Better Strategies for Saving More: Evidence from Three Interventions in Chile[*]

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Abstract

Individual behavioral biases can affect savings behavior. We conduct an experiment to evaluate different strategies to increase savings. We compare an automatic savings plan (or default rule), monthly reminders, and a rule-of-thumb savings package that appeals to careful spending. We find that rule-of-thumb and default rules can increase savings for one year after the intervention. In contrast, reminders can reduce account balances and debt levels. The increase in savings under the default rule is produced by a (mechanical) increase in deposits, but savings is later decreased by an increase in withdrawals.

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1. Introduction

Despite enthusiasm in the policy community for promoting formal savings among the poor, the evidence on instruments to increase savings is not entirely encouraging. Three facts stand out from recent impact evaluations of savings interventions. First, low-income households sometimes save a large fraction of their earnings. Table A1 in Annex 1 reports average savings rates from a subset of experiments for which the data are available. The total stock of savings is more than double the savers' monthly income in several of the studies and more than 35% of their monthly income in most of them. Second, despite these findings, treatment effects from savings-promotion interventions tend to be small: Bachas et al. (2021) review the magnitude of the treatment effects for many of these interventions and conclude that none of them increase the stock of savings by more than 2% of annual income, on average. In fact, many of them have no discernible effect. Finally, one reason the effects are limited is that take-up of the (usually subsidized) savings product on offer as a part of the intervention is often surprisingly low.

In Chile, the percentage of adults (persons aged 15 or older) with financial accounts stands at 87%, which surpasses the global average of 76% and the 39% average in low-income economies. However, only 31% of adults saved money in a financial institution in the past 12 months (Demirgüç-Kunt et al., 2022). This suggests that it is not access to financial services but use of them that is the primary issue there, particularly for savings. In contrast, savings accounts have boosted savings in countries with lower access, such as Malawi, Kenya, and Uganda, whose per capita incomes are 9%–15% of Chile's.[2] Additionally, Chile has relatively high trust in the financial sector: only 8% of individuals that do not have an account report that it is because they lack trust in the financial sector (compare to 21% in Peru and Uganda).[3]

A key to designing effective interventions is correctly positing what constrains savings. The two main candidates underlying most interventions are lack of access to formal savings opportunities and limited ability to commit to saving. The typical interventions, therefore,

[2] Per capita GDP (PPP) in 2014 (the year of the intervention analyzed in this paper).
[3] Retrieved from https://www.worldbank.org/en/publication/globalfindex/Data in February 2024.

either provide access to a bank account (for example, Dupas and Robinson, 2013 in Kenya; Brune et al., 2017 in Malawi; Prina, 2015 in Nepal; Dupas et al., 2018 in Malawi, Uganda, and Chile; and Somville & Vandewalle, 2018, Pomeranz and Kast, 2022, among others) or offer some kind of commitment savings product (for example, Ashraf et al., 2006 and Karlan and Zinman, 2018 in the Philippines; and Brune et al., 2017 in Malawi, Dupas and Robinson, 2013 in Kenya; Kast et al., 2018 and Kast and Pomeranz, 2014 for Chile).

Given the relatively limited success of these interventions, interest has risen in other possible strategies for encouraging savings based on behavioral foundations other than commitment problems. Prominent among them is one designed by Karlan et al. (2016), who argue that limited attention to low-probability but substantial expenses is a cause of undersaving. Based on this conjecture, the authors design a set of SMS-based savings reminders that encourage savers to better plan for these expenses. They show that this strategy increases savings in their pooled sample covering Bolivia, the Philippines, and Peru.[4]

In this paper, we introduce another reason why people may fail to save, inspired by the study by Drexler et al. (2014) on the impact of rules of thumb on small-business owners' cash management. They find that implementing some seemingly obvious decision rules leads to an increase in business revenues. While the authors do not find a significant effect on savings, that is not their focus. We start from a closely related theory: given the vast number of choices people need to make, they might find it helpful to have some simple rules of thumb to guide their consumption and savings choices. Based on this theory, we design an intervention that provides households with savings strategies (SS) that appeal to careful spending. The intervention includes rules of thumb to reduce expenditures on temptation goods and to encourage better budget planning. We show participants a video, give them a hard-copy calendar with monthly printed reminders about their plan, and send them monthly SMS messages about their SS over the following year.

[4] Similar default payments have been shown to increase savings—for example, among factory workers in Afghanistan (Blumenstock et al., 2018), farmers in Malawi (Brune et al., 2016), and villagers in rural India (Somville & Vandewalle, 2018). Other type of interventions focus on joint decision-making (Seshan & Yang, 2014) and changes in interest rates (Schaner, 2018).

We conducted an experiment to evaluate the SS intervention, and we compare it to the other behavioral interventions that have already been studied. The experiment was implemented between October 2015 and May 2016, included a control group and three treatment groups, and involved 6,242 participants in Santiago, Chile.

The first treatment is the SS intervention described above. The second is inspired by and very similar to the savings-reminder intervention in Karlan et al. (2016). In this treatment group, beneficiaries are sent personalized savings reminders by SMS every month for one year. As in Karlan et al. (2016), the messages are tailored to each participant's savings objective as declared in the baseline survey.

The third treatment, the automatic savings plan (ASP), provides participants access to a commitment savings account. ASP is inspired by Ashraf et al. (2006) and the broader literature on commitment problems in savings (Blumenstock et al., 2018; Brune et al., 2017; Dupas and Robinson, 2013; Kast et al., 2018; Somville and Vandewalle, 2018). Given our study's goal of identifying the impact of various strategies to promote the use of savings accounts rather than the impact of account access, all participants have a basic transactional account known as CuentaRUT.

We use administrative data from BancoEstado and survey data to evaluate the experiment. The administrative data allow us to estimate our program's impact on savings balances, debt levels, and transactions (withdrawals and deposits) for 17 months after enrollment. We complement these data with a household survey of a subsample of 2,049 households, conducted approximately 16 months after enrollment began. The survey allows us to observe the program's impact on total savings (including informal savings and other savings outside the partner bank), debt, and expenditures.

Using administrative data, we find that the SS treatment has a significant and relatively large positive effect on formal savings of approximately US$79 on a base of US$521 in the control group. Although not statistically significant, the point estimates for this effect suggest that the balance increase is produced by reducing withdrawals (not by increasing deposits). Using survey data, we also find no effect on realizing the baseline savings goal or on total debt or expenditures.

We observe a significant reduction in the transactional balance kept in the CuentaRUT account in the SMS treatment. However, the effect is no longer significant when also considering the balance in savings accounts. This result contrasts with previous findings of a positive effect (Karlan et al., 2016; Abebe, Tekle, and Mano, 2018) in the context of poorer countries. Using survey data, we also find a decrease in the probability of carrying retail debt and using a line of credit. This result is similar to that of Pomeranz and Kast (2022), who find that providing access to a savings account in Chile decreases short-term debt, and it highlights the potential fungibility between savings and credit (Bauer et al., 2012). The declines in both CuentaRUT balances and retail debt are consistent with the hypothesis that the treatment makes the saving goal more salient. Consequently, individuals withdraw funds from their account to pay for whatever they aim to purchase without adding to their existing debt. These results highlight the significance of context for evaluating the external validity of approaches aimed at promoting savings.

Turning to the ASP treatment, we find that it positively and significantly affects the average savings balances by US$82 10 months after enrollment. This effect remains positive from month 12 onward but decreases in statistical significance and size over time. These results are consistent with the literature, which finds that default treatments have positive effects (Bachas et al., 2021). Our analysis of the deposits into and withdrawals from savings accounts shows that the balance is built by a (mechanical) increase in deposits and no effects on withdrawals up to month 9, when withdrawals pick up, consistent with a decrease in balances.

The overall evidence is promising, as both SS and ASP are light-touch interventions that cost relatively little and successfully increase savings in the first 12 months after the intervention. While not statistically significant, the positive impact of both interventions persists for an extended period. Furthermore, the intention-to-treat (ITT) effects of both SS and ASP are indistinguishable from each other in both the survey and administrative data, and therefore the novel SS intervention seems to work as well as the ASP treatment. Although this is specific to the study context, it is compelling enough to consider SS deserving of further trial. The result for ASP is remarkable, as the take-up was only 31%. Treatment-on-the-treated (TOT) calculations indicate that the increment in savings is almost 50% of the control-group average. By contrast, the SMS treatment very clearly does not increase savings, though it

does decrease retail debt. The broader message is that the evidence strongly supports Dupas et al.'s (2016) view that savings interventions need to cater to the context to be effective and that it is challenging to identify universally applicable interventions.

Our paper makes four contributions to the literature. First, we add new evidence from Chile, a country with high access to bank accounts, to a literature that has mostly focused on more disadvantaged countries with lower access to bank accounts. Second, we look at a new intervention that aims to teach how to spend carefully; the intervention has a similar impact to the well-known default treatment. Third, we conduct a replication exercise of two interventions that have been successful in other contexts aimed at addressing behavioral biases. Furthermore, our design allows us to compare multiple treatments. We find that, as in different contexts, ASP increases savings balances. The rule-of-thumb treatment also increases savings for up to a year. In contrast, perhaps surprisingly, the SMS treatment decreases CuentaRUT balances but reduces retail debt. Taken together, the results are consistent with a positive net effect on households' financial situation. Fourth, we investigate the mechanisms of successful savings interventions. ASP mechanically increases deposits in all available months and starts increasing withdrawals after a year. Therefore, the increase in savings is caused by a rise in deposits and not a reduction in withdrawals. In contrast, for SS, the mechanism of the savings increase is the conscious decision to decrease withdrawals. This intervention could be explored as a complement to traditional commitment interventions such as ASP.

2. The Interventions: SS, SMS, and ASP

2.1 Recruitment and Baseline Survey

This study was conducted in partnership with BancoEstado, an autonomous state-owned financial institution. BancoEstado serves most of the financial needs of individuals in low-income groups in Chile, provides 92.8% of the savings accounts in the country, and holds 88.7% of the savings in such accounts.[5] The intervention was implemented

[5] Retrieved May 22, 2018, from http://www.sbif.cl/sbifweb/servlet/InfoFinanciera?indice=4.1&idCategoria=564&tipocont=905.

in 23 BancoEstado branches in vulnerable urban municipalities in Chile's Metropolitan Region.[6]

Study participants were recruited at various BancoEstado branches. To qualify, they had to be older than 18 years of age, have an account with BancoEstado, and have or be willing to open a savings account at the branch at which they were recruited. Furthermore, individuals had to have a CuentaRUT account or be willing to open one. The CuentaRUT account (offered only by BancoEstado) is automatically connected to an individual's national identification number, known as an RUT (Rol Único Tributario). Even though a CuentaRUT account was needed for only one of the treatments, we required all study participants to have one to facilitate comparisons across treatments. For a detailed description of our offering process, see Annex 3.

There are several differences between a CuentaRUT account and a savings account that, overall, make a savings account more illiquid. First, unlike savings accounts, CuentaRUT accounts can be drawn on via debit card to buy goods, withdraw money, or pay utility bills at several retail stores (*Cajas Vecinas*). There are currently more *Cajas Vecinas* than ATMs in the Metropolitan Region (6,378 versus 3,503). Second, savings accounts offer between two and nine free withdrawals per year, while BancoEstado always charges a fee for withdrawals from CuentaRUT accounts. Third, overdraft fees are larger for savings accounts. Fourth, savings accounts pay interest.[7] These differences also imply different usage by clients—for instance, 50% (42%) of participants make a withdrawal (deposit) from (to) CuentaRUT in the three months before the offering, and the corresponding figures for savings accounts are just 9% for both withdrawals and deposits.

If a BancoEstado client met the eligibility criteria, a branch associate explained the research project and invited the individual to participate in the intervention. If the client accepted, they

[6] Highly vulnerable municipalities were chosen in accordance with the Priority Social Index 2014 and in agreement with BancoEstado. The number of branch associates per branch and the presence of at most two branches per municipality were taken into consideration. See Annex 2 for details. The Ministry of Social Development computes the Priority Social Index, which considers income, education, and health, to determine a municipality's level of social development.

[7] Overall, BancoEstado savings accounts are similar to those used in the rest of the literature. See Dupas et al. (2018) for a summary of account characteristics from other studies and Annex 4 for a description of the accounts used in our study.

had to sign a consent form that permitted us to use the bank's administrative data in our evaluation. Once the client signed the consent form, the branch associate gave them a tablet computer used exclusively for our study and played a one-minute video explaining the project. Afterward, the individual was prompted to take a baseline survey.[8] After completing the survey, the participant returned the tablet to the branch associate.

Individuals were then randomly assigned to a treatment based on their national identification numbers and stratified by some specific information from their survey responses. The branch associates who administered the surveys had to tap a hidden button on the tablet to see the treatment assignment.[9] These associates were trained on the procedures for each treatment and what to say during the offering process.[10] Table A2 reports the number of recruited individuals for this evaluation each month, and Figure 1 shows the intervention calendar.

2.2 Experimental Design

Individuals were randomly assigned to four treatments: automatic savings strategies (SS), SMS reminders (SMS), savings plan (ASP), and pure control. In Table 1, we show the treatment assignment. About 20% of the participants were assigned to the SS group (N = 1,237, 20%), 20% to SMS (N = 1,273), 30% to ASP (N = 1,845), and 30% to the control group (N = 1,887). We oversampled the control and ASP groups to increase the power because we expected a lower take-up rate for the ASP group than the other two treatments.

We asked individuals to declare their savings goals in the baseline survey. Table A3 illustrates that the two most common goals were to save for (1) purchasing a house (47%) and (2) unforeseen expenses (13%). We stratified the sample by the housing saving goal since it was the most common goal and involves a longer-term commitment and, therefore, might be associated with larger balances. We also stratified individuals based on whether they received a cash transfer since receiving one implies that they maintained a regular income flow.

[8] The baseline survey had 11 questions and took an average of 14 minutes to complete. It included questions about education, labor market participation, family structure, reasons for saving, and whether the participant received government subsidies. It had to be short to avoid hindering branch services.
[9] We used the last two digits of the identification number to assign the participants to each treatment. Before enrollment, we randomized the numbers that corresponded to each treatment for each stratum.
[10] In December 2015, after three months of recruitment, we engaged monitors at the largest bank branches to help increase enrollment. Approximately 54.2% of the participants (N = 3,208) were recruited by branch associates and 45.8% (N = 2,715) were recruited with the monitors' assistance. See Annex 3 for details.

We designed the SS treatment for this study, while the SMS reminders were similar to the ones used in the previous literature. Only the individuals assigned to the SS and SMS treatments were offered these services. When we conducted this study, ASP was already among the savings services BancoEstado makes available to its clients; therefore, we only randomized the offer of this service. However, anyone seeking this service could receive it at any BancoEstado branch.

