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**Conference Paper**

## Overconfidence, Underconfidence, and the Use of Persuasive Messages in the Attainment of Savings Goals

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## Extended Summary

# Overconfidence, Underconfidence, and the Use of Persuasive Messages in the Attainment of Savings Goals

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Finding ways to increase household savings - especially among poor households - has attracted considerable attention from economists. Commitment problems, i.e. the inability to realize future plans due to a lack of self-control, have been identified as a major concern for undersavers. With the right commitment device at hand even poor households in less developed economies can achieve high and sustained levels of savings (Ashraf et al., 2006, Karlan et al., 2011, Dupas and Robinson, 2013, and others). However, the fairly low population shares who are empirically found to be present-biased and sophisticated<sup>1</sup>, i.e. have a demand for commitment, raise the question as to whether self-control is the only behavioral bias relevant in explaining the under-saving of poor households<sup>2</sup>.

In our analysis we focus on the problem of over- and underconfidence about future ability to attain goals. We hypothesize that persuading savers to make more realistic savings goals at the time they formulate them will help them reach their savings goals with a higher likelihood. The paper analyzes whether the success of persuasive messages depends on an individual's behavioral bias: If at onset of a savings period saving goals are chosen with over- or underconfidence, i.e. individuals over- or underestimate their savings potential, individuals might save too little and even stop saving altogether. Thus, given an individual's characteristics different dis- or encouraging messages might help to achieve the savings goals. The messages encourage some individuals to reconsider the first self-set goal and to choose either a more ambitious or a more cautious goal.

In December 2014 we approached 940 households in rural Ethiopia to determine one most important savings goals. Following, we handed out moneyboxes and randomized five messages. Four of the five

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<sup>1</sup>Baur et al. (2012) find that 19.9 percent are strongly present-biased and 13.2 percent are weakly present-biased, for a sample of microfinance clients in India; Ashraf et al. (2006) find that 14.5 percent are present-biased for a sample of microfinance clients in the Philippines; and Brune et al. (2014) find that 10 percent are present-biased for a sample of microfinance clients in Malawi.

<sup>2</sup>A range of other barriers to savings have been introduced in the literature, please refer to Karlan et al. (2014) for an overview.

messages were persuasive in the sense that they recommended households to save for higher or lower amounts than initially formulated. After receiving the message, farmers could voluntarily adjust their savings goal with respect to the savings amount. The fifth message did not contain a recommendation. Furthermore, we cross-randomize the recommendation to save in a daily or a weekly frequency towards the savings goal. In total, 940 households were randomly assigned to either control or to one of twenty different treatment arms, 32 observations to each treatment arm. A pure control group of 300 individuals received neither moneyboxes nor messages.

In a nutshell, the experimental procedure follows the following steps:

1. We ask respondents to name and explain the most important savings goal they would like to save for.
2. We ask respondents how much they want to save for this goal in the next 8-24 weeks (2-6 months).
3. Depending on the treatment arm (and holding the time period fixed), we read out one of these sentences:
  - (a) Our experience shows that people are more likely to reach their savings goal if they have higher goal amounts. Do you want to increase the amount of your savings goal to... [Calculate  $goalamount * 1.4$ ]?
  - (b) Our experience shows that people are more likely to reach their savings goal if they have higher goal amounts. Do you want to increase the amount of your savings goal to... [Calculate  $goalamount * 1.2$ ]?
  - (c) Our experience shows that people are likely to reach their savings goal. [No change in  $goalamount$ ]
  - (d) Our experience shows that people are more likely to reach their savings goal if they have lower goal amounts. Do you want to decrease the amount of your savings goal to... [Calculate  $goalamount * 0.8$ ]?
  - (e) Our experience shows that people are more likely to reach their savings goal if they have lower goal amounts. Do you want to decrease the amount of your savings goal to... [Calculate  $goalamount * 0.6$ ]?
4. Given the persuasive message, we asked participants whether they want to adjust their goal amount.
5. Depending on the treatment arm, we recommend to save either in weekly or daily intervals.
6. Then we asked participants to write down the following information on the label of the moneybox: The savings goal (written or drawn), the goal amount in Birr (considering the adjustment after the persuasive message), the savings installment in Birr, whether the savings frequency is weekly or daily and the end date. The goal amount will serve as a reference points for respondents for their savings activities. It was announced that there will be another visit at an unspecified future date.

In partnership with a local microfinance organization and a local university, the University of Mekelle, we collected two baselines (November/ December 2013; December 2014) and a follow-up

survey in January/ February 2015. Therewith, we were able to observe savings outcomes before the first individuals completed their self-selected savings period of eight weeks.

Currently under investigation is whether the treatments may have average impacts with respect to savings and non-savings outcomes. Our outcomes are broadly grouped into monetary savings, non-monetary savings, investment, consumption expenditures and remittances and other transfers. While we hypothesized that there will be an increase in monetary savings due to the moneyboxes and the persuasive messages, the direction of the impact on the other outcome groups is not clear. If budget constraints are binding, an increase in monetary savings should lead to a reduction in non-monetary savings, investment, consumption expenditures and remittances in the first follow-up survey. But the effect could also be the opposite. For instance, the increase in one type of savings may increase the demand for other types of savings as well. Brune et al. (2014) show that the random assignment of a commitment savings account increases the savings held in other bank accounts as well. Thanks to the varied and detailed data on savings and other financial behavior we can directly quantify the extent of this type of crowding-out behavior arising due to the introduction of the moneyboxes. Furthermore, households possessing a moneybox may be more capable of smoothing consumption, which may actually lead to higher average consumption expenditures at a certain point in time. In general, the shifts in household portfolios are hard to predict.

Moreover, we test whether the individual characteristics of participating households determine their savings performance and whether they differentially benefit from the persuasive message. Thus impact may differ along these characteristics.