credit availability, transaction costs, and the level of permanent income.

Using qualitative approach, Odele and Wamburgu (2010) assessed the saving needs of current and potential clients of Wisdom Microfinance operating in various regions in Ethiopia. The study shows that rural clients have a range of reasons for their demand for saving products including savings for life threatening emergencies like death, funeral expenses and drought, festivals like Meskel, building houses, buying assets and investment in business. To build these lump sum expenditures, individuals use various saving mechanisms that include saving with *Iqub* and *Eddir*, saving at home and saving in kind, among others. Formal saving mechanisms are not commonly used in the community. In making a choice where to put their savings, respondents indicated the following attributes as important: office security, fast service in the withdrawal process, trust for

the institution, proximity of service, earning of interest on savings and customer service.

Taking 'holding saving accounts' in financial intermediaries as an indicator, Assefa *et al.* (2005) conclude that households' saving behaviour in Ethiopia is dismal. More than 96% of the households in that sample had no saving account. This, however, does not mean that Ethiopians spend all their income on current consumption. On the contrary, they are engaged in saving in kind in the form of seeds, livestock, etc[2]. They also save in cash in informal saving institutions such as *Iqub* (or ROSCAs). Thus, saving is practiced in Ethiopia by everyone (including the very poor), even if the amounts are very small.

Furthermore, Teshome (2013) studied the saving behaviour of rural households in East Hararghe Zone, Ethiopia, using survey data generated from 700 sampled households. The study found that the education level of the head, livestock holdings, access to credit service, income, investment, training and contact with extension workers were found to have a significant effect on household's amount of savings. They also show that the poor rural households save in nearby informal financial institutions.

Thus, saving is an integral part of households though their magnitudes and forms vary across individuals. In what follows, we describe and show the magnitude and spread of saving in our sample.

A Description of Saving Behaviour in the Sample

We use the data gathered by the Ethiopian Inclusive Finance Training and Research Institute (EIFTRI) in January 2013 to describe the saving behaviour of households. The questionnaire asked about financial activities of the household in 12 months before the implementation of the survey (2012).

With some variations, notably in the pastoralist areas, 71.3% of the sampled households (74.8% in urban and 70.1% in rural areas) prefer savings, compared to loan and insurance products (see Table 1a). The results of this

study are consistent with those of Robinson (2001) and Morduch (2008), which conclude that saving services are more valuable than credit for poor households. This is so as saving builds household's assets that can be used as collateral, is a better mechanism for smoothening consumption, and can be used to finance major expenditures such as school fees, self-insure against major shocks, and self-finance investment of small businesses.

About 79% (81.8% of the urban households and 77.8% of the rural households) in our sample had savings, either in the form of cash or in-kind, in the 12 months prior to the survey (Table 1b). A significant proportion of the pastoral communities (55.5%) however, reported that they did not save in any form. For those who saved, financing unexpected events (81%), buying assets (97%), investing in education of children (90%), investing in business (90%), and for retirement (83%) were main reasons for saving.

Table 1: Household preferences among loan, saving, and insurance and saving behaviour of respondents in the last 12 months (%)

	a) Household preferences among loan, saving, and insurance			**b) Percent of households engaged in saving**	
Category	Loan	Saving	Insurance	Saved	Didn't save
Urban	15.83	74.75	9.42	81.80	18.20

Grain surplus	11.56	79.11	9.33	86.00	14.00
Chronically Food Insecure	17.17	70.67	12.17	85.45	14.55
Cash crop	17.33	74.67	8.00	88.67	11.33
Pastoralists	39.33	53.33	7.33	44.85	55.15
Rural total	19.93	70.13	9.93	77.79	22.21
Total	18.91	71.29	9.80	78.79	21.21

Source: Survey results

When financial intermediaries are not available near their villages, people tend to save in informal institutions or translate it into an in-kind saving by investing in livestock, hide cash at home, save in the form agricultural produce and trees, and participate in *Iqub* (or ROSCAs). In many cases, these informal savings schemes are relatively riskier, illiquid, indivisible, and impose variable terms. For example, saving in the form of livestock may have a challenge of being susceptible to disease; it must be sold as a whole, not in parts, to obtain cash; and it is exposed to the risk of theft and fluctuations in market price.

Saving in-kind has advantages as well though; as it is easy to protect. It usually serves as a household coping mechanism to meet unplanned expenditures. In some communities, cultural norms define social status and thus affect the types of saving in-kind. It could also lead to good business, if the items provide higher return than the return obtainable from savings products. Saving in terms of food items provides food security to the households.

Informal saving mechanisms such as *Iqub* (or ROSCAs) offer simple processes. This is the greatest attraction for households residing in remote villages because they cannot afford to pay extra costs (such as transport cost) to deposit a small amount of cash for saving in formal institutions.

Table 2: Average estimated value of savings (in cash and kind) in the last 12 months, in Birr

Category	Saving in-kind	Saving in cash
Urban	3,064.71	3,960.31
Grain surplus	10,765.22	5,490.51

Chronically food insecure	2,627.16	1,743.56
Cash crop	676.40	3,327.31
Pastoralists	1,689.30	2,092.62
Rural total	4,683.93	3,095.16
Total	4,279.33	3,311.34

Source: Survey results

The amount of in-kind savings of sample households in the 12 months prior to the survey (Birr 4,279) was higher than saving in cash (Birr 3,311) (Table 2). Although, the average cash saving of urban households (Birr 3,960) was higher than their saving in kind (Birr 3,065), the average cash saving (Birr 3,095) of rural households was lower than their in-kind saving (Birr 4,684). Note also that there is substantial variation among the different rural categories.

Saving in cash was made by about 68% of respondents (76% urban and 65% rural households). Note also that 8% of the households (10.6% the urban 6.8% of the rural households) used to save in cash but gave up their saving practice (Table 3). About 24% of the sample households (13% urban and 28% rural households) hardly saved in cash which indicates that saving in cash is relatively more pronounced by urban compared to rural households. The majority (about 64%) of the households in pastoral areas had never saved in cash. This is partly the result of limited access to financial intermediaries. About 23% of the households in surplus grain producing areas and 19% in chronically food insecure Woredas do not save in cash.