2.3 Treatment Groups

Once a BancoEstado branch associate saw an individual's treatment assignment on the tablet, the associate had to perform specific tasks depending on the assignment.[11]

Treatment 0: Control Group

Individuals assigned to the control group did not receive any treatment. The branch associate did not offer them any new services and only opened the account the client had requested upon arrival at the branch.

Treatment 1: Savings Strategies(SS)

We developed five strategies to help people lower their consumption of temptation goods. These strategies were (1) identifying temptations, (2) calculating how much one could feasibly save within one year by decreasing unnecessary expenses, (3) determining a concrete savings goal, (4) developing a budget and remembering that it is not necessary to cease all spending on temptation goods, and (5) saving money in the bank. These strategies were conveyed to participants in three ways: (1) a three-minute animated video shown on a tablet provided by the branch associate; (2) a gift bag with several items intended to increase the individuals' savings, including a wallet with the program's logo and a magnet that served as a reminder of the strategies presented in the video; and (3) a calendar that reminded the individuals of a different strategy every month. Later in the treatment, individuals received monthly SMS messages that reminded them of the strategies. These monthly messages are shown in Annex 5 and correspond to the messages conveyed in the calendar. For example,

[11] For every treatment, the branch associate gave participants a set of plain pencils (without a logo) as a thank-you gift for their participation. Since individuals in the SS treatment were given some items, giving all individuals a gift equalized the treatments and prevented individuals in the SMS, ASP, or control group from asking for materials not part of their treatment.

the SMS messages sent in February 2016 read "[Name], if you want to save, remember that spending CLP$4,000.00 weekly on unnecessary expenses or temptation goods adds up to CLP$208,000 per year. BancoEstado."[12]

Treatment 2: SMS Savings Reminders (SMS)

Individuals in this treatment received monthly SMS messages for one year. These messages were individualized and reminded the participants of their goals, which they had indicated in the baseline survey. For example, if the individual declared at baseline that they wanted to save for unexpected expenses, the monthly SMS message said "[Participant's Name], remember to deposit money into your savings account this month. Get closer to meeting your goal of saving for unexpected expenses! Greetings, BancoEstado." These messages were similar to those described by Karlan et al. (2016). Because the branch associates did not have to offer services or help clients open a bank account, from the bank's point of view this treatment seems no different from the control group.

Treatment 3: Automatic Savings Plan (ASP)

In treatment 3, the branch associate explained how ASP works and offered the service. The ASP program automatically transferred money from the participant's CuentaRUT account into their savings account. The individual could specify the amount of money and the date the transfer would occur.[13]

Table 1 shows the take-up rates for each treatment. Regarding ASP group, take-up was defined as agreeing to enroll in ASP when it was offered; the take-up rate was 31%. Meanwhile, the take-up of ASP in the control group was 15%. Take-up for the SMS and SS treatments was defined as receiving at least one text message. The take-up rates for SMS and SS were 92% and 93%, respectively. In Table A4, we report the main predictors of take-up for each treatment. Workers, students, and younger individuals are more likely to take up ASP, and older individuals and those with larger CuentaRUT pre-offering balances are more likely to take up SMS.

[12] Corresponding to US$6 and US$315, respectively.

[13] The minimum transfer amount was CLP 1,000 (approximately US$1.50). If the individual did not have a savings account, they had to open one. If the participant had more than one savings account, they could choose which account the transfer would be made to. The only restriction was that the savings account had to be in the individual's name.

2.4 Data

BancoEstado granted us access to transactional data for bank accounts and individual-level data on monthly savings and debt balances from September 2014 to September 2017 for all financial instruments. Since the offer process ran from October 2015 to May 2016, we have 13 months of pre-enrollment and 17 months of post-enrollment administrative data for every participant. We constructed the pretreatment data as the average for the 13 months before individuals were enrolled.

Besides the information on savings accounts, the BancoEstado data include the balances and transactions recorded in the CuentaRUT accounts. Although this account is not designed for savings purposes, individuals might maintain balances in the CuentaRUT account for this purpose. We call the sum of the balances in CuentaRUT and savings accounts total savings. These reports' details are in the data appendix (Annex 6).

To complement the administrative data, we conducted a household survey between March and July 2017, corresponding to 13 to 22 months after the offering, for 2,049 individuals (32.8% of participants).[14] The survey collected information on total savings, including formal and informal savings, debt, and employment, among other variables. The savings data collected in the survey include savings amounts at all financial institutions (not just BancoEstado), allowing us to study the program's impact on savings beyond the partner bank.

2.5 Summary Statistics

Table 2 provides the summary statistics for each treatment. Column 1 reports the number of observations. Columns 2 through 5 report the average level of each variable by treatment, and Column 6 shows the *p*-value for the test that all treatment and control means are the same. Panels A and B report the results for the bank data, and Panel C reports the results from the baseline-survey variables. The variables related to balances and transactions were top-censored at the 99th percentile to eliminate outliers (similar to Bachas et al. (2021), De Mel et al., 2013; Karlan et al., 2016).

[14] We sent the entire experimental sample to the survey firm. The survey firm intended to contact the whole sample but could only reach 2,049 people. Therefore, the survey sample was not selected randomly. We present in Section 3 a discussion of the implications for the analysis of the survey data.

The average savings of the control group in the savings accounts is US$224.40.[15] In Column 6, the *p*-value of the equality of means of savings balances is 0.669, which indicates balance across treatments. The average CuentaRUT account balance is US$78.20 for the control group, which is balanced across treatments (*p*-value = 0.104).[16]

We added the balances in all of the savings accounts and CuentaRUT accounts for each individual to create an indicator of the amount of resources individuals have in relatively liquid formal instruments; the sum is almost US$314.50 for the control group, with no statistical differences among the treatment groups.[17]

Regarding nonmortgage debt levels, the average amount of debt among the control group at baseline is US$169.40, with 6.6% of the control group carrying some debt at baseline.

In Table 2, Panel C reports the means and the balance test for the individual characteristics gathered from the baseline survey. The first two variables (that is, saving for a house and subsidy recipient) define the stratification cells; 47% of the participants in the control group report saving for a home, and 42.1% report receiving subsidies. Both variables are balanced across treatments. Among the control group, 29.4% are male, the average age is 34, and the most common educational achievement level is high school, which 52% of the control group completed. Most participants had worked the week prior to enrollment (63%), and the average monthly per capita household income for the control group was US$276. All variables are balanced, except for gender and the probability of being a student.

Overall, considering the number of hypotheses tested, the random assignment seems to have provided comparable groups, which supports the internal validity of the results. Moreover, we perform a regression to see whether covariates can predict any treatment. Table 2, Panel D shows the *p*-value of the F-test that all covariates are zero. For all comparisons, the null is not rejected.

[15] All amounts report real prices in USD for the same month in September 2014.
[16] However, the SMS group has a higher balance than the SS group (*p*-value = 0.04) and SMS (*p*-value = 0.03). In Table 2 we only report the test of the control group with each treatment group; the tests between groups that are mentioned in the text are available upon request.
[17] After the sum was generated, all categories were winsorized, which is why the mean of "Total Savings and CuentaRUT Account" is not equivalent to the sum of these two means.

2.6 Empirical Strategy

We estimate the ITT effects of the SS, SMS, and ASP treatments on outcomes Y_i for each individual i. The identification strategy relies on the random assignment of each eligible individual to either a treatment group or the control group. This approach ensures that individuals in each group are, on average, similar. The main estimated equation is as follows:

$$Y_i = b0 + b1*ASP_i + b2*SMS_i + b3*SS_i + a1*X_i + u_i \qquad (1)$$

Here, *ASP*, *SMS*, and *SS* are indicators of the treatment status. X_i is a set of dummy variables indicating the stratification cell (defined by the intention to save for a house and receipt of subsidies) and the variables that control for the characteristics of the offer process: a dummy that identifies whether the monitor or branch associate served as a recruiter, dummies for the branch associate's name, and offering-month and branch fixed effects. [18] We also include the set of variables selected by Post-Double-Selection (PDS) Least Absolute Shrinkage and Selection Operator (LASSO) analysis for each outcome.[19] We report all results with robust (Eicker-Huber-White) standard errors. We also use this equation (without the variables selected by PDS LASSO) to perform a balance test on each of the 13 months before enrollment for all dependent variables.[20]

3. Results

To facilitate our analysis, we report the parameters from Equation 1 in figures instead of tables for each month with administrative data. As mentioned above, we also use Equation 1 to test the monthly balance on the variables for 13 months before enrollment and 17 months after enrollment completion. In each graph, we plot the ITT for each treatment and compare it to the control group, indicating whether it is significant at the 5% and 10% level. Savings balances in the control group increased from US$282.30 before the month of enrollment to US$521.98 one year after the offering date. Therefore, all effects should be considered relative to this trend.

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[18] We also included a dummy indicating the 55 cases in which the same branch service sssociate offered a product to more than one person on the same date and at the same time. A given branch service associate offered could potentially have enrolled two individuals at the same time, which is what this variable indicates. We imputed the average value if there was a missing value in the independent variables and included a dummy indicating this.

[19] We included in the process all variables presented in Table 2.

[20] The first month after enrollment corresponds to the month in which the offer was made because dependent variables are measured at the end of the month.

A. Administrative Data

Savings Balances at Partner Bank

We report results on savings accounts, CuentaRUT balances, and their sum. Although the CuentaRUT account is not intended to function as a savings account, individuals can use it for that purpose. In fact, in the follow-up survey, 22% of individuals mentioned that CuentaRUT accounts could be used for savings. Since we required all participants to have (or open) a CuentaRUT account, we report the impact of the treatments on this transactional account for two reasons: (1) to identify potential savings in this account, and (2) to study the potential shift of balances from CuentaRUT accounts to savings accounts.

Panel A in Figure 2 shows that the ASP treatment increases savings account balances up to 10 months after treatment began and then decreases them. The effects of ASP are significant from months 6 to 12 and reach US$83 in month 10. The effects of SS are significant during months 5–6 and 10–11, with a maximum impact of US$79. The SMS coefficients, in contrast, are mostly below 0 but are never significant.

The coefficients reported in Figure 2, Panel B show that ASP decreases the CuentaRUT balance almost every month (with a maximum point estimate of −US$13.6 in month 17), whereas the effect of SMS is consistently negative. This negative effect is significant for SMS for 16 of the 17 months when the balances reach a level of −US$35 relative to the control group. For SS the effect on CuentaRUT accounts is less consistent and never statistically significant.

In Figure 2, Panel C presents the results for both savings accounts and CuentaRUT accounts. ASP continues to have a positive effect on balances, which build up for 10 months after the offering, with the greatest effect observed in month 10 at US$82. Moreover, the SS treatment follows a similar pattern to ASP and is marginally significant 3 months after the offering, reaching a US$76 impact on the balance. In contrast, the SMS coefficients are always negative and statistically significant only for month 15.

In Table A5, Panel A, we also present the impact on savings by taking averages over several months. The analysis is presented in two periods: from month 1 to month 12, during which

individuals received SMS messages, so we can study the effects while individuals received the treatment; and from month 13 to month 17, a period after the treatment ended that coincides with the timing of the survey, conducted on average 16 months after the intervention. The table summarizes what is observed in Figure 2.

Coefficients for SS show a large positive and significant effect on savings accounts in months 1–12, with no impact on CuentaRUT balances. When both accounts are considered, the effect size increases and is still significant (at the 10% level). However, the coefficient size declines and is not significant when considering months 13–17.

Column 3 shows that the SMS treatment significantly decreases CuentaRUT balances in both periods, although the effect on total balances is negative but not significant. Column 4 indicates that ASP leads to a 9.7% increase in savings balances during months 1–12. However, once CuentaRUT balances are included, the effect is not significant.

Our findings indicate an increase in savings balances and a decrease in CuentaRUT account balances for SS and ASP, which is consistent with a transfer of funds from transactional accounts to savings accounts. However, for the ASP treatment this transfer is partly mechanical since transfers from CuentaRUT accounts to savings accounts occur automatically. Given that the SS and ASP effects exhibit a similar pattern, we test (Table A5, Panel B) the hypothesis that all coefficients for both treatments are the same. We cannot reject the null of similar effects for balances in savings accounts and total balances, with a *p*-value of above 0.7 in both cases (see Table A5, Panel B). We do reject the null that SMS has the same effect size as SS and ASP.[21]

For a robustness check, we present in Table A6 the results without controls. The results are qualitatively similar, and the confidence intervals overlap with the LASSO specification. We prefer the LASSO approach to increase power.

[21] We also find statistically significant differences between SMS and the other two treatments. Analyzing the extensive margin, we find that no treatment has an impact on the probability of having positive balances in the savings accounts. The point estimates for CuentaRUT accounts are positive and significant for SS over several months, which implies that individuals in these treatment arms maintained positive but smaller balances in their CuentaRUT accounts compared to the control group (results available upon request). The effect on account possession is irrelevant because all study participants were required to have one.

Finally, considering that ASP has a substantially lower take-up than SS and SMS, and considering that 15% of the control group open ASP, the ITT results for ASP are mainly due to a change in savings from a fraction of the individuals assigned to that treatment. Then, we compute its TOT by instrumenting its take-up by treatment assignment. As expected, Table A7 shows that the coefficients for ASP more than sextuple, while the estimates are more imprecise. In the case of savings, the effects are almost 50% of the mean of the control group for the whole period. This is a substantial effect for an intervention that only offered a default option once, with no additional incentives. We focus our discussion on the ITT, as it better represents the result of a policy intervention and allows us to compare our results with the literature.

Effects on Transactions at Partner Bank

To gain insight into transaction behavior and how savings accumulate and decline over time, we examine the impacts of the treatments on the probability of making deposits and withdrawals in Figure 3. The effects on account balances may be a result of different deposit and withdrawal patterns.

While not statistically significant, the point estimates for SS suggest that the rise in savings levels reported in the previous section may be associated with a decrease in withdrawals up to month 9 (see Figure 3, Panel B). This effect is relevant, as it aligns with the advice provided by the rules of thumb aiming to induce careful spending. For all treatments, including SS, we observe a slight uptick in withdrawals from savings accounts after the ninth month, which is in line with the drop in savings balances in these treatment groups.

We also study whether individuals in the ASP treatment group withdraw their funds more frequently than those in the control group, thereby undoing the treatment, or whether they overlook the fact that money is being automatically transferred from their CuentaRUT accounts to their savings accounts, as hypothesized in the savings-default literature. Figure 3, Panel A shows that the probability of deposits for ASP rises throughout the period, which is consistent with the default literature.[22] However, the point estimates for the probability of

[22] To study the mechanical effect, we would need to identify the transfers from the CuentaRUT accounts to the savings accounts. We are unable to do so, however, because this type of transaction is not recorded in the transactional data. Yet since the number of monthly deposits increased by approximately 0.05, and since the

withdrawals are positive but not significant for most of the first nine months, after which they become significant in most months. Thus, in the medium term, participants do not drop out of the default rule but do offset it indirectly by increasing withdrawals. These patterns align with the balance change for ASP and suggest that the decrease in savings after month 10 is due to an increase in withdrawals, not a decline in deposits.

Regarding the probability of making a deposit to or withdrawal from a CuentaRUT account (see Panels C and D), SMS exhibits negative and significant effects on both deposits and withdrawals. Therefore, the decrease in CuentaRUT balances observed in the SMS treatment appears to be due to a reduction in deposits rather than an increase in withdrawals.

The results suggest that different treatments lead to distinct transactional behavior. SS seems to have no effect on deposits but decreases withdrawals, consistent with the rule of thumb. ASP, in contrast, builds savings through an increase in deposits throughout the 17-month period after treatment and an increase in withdrawals only after the 10th month. This implies that the nudge has the expected effect on deposits, but this effect is offset by an increase in withdrawals in the medium term. In contrast, SMS results in a reduction in deposits to and withdrawals from both CuentaRUT and savings accounts. Hence, the hypothesis that lack of attention constrains savings is not supported by the savings behavior observed.[23, 24]

B. Survey Data

We have three objectives in using the survey data. First, we aim to study the effect on overall savings, which encompasses informal savings and savings outside of the partner bank. This allows us to test whether the effects observed in the administrative bank data result from

difference in take-up between the ASP group and the control group was approximately 0.18, the change in the number of monthly deposits of those participating in ASP was, on average, 0.28. Since this number is less than 1, the estimated impact is less than the expected mechanical effect. As the monthly deposits start being less than the mechanical effect, we argue that this difference is due not to individuals' canceling the transfer but to the substitution for the transfer that would have been made in the absence of the treatment.

[23] To understand what caused balances to increase (more deposits or fewer withdrawals) and to determine whether the treatments affected these patterns, we also study whether the withdrawal pattern is associated with the days on which we sent text messages. The SMS and SS texts were sent on the same day. We do not find evidence of this behavior for SS and SMS (see Annex 7).

[24] We also examine the savings-balance data to address whether the changes in savings balances were due to large withdrawals. To do this, we create an indicator variable that equals 1 if the absolute balance change was larger than 90%. Our results suggest that, in the first nine months after enrollment, the SS treatment was less likely to result in large withdrawals compared to the control group, which is consistent with the observed increase in balance during the same period.

participants' transferring funds to BancoEstado accounts from other financial institutions or informal savings. We aim second to assess treatment compliance and third to explore downstream outcomes and changes in spending patterns.

Survey Sample

In this study, 2,049 individuals participated in the survey. As those who were interviewed might not constitute a random sample of all participants, we study the degree to which the survey sample reflects the study population. We do so in two ways. First, Table A9 presents the correlations between not being included in the sample and the treatment assignments without controls, with controls (baseline characteristics), and with controls interacting with the treatments. We find no case in which the treatment assignment predicts whether the participant was surveyed. Hence, there is no evidence for differential attrition by treatment.[25]

Second, we estimate Equation 1 including a dummy taking the value of 1 if the participant was surveyed and 0 otherwise. Figure A2 reports the coefficients on the interactions between this dummy and each treatment-assignment dummy, with balance in savings, balance in CuentaRUT, and total balance as dependent variables. The point estimates are statistically significant in very few cases, indicating that individuals in SS that respond to the survey have larger savings balances than those that do not.

Evidence on the First Stage

To ensure that the treatments were delivered as planned, we asked participants whether they had an ASP, received an SMS from the bank, and received gifts when they visited the bank. In Table 3, Panel A, we observe that individuals assigned to both the SS and SMS treatment groups report receiving more SMS messages than the control group.[26] Additionally, participants in the SS group are more likely to receive individualized messages related to strategies, while those in the SMS group are more likely to receive general strategic reminders. Moreover, individuals in the SS group are more likely to report receiving the treatment gifts, and more individuals in the ASP treatment report signing up for the ASP than

[25] Column 2 shows that men and those with greater per capita income were more likely to participate in the survey.
[26] The survey question was "During the last year, did you receive a SMS message from BancoEstado?"

does the control group. These results indicate that the intervention was implemented according to the protocol and that treatment-assignment randomization was followed.

Effect on Savings

As previously stated, the results obtained from the survey data might differ from those obtained from the partner-bank data. This is because the survey includes savings from all financial institutions and informal savings, whereas the partner-bank data only capture figures from the partner bank. A comparison between formal savings balances obtained from the survey data and administrative data suggests that the survey data might capture savings from more financial institutions. For example, the average formal savings balance for the control group is US$544.20 in the survey, compared to US$526 in the administrative data (in month 16, which is the average month in which the survey was conducted).[27] The balance information on the CuentaRUT accounts was not explicitly asked for in the survey and may or may not have been included in the respondents' reported savings balances. Also, there is sample variation, as we did not survey all participants. Nevertheless, we find no statistical differences between savings account balances from the survey data and total bank balances for individuals in the surveyed sample (see Figure A2).

Furthermore, the survey also gathered information on informal savings, which includes savings kept at home, in participants' businesses, with a Rotating Savings and Credit Association, or held by someone else. Given our access to data on informal savings, we can study whether participants opted to transfer their informal savings to formal savings accounts in response to the treatments.

Table 4 presents the treatments' ITT impacts on savings balances in the survey data (Panel A) and administrative data using the data from the closest month to when the survey was taken (Panel C) for comparison. Panel A shows the effect on participants' total formal savings and their total individual savings (including informal savings). Column 1 shows that the individual average savings for the control group is US$544.2, which indicates that 82% of the control group's savings are formal. Column 2 presents the ITT coefficient for SS, showing a

[27] There is no significant difference between savings balances in the administrative data (month 12) and survey data for the control group (available upon request).

significant positive impact on savings accounts with a 28% rise in savings balances. The coefficient size is very similar—and remains significant—when informal savings are included, indicating that the savings increase is not due to shifting from informal to formal instruments. Comparable coefficients with administrative data (Table 4, Panel C) are remarkably similar, with a point estimate of US$154. This estimate is more than twice the effect reported in Table A5 for SS, which is consistent with the results in Figure A2 that show that individuals in SS that answer the survey have larger balances that those that do not.

Table 4, Panel A, Column 3 shows that the SMS treatment has a nonsignificant effect on decreasing savings balances. The coefficient size increases when informal savings are included, but it remains nonsignificant. Column 4 shows that ASP results in an 18% increase in formal balances (p-value = 0.13). However, once informal savings are included, the coefficient size declines substantially, its variance increases, and the impact is no longer significant.

In Table 4, Panel B, the test's p-values of the difference between each treatment are reported. We reject the null that SMS has the same effect size as SS, while for ASP we do not reject it, but the p-value is 0.106. Additionally, we cannot reject the hypothesis that ASP has the same effect size as SS, with p-values of 0.506 for formal savings and 0.289 for total savings.

Overall, the survey and administrative results suggest that both ASP and SS have the potential to increase formal savings when considering all financial institutions.

Interpreting the Results

Using administrative data, both SS and ASP have positive and significant effects that are not statistically different from each other. From survey data, we found that SS has positive effects that are not statistically different from ASP's. The mechanisms for the increase in balances seem to depend on the treatment arm. For the ASP treatment, we observed a permanent (within the observed period) increase in deposits and no change in withdrawals until month 10, when withdrawals begin to increase and savings balances to decrease. For SS, the patterns suggest no effects on deposits and an increase in withdrawals after month 10. In contrast, SMS reminders have—if anything—a negative effect on savings balances and a consistent and negative impact on CuentaRUT account balances.

Note that our estimates are ITT effects. As most people received the text messages, while only one-third of the ASP treatment group signed up for the ASP, the similarity in the estimated impacts of the SS and ASP treatments suggests that the ASP treatment has a more substantial impact on a smaller subset of individuals.

Effects on Spending and Borrowing Patterns

We study the effects on spending and borrowing patterns, as they can be affected differently by each treatment. Also, the pattern of total balances over time—an initial rise followed by a decline—suggests that individuals may have reached their savings target and then withdrawn funds from their accounts.

The low take-up of ASP and small sample size of some of these outcomes affect the power of the estimations. Considering the minimum detectable effects reported in Tables A11 and A12, we refrain from drawing conclusions about ASP for these outcomes.

In the household survey, we asked each individual whether they had made any expenditures on the baseline goals they were saving toward in the past 12 months. We created a dummy variable that indicates whether an individual had spent money on the goal. As shown in Table 5, Panel A, 33.6% of the control group reported spending money on the spending category stated at baseline in the past 12 months. However, we do not observe significant differences in goal achievement among the treatment groups.

We examine the impact of the treatments on spending on temptation goods (for example, cigarettes, alcohol, and entertainment) in the month before the survey was conducted. We also assess the effects on durable assets and total consumption in the previous month. We find that the SS and SMS treatments do not affect spending on temptation goods.

Table 6 presents our analysis of the treatments' effect on total debt and the probability of holding different types of debt.[28] We use self-reported data to identify the type of debt held by participants, including bank credit, line(s) of credit, retail credit card(s), consumer credit, and mortgage credit. Total debt is also self-reported. The SMS treatment has a significant or

[28] The high variance in the amounts of debt resulted in imprecise estimates.

sizable impact on debt, with a significant reduction in the likelihood of borrowing from a line of credit and a retail credit card. We also use administrative data to examine the impact of each treatment on debt owed to the partner bank. We do not observe any significant impact for any treatment (see Figure A3).[29] Finally, we conduct a difference-in-differences analysis using administrative data, with the period before the offering as the reference, analyzing whether there was an effect on debt levels 1 to 13 months or 14 to 17 months after the offering. The results, presented in Table A13, show that the SMS treatment leads to a decrease in total debt by US$38.40 after month 13. Note that the reduction in debt observed in the survey data for the SMS treatment might not be captured in the administrative data. Thus, these results from both sources are complementary.

The expenditure results mentioned above complicate our ability to interpret the impacts of the interventions. We find no impact on achieving the saving goal for any of the treatments. Furthermore, we do not find the expected impact of the SS treatment on expenditures on temptation goods. However, we find a reduction in debt associated with the SMS treatment.

Understanding SS's Effect

In the baseline survey, we asked participants whether they needed to decrease their spending on alcohol and tobacco.[30] Figure 4 shows the SS treatment's impact on savings relative to the control group for two subgroups: those who wanted to reduce their alcohol and tobacco consumption (33% of the sample) and those who did not. The results indicate that the effects of the SS treatment on savings account balances and total savings are larger for, and only significant for, the former group. These findings align with the SS message, which emphasized responsible spending.

[29] We calculate net savings by adding savings, the balance in CuentaRUT, and the balance in other checking accounts and then subtracting debt. Figure A3 shows the results for the net-savings variable. We find a similar pattern to that for the effect on total savings. The ASP and SS treatments have a positive effect, with a peak around month 10 after the offering and decreasing afterward. The SMS treatment has mostly a negative effect. However, because of the variable's variability, almost none of the coefficients are significant.

[30] The question was "In which of the following categories do you think you have unnecessary expenses that you could reduce? (Check only one option)." The categories were housing, clothing, communications, recreation, food, transportation, household maintenance, health and medicine, education, alcohol and tobacco, and other expenditures. We generated a dummy taking the value of 1 if the individual responded, "Alcohol drinks and tobacco" and 0 if they responded with another category or if the value was missing.

Overall, the treatment has a positive impact on savings in the short term and seems to promote greater awareness of spending. The effects are particularly pronounced for those individuals who aimed to decrease their consumption of temptation goods.

Understanding the Negative SMS Effect

Several hypotheses are consistent with the negative effect of the SMS treatment on CuentaRUT accounts. First, Medina (2021) finds that reminders of credit card payments reduce late-fee payment but increased overdraft fees. According to the author, this behavior is consistent with the salience produced by the SMS message: "When a prospective task becomes exogenously more salient and receives more attention, consumers overweight the importance of that one task." Second, Pomeranz and Kast (2022) study the impact of offering a free savings account and find a negative impact on debt and an unclear and sometimes negative impact on saving balances. They hypothesize this is because individuals use savings and debt as substitutes when the savings motive is precautionary. Our results are consistent with these results since individuals could use the more liquid instrument (CuentaRUT) for debt payment or to smooth consumption, but it is unclear why the text message would induce this behavior.

Alternatively, text messages may have annoyed participants, leading them to withdraw their balances from BancoEstado. However, the SS treatment also included monthly (albeit different) text messages, which did not have a negative effect on CuentaRUT account balances. Therefore, it is likely that the SMS content—not the messages themselves—had a negative impact.

A third hypothesis is that the SMS treatment made the end goal of saving too salient; consequently, instead of inducing savings, it generated consumption. To test this hypothesis indirectly, we study the effect of spending on the savings goal reported at baseline. Our findings, presented in Table 6, Panel A, show a positive but not statistically significant impact of SMS on spending on the original goal (p-value = 0.55). There is also a substantial decrease in the probability of bearing retail debt (Table 6). Therefore, while the SMS intervention had a negative effect on CuentaRUT accounts, it did decrease retail debt.

Therefore, the evidence suggests that individuals in the SMS treatment not only read and comprehended the messages but also used their CuentaRUT balances to consume instead of resorting to debt to finance consumption. As a result, the treatment may have had a positive impact on their overall net wealth.

4. Conclusion

Financial inclusion and savings encouragement are critical aspects of social protection and promotion because they increase lower-income families' ability to guard against adverse economic shocks. In this paper, we evaluated several treatments aimed at promoting savings: financial services previously studied in the literature (default options and reminders) and a new intervention providing individuals with rules of thumb to encourage careful spending. Our findings indicate that both the default option and rule-of-thumb intervention had a positive impact on savings in the medium term, while the reminders had some negative effects on savings levels but may have had positive effects on net wealth as debt decreased. These results are promising, considering that the treatments represented small nudges and the savings increase was sustained for to a year after the intervention.

Different savings-promotion strategies operate via different mechanisms. ASP, by definition, increases savings by default but accumulates balances until withdrawals catch up, which starts happening in our experiment in month 10. Savings reminders decrease account balances but simultaneously decrease retail debt. The rule-of-thumb intervention operates by reducing withdrawals from savings rather than increasing deposits.

Our results are in line with previous research on the impact on savings relative to annual household income, at least for ASP and SS. Using administrative data, we found that the ITT effect on the average total balance in the first 12 months after the offer, relative to annual household income, was 0.5% for SS, −0.3% for SMS, and 0.4% for ASP. However, only the effect for SS was statistically significant. In the case of ASP, using TOT estimates, the effect relative to annual income is 2.7%.

Both the SS and ASP treatments are cost-effective. The cost of implementing SS ranges from US$13.00 to US$16.00. Considering that the SS intervention's maximum impact on savings balances is US$79, the benefit-to-cost ratio is 4.9–6.0. Meanwhile, the cost to implement the

ASP is negligible, making the intervention's maximum balance increase (US$82) a net benefit.[31]

Taken together, these results show that simple and cost-effective interventions can have a sizable impact on savings. However, they also reinforce doubts about the efficacy of savings-promotion strategies to generate sustainable savings in the long run.

[31] The higher amount of US$16.00 represents all costs, including the production of the video. Once made, however, the video can be shown to many individuals without increasing the intervention cost. For this reason, we include the lower intervention cost of US$13.00.

5. References

Abebe, G., Tekle, B., & Mano, Y. (2018). Changing Saving and Investment Behaviour: The Impact of Financial Literacy Training and Reminders on Microbusinesses. *Journal of African Economies*, *27*(5), 587–611. https://doi.org/10.1093/jae/ejy007

Ashraf, N., Karlan, D., & Yin, W. (2006). Tying Odysseus to the Mast: Evidence From a Commitment Savings Product in the Philippines. *The Quarterly Journal of Economics*, *121*(2), 635–72.

Bachas, P., Gertler, P., Higgins, S., & Seira, E. (2021). How Debit Cards Enable the Poor to Save More. *The Journal of Finance*, *76*(4), 1913–1957. https://doi.org/10.1111/jofi.13021

Bauer, M., Chytilová, J., & Morduch, J. (2012). Behavioral Foundations of Microcredit: Experimental and Survey Evidence from Rural India. *American Economic Review*, *102*(2), 1118–139. https://doi.org/10.1257/aer.102.2.1118

Blumenstock, J., Callen, M., & Ghani, T. (2018). Why do Defaults Affect Behavior? Experimental Evidence from Afghanistan. *American Economic Review*, *108*(10), 2868–2901.

Brune, L., Giné, X., Goldberg, J., & Yang, D. (2016). Facilitating Savings for Agriculture: Field Experimental Evidence from Malawi. *Economic Development and Cultural Change*, *64*(2), 187–220. https://doi.org/10.1086/684014

Brune, L., Giné, X., Goldberg, J., & Yang, D. (2017). Savings Defaults and Payment Delays for Cash Transfers: Field Experimental Evidence from Malawi. *Journal of Development Economics*, *129*, 1–13. https://doi.org/10.1016/j.jdeveco.2017.06.001

De Mel, S., McIntosh, C., & Woodruff, C. (2013). Deposit collecting: Unbundling the role of frequency, salience, and habit formation in generating savings. *American Economic Review*, *103*(3), 387–92.

Demirgüç-Kunt, A., Klapper, L., Singer, D., & Ansar, S. (2022). *The Global Findex Database 2021: Financial Inclusion, Digital Payments, and Resilience in the Age of COVID-19*. World Bank Publications.

Drexler, A., Fischer, G., & Schoar, A. (2014). Keeping it Simple: Financial Literacy and Rules of Thumb. *American Economic Journal: Applied Economics*, *6*(2), 1–31.

Dupas, P., Karlan, D., Robinson, J., & Ubfal, D. (2018). Banking the Unbanked? Evidence from Three Countries. *American Economic Journal: Applied Economics*, *10*(2), 257–97.

https://doi.org/10.1257/app.20160597

Dupas, P., & Robinson, J. (2013). Savings Constraints and Microenterprise Development: Evidence from a Field Experiment in Kenya. *American Economic Journal: Applied Economics*, *5*(1), 163–92. https://doi.org/10.1257/app.5.1.163

Karlan, D., McConnell, M., Mullainathan, S., & Zinman, J. (2016). Getting to the Top of Mind: How Reminders Increase Saving. *Management Science*, *62*(12), 3393–411. https://doi.org/10.1287/mnsc.2015.2296

Karlan, D., & Zinman, J. (2018). Price and Control Elasticities of Demand for Savings. *Journal of Development Economics*, *130*, 145–59. https://doi.org/10.1016/j.jdeveco.2017.10.004

Kast, F., Meier, S., & Pomeranz, D. (2018). Saving More in Groups: Field Experimental Evidence from Chile. *Journal of Development Economics*, *133*, 275–94.

Kast, F., & Pomeranz, D. (2014). *Saving More to Borrow Less: Experimental Evidence from Access to Formal Savings Accounts in Chile* (Working Paper 20239). National Bureau of Economic Research. https://doi.org/10.3386/w20239

Medina, P. C. (2021). Side Effects of Nudging: Evidence from a Randomized Intervention in the Credit Card Market. *The Review of Financial Studies*, *34*(5), 2580–2607. https://doi.org/10.1093/rfs/hhaa108

Pomeranz, D., & Kast, F. (2022). Savings Accounts to Borrow Less Experimental Evidence from Chile. *Journal of Human Resources*, 0619. https://doi.org/10.3368/jhr.0619–10264R3

Prina, S. (2015). Banking the Poor Via Savings Accounts: Evidence from a Field Experiment. *Journal of Development Economics*, *115*, 16–31.

Schaner, S. (2018). The Persistent Power of Behavioral Change: Long-Run Impacts of Temporary Savings Subsidies for the Poor. *American Economic Journal: Applied Economics*, *10*(3), 67–100. https://doi.org/10.1257/app.20170453

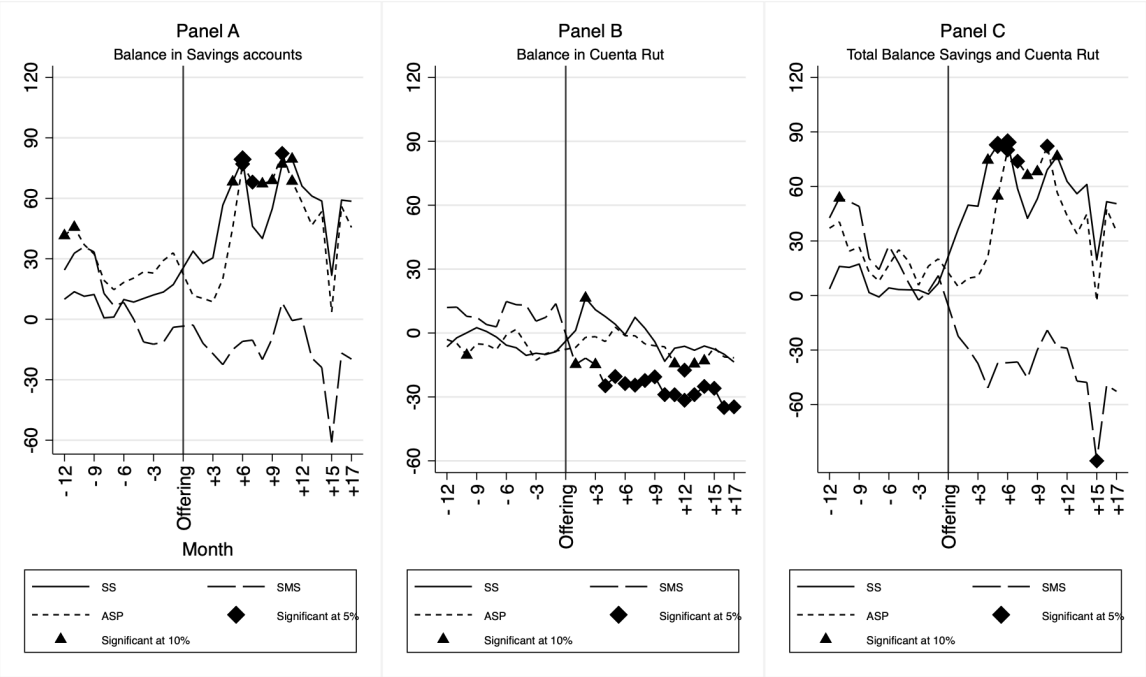
Seshan, G., & Yang, D. (2014). Motivating Migrants: A Field Experiment on Financial Decision-Making in Transnational Households. *Journal of Development Economics*, *108*, 119–27. https://doi.org/10.1016/j.jdeveco.2014.01.005

Somville, V., & Vandewalle, L. (2018). Saving by Default: Evidence from a Field Experiment in Rural India. *American Economic Journal: Applied Economics*, *10*(3), 39–66. https://doi.org/10.1257/app.20160547

Figure 1: Timeline

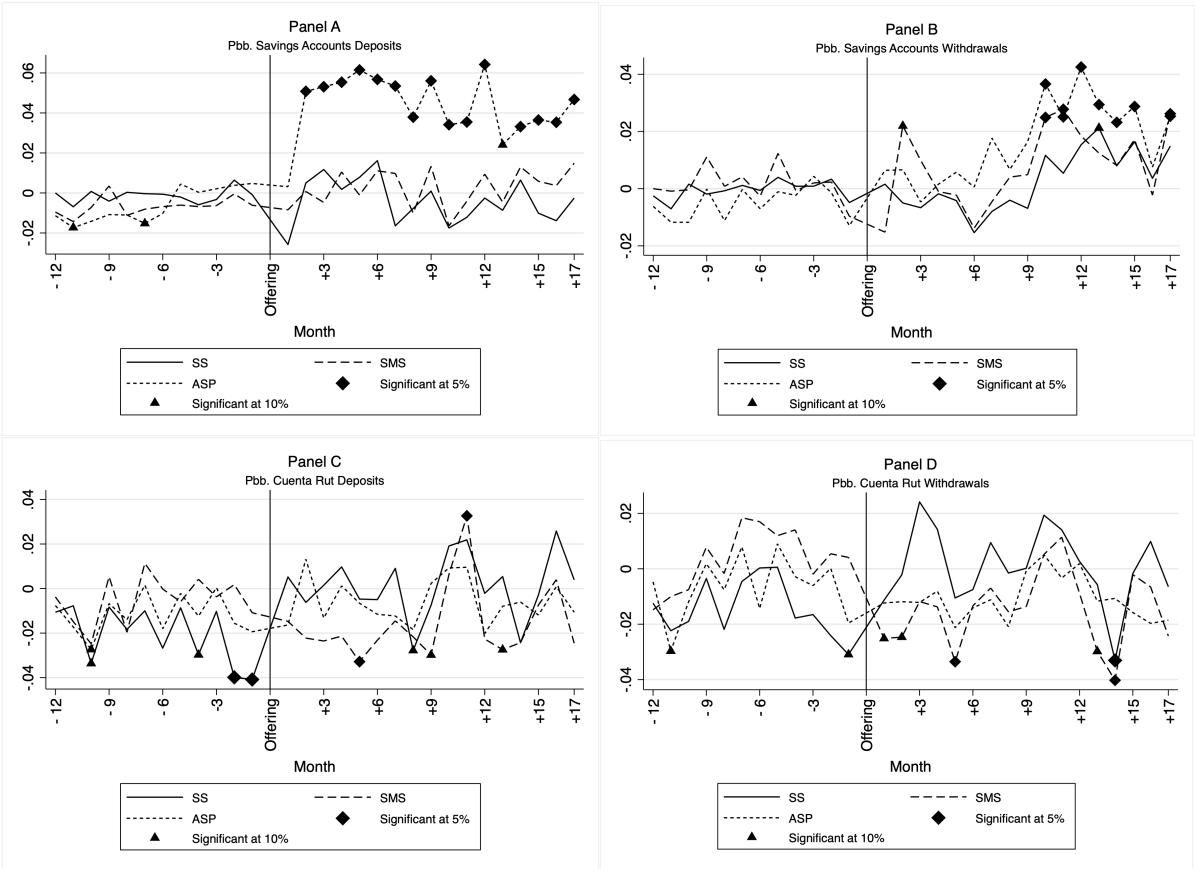
Year	Month	
2014	July	Design and pilot preparation
	August	
	September	Administrative data first month
	October	
	November	
	December	Pilot implementation
2015	January	Pilot Evaluation
	February	
	March	
	June	
	July	
	August	
	September	
	October	Offering process and baseline survey
	November	Treatment implementation (SMS)
	December	
2016	January	
	February	
	March	
	April	
	May	End of offering process
	June	
	July	
	August	
	September	
	October	
	November	
	December	
2017	January	
	February	
	March	Follow-up survey
	April	Treatment implementation (SMS) ends
	May	
	June	
	July	Follow-up survey ends
	August	
	September	Administrative Data Ends

Figure 2: ITT Effects Using Administrative Data



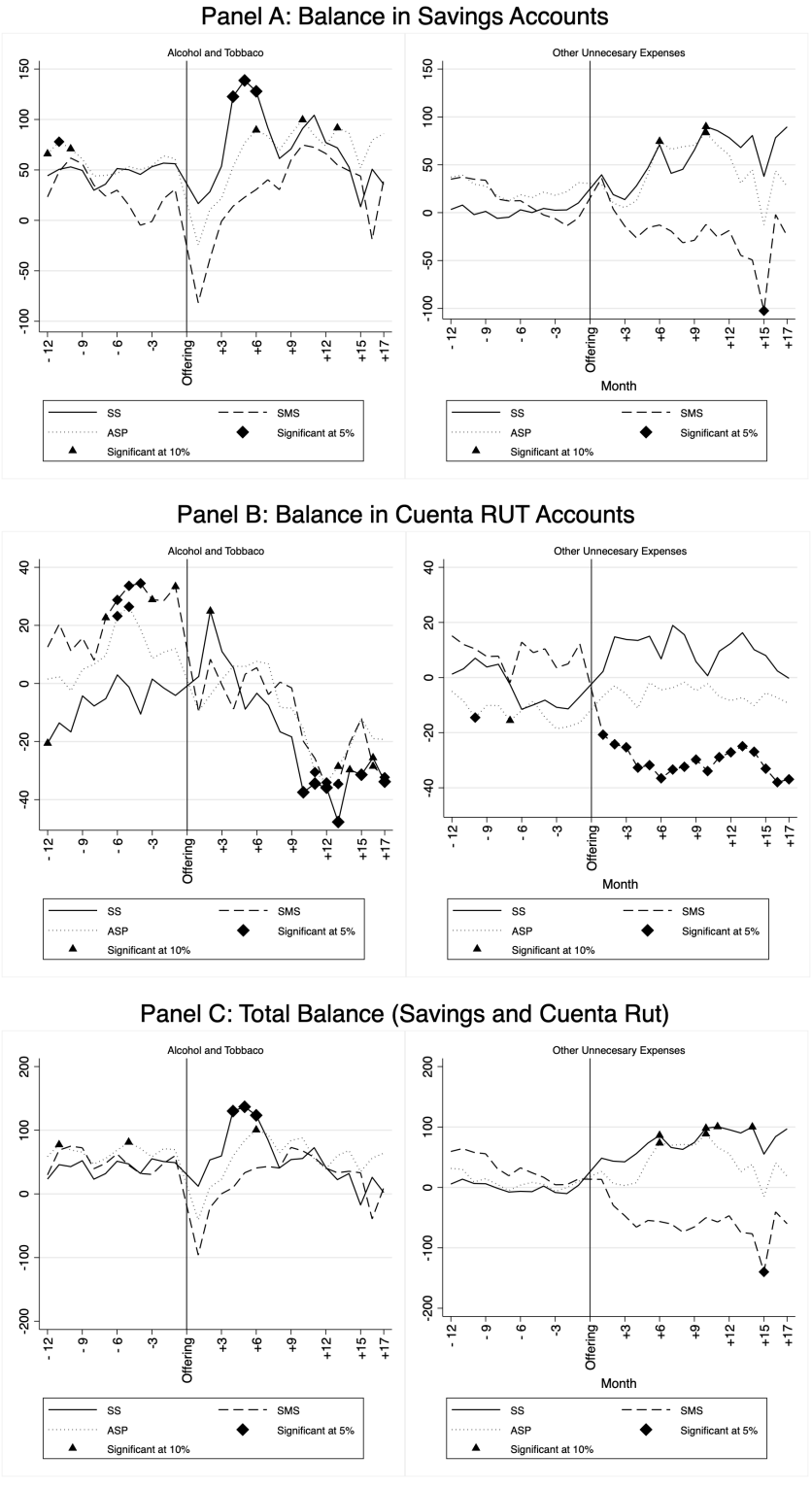
Notes: The figure reports coefficients from the regression of savings and CuentaRUT account amounts on the treatments. Panel A reports coefficients on the balance in savings accounts, Panel B reports coefficients on the balance in CuentaRUT accounts, and Panel C reports coefficients on total balance (savings and CuentaRUT accounts). All variables are measured in real US dollars based on the exchange rate of September 2014. Variables are top-coded at the 99th percentile. All regressions include dummies for strata (defined by savings goal and receipt of subsidy), fixed effects for enrollment date, branch-associate fixed effects, branch fixed effects, and a dummy indicating whether an enumerator or a branch associate recruited the individual. We apply PDS LASSO to select relevant controls from the variables included in Table 2, including dummies indicating missing values. We use robust standard errors.