Table 3: Status of cash saving of households

Category	Currently saving cash	Used to but stopped saving currently	Never saved cash
Urban	76.22	10.57	13.21
Grain surplus	68.60	8.69	22.72
Chronically Food Insecure	74.25	6.69	19.06
Cash crop	85.42	4.17	10.42

Pastoralists	30.90	5.32	63.79
Rural total	64.88	6.77	28.35
Total	67.69	7.71	24.60

Source: Survey results

Male headed households had significantly higher cash savings (about 2.2 times) than female headed households (Table 4). Yet, female headed households in pastoral community had relatively higher cash saving than their male counterparts. Widowed household heads had the lowest saving (Birr 1,379) followed by the households who were divorced or separated (Birr 1,910). As indicated in Table 4, single households had relatively the highest levels of saving (Birr 3,718) followed by married households (Birr 3,697).

Table 4: Average Cash Saving of Households by Sex and Marital Status

Categories		**Urban**	**Grain surplus**	**CFI**	**Cash crops**	**Pastoralists**	**Rural total**	**Total**
Sex	Male	5,256.75	5,984.52	1,883.85	3,530.49	2,068.81	3,326.20	3,691.10
	Female	1,915.42	1,942.67	857.34	990.83	2,257.37	1,469.61	1,696.61
Marital status	Married	5,281.21	6,042.79	1,900.15	3,572.44	1,865.47	3,319.33	3,697.01
	Single	2,695.33	5,780.00	3,275.00	5,000.00	1,000.00	5,949.09	3,717.94
	Divorced/ Separated	2,673.23	758.57	966.08	3,000.00	1,777.78	1,053.47	1,910.21
	Widowed	1,092.56	2,020.21	454.60	885.00	3,075.14	1,597.86	1,379.29

Source: Survey results

Table 5: Average Cash Saving of Households by Religion and Education Source: Survey results

Categories		**Urban**	**Grain surplus**	**CFI**	**Cash crops**	**Pastoralists**	**Rural total**	**Total**
Religion	Orthodox	3,855.54	5,774.12	1,618.08	3,426.38	4,711.82	3,754.69	3,789.76
	Protestant	3,582.29	-	2,206.30	3,311.52	760.00	2,724.90	2,786.77
	Catholic	20,000.00	-	500.00	700.00	-	600.00	7,066.67
	Muslim	4,302.15	4,430.74	1,566.68	4,750.00	1,997.54	2,374.05	2,675.62
Education	Formal education	4,619.51	8,608.81	2,165.55	4,236.23	4,006.00	4,695.69	4,669.55
	Adult literacy	1,917.50	4,742.86	6,285.71		18,000.00	6,346.67	4,806.09
	Religious Education	8,666.00	8,518.67	2,841.00	616.67	1,023.75	3,112.20	4,234.78
	Read and Write	4,712.83	8,319.23	2,242.15	4,144.82	4,156.40	4,620.48	4,651.63
	Read only	6,577.14	6,810.00	1,462.16	1,966.67	2,500.00	3,073.18	3,618.24
	Illiterate	1,495.40	2,386.07	1,161.03	1,726.25	1,231.71	1,573.07	1,562.05

Source: Survey results

Education turns out to be an important variable in explaining household cash-saving variability (Table 5). Household with illiterate heads have the lowest cash savings compared to household heads that have some form of education. For example, the illiterate respondents had lower average cash saving (Birr 1,562), while respondents, who read only, had average saving of (Birr 3,618). This difference in household saving was much higher in urban areas compared to rural areas.

There does not seem to be any systematic variation between cash saving and family size (Table 6). Households, with a family size, ranging from 1 to 7, had cash saving which varied from Birr 2,164 to Birr 2,850. However, households with more than 8 members had relatively high cash saving than households with a lower size. The results do not show much difference among the family size categories of household heads, in urban and rural areas.

Age seems to influence the level of saving. Young household heads (less than the age of 25) had higher cash saving compared to the older age groups (Table 7). Although this is true for both urban and rural areas, households with relatively younger (less than the age of 25) household heads in urban areas had the highest cash saving (Birr 14,560). Young household heads in the cash crop producing areas had relatively lower cash saving (Birr 1,250) compared to other rural households (Birr 2,630). The results show that cash saving declines as the age of household head increases, which seems to be consistent with the life-cycle hypotheses.

Table 6: Household's cash income by family size

Family size	Urban	Grain surplus	CFI	Cash crop	Pastoralists	Rural total	Total
1	2,881.76	2,333.33	668.00	.	1,250.00	1,583.50	2,466.32
2	3,464.17	2,434.38	729.00	266.67	3,217.22	2,014.22	2,770.71
3	2,388.10	1,980.48	2,248.84	2,319.50	1,540.67	2,015.31	2,164.42
4	3,780.40	2,377.57	1,316.83	1,322.11	1,087.61	1,633.10	2,233.83
5	3,561.16	3,513.33	1,688.14	3,219.55	1,169.79	2,223.45	2,615.39
6	5,764.93	2,638.83	1,188.18	3,305.00	2,543.41	2,162.50	2,849.81
7	1,974.61	3,503.93	1,594.95	2,348.00	3,207.14	2,456.51	2,390.30
8	12,370.00	5,347.44	2,323.77	6,879.29	1,505.70	3,400.20	4,474.71
9	1,618.20	37,484.40	2,156.39	4,534.29	1,804.00	11,729.47	10,766.50
>9	9,537.70	10,573.00	3,014.57	5,791.11	5,741.14	6,309.05	6,638.50
Average	3,960.31	5,490.51	1,743.56	3,327.31	2,092.62	3,095.16	3,311.34

Source: Survey results

Table 7: Household cash saving by age group

Age	Urban	Grain surplus	CFI	Cash crop	Pastoralists	Rural total	Total
<25	14,560.71	4,106.00	1,942.40	1,250.00	2,630.00	2,665.90	4,886.27
26-35	4,230.74	3,708.88	1,739.20	3,768.63	2,588.23	2,698.59	3,025.27
36-45	3,381.78	9,031.27	2,022.44	4,435.88	1,701.89	4,107.92	3,921.94
46-55	3,345.72	5,573.14	1,728.11	3,612.07	949.20	3,135.22	3,193.03
56-65	4,299.38	3,641.20	1,326.90	2,485.55	2,305.10	2,468.13	2,994.13
66-75	1,636.55	405.05	1,050.87	1,249.23	4,698.57	1,558.27	1,575.32
>75	5,176.67	150.00	591.43	1,936.00	430.00	1,009.62	2,081.14
Average	3,960.31	5,490.51	1,743.56	3,327.31	2,092.62	3,095.16	3,311.34

Source: Survey results

It is not surprising that cash saving of households tends to be positively correlated with the income of the households. For example, the relatively poorer households, with income less than Birr 5,000 per annum, had the lowest cash saving (Birr 715), and saving shows an increasing trend as the income households increases (Table 8). For example, the average cash saving of households, with income more than Birr 60,000 per annum, was Birr 31,177.

Table 8: Household cash saving by income

Income	Urban	Grain surplus	CFI	Cash crops	Pastoralists	Rural total	Total
<5000	640.92	1,219.56	493.54	.	216.59	720.99	715.02
5001-10000	984.33	1,653.46	1,251.58	487.27	639.34	1,225.74	1,174.24
10001-15000	1,021.50	3,912.97	1,372.41	1,534.78	336.93	1,792.34	1,616.94
15001-20000	2,110.74	4,382.12	2,743.96	1,537.41	2,237.32	2,727.19	2,535.94
20001-25000	2,162.68	3,114.64	3,126.95	2,214.85	1,732.42	2,644.41	2,520.19
25001-30000	2,655.61	6,599.77	2,845.27	5,070.39	809.38	3,576.26	3,256.37
30001-35000	6,120.07	10,080.00	4,066.31	7,135.33	5,057.14	6,579.82	6,403.48
35001-40000	7,737.03	3,947.27	5,161.82	4,553.33	7,283.33	5,035.88	6,366.30
40001-45000	16,360.00	6,633.33	7,940.00	4,130.00	10,000.00	7,244.17	10,282.78
45001-50000	1,927.60	7,658.67	6,600.50	3,408.00	12,175.75	8,141.47	5,563.70
50001-55000	5407.67	14116.67	4900.00	2550.00	.	10238.89	7478.19
55001-60000	9,897.50	15,585.71	.	4,500.00	6,110.00	11,369.17	10,780.50
>60000	20,126.88	63,430.59	20,300.00	21,666.67	19,038.55	41,577.76	31,177.33
Average	3,960.31	5,490.51	1,743.56	3,327.31	2,092.62	3,095.16	3,311.34

Source: Survey results

Table 9: Purpose of in-kind savings

Responses	**Urban**	**Grain surplus**	**Cash crop**	**CFI**	**Pastoralists**	**Rural total**	**Total**
Invest in cattle/livestock	11.54	57.41	58.33	70.04	57.14	62.52	56.75
Invest in existing business	17.95	4.94	8.33	4.86	12.99	6.06	7.40
Invest agricultural equipment	-	5.70	4.17	2.43	1.30	3.76	3.34
Start a new business	2.56	2.28	4.17	2.43	12.99	3.76	3.63
Improve your home	34.62	12.55	8.33	5.67	14.29	9.82	12.63
Plant trees such as Eucalyptus	-	0.76	4.17	0.40	1.30	0.82	0.73
Buy household durables radio, tape recorder, etc	33.33	1.14		0.40		0.65	4.06
Rent a plot of land	-	12.55	12.50	8.10	-	9.17	8.13
Lend money to other people	-	-	-	0.40	-	0.16	0.15
Repay loan faster or settle outstanding balance early				0.81		0.33	0.29
Save crops for selling in the future	-	2.28	-	4.45	-	2.78	2.47
Others	-	0.38	-	-	-	0.16	0.15

Source: Survey results

Households save for many reasons such as financing small and large expenditures occurring in the short or medium term as well as long-term needs of households. The main purposes of in-kind savings for our sampled households include investing in livestock (56.8%), followed by improving housing (12.6%), rent-in additional land (8.1%) and investing in existing businesses (7.4%). The purpose of in-kind saving varied between rural and urban areas. In urban areas, the main purposes of in-kind saving were improving housing (34.6%) and to buy household durables (33.3%). The main purposes of in-kind savings in rural areas included investing in livestock (62.5%) and improving housing (9.8). The main reason for in-kind based household saving was to earn higher returns (64.9%). About 11.3% of the respondents indicated that safety was the major reason behind saving in-kind (Table 9).

The response of households on why they preferred saving in-kind significantly varied between rural and urban households. About 48.1% of the urban households preferred saving in-kind to show their status in their community; the figure was only 4.7% for rural households. On the other hand, high return was the main reason for the majority of the rural households (about 69%) while it is only for 32.5% of the urban respondents (Table 10).

Table 10: Driving forces of in-kind savings of households

Reasons	Urban	Grain Surplus	CFI	Cash crop	Pastoralists	Rural total	Total
Safety	9.09	7.52	10.84	-	30.77	11.53	11.26
Higher return	32.47	69.55	72.29	60.87	58.97	68.99	64.94
Protection against inflation	7.79	9.77	7.63	8.70	2.56	7.95	7.94
Social function or prestige which shows my status in the community	48.05	4.89	4.02	4.35	6.41	4.71	9.52
Avoid the temptation of using cash saving for unplanned purposes	2.60	8.27	5.22	26.09	1.28	6.82	6.35
Total number of observations	147	512	471	46	132	1161	693

Source: Survey results

Table 11: The Preference of Households and Attributes of Cash Saving Services

Category	Safety	Accessibility	Higher interest rate	Others
Urban	71.50	26.50	1.00	1.00
Grain surplus	54.31	44.41	1.28	
Chronically Food insecure	59.30	38.51	2.19	
Cash crop	57.14	42.86	-	-
Pastoralists	54.46	44.55	0.99	-
Rural total	56.97	41.53	3.75	-
Total	61.11	37.25	1.35	0.28

Source: Survey results

Results from the survey (Table 11) reveal that about 61.1% of the respondents considered safety as the main attribute needed from a finance provider or a product. The preferences for specific attributes differ among households residing in urban and rural areas. Although safety is the most important attribute for the overwhelming majority of the households, it was relatively more important for urban households (71.5%), who have a relatively wider range of options to save in diverse finance providers, compared to the rural households (57%). About 37.25% of the respondents indicated that accessibility was another major criterion in selecting a finance provider to deposit their savings. Accessibility was a more important attribute for rural households (41.5%) compared to households in urban areas (26.5%). This level of intensity of preference for accessibility by rural households arises because rural areas have limited infrastructure and poor communication options.

While discussing returns on savings, respondents did not make comparisons between the interest amounts provided by different finance providers. Instead, households were more concerned about the comparative gains between returns on money invested in any business or in-kind purchase, such as livestock or agricultural products, and the interest received on deposits with financial institutions. About 89.3% of the respondents revealed that they preferred to save in a place where their deposit is safe, even if the interest rate is lower. It was only 14.2% of the respondents who switched from saving in cash to saving in-kind as a result of the price increase in the three years prior to the survey. Moreover, about 73% of the households revealed that lack of investment did not discourage them from saving in cash.

Table 12: Percent of the Muslim sub-sample that see problems in using saving products by existing formal institutions

Category	**Yes**	**No**	**Total number of observations**
Urban	18.48	81.52	92
Grain surplus	5.26	94.74	95
Chronically food insecure	1.69	98.31	118
Cash crops	25.00	75.00	4
Pastoralists	20.49	79.51	288
Rural total	13.27	86.73	505
Total	14.07	85.93	597

Source: Survey results

Many perceive that the Muslim community, because of the interest on deposits or Riba, may have a challenge in depositing in the existing formal financial institutions. However, about 85.9% of the Muslim respondents sub-sample reported that depositing their cash saving in the existing formal financial institutions (banks, MFIs and financial cooperatives) was not a real challenge (Table 12).

Table 13: Trust level of households in depositing their savings

Responses	Urban	Grain surplus	CFI	Cash crops	Pastoralists	Rural total	Total
Myself	6.40	14.00	11.17	16.00	51.16	20.52	16.99
Neighbour, friend or family	1.60	0.44	0.33	2.67	3.32	1.20	1.30
Cooperatives	0.80	-	0.67	-	0.33	0.33	0.45
MFI	9.00	17.78	20.83	6.00	-	14.26	12.94
Commercial banks	79.80	67.56	66.50	74.00	44.85	63.22	67.37
Iqub	2.40	0.22	0.50	1.33	0.33	0.47	0.95
Total number of observations	500	450	600	150	301	1501	2001

Source: Survey Results

Secured and safe financial intermediaries that provide diversified and flexible saving products with reasonable returns with client-friendly processes seem to be the main concerns to savers. About 67.4% of the respondents trusted banks while about 12.9% trusted MFIs (Table 13). About 17% of the households preferred to handle their cash saving at home. The trust of urban households on banks (79.8%) was relatively higher compared to the rural households (63.2%). On the other hand, the trust on MFIs was relatively higher in rural areas (14.3%) compared with urban households (9%). Although financial cooperatives are owned and managed by members themselves, less than 1% of the respondents trust their institution, when it comes to depositing their own cash saving. Thus, financial intermediaries providing deposit services need to have "safe and sound" deposit operations. They require strong management of credit, saving, liquidity, and interest rate risk.

Sampled households were asked on why they preferred to keep their cash savings in commercial banks and MFIs (Table 14). About 38.7% reported that they preferred to save in banks and MFIs because they have secured offices, while 36.7% indicated safety and trust as the main reasons behind their preference.

Table 14: Reasons for keeping savings in commercial banks and MFIs

Responses	Urban	Grain Surplus	CFI	Cash Crops	Pastoralists	Rural total	Total
Office security	36.05	42.11	38.46	40.68	36.36	39.83	38.69
Fast service in cash withdrawal	12.02	15.79	13.04	5.08		12.50	12.35
Safety of saving/trust	43.80	27.27	34.45	47.46	45.45	33.83	36.83
Easy access to deposit	2.33	5.74	3.01		9.09	4.00	3.50
Entitled to get credit	3.10	2.87	6.02	3.39	6.06	4.67	4.20
Interest earning	0.78	5.26	3.34	3.39	-	3.83	2.91
Customer service	1.94	0.96	1.67	-	3.03	1.33	1.52
Total number of observations	258	209	299	59	33	600	858

Source: Survey Results

The results of the study in Table 15 show that about 30.8% of the respondents saved their cash at home. Some 19.2% and 17.7% of the respondents had outstanding savings in MFIs and banks, respectively. About 13.8% of the households used *Iqub* (ROSCAs) as a means of saving their cash and 8.7% of the respondents had outstanding saving in SACCOs.

Table 15: Percentage of respondents with outstanding savings using different mechanisms

Institutions	Urban	Grain surplus	CFI	Cash crop	Pastoralists	Rural total	Total
Banks	21.06	22.70	6.54	11.72	27.88	16.24	17.74
Microfinance Institutions	22.68	20.54	21.37	18.62	8.31	17.69	19.24
Cooperatives	2.65	0.81	2.07	16.55	1.34	2.97	2.87
Saving and credit associations	4.57	5.95	6.86	2.07	24.66	10.56	8.71
Friends or relatives outside your household	0.15	1.35	0.48	0.69	0.80	0.79	0.59
Iqub	13.40	9.46	14.35	8.97	19.57	13.93	13.77
Iddir	1.91	0.27	7.34	-	10.19	5.61	4.47
Own home	32.25	34.86	39.23	38.62	6.97	30.17	30.78
Lending to others	1.18	4.05	1.44	2.76	0.27	1.91	1.69
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Survey results

The average outstanding saving balance of respondents given in Table 16 is computed by dividing the total amount of savings by the total sample size, disaggregated into rural and urban households. The results indicate that average outstanding savings of respondents in banks was Birr 2,845.7, followed by saving at home (Birr 850.7), saving through Iqub (Birr 564.1), and savings in MFIs (Birr 316.7). The average cash savings of respondents in SACCOs was much smaller (Birr 82.1). The average cash savings of urban households in formal banks was twice the average cash savings of rural households. Moreover, the outstanding cash balance of urban households in MFIs, SACCOs and *Iqub* was much higher than rural households. The outstanding cash balance kept at home was much higher in rural areas compared to urban households.

Table 16: Households' average outstanding saving (formal and informal, entire sample, in Birr)

Institutions	Urban	Grain surplus	CFI	Cash crop	Pastoralists	Rural total	Total
Banks	5,396.23	4,605.27	643.93	1,321.57	1,636.25	2,758.36	2,845.73
Microfinance	428.94	557.68	149.51	252.75	-	230.54	316.65
Cooperatives	7.48	57.82	17.16	-	114.44	23.98	34.33
Saving and credit associations	241.37	55.84	29.08	6.94		80.95	82.13
Friends/relatives outside your household	5.52	39.56	16.87	3.33	69.77	29.77	22.58
Iqub	857.43	914.16	387.30	241.47	259.02	640.78	564.09
Iddir	269.47	66.69	43.90	113.67	0	100.75	95.28
Own home	389.24	1,459.29	901.55	1,644.53	312.46	730.29	850.72
Lending to others	38.6	170.44	29.42	36.00	6.64	74.72	62.04
Total number of observations	500	450	600	150	301	1501	2001

Source: Survey results

The result of the average outstanding households' cash saving, when computed on only those households who had outstanding cash balances, i.e., excluding those with zero outstanding cash balance the results differ substantially compared to the result in Table 17. The average outstanding saving of sample households was Birr 2,521.9. The average outstanding saving in banks (Birr 14,638.3) was by far much larger compared to the average outstanding savings of households in other institutions. Moreover, the average outstanding saving balance of rural households in banks (Birr 16,835.6) was higher than the savings of urban households (Birr 10,858.3). The average outstanding saving balance of those households who used friends and relatives and lending to others as means of saving was Birr 3,475.4 and Birr 3.355.4 respectively, which was relatively higher, compared to other mechanisms of saving. The average outstanding saving balances of households in MFIs (Birr 1,501.5) and SACCOs (Birr 860.4) were relatively lower compared to banks and the informal mechanisms.

Table 17: Households' average outstanding saving given that they saved cash (formal and informal institutions)

Institutions	Urban	Grain surplus	CFI	Cash crop	Pastoralists	Rural total	Total
Banks	10,858.3	21,642.9	9,423.39	6,102.9	17,629.19	16,835.59	14,638.3
Microfinance Institutions	1,867.47	2,616.05	669.46	1,116.4	882.74	1,291.18	1,501.48
Cooperatives	1,816.61	366.67	791.85	912.38	540.00	799.80	1,090.32
Saving and credit associations	1,381.71	1,033.18	405.81	238.67	876.15	759.39	860.39
Friends or relatives outside your household	500.00	6,360.00	3,373.33	300.00	820.00	3,723.33	3,475.38
Iqub	1,834.49	11,669.4	2,582.00	1,332.3	4,159.89	4,558.31	3,737.56
Iddir	3,033.54	10.00	572.61		3,286.05	1,779.06	1,945.47
Own home	2,767.69	2,945.29	2,198.89	2,484.8	1,390.00	2,398.60	2,521.90
Lending to others	1,500.00	4,933.33	1,961.11	1,375.0	15,000.0	3,867.24	3,355.41

Source: Survey results

Determinants of Household Saving

There are a number of variables that influence households' saving behaviour. These include demographic variables (such as sex, household size, marital status and age) income, religious beliefs, education, economic activities of the household, information about loans, asset ownership, risk exposure, remittance, investment opportunities, interest rate on saving, variations in geographic location and ethnicity. To this end, information that could be used in representing these variables was collected from the respondents in the survey. In what follows we start by specifying the econometric model and variables used.

The model

In selecting a model to be used in identifying the determinants of saving,[10] we observe that a substantial number of individuals had zero saving. Thus, saving becomes a limited dependent variable. This situation leads to a choice problem in terms of both sample size and estimation method. The choice of sample size emerges whether to use the whole sample (including the zero saving levels) or only the observations with positive saving. If we use the positive levels only we have a selection bias because we are excluding a subset of our sample. If we use the whole sample, we have substantial observations with zero values and OLS is not the appropriate method of regression. According to Heckman (1979), sample selection bias may arise either because there might be self-selection by individuals or data units being investigated, or there might be sample selection decisions by analysts or data processors operating in a similar fashion as self-selection.

A method suggested in this scenario is the use of the Tobit model (Tobin, 1958) that assumes normal distribution of the error terms and uses Maximum Likelihood Estimation (MLE). Yet, another method that is used in this setup is the Heckman two-stage method of estimation. The latter has the advantage of using the two levels of decisions and takes care of the two possible selection biases that could emerge in such circumstances. We use the Heckman two-stage regression model to estimate our parameters of interest (the reader is referred to Heckman 1979 for the derivation of the estimable equation).

In what follows we describe the variables used in the model specified above.

All in all, we had 1993 household with complete information on all the variables we included in the model. The following variables were included in our Heckman two-stage regression equation.

[10] This is of interest not only from the academic and/or positive point of view but would have normative content that is helpful in designing policies that help bringing about desired outcomes.

a) *Age:* age is identified as an important determinant of saving. In fact, the 'permanent income hypothesis' predicts that individuals save in their young age and deplete it as they grow old.[11] We also discussed counter arguments to this hypothesis based on household settings prevailing in developing countries. Since we have information on the age of all members of households in the survey, we included the average age of members of the household and its square as explanatory variables for the decision to save. The intuition here is that decisions are not made based solely on the age of the head but on all of its members. The hypothesis here is that the probability of deciding to save would be higher for households composed of relatively younger members but as the average age increases the decision to save declines. The mean age of households in our sample is 23 years and ranges between 9 and 70 (Table 18). On the average, each household has around 2.3 children (aged 14 and below) and about 0.2 elderly persons (aged 60 and above). Each household is also sending around two children to school. We would like to see the effects of these variables on the decision and amount of saving by a household.
b) *Gender of household head:* around 80 percent of the households in our sample are male-headed. The hypothesis here is that male-headed households tend to save more than female headed households. We have also included variables that indicate whether the household head is single (1.7%), divorced (6%) or widowed (12%).
c) *Literacy and religious affiliation:* about 43% of the sampled households are illiterate; we included dummy to see whether literacy had effect on saving. We also included a dummy for individuals that are followers of the Orthodox religion (about 55% of the households included in the model).
d) *Location*: We included dummies for the different kinds of rural areas (surplus grain producing, chronically food insecure, cash crop producing areas and pastoralist) vis-a-vis urban areas.

[11] In fact, the main driver here is the rate of time preference. However, as this is not observable age is taken as its proxy.

e) Income: Income is probably the most important variable of interest. The average income for the sample is ETB 18,689.82 (around USD 1,000). This is both significantly different between those who save in cash and those who do not. The group that saved earned an annual average income of ETB 21,389.17 which is significantly higher compared with the average annual income of ETB 12,347 for those that did not save in cash.

f) Sources of income. We included dummies that indicate households' engagement in nonfarm income and wage employment. We also included dummies for households that obtain rental income from own houses and remittances.

g) Interaction terms: We introduced income and location interaction terms in the factors affecting the amount of saving by a household.

Table 18: Descriptive statistics of variables included in analysis*

Variable	Mean	Std. Dev.	Min	Max
Dummy = 1 if saving is positive	0.6759	0.4577	0	1
Number of children aged 14 or less	2.2835	1.7855	0	12
Number of elderly aged 60 or more	0.2173	0.4586	0	3
Number of members currently in school	2.0452	1.7396	0	10
Mean age of members of household	23.3307	8.3628	8.75	69.5
Square of mean age of household members	614.2215	488.5627	76.5625	4830.25
Dummy =1 if male	0.8098	0.3925	0	1
Dummy = 1 if single	0.0171	0.1295	0	1
Dummy = 1 if divorced	0.0607	0.2389	0	1
Dummy = 1 if widowed	0.1199	0.3249	0	1
Dummy = 1 if Orthodox	0.5524	0.4974	0	1
Dummy =1 if head is illiterate	0.4265	0.4947	0	1
Dummy = 1 if grain surplus	0.2253	0.4179	0	1
Dummy = 1 if CFI	0.3006	0.4586	0	1
Dummy = 1 if cash crop	0.0748	0.2631	0	1
Dummy = 1 if pastoralist	0.1510	0.3582	0	1
Natural log of saving	5.0745	3.5458	0	13.45
Natural log of income	9.4185	0.9132	5.01	13.17
Natural log of interest earned	0.4416	1.3921	0	9.52
Dummy =1 if Investment opportunity not a hurdle	0.6412	0.4798	0	1
Dummy = 1 if definitely save for increased interest	0.4892	0.5000	0	1
Dummy = 1 if may save for increased saving	0.2012	0.4010	0	1
Dummy = 1 if nonfarm income	0.0978	0.2972	0	1
Dummy = 1 if business income	0.1480	0.3552	0	1
Dummy = 1 if wage income	0.0813	0.2733	0	1
Dummy = 1 if house rent income	0.0070	0.0835	0	1
Dummy = 1 if remittance income	0.0030	0.0548	0	1
Grain surplus * ln income	2.0204	3.7730	0	12.47
CFI * ln income	2.7743	4.2633	0	11.65
Cash crop * ln income	0.7046	2.4870	0	11.42
Pastoralist * ln income	1.4823	3.5298	0	12.69

*The total number of observations is 1993. Source: Survey results

Econometric results

The results from the econometric analysis in Table 19 show that the parameter associated with the Mills ratio is statistically significant. This implies that it is not advisable to use OLS on the positive values of savings to estimate the parameters in the saving equation.

From the first equation we observe the demographic factors are influential in the decision to save by households. The mean age of household members and its square are statistically significant variables in determining households' decision to save or not to save. As the average age of the household increases, the probability of saving increases, but this is not something that goes on indefinitely; the probability of saving starts to decrease after reaching a maximum as indicated by the negative impact that comes from age squared. Thus, as the members of a household get older the probability that they save starts to decline. In effect, the function has an 'inverted-U' shape. The probability of saving in cash declines as the number of elderly (aged 60 or more) increases. On the other hand, family size tends to induce households to save cash. Both results are intuitive as prevalence of higher numbers of children would need households to make saving for their children's future.

Male headed households exhibit a higher probability of saving in cash. Married households tend to reduce saving, other things being equal. The marital status variables (dummies) for households that are not married (i.e., are single, divorced and widowed) indicates that such households have a higher probability to save compared to the heads that are married. The gender (dummy) was also found to have a positive and significant effect on household saving behaviour, implying that male headed households have higher probability of saving compared to female headed households.

The probit results in the first equation reveal that religion does not seem to have much influence on the saving behaviour of households. Education was expected to be a significant and positive factor in determining the saving behaviour of households. The results, however, show that the differences are not statistically significant and have a negative sign.

An interesting finding emerges regarding the relationship between geographic location of households (urban and rural) and saving behaviour. Given the higher level of poverty in rural areas (compared to urban areas), we expected that households located in urban areas have wider opportunities to expand cash saving compared to households located in rural areas. Contrary to a priori expectations, except for grain surplus producing areas with a negative and statistically insignificant coefficient, the likelihood of household saving is found to be higher and statistically significant for rural areas than urban areas.

Table 19: Heckman two-step selection model for the determinants of household of cash savings

Variables	Coef.	Std. Err.	Z	P>z
Dummy = 1 if saving is positive				
Mean age of members of household	0.0493	0.0008	60.5700	0.0000
Square of mean age of household members	-0.0007	0.0000	-44.1800	0.0000
Dummy =1 if male	0.1625	0.0100	16.2100	0.0000
Number of elderly aged 60 or more	-0.0506	0.0064	-7.9200	0.0000
Number of children aged 14 or less	0.0391	0.0015	26.2100	0.0000
Dummy = 1 if single	0.0580	0.0170	3.4200	0.0010
Dummy = 1 if divorced	0.1749	0.0123	14.2200	0.0000
Dummy = 1 if widowed	0.1514	0.0111	13.6600	0.0000
Dummy = 1 if Orthodox	0.0075	0.0049	1.5200	0.1290
Dummy =1 if head is illiterate	-0.0071	0.0049	-1.4500	0.1480
Dummy = 1 if grain surplus	-0.0069	0.0083	-0.8400	0.4030
Dummy = 1 if CFI	0.0219	0.0068	3.2300	0.0010
Dummy = 1 if cash crop	0.0198	0.0104	1.9100	0.0560
Dummy = 1 if pastoralist	0.0192	0.0077	2.4800	0.0130

Variables	Coef.	Std. Err.	Z	P>z
Natural log of income	0.3426	0.0405	8.4500	0.0000
Natural log of interest earned	0.0422	0.0246	1.7100	0.0870
Number of elderly aged 60 or more	-0.1944	0.0701	-	0.0060
Number of members currently in school	0.0489	0.0197	2.4900	0.0130
Dummy =1 if Investment opportunity not a hurdle	0.6001	0.0674	8.9000	0.0000
Dummy = 1 if definitely save for increased interest	0.7194	0.0752	9.5700	0.0000
Dummy = 1 if may save for increased income	0.6915	0.0907	7.6200	0.0000
Dummy = 1 if nonfarm income	-0.3308	0.1150	-	0.0040
Dummy = 1 if business income	0.0830	0.1190	0.7000	0.4850
Dummy = 1 if wage income	-0.3912	0.1354	-	0.0040
Dummy = 1 if house rent income	-0.0815	0.3592	-	0.8200
Dummy = 1 if remittance income	-0.7523	0.6722	-	0.2630
Grain surplus * ln income	-0.0486	0.0111	-	0.0000
CFI * ln income	-0.0154	0.0100	-	0.1250
Cash crop * ln income	-0.0441	0.0143	-	0.0020
Pastoralist * ln income	0.0035	0.0130	0.2700	0.7890
Constant	-3.3337	0.3772	-	0.0000
Mill's lambda	0.0841	0.0097	8.66	0.000

Rho	0.8697	Number of	1993
Sigma	0.0967	Censored	595
		Uncensored	1398
Wald Chi2 (15)	49581.96	Prob > chi2	0

Source: Survey results

A key factor contributing to the increase in the probability of cash saving of rural households is the significant price rise of agricultural products since 2008, which increased the cash receipts of rural households. This implies that financial intermediaries interested in mobilizing savings in Ethiopia should focus on this source.

The second equation depicts that households with higher income level have higher cash based savings. The income elasticity of saving is 0.34, which is inelastic; which is not surprising given the levels of income of these households, nonetheless the coefficient is significant. The number of elderly in the households has a negative and significant effect on cash saving. An increase in the number of elderly by one reduces cash saving by close to 20%. On the other hand, the number of children attending school has a positive and significant effect: it increases cash saving by some 5%. Households who do not see lack of investment opportunities as a problem tend to save more in cash. Type of the economic activity that the household is engaged in is another factor affecting the level of cash saving. Earners of wage income and those engaged in nonfarm income tend to save less in cash and both are statistically significant. Business and rental income do not have any statistically significant effect on saving in cash. In terms of the relationship between remittance and cash saving, the results indicate that getting remittance is insignificant in influencing the amount of household savings, which is quite the opposite of the finding in Bending et al., (2009), whose results show that "remittances increase the available financial resources for savings." The results of our study imply that households who receive remittances use it for consumption.

Conclusion and Recommendations

This study attempts to contribute towards understanding the saving behaviour of households in Ethiopia and identifying their specific needs to develop their saving culture. It has the intention of providing useful evidence to finance providers, assist them to develop accessible and flexible saving products, and to design appropriate saving mobilization strategies to meet the growing demand for loans.

The analysis of the study mainly relies on primary data collected from 2,000 households residing in both urban and rural areas of Ethiopia. Both descriptive statistics and econometrics approach are used to analyze the data. The findings from the descriptive analysis show that the sample households often prefer savings, compared to loan and insurance products. A large proportion of our respondents currently save in cash. Also, the descriptive analysis reveals that the male household heads had higher cash savings (about 2.2 times) than female headed households. In terms of the difference in cash saving by marital status, widowed households had the lowest levels of saving. Households with illiterate heads had lower average cash

saving.

The study also indicated that lack of investment opportunities does not discourage households from saving in cash. However, there is evidence that the existing formal finance providers discouraged them from depositing their saving. Unlike the perception that the Muslim community is not interested in earning interest, a large proportion of Muslim respondents reported that depositing their cash saving in the existing banks, MFIs and financial cooperatives.

Rural and urban households demand secured and safe financial intermediaries that provide diversified and flexible saving products with good returns with client-friendly processes. Most of the respondents trusted banks; MFIs and SACCOs do not seem to be trusted by a large proportion of the sampled respondents. Their reasons for discriminating among financial institutions are safety and trust. Of course, efficiency in service delivery, particularly in cash withdrawal, was the main reason to save in banks and MFIs. These findings imply that saving services are expected to respond to a wide range of household needs - needs that are driven by a diverse array of planned or unforeseen events. Saving products and finance providers must meet a specific set of common needs such as security, easy access to open accounts and withdraw deposits, and convenient delivery system.

A substantial proportion of the sample saved their liquid cash at home. Only 19.2% and 17.7% saved their outstanding savings in MFIs and banks, respectively. *Iqub* is still a dominant mechanism of saving for a substantial part of the sample (23% of respondents preferred to use *Iqub* and other informal institutions). Thus, understanding the willingness of households to save in cash is important in assisting finance providers to design client- centred saving products and expand their outreach. A substantial proportion of the sample households had a plan to save on regular basis.

The findings from the Heckman two-step regression confirm theories and several standard findings on the contributions of our explanatory variables on saving in cash. The innovation in our use of average age of all household members resulted in an interesting result in that the variable leads to an ‘inverted-U’ function. Marital status and gender were also found to have a positive and significant effect on households saving behaviour, implying that single and male headed households have a higher probability of saving compared to female headed households. Contrary to a priori expectations of the researchers, the likelihood of saving is found to be higher for rural households than their counterparts in urban areas. Religion and type of major economic activities that the household heads are involved in were also found to be significant variables impacting on the saving behaviour of households.

Moreover, variables such as investment opportunities, earning fixed wage and rent income were found to be insignificant in influencing the saving behaviour of households. From the second stage equation we found that income is an important variable affecting the level of savings. The income elasticity is about 0.3 and, though small, it is significant.

Acknowledgement

The authors greatly appreciate the generous financial support given by Household Asset Building Program (HABP) and Commercial Bank of Ethiopia through AEMFI and EIFTRI. However, any opinions expressed here are those of the authors and not those of the above organizations.

End Notes

[1] 2010 was the beginning of the five-year Growth and Transformation Plan (2010/11-2014/15)

[2] In fact, given the yearly single-cycle crop production system that prevails in the rural areas, households store much, if not all, their produce to smooth consumption over a year.

References

Ainstie, G. 1992. Picoeconomics. Cambridge: Cambridge University Press.

Ashraf, N., Gons, N., Karlan, S.D. and Yin, W. 2003. A review of commitment savings products in developing countries. ADB Working Paper Series No. 45, Asian Development Bank: Economic and Research Department.

Assefa Admassie, Gebrehiwot Ageba and Mulat Demeke. 2005. Rural finance in Ethiopia: Assessment of financial products of microfinance institutions. AEMFI: Addis Ababa.

Bending, M., Giesbert, L. and Steiner, S. 2009. Savings, credit and insurance: Household demand for formal financial services in Ghana. BWPI Working Paper No. 76.

Browning, M. and Lusardi, A. 1996. Household savings: Micro theories and micro facts. *Journal of Economic Literature,* 34 (4).

Christensen, G. 1993. The limits to informal financial intermediation. *World Development,* 21,(5).

Deaton, A. 1989. Savings in developing countries: Theory and review. Proceedings of the World Bank: Annual conference on development economics. Washington D.C.

Deaton, A. 1992. Household savings in LDCs: Credit markets, insurance and welfare. *Scandinavian Journal of Economics,* 94(2): 253-273.

FDRE. 2010. Growth and Transformation Plan (2010/11-2014/15). Ministry of Finance and Economic Development, Addis Ababa.

FDRE. 1997. Micro and Small Enterprises Development Strategy, Addis Ababa: Ministry of Trade and Industry, Addis Ababa.

Friedman, M. 1954. A theory of the consumption function, Princeton: Princeton University Press.

Gardiol I. Dauner, B. H. and Deshpande, R.2005. Philippines: Country level savings assessment. The World Bank: CGAP Savings Initiative.

Graham W. and Mutesasira, L. 2001. The relative risks to savings of poor people. Kampala: MicroSave.

Hall, R. 1978. Stochastic implications of the life cycle permanent income hypothesis: Theory and evidence. *Journal of Political Economy,* 86 (6): 971-987.

Heckman, J. J. 1979. Sample Selection Bias as a Specification Error. *Econometrica,* 47(1).

Keynes, J. M. 1936. The general theory of employment, interest and money. Cambridge: Macmillan Cambridge University Press.

Kiiza, B. and Pederson, G. 2002. Household financial savings mobilization: Empirical evidence from Uganda. *Journal of African Economies*,10 (4).

Laibson, D. 1997. Golden eggs and hyperbolic discounting. *The Quarterly Journal of Economics,* May 1997.

Lowenstein, G. and Prelec, D. 1992. Anomalies in intertemporal choice: Evidence and an interpretation. *Quarterly Journal of Economics,* 102 (2).

Lowenstein, G. and Thaler, H. 1989. Anomalies: Intertemporal choice. *Journal of Economic Perspectives,* 3 (4).

Musoke, C. K. 2005. Assessment of the Impact of MFI Services to different categories of Clients in Uganda. CDFU and DFID-FSDU. Kampala

Melzer, I. 2007. Savings in Zambia. FinScope. Eighty20 Consulting.

Modigliami, F. 1966. The life-cycle hypothesis of saving, the demand for wealth, and supply of capital. *Social research,* 33 (2).

Odele, S. and Wambugu, M.A. 2010. Savings market research and concept market reginement: Ordinary, smart growth and smart savings product. A report submitted by MicroSave Consulting Ltd to Wisdom Microfinance Institution S.C.

O'donahue, T. and Rabin, M. 1999. Doing it now or doing it later. *The American Economic Review*, 89 (1).

Pelrine, R. and Kabatalya, O. 2005. Saving habits, needs and priorities in Rural Uganda. Kampala: USAID/Rural SPEED.

Teshome, G. 2013. Determinants of Rural Household Savings in Ethiopia: The Case of East Hararghe Zone, Oromia Regional State. *Journal of Economics and Sustainable Development,* 4 (3).

Thaler, R. 1990. Anomalies: Saving, fungibility and mental accounts. *Journal of Economic Perspectives*, 4 (1).

Tobin, J. 1958. Estimation of relationships for limited dependent variables. *Econometrica,* 26 (1).

Zeller, M. and Sharma, M. 2002. Access to and demand for financial

services by the rural people: A multicountry synthesis. In Zeller M. and R.L Mayer (eds). The Triangle of Microfinance: Financial Sustainability, Outreach, and Impact, Baltimore MD and London: Johns Hopkins University Press.