Figure 3: ITT Effects on the Probability of Making Deposits and Withdrawals Using Administrative Transactions Data



Notes: The figure reports coefficients from the regression on the probability of making deposits or withdrawals from savings and CuentaRUT accounts. It includes transfers among BancoEstado accounts. General notes from Figure 2 apply.

Figure 4: SS Treatment Heterogeneity by Type of Expenditures Participants Aimed to Decrease at Baseline



Notes: The figure reports coefficients from the regression of savings and CuentaRUT balances interacted with the type of expenditures individuals declared that they wanted to decrease at baseline. General notes from Figure 2 apply.

Table 1: Treatment Assignment

Treatment Arm	Participants	Take-up	Signed up for ASP
Control group	1.887		14,7%
Automatic savings plan (ASP)	1.845		31,0%
SMS reminders (SMS)	1.273	92%	15,2%
Savings strategies (SS)	1.237	93%	16,2%
Total	6.242		

Notes: Authors' calculations. For SMS and SS, take-up is defined as receiving at least one text message. Take-up of ASP and control groups is defined by whether individuals opted to start an ASP at the time of the offering.

Table 2: Variable Means and Difference Test between Treatment Groups

	[1]	[2]	[3]	[4]	[5]	[6]
		Level				
Product Category	N obs	Control	Savings Strategies (SS)	SMS Reminders	Automatic Savings Plan (ASP)	*p*-value ASP=SMS =SS=0
Panel A: Amounts (US$)						
Balance in savings accts.	6,242	224.4	234.3	242.9	254.6	0.669
		(755.7)				
Balance in CuentaRUT	6,242	78.16	71.59	91.35	72.43	0.104
		(194.7)				
Total balance (savings acct. & CuentaRUT)	6,242	314.5	317.76	352.24	337.60	0.770
		(845.0)				
Total debt	6,242	169.4	156.04	202.54	170.80	0.694
		(957.0)				
Panel B: Probability (>0)						
Balance in savings accts.	6,242	0.512	0.51	0.52	0.51	0.916
		(0.5)				
Balance in CuentaRUT	6,242	0.714	0.72	0.70	0.70	0.258
		(0.4)				
Total balance (savings acct. & CuentaRUT)	6,242	0.854	0.84	0.83**	0.83*	0.0651
		(0.3)				
Total debt	6,242	0.066	0.05	0.07	0.06	0.510
		(0.2)				

Notes: Column 1 shows the number of observations. Columns 2–5 show the mean values for the control group, savings strategies, SMS reminders, and automatic savings plan, respectively. Column 2 also shows standard deviations in parentheses. Columns 6–11 report the *p*-values of the regressions of treatment assignment controlling by strata. Standard deviations are in parentheses. Variables in Panel A are in US dollars, using the exchange rate of September 2014 (USD=CLP 593.47). Regressions include dummies for strata (defined by savings motive and receipt of subsidy), fixed effects for date of offering, branch service associates fixed effects, branch fixed effects, and a dummy indicating whether the individual was recruited by an enumerator or a branch service associate. We also include a dummy variable to control for rare cases in which branch service associates offered the program at the same hour. We use robust standard errors. Data in Panels A and B come from the partner bank's administrative data, and Panel C's data come from the baseline survey. The sample size varies because of missing values. In comparing treatment and control groups, *** denotes a difference significant at the 1% level, ** at the 5% level, and * at the 10% level.

Table 2: Variable Means and Difference Test between Treatment Groups (cont'd)

	[1]	[2]	[3]	[4]	[5]	[6]
		Level				
Product Category	N obs	Control	Savings Strategies (SS)	SMS Reminders	Automatic Savings Plan (ASP)	*p*-value ASP=SMS=SS=0
Panel C: Baseline Variables						
Saving for a home	6,242	0.47 (0.50)	0.46	0.45	0.46	0.608
Subsidy recipient (1=receives)	6,242	0.421 (0.49)	0.44	0.42	0.42	0.789
Gender (1=male)	6,242	0.294 (0.46)	0.323*	0.321	0.323*	0.173
Age	6,242	34.00 (13.92)	33.66	33.74	33.82	0.939
Highest educational level						
Primary	6,242	0.11 (0.31)	0.10	0.10	0.12	0.336
Secondary	6,242	0.52 (0.50)	0.53	0.54	0.51	0.165
Tertiary	6,242	0.34 (0.47)	0.35	0.33	0.36	0.401
Working	6,148	0.63 (0.48)	0.62	0.62	0.63	0.897
Studying	6,148	0.11 (0.31)	0.12*	0.12	0.13**	0.118
Retired	6,148	0.02 (0.15)	0.03	0.02	0.021	0.874
Household per capita income	5,849	275.56 (261.38)	280,24	266,09	271,82	0.331
Panel D: F-Test						
ASP vs C	0.258					
SMS vs C	0.406					
SS vs C	0.617					
ASP vs SMS	0.148					
ASP vs SS	0.636					
SMS vs SS	0.109					

Notes: Column 1 shows the number of observations. Columns 2–5 show the mean values for the control group, savings strategies, SMS reminders, and automatic savings plan, respectively. Column 2 also shows standard deviations in parentheses. Columns 6 reports the *p*-values of all coefficients' equality to zero. Standard deviations are in parentheses. Variables in Panel A are in US dollars, using the exchange rate of September 2014 (USD=CLP 593.47). Regressions include dummies for strata (defined by savings motive and receipt of subsidy), fixed effects for date of offering, branch service associate fixed effects, branch fixed effects, and a dummy indicating whether the individual was recruited by an enumerator or a branch service associate. We also include a dummy variable to control for rare cases in which branch service associate offered the program at the same hour. We use robust standard errors. Data for Panels A and B come from the partner bank's administrative data, and Panel C's data come from the baseline survey. The sample size varies because of missing values. In comparing treatment and control groups, *** denotes a difference significant at the 1% level, ** at the 5% level, and * at the 10% level.

Table 3: ITT Effects on Treatment Components Using Survey Data

	[1] Control Mean	[2] Savings Strategies (SS)	[3] SMS Reminders	[4] Automatic Savings Plan (ASP)	[5] Sample Size
Panel A: Processes					
Receives SMS	0.227	0.541***	0.520***	0.019	1,957
	(0.419)	(0.028)	(0.029)	(0.025)	
SMS reminders	0.099	0.241***	0.520***	0.007	1,785
	(0.300)	(0.028)	(0.029)	(0.019)	
SMS strategies	0.061	0.343***	0.041**	-0.009	1,785
	(0.240)	(0.028)	(0.020)	(0.016)	
Has ASP	0.100	0.013	0.022	0.137***	2,028
	(0.300)	(0.020)	(0.020)	(0.021)	
Receives treatment gifts	0.195	0.455***	0.029	0.010	1,957
	(0.397)	(0.029)	(0.028)	(0.024)	

Panel B: P-values	[1] SS=SMS	[2] SS=ASP	[3] SMS=ASP
Receives SMS	0.501	0.000	0.000
SMS reminders	0.000	0.000	0.000
SMS strategies	0.000	0.000	0.000
Receives treatment gifts	0.000	0.000	0.510
Signed up for ASP	0.664	0.000	0.000

Notes: Data for "SMS reminders" and "SMS strategies" come from a different question from "Receives SMS"; therefore, the coefficients do not necessarily add up. ASP take-up is measured at the time of the survey. SS and SMS indicate whether participants received messages in the last 112 months. The table reports the means for the control group for the follow-up survey, intent-to-treat (ITT) estimates, and standard errors (in parentheses) of program assignment. Variables are top-coded at 99%. Regressions include dummies for strata (defined by savings motive and receipt of subsidy), fixed effects for date of offering, branch service associate fixed effects, branch fixed effects, and a dummy indicating whether the individual was recruited by an enumerator or a branch service associate. We also include a dummy variable to control for rare cases in which branch service associate offered the program at the same hour. We apply PDS LASSO to select relevant controls from the variables included in Table 2, including dummies indicating missing values. Panel B reports the *p*-values of the comparison between the three treatment groups. We use robust standard errors. The sample size varies because of missing values. *** p<0.01, ** p<0.05, * p<0.1

Table 4: ITT Effects on Savings Stock Using Survey and Administrative Data

Panel A: Survey Data Outcomes	[1] Control Mean	[2] Savings Strategies (SS)	[3] SMS Reminders	[4] Automatic Savings Plan (ASP)	[5] Sample Size
Total formal savings	544.2	152.987*	-22.290	97.991	2,045
	(1117)	(82.811)	(70.911)	(64.606)	
Total savings (including informal savings)	658.8	151.277*	-58.541	54.838	2,046
	(1220)	(91.242)	(77.569)	(70.572)	
Panel B: P-values	[1] SS=SMS	[2] SS=ASP	[3] SMS=ASP		
Saving accounts and saving for a home	0.0454	0.506	0.106		
Total savings (including informal savings)	0.0291	0.289	0.162		
Panel C: Administrative-Data Outcomes	[1] Control Mean	[2] Savings Strategies (SS)	[3] SMS Reminders	[4] Automatic Savings Plan (ASP)	[5] Sample Size
Balance in savings accounts	525.7	154.092**	-39.890	71.475	2,045
	1247	(74.723)	(66.826)	(61.462)	
Balance in CuentaRUT	104.1	3.862	-15.202	14.742	2,045
	265.5	(13.680)	(14.194)	(13.271)	
Total balance (savings acct. & CuentaRUT)	644.6	147.205*	-62.519	76.168	2,045
	1364	(76.082)	(70.722)	(65.055)	
Panel D: P-values	[1] SS=SMS	[2] SS=ASP	[3] SMS=ASP		
Balance in savings accounts	0.0223	0.293	0.134		
Balance in CuentaRUT	0.207	0.447	0.0349		
Total balance (savings acct. & CuentaRUT)	0.0162	0.381	0.0765		

Notes: The table reports the means for the control group for the follow-up survey, intent-to-treat (ITT) estimates, and standard errors (in parentheses) of the program assignment. All the amounts are measured in real US dollars (using the exchange rate as of September 2014). Panel A reports the effects on total formal savings (saving accounts and saving for a home) and total savings. Total savings include formal savings and informal savings, which include the following: saving for one's home or business, saving with another person, or savings in a *polla*. Survey was implemented between 13 and 22 months after the intervention. We present the administrative data for the same months. See also notes for Table 3.

Table 5: ITT Effects on Other Outcomes Using Survey Data

	[1] Control Mean	[2] Savings Strategies (SS)	[3] SMS Reminders	[4] Automatic Savings Plan (ASP)	[5] Sample Size
Panel A: Expenditure					
Has an expenditure budget	0.494	-0.025	-0.045	0.007	2,049
	0.500	(0.032)	(0.032)	(0.029)	
Pr. spending on baseline goal (last 12 months)	0.336	-0.006	0.021	0.026	1,253
	0.473	(0.034)	(0.035)	(0.031)	
Expenditures on temptation goods (last month)	43.901	-1.763	-0.787	7.788**	2,045
	66.187	(4.016)	(4.126)	(3.846)	
Total expenditure (last 12 months)	700.470	-22.714	-24.601	-26.787	2,046
	424.700	(28.415)	(27.521)	(23.840)	
Durable assets	417.409	7.429	-2.737	-0.508	2,010
	303.991	(19.792)	(19.083)	(16.639)	

Panel B: P-values	[1] SS=SMS	[2] SS=ASP	[3] SMS=ASP
Financial security	0.231	0.004	0.109
Has an expenditure budget	0.574	0.318	0.111
Pr. spending on baseline goal	0.491	0.360	0.884
Expenditures on temptation goods	0.820	0.019	0.044
Expenditures on electronic durable goods	0.636	0.682	0.906
Total expenditure	0.951	0.885	0.936

Notes: The table reports the mean for the control group for the follow-up survey, intent-to-treat (ITT) estimates, and standard errors (in parentheses) of program assignment. All the amounts are measured in real US dollars (using the exchange rate as of September 2014). *Has an expenditure budget* is a dummy that takes the value 1 if the interviewee has a budget for the expenditures they want to make and 0 if they do not. Durable assets include washing machines, refrigerators, ovens, and microwaves. Panel B reports the *p*-values of the comparison between the three treatment groups. We use robust standard errors. Variables are top-coded at 99%. See notes for Table 3. The sample size varies because of missing values. ***p<0.01, **p<0.05, * p<0.1

Table 6: Stock of Debt and Probability of Positive Debt (Survey Data)

	[1]	[2]	[3]	[4]	[5]
	Control Mean	Savings Strategies (SS)	SMS Reminders	Automatic Savings Plan (ASP)	Sample Size
Panel A: ITT Effects					
Total debt amount	1590	-11.067	40.271	31.762	2,038
	(3572)	(238.758)	(248.394)	31.762	
Bank credit	0.111	0.014	0.028	0.012	1,795
	(0.315)	(0.023)	(0.023)	(0.020)	
Line of credit	0.069	-0.020	-0.033**	-0.011	1,754
	(0.253)	(0.016)	(0.016)	(0.016)	
Retail credit cards	0.349	-0.018	-0.090***	-0.016	1,850
	(0.477)	(0.032)	(0.032)	(0.029)	
Consumption credit (bank, financial institution, or retail)	0.108	-0.013	-0.000	-0.015	1,782
	(0.310)	(0.021)	(0.021)	(0.019)	
Mortgage credit	0.055	-0.022*	-0.012	-0.012	1,728
	(0.228)	(0.013)	(0.016)	(0.014)	

Panel B: P-values	[1] SS=SMS	[2] SS=ASP	[3] SMS=ASP
Total debt amount	0.849	0.863	0.973
Bank credit	0.560	0.940	0.473
Line of credit	0.397	0.550	0.129
Retail credit cards	0.033	0.950	0.017
Consumption credit (bank, financial institution, or retail)	0.552	0.940	0.479
Mortgage credit	0.508	0.471	0.997

Notes: The table reports the mean for the control group for the follow-up survey, intent-to-treat (ITT) estimates, and standard errors (in parentheses) of program assignment. Output variables consider the total debt amount reported by the respondent and dummies that take the value 1 if the participant reports having debt in the corresponding category. All data are collected at the time of the survey. Panel B reports the *p*-values of the comparison between the three treatment groups. We use robust standard errors. The sample size varies because of missing values. See also notes for Table 3. ***p<0.01, **p<0.05, * p<0.1

ANNEX 1: Additional Tables and Figures

Table A1: Comparison with Other Studies

Study	Intervention	Country	Population	Baseline Data (2015 US Dollars)		Savings as Proportion of Monthly income	Measurement of the Variables		
				Monthly Income	Savings		Monthly Income Level [1]	Level of Savings	Detail of Savings
Ahsraf et al (2006a) "Tyding Odysseus" [2]	Deposit collection	Philippines	Prior clients of a rural Bank	351.4	16.7	4.8%	Household	Individual. Stock	Savings in partner bank
Ahsraf et al (2006b) [3]	Deposit collection	Philippines		362.0	27.3	7.5%	Household	Individual. Stock	Savings in partner bank
				362.0	254.6	70.3%	Household	Household. Stock	Total monetary savings (multiple sources)
Bachas et al (2018)	Debit card	Mexico	Cash transfer beneficiaries	87.3	N/A	N/A	Per capita	N/A	"Net savings" reported, which is observed savings balance minus predicted withdrawals
Drexler, Fischer, and Schoar (2014).	Financial education	DR	Micro entrepreneurs	218.7	N/A	N/A	Individual	N/A	
Dupas and Robinson (2013a)	Account or lockbox	Kenya	Participants of ROSCAs	60.4	N/A	16.3%	Individual	Individual Monthtly contribution	Contribution to ROSCA
Dupas and Robinson (2013b)	Account or lockbox	Kenya	Female (market vendors)	138.7	138.6	99.9%	Individual	Individual. Stock.	Last year savings in ROSCA
			Male (vendors and bicycle-taxi drivers)	73.5	55.4	75.4%	Individual	Individual. Stock.	Last year savings in ROSCA

Dupas et al. (2018)	Account	Uganda	Unbanked	43.2	42.6	98.6%	Individual	Individual. Stock	Total monetary savings (multiple sources)
		Malawi		56,7	25.3	44.7%	Individual	Individual. Stock	Total monetary savings (multiple sources)
		Chile		61.2	23.9	39.0%	Per capita	Individual. Stock	Total monetary savings (multiple sources)
Karlan et al. (2016)	Reminders	Philippines	Clients who recently opened commitment savings account	198.4	N/A	N/A	Individual	Savings reported but it is unclear if it is at baseline	Savings by goal date in the account
		Peru		N/A	N/A	N/A	N/A	Savings reported but it is unclear if it is at baseline	Savings by goal date in the account
		Bolivia		N/A	N/A	N/A	N/A	Savings reported but it is unclear if it is at baseline	Savings by goal date in the account
Karlan et al. (2017)	Savings group	Ghana, Uganda, and Malawi	Female in target villages	16.6	N/A	N/A	Per capita	Unclear of reported savings are household or individual level.	Total monetary savings (multiple sources)
Karlan and Zinman (2018)	Interest rate, account ownership requirements	Philippines	People with a regular income interested in open a commitment savings account	Unclear of reported savings are household or individual level.	305.5	220.2%	Individual	Individual. Stock	Total monetary savings (multiple sources)
Kast and Pomeranz (2014)	Account	Chile	Self-employed micro-entrepreneurs	203.9	167.3	82.1%	Per capita	Individual. Stock	Savings in banks or cooperatives. Regardings savings, it sayss "while income is reported in per capita temrs, these figures may represent the savings of several household members combined.."

Kast, Meier and Pomeranz (2018)	Savings group	Chile	Microcredit clients	204.7	181.2	88.5%	Per capita	Individual. Stock	Savings in banks or cooperatives. Regardings savings, it sayss "while income is reported in per capita temrs, these figures may represent the savings of several household members combined.."
Prina (2015)	Account	Nepal	Female household heads	150.3	357.8	238.1%	Household	Household. Stock	Total monetary savings: bank accounts, ROSCA, MFIs and cash at home.
				150.3	137.3	91.4%	Household	Household. Stock	Deposits in bank accounts
Schaner (2016)	Interest rate	Kenya	Newly bank accounts by couples - Husbands	133.8	153.2	114.5%	Individual	Individual. Stock (unclear)	Total monetary savings (bank, cooperatives, home)
			Newly bank accounts by couples - Wives	65.5	39.0	59.5%	Individual	Individual. Stock (unclear)	Total monetary savings (bank, cooperatives, home)
Seshan and Yang (2014)	Financial education	India/Qatar	Indian migrants workers in Qatar	793.2	3691.7	465.4%	Individual	Individual. Stock	Total monetary savings (cashm bank and postal account, ROCA, life insurance and pension funds contributios, gold holdings, market value of stocks). Savings does not include hoint savings with wife.
Somville and Vandewalle (2018)	Payment default	India	People from villages without a bank branch	59.4	2.1	3.6%	Household	Individual. Stock	Bank account in partner bank
Banerjee, Martínez A, Puentes (2019)	SMS, ASP, financial education	Chile		275	185.0	67.3%	Per capita	Individual. Stock	Bank account in partner bank

Note: [1] Per capita income is calculated by dividing the household monthly income by the number of residents, while individual income is the reported individual monthly income of the targeted person. [2] Median household income from footnote 15, it is not clear if it is baseline income. [3]Median income. All the papers correspond to the literature review of Bachas et al. (2018). Excluded papers do not include a measure of total household income.

Table A2: Recruitment by month

Year	Month	Number of offers
2015	October	460
	November	608
	December	611
2016	January	1,031
	February	983
	March	1,510
	April	1,036
	May	3
Total		6,242

Note: Author's calculation

Table A3: Savings Goals

Baseline savings motives	%
Unforseen expenses	12.48%
Medical or Dental treatment	0.57%
Holidays	2.35%
Child's birth	1.38%
Gifts	0.26%
Car or bicycle	2.48%
Wedding or ceremonies	0.23%
For old age	4.22%
Fix or expand house	3.85%
Entrepreneurship	2.08%
Own Education	3.02%
Children education	5.55%
Household stuff	0.21%
Buy a house	46.51%
Electronic personal items	0.10%
To have savings	10.97%
Other motives	3.75%
Total	100%

Note: Author's calculation.

Table A4: Take-up Prediction using administrative data

Variables	[1] Savings Strategies (SS)	[2] SMS Reminders	[3] Automatic Savings Plan (ASP)
Gender (1=female)	-0.016	-0.010	0.003
	(0.017)	(0.017)	(0.025)
Highest educational level			
Primary	0.215	0.089	0.010
	(0.195)	(0.104)	(0.139)
Secondary	0.257	0.143	0.033
	(0.194)	(0.100)	(0.138)
Tertiary	0.293	0.161	-0.008
	(0.194)	(0.101)	(0.138)
Worked last week	0.018	0.002	0.109***
	(0.019)	(0.019)	(0.027)
Studied last week	0.013	-0.032	0.103**
	(0.027)	(0.033)	(0.041)
Retired last week	-0.021	-0.023	-0.050
	(0.060)	(0.055)	(0.060)
Household per capita income	-0.028	-0.020	-0.059
	(0.026)	(0.034)	(0.050)
Age/1000	0.341	1.260**	-2.542***
	(0.637)	(0.634)	(0.866)
Cuenta Rut Pre Offering	0.069	0.068**	0.118
	(0.050)	(0.032)	(0.137)
Savings Pre Offering	0.021	0.004	-0.077
	(0.023)	(0.019)	(0.109)
Total Balances Pre Offering	-0.008	-0.005	0.044
	(0.025)	(0.016)	(0.107)
Observations	1,237	1,273	1,845
R-Squared	0.024	0.030	0.034

Note: The table reports the results of the regression between the probability of accepting the program offering and baseline characteristics. Income and Balances un 1,000 US Dollars. Column [1] reports the results from from Strategies take-up; column [2] reports the results from SMS take-up; and column [3] reports the results ASP take-up. Regressions include dummies for strata (defined by the reception of subsidy and savings motive). We use robust standard errors. Sample size varies due to missing values and treatment arms size. *** p<0.01, ** p<0.05, * p<0.1.

Table A5: ITT effects on savings stock using administrative data

Panel A: Administrative data *Outcomes*	[1] Control Mean	[2] Savings Strategies (SS)	[3] SMS Reminders	[4] Automatic Savings plan (ASP)	[5] Sample Size
Between 1st-12th month					
Balance in Savings Accounts	504.7	54.984*	-9.345	48.835*	6,242
	1117	(33.065)	(32.275)	(28.803)	
Balance in CuentaRUT	113.808	1.550	-22.239***	-5.304	6,242
	244.123	(6.696)	(6.176)	(5.953)	
Total Balance (Savings Acc. & CuentaRUT)	627.8	61.652*	-33.509	47.646	6,242
	1218	(35.044)	(34.134)	(30.431)	
Between 13th-17th month					
Balance in Savings Accounts	538.2	51.853	-28.146	41.068	6,242
	1230	(40.994)	(38.910)	(35.631)	
Balance in CuentaRUT	114.444	-9.048	-29.912***	-11.465*	
	262.107	(7.683)	(7.247)	(6.868)	
Total Balance (Savings Acc. & CuentaRUT)	660	47.762	-57.559	31.712	
	1327	(42.928)	(40.960)	(37.251)	

Panel B: P-values	[1] SS=SMS	[2] SS=ASP	[3] SMS=ASP
Between 1st-12th month			
Balance in Savings Accounts	0.0867	0.859	0.0859
Balance in CuentaRUT	0.001	0.317	0.009
Total Balance (Savings Acc. & CuentaRUT)	0.0172	0.702	0.0242
Between 13th-17th month			
Balance in Savings Accounts	0.0773	0.798	0.0869
Balance in CuentaRUT	0.007	0.737	0.007
Total Balance (Savings Acc. & CuentaRUT)	0.0268	0.716	0.0357

Notes: The table reports the means for the control group for the follow-up survey, intent-to-treat (ITT) estimates, and standard errors (in parentheses) of the program assignment. All the amounts are measured in real US dollars (using the exchange rate as of September 2014). See also notes from Table 3

Table A6: ITT effects on savings stock administrative data (No PDS Lasso)

Panel A: Administrative data Outcomes	[1]	[2]	[3]	[4]	[5]
	Control Mean	Savings Strategies (SS)	SMS Reminders	Automatic Savings plan (ASP)	Sample Size
Between 1st-12th month					
Balance in Savings Accounts	504.7	53.805	10.483	69.911*	6,242
	1117	(44.696)	(43.043)	(39.309)	
Balance in CuentaRUT	113.808	-5.101	-14.420*	-11.201	6,242
	244.123	(9.466)	(8.650)	(8.023)	
Total Balance (Savings Acc. & CuentaRUT)	627.8	52.832	-2.971	60.967	6,242
	1218	(49.341)	(46.998)	(42.786)	
Between 13th-17th month					
Balance in Savings Accounts	538.2	45.034	-10.113	58.052	6,242
	1230	(49.894)	(45.939)	(43.362)	
Balance in CuentaRUT	114.444	-14.454	-23.644***	-15.926**	
	262.107	(9.564)	(8.696)	(8.123)	
Total Balance (Savings Acc. & CuentaRUT)	660	34.468	-31.955	42.888	
	1327	(53.705)	(49.609)	(46.413)	

Panel B: P-values	[1]	[2]	[3]
	SS=SMS	SS=ASP	SMS=ASP
Between 1st-12th month			
Balance in Savings Accounts	0.383	0.729	0.184
Balance in CuentaRUT	0.355	0.515	0.711
Total Balance (Savings Acc. & CuentaRUT)	0.310	0.873	0.192
Between 13th-17th month			
Balance in Savings Accounts	0.310	0.802	0.156
Balance in CuentaRUT	0.340	0.870	0.340
Total Balance (Savings Acc. & CuentaRUT)	0.258	0.880	0.147

Notes: The table reports the means for the control group for the follow-up survey, intent-to-treat (ITT) estimates, and standard errors (in parentheses) of the program assignment. %. Regressions include dummies for strata (defined by savings motive and receipt of subsidy), fixed effects for date of offering, branch service associate fixed effects, branch fixed effects, and a dummy indicating whether the individual was recruited by an enumerator or a branch service associate We also include a dummy variable to control for rare cases in which branch service associate offered the program at the same hour. All the amounts are measured in real US dollars (using the exchange rate as of September 2014).

Table A7: ToT effects on savings stock using administrative data

Panel A: Administrative data Outcomes	[1]	[2]	[3]	[4]	[5]
	Control Mean	Savings Strategies (SS)	SMS Reminders	Automatic Savings plan (ASP)	Sample Size
Between 1st-12th month					
Balance in Savings Accounts	504.7	54.983	-11.465	304.448*	6,242
	1117	(34.409)	(34.621)	(179.004)	
Balance in CuentaRUT	113.8	2.122	-24.042***	-33.044	6,242
	244.1	(6.946)	(6.593)	(36.830)	
Total Balance (Savings Acc. & CuentaRUT)	627.8	62.261*	-37.709	297.059	6,242
	1218	(36.466)	(36.604)	(188.964)	
Between 13th-17th month					
Balance in Savings Accounts	538.2	52.279	-31.701	256.049	6,242
	1230	(42.505)	(41.509)	(220.073)	
Balance in CuentaRUT	114.444	-8.759	-32.218***	-71.405*	
	262.107	(7.953)	(7.752)	(42.728)	
Total Balance (Savings Acc. & CuentaRUT)	660	48.676	-63.434	197.779	
	1327	(44.497)	(43.694)	(229.866)	

Panel B: P-values	[1] SS=SMS	[2] SS=ASP	[3] SMS=ASP
Between 1st-12th month			
Balance in Savings Accounts	0.0992	0.145	0.0620
Balance in CuentaRUT	0.000646	0.314	0.795
Total Balance (Savings Acc. & CuentaRUT)	0.0196	0.194	0.0614
Between 13th-17th month			
Balance in Savings Accounts	0.0832	0.331	0.165
Balance in CuentaRUT	0.005	0.115	0.319
Total Balance (Savings Acc. & CuentaRUT)	0.0276	0.496	0.228

Notes: The table reports the means for the control group for the follow-up survey, Treatment on the Treated (ToT) estimates, using as instruments the randomization of the program assignment. Standard errors (in parentheses) . All the amounts are measured in real US dollars (using the exchange rate as of September 2014). We include as control variables the same variables selected by PDS Lasso for the results in Table A5.

Table A8: Interaction between treatments and months after the offer

P-value F Test - Months 1 to 17 interacted with each treatment	[1]	[2]
SS=ASP	0.999	0.972
SS=SMS	0.001	0.000
ASP=SMS	0.000	0.000

Note: Table reports p-values from the F-test of the interaction between all treatments and the 17 months after the offering. In column [1] the dependent variables is savings accounts, while in column [2] is total balance (savings accounts and Cuenta Rut). General notes from Figure 2 apply. We use robust standard error. Sample size varies due to missing values. ***p<0.01, **p<0.05, * p<0.1

Table A9: Study of Attrition by Treatment

Dependent variable: Non completed survey	[1] Follow-up Survey	[2] Follow-up Survey
Panel A:Treatments		
Savings Strategies (SS)	-0.008	0.0287
	(0.017)	(0.2202)
SMS Reminders (SMS)	0.018	-0.1189
	(0.017)	(0.1680)
Automatic Saving Plan (ASP)	0.008	0.2052
	(0.015)	(0.1674)
Panel B: Baseline Characteristics		
Cuenta Rut amounts pre offering mean		0.0110
		(0.1269)
Saving Accounts amounts pre offering mean		0.1020
		(0.0848)
Total Balances pre offering mean		-0.0924
		(0.0808)
Gender (male==1)		0.0489**
		(0.0245)
Primary		-0.0503
		(0.1055)
Secondary		-0.0263
		(0.1010)
Tertiary		-0.0427
		(0.1016)
Worked last week		0.0194
		(0.0278)
Studied last week		0.0292
		(0.0428)
Retired last week		-0.0682
		(0.0856)
Household per capita income		0.0990**
		(0.0435)
Age/1000		0.2183
		(0.9245)
Baseline Characteristics interacted with SS		X
Baseline Characteristics interacted with SMS		X
Baseline Characteristics interacted with ASP		X
p-value F-test Interaction SS		0.765
p-value F-test Interaction SMS		0.159
p-value F-test Interaction ASP		0.324
p-value F-test covariates in levels		0.0770
Observations	6,242	6,242

Note: The dependent variable takes a value of 1 if the individual was not found. The sample includes all individuals originally sought. Income and Balances un 1,000 US Dollars. Column [2] controls for all baseline values and its interaction by each treatment. We control for stratification in all regressions. Robust standard errors. *** p<0.01, ** p<0.05, * p<0.1

Table A10: Large withdrawals after offering

	[1] Control Mean	[2] Savings Strategies (SS)	[3] SMS Reminders	[4] Automatic Savings Plan (ASP)	[5] Sample Size
Panel A: Months after offering					
Savings Accounts					
1st-9th month	0.299	-0.027*	0.001	0.009	6,242
	0.458	(0.016)	(0.016)	(0.015)	
10th-17th month	0.205	0.036**	0.041***	0.039***	6,242
	0.403	(0.015)	(0.015)	(0.014)	
CuentaRUT					
1st-9th month	0.812	-0.008	-0.005	-0.005	6,242
	0.391	(0.013)	(0.013)	(0.012)	
10th-17th month	0.783	0.006	0.005	0.005	6,242
	0.413	(0.014)	(0.014)	(0.013)	
Savings Acc. & CuentaRUT					
1st-9th month	0.727	-0.000	-0.002	-0.012	6,242
	0.446	(0.015)	(0.015)	(0.014)	
10th-17th month	0.660	0.025	0.024	0.016	6,242
	0.474	(0.016)	(0.016)	(0.015)	

Panel B: F-Test	[1] SS=SMS	[2] SS=ASP	[3] SMS=ASP
1st-9th month			
Savings Accounts	0.113	0.0287	0.645
CuentaRUT	0.815	0.837	0.481
Savings Acc. & CuentaRUT	0.926	0.420	0.481
10th-17th month			
Savings Accounts	0.782	0.880	0.881
CuentaRUT	0.968	0.918	0.952
Savings Acc. & CuentaRUT	0.941	0.569	0.623

Note: The table reports coefficients from the regression of the probability of a withdrawal larger than 90% in the total savings or *CuentaRUT* account balance. Rsee notes in Table 3.

Table A11: MDE of ITT effects on other outcomes using survey data (% Control Mean)

	[1] Savings Strategies (SS)	[2] SMS Reminders	[3] Automatic Savings Plan (ASP)
Has an expenditure budget	19,4%	19,9%	99,3%
Pr. Spending on baseline goal	34,5%	35,4%	176,6%
Expense in temptations goods	28,9%	29,7%	147,9%
Electronic durable goods	14,0%	14,3%	71,4%
Total Expenditure	11,6%	11,9%	59,5%

Note: Minimun Detectable Effects as percentage of the control mean using control group follow-up standard deviation. Power 80%, significance 5%

Table A12: MDE of ITT effects on debt outcomes using survey data (% Control Mean)

	[2] Savings Strategies (SS)	[3] SMS Reminders	[4] Automatic Savings Plan (ASP)
Total debt amount	43,2%	44,3%	221,0%
Bank Credit	58,1%	59,6%	297,5%
Line of Credit	76,0%	77,9%	388,8%
Retail credit cards	27,6%	28,3%	141,1%
Consumption credit (bank, financial institution or retail)	59,0%	60,5%	302,0%
Mortgage credit	86,5%	88,8%	442,9%

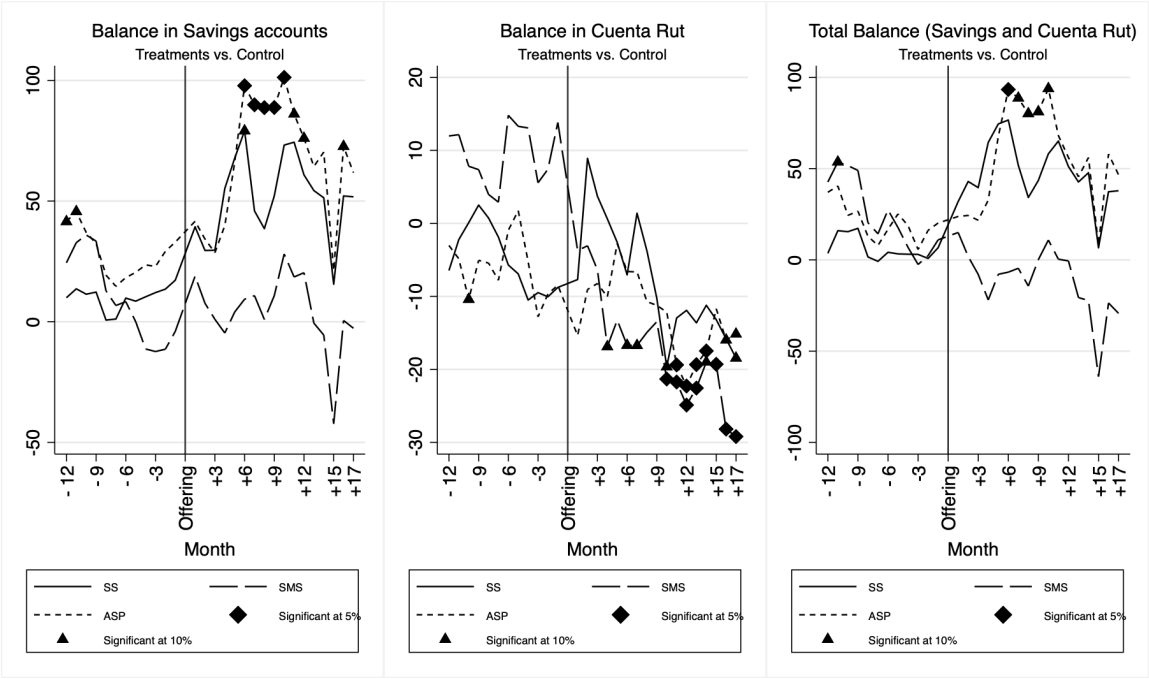
Note: Minimun Detectable Effects as percentage of the control mean using control group follow-up standard deviation. Power 80%, significance 5%

Table A13: Difference and Difference Effect in Debt

VARIABLES	(1) Debt (1 to 13 months)	(1) Debt (14 to 17 months)
Time Dummy	56.498***	127.339***
	(3.890)	(10.274)
ASP	2.983	1.251
	(1.872)	(1.971)
SMS	8.263***	7.017***
	(2.577)	(2.609)
SS	3.582	2.863
	(2.245)	(2.259)
ASP * Time Dummy	-1.096	3.824
	(5.681)	(14.865)
SMS * Time Dummy	-2.140	-38.368**
	(6.958)	(15.804)
SS * Timy Dummi	4.926	0.428
	(7.033)	(18.002)
Observations	162,292	106,114
Control Mean	228.2	299

Note: Time Dummy takes the value of 1 if months are between 1 and 14 (column [1]) months 14 or more (column [2]), and 0 if before baseline. General notes from Table 3 apply ***p<0.01, **p<0.05, * p<0.1

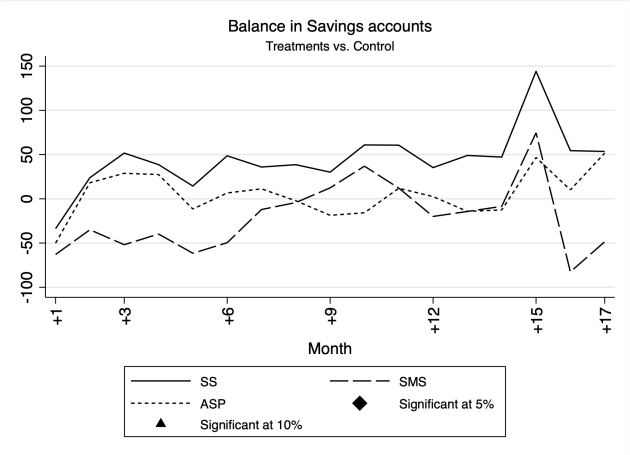
Figure A1: ITT Effects Using Administrative Data (No PDS Lasso)



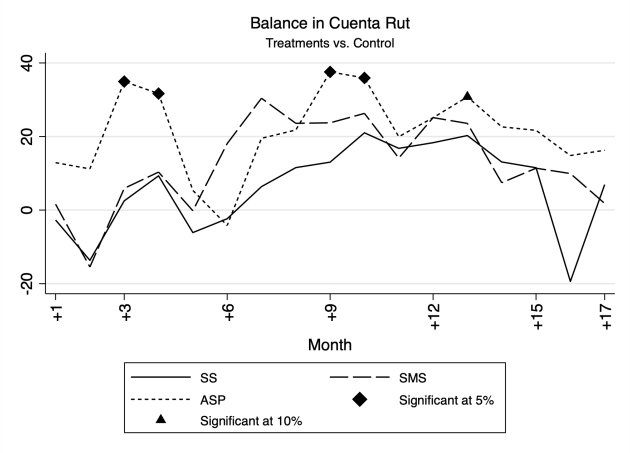
Notes: The figure reports coefficients from the regression of savings and CuentaRUT account amounts on the treatments. Panel A reports coefficients on balance in savings accounts, Panel B reports coefficients on balance in CuentaRUT accounts, and Panel C reports coefficients on total balance (savings and CuentaRUT accounts). All variables are measured in real US dollars based on the exchange rate of September 2014. Variables are top-coded at the 99th percentile. All regressions include dummies for strata (defined by savings goal and receipt of subsidy), fixed effects for enrollment date, branch-associate fixed effects, branch fixed effects, and a dummy indicating whether an enumerator or a branch associate recruited the individual. We use robust standard errors.

Figure A2: Interactive Effect of Being in the Survey Sample

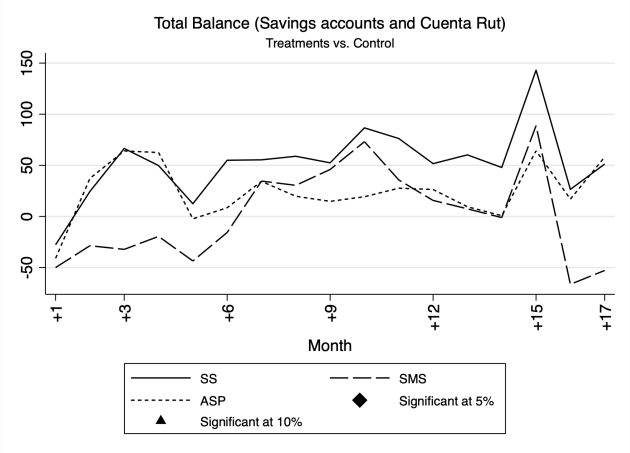
Panel A: Balance in Savings Accounts.



Panel B: Balance in *CuentaRUT* Account

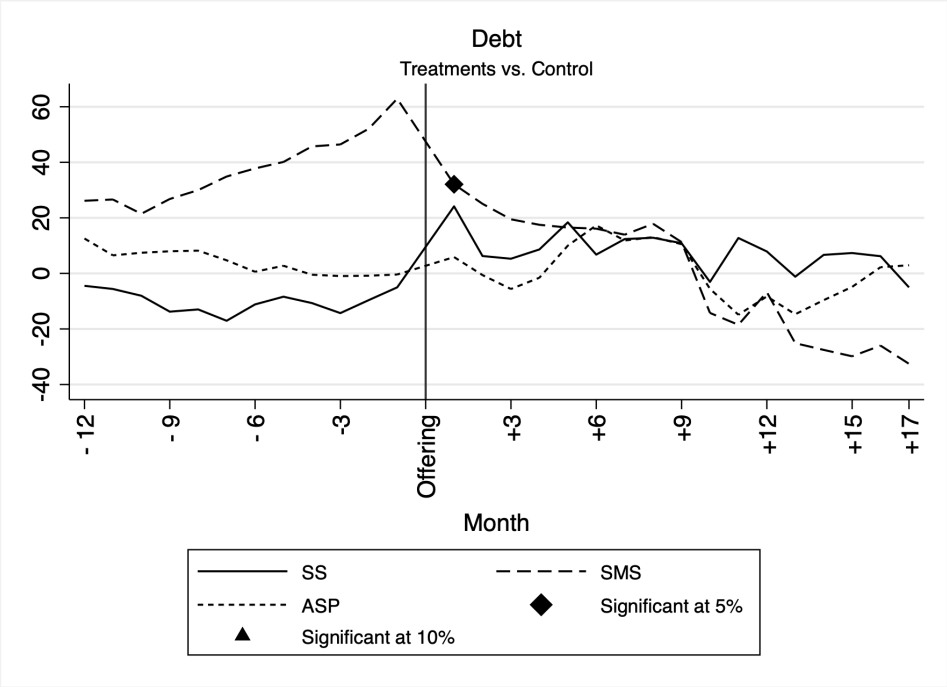


Panel C: Total Balance (Savings and *CuentaRUT* Accounts)



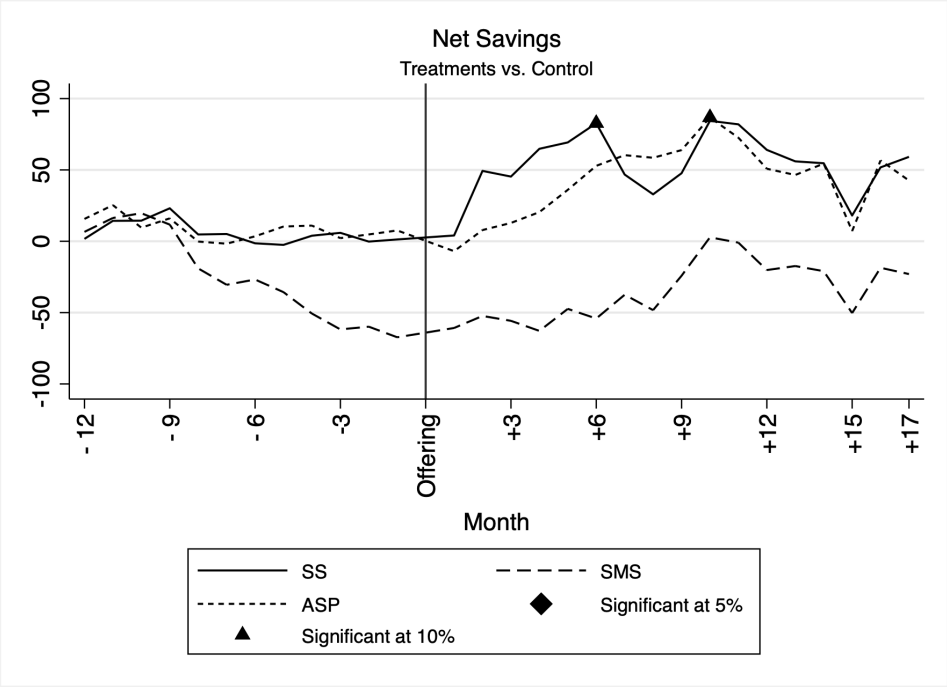
Note: General notes from Figure A1 apply.

Figure A3: Total Debt



Note: The figure reports coefficients from the regression of balance in debts on treatments. Balance in debts is measured in real US dollars based on the exchange rate for September 2014 and top-coded at 99%. General notes from Figure A1 apply.

Figure A4: Net Savings



Note: The figure reports coefficients from the regression of balance in debts on treatments. Net savings is measured in real US dollars based on the exchange rate for September 2014, top-coded at 99% and also bellow-coded at a 1%. General notes from Figure A1 apply.

ANNEX 2
BRANCH SELECTION

This experiment was implemented in 23 BancoEstado branches located in vulnerable urban municipalities in the Metropolitan Region of Chile. The research team determined the number of branches based on the number of participants needed to conduct the experiment as well as budget requirements. The research team and BancoEstado selected the branches based on the following four criteria: (1) location in a vulnerable municipality, measured by the Social Priority Index 2014, (2) location in Santiago de Chile, (3) the presence of a maximum of two BancoEstado branches in each municipality, and (4) BancoEstado's approval. An explanation of each criteria is below:

1. *Vulnerability*

All branches are located in highly vulnerable municipalities and were chosen based on the Social Priority Index 2014,[32] which the Ministry of Social Development has computed since 1995. The index considers income, education, and health to define municipalities' level of social development and is used to target social assistance across municipalities. The Social Priority Index classifies the municipalities into five categories:[33] "High Priority," "Medium-High Priority," "Medium-Low Priority," "Low Priority," and "No Priority."

2. *Branch located in Santiago City*

The Metropolitan Region of Chile is made up of 6 provinces: Chacabuco, Cordillera, Maipo, Melipilla, Talagante, and Santiago.

3. *Maximum of two branches per municipality*

BancoEstado is a state-owned bank that is present throughout Chile, especially in areas where the low-income population resides. Any given municipality has up to 18 BancoEstado branches. In order to increase the external validity of our evaluation, we selected up to 2 branches per municipality.

4. *BancoEstado's selection and approval*

The research team sent BancoEstado a list of municipalities with the highest Social Priority Index 2014 (i.e., high or medium priority). BancoEstado then provided information about the branches in these municipalities, including their addresses and the number of initial branch service associate at each branch. Based on this information, the research team selected 32 branches, focusing on those that have more initial branch service associate as an indicator of the number of clients, and sent the preliminary list to BancoEstado for approval.

BancoEstado subsequently selected 23 municipalities from this list based on the willingness of the different branches to participate in the evaluation, whether branches were already participating in another program, the branches' internal workflow, client influx, and branch capacity.

Table A2.1 shows the final list of branches and the corresponding number of branch associates who participated in the program.

[32] "Índice de Prioridad Social de Comunas 2014, Región Metropolitana," Ministerio de Desarrollo Social.
[33] The Priority Social Index 2014 classified 14 municipalities as "High Priority," 23 as "Medium-High Priority," 9 as "Medium-Low Priority," 3 as "Low Priority," and 3 as "No Priority."

Table A2.1: Branches Selected

Social Priority Index 2014 Classification	Municipality	Branch Name	Number of Participating Branch associates
High Priority	Renca	Santiago Panamericana Norte	1
High Priority	Renca	Santiago Renca	2
High Priority	Cerro Navia	Santiago Cerro Navia	1
High Priority	Lo Prado	Santiago Lo Prado	2
High Priority	Conchali	Santiago Conchali	2
High Priority	Conchali	Conchali El Cortijo	1
High priority	La Granja	Santiago Santa Rosa	2
High Priority	San Bernardo	San Bernardo Eyzaguirre	1
Medium-High Priority	Recoleta	Santiago Recoleta	2
Medium-High Priority	Recoleta	Santiago Av. Mexico	2
Medium-High Priority	Estacion Central	Estacion Central Las Rejas	1
Medium-High Priority	Pedro Aguirre Cerda	Santiago Jose Maria Caro	1
Medium-High Priority	Quinta Normal	Santiago Quinta Normal	2
Medium-High Priority	Independencia	Santiago Independencia	2
Medium-High Priority	Puente Alto	Puente Alto	2
Medium-High Priority	Puente Alto	Puente Alto Plaza	1
Medium-High Priority	Huechuraba	Santiago Huechuraba	1
Medium-High Priority	Cerrillos	Santiago Los Cerrillos	1
Medium-High Priority	Peñalolen	Santiago Penalolen	2
Medium-Low Priority	La Cisterna	Santiago La Cisterna	2
Medium-Low Priority	Macul	Santiago Macul	2
Medium-Low Priority	San Miguel	Santiago San Miguel	4
Medium-Low Priority	La Florida	Santiago La Florida	4

In December 2015, the Santiago Panamericana Norte branch (Renca Municipality), the San Bernardo Eyzaguirre branch (San Bernardo Municipality), and the Santiago Santa Rosa branch (La Granja Municipality) were removed from the evaluation. The research team and bank staff made this decision based on the low number of participants at these branches and the branch associates' unwillingness to participate. We chose the following three branches as replacements.

Table A2.2: Replacement Branches

Social Priority Index 2014 Classification	Municipality	Branch Name	Number of Participating Branch associates
Medium-Low Priority	Maipu	Maipu	4
Medium-Low Priority	Maipu	Maipu Vespucio	2
Medium-Low Priority	Santiago	Santiago San Diego	1

ANNEX 3
ENROLLMENT PROCESS

Program implementation was made possible through collaboration with BancoEstado, particularly its branches and branch associates. At every branch, BancoEstado has branch service associates that fulfill different roles: initial associates, credit associates, and cash associates, among others. The initial branch associates open savings and *CuentaRUT* accounts, credit branch associates process loans, and cash branch associates are cashiers.[34] Only initial branch associates participated in the enrollment process. Their participation was voluntary but encouraged by the BancoEstado's central offices.

Bank staff directly invited the branch operations managers[35] to participate in this study, and the operations managers subsequently informed the branch employees. The research team developed and led training sessions with coffee breaks and gave the branch service associates boxes of chocolate with the project's logo in order to thank them and encourage their participation.[36]

The fieldwork for this project was carried out in three stages: branch service associates training, the enrollment process, and data collection. Each stage is described below.

1. Training

The research team designed and led 10 training sessions for the branch associates from the different branches. These sessions lasted approximately two hours.

The training sessions included a:

a. Presentation of the intervention: the field manager presented the program, its objectives, purpose, and the implementation process. At the beginning of the training, high-ranking managers showed a motivational video that they had made in order to show BancoEstado's commitment to the study.
b. Description of the offer process: each step of the offer process was explained in detail. Particular emphasis was placed on the associates´ role in the process.
c. Tablet device operation instruction: The field manager explained how to operate the tablet (e.g., how to turn it on and off, open the program, save the survey, etc.), and a member of the research team assisted the branch service associates in practicing how to use the device correctly by following the field manager's instructions.
d. Practical role-playing exercise: The branch service associates then simulated the program offer by alternately playing the roles of branch service associates and client.

Training took place one week before the offer process was launched.

[34] Depending on the size of the branch, a branch service associates can take on multiple roles (e.g., initial and credit branch service associates duties).
[35] Every branch has an operations manager who is in charge of the branch's communication and coordination with the BancoEstado's central offices.
[36] In addition, the research team developed a reception at each branch in January 2016 in order to thank branch service associates for their participation and show appreciation for their involvement in the enrollment process.

2. The Enrollment Process

We used a tablet in the offer process. The tablet contained the following content: a one-minute introduction video, a baseline survey, and a program to randomize the treatment assignment. It also had an educational video for the Savings Strategies (SS) treatment arm. The initial offer process involved the following steps:

- The client entered the branch and waited for his turn with the branch associate.[37]
- The branch associate determined if the client was a potential participant. A potential participant had to be a BancoEstado client who is 18 years of age or older and had "intentions to save," which were determined by whether the individual had a savings account, had come to the branch to open one, or had mentioned to the branch associate the desire to start saving money.
- The branch service associates explained the program and invited the client to participate.
- If the client agreed to participate, the branch associate explained the content of the consent form.[38] The potential participant signed the consent form.
- The branch associate gave the tablet to the participant, waited until the participant had finished watching the introduction video,[39] and then assisted him/her with the baseline survey.
- After finishing the survey, the participant handed the tablet back to the branch associate, who then verified to which treatment the participant had been assigned.
- If the client agreed to participate in the program, then the branch service associates opened a savings account or *CuentaRUT* account (or both) for the client, depending on the client's wishes. If the individual had both types of accounts, then no account was opened unless the client requested a new one. The account opening process took place at the same time as the offer process. For example, while the participant filled out the survey, the branch associate opened the account(s). At the end of the offer process every participant had to have a savings account and *CuentaRUT* account.
- The branch service associates checked the tablet to see whether the participant was assigned to one of the in situ treatments and, therefore, should be invited to the automatic savings program or shown the educational video. If the client was not assigned to either of these treatments, then the branch service associates proceeded to open the account that the customer wanted and give him/her the small gift (a recyclable bag and a small box with six pencils that cost approximately $1.00 USD).

By December 2015, after 2 months of promoting enrollment, we had not yet met our enrollment goal. In order to speed up the enrollment process, we recruited

[37] Usually there was a line of people waiting at each branch because the clients outnumbered the branch service associates.

[38] The Informed Consent form is a physical document that allows the research team to receive all of the participants' de-identified bank information and data.

[39] The video explained the project and its objective as well as the partnership between BancoEstado and the research team. It indicated that participation was voluntary, free, and that the participant could withdraw from the study whenever he or she wanted. It also explained that the participant had to take a baseline survey and that the branch associate would indicate what steps to follow.

enumerators/monitors to help at 11 branches that have greater client flow.[40] monitors assisted the branch service associates at the bank branches by approaching the clients in the waiting area, encouraging them to participate in the project, and assisting them in using the tablet. The new offer process with monitors involved the following steps:

- The monitor approached a client in the waiting area and checked whether he/she was eligible to participate (same eligibility criteria as in the original process).
- If the client was eligible, the enumerator explained the program and invited him/her to participate. If the client agreed to participate, the enumerator gave him/her the Informed Consent form.
- Once the form was signed, the monitor gave the participant the tablet. The participant then watched the introduction video and filled out the baseline survey.
- After completing the survey, the participant returned the tablet to the enumerator who then checked the tablet to find out to which treatment the participant has been assigned.
- The monitor gave the participant a "treatment card" with a number that indicated the treatment assignment.[41] The monitor also asked the participant to keep the card and give it to the branch service associates once the branch service associates was available to attend to him/her.
- If the individual was assigned to the saving strategies treatment arm, then the monitor gave him/her the tablet to watch the video about that treatment arm.
- Once the branch service associates met with the participant, he/she looked at the number written on the treatment card, proceeded to explain the treatment to which the participant was assigned (just like in the original enrollment process), and then gave the participant a gift.

Program presentation video transcript

- Hi! "Peso a Peso [Penny by Penny], start saving" is a research project developed by The Pontifical Catholic University of Chile in collaboration with BancoEstado. Our goal is to investigate how to improve savings in Chile, and we hope to do this by measuring the effects of different tools that may help you increase your savings.

- Am I required to participate in this study?

- Participation is voluntary and absolutely free.

- How does the study work?

- After watching a video, you complete a survey, and then an branch service associates will inform you of the next steps.

- How will you benefit from participating in this project?

[40] The monitors were economics, sociology, or social work students. Nine monitors worked in January and February, seven in March, and eight in April.

[41] The treatments and their corresponding numbers were ASP = 1, SMS = 2, SS = 3, Control = 4.

- This project will help people like you increase your savings. Also, by participating you will get to know more about savings in Chile.

- Your collaboration is crucial to the success of this project!

- "Peso a Peso, start to save" and make your dreams come true.

3. Data Collection

During the third phase of the fieldwork, the research team collected data from the branches. Due to confidentiality, the team did not have access to the clients' RUT (National Identification Number); consequently, BancoEstado collected each individual's information provided via the RUT, replaced the RUT and identifying information with a non-identifying study ID, and then sent the information, including the baseline survey responses and Informed Consent forms, to the research team.
The research team collected the process documents used to monitor the intervention, which consisted of a worksheet completed by the branch service associates, the automatic savings confirmation (physical document), treatment cards, and the interviewers' logbooks. The information contained in these documents did not include RUTs. A more detailed explanation follows.
3.1. The bank followed the following protocol for data collection:

- The branches administered the baseline survey, which asked for personal identification numbers (RUT), via the tablet and collected the information using SurveyCTO Collector.[42] The program was configured to automatically send survey information to the SurveyCTO server once the tablet was connected to the internet. Only the bank could access the data via a secure password on the SURveyCTO server.
- Members of the research team visited the branches once a week and connected the tablets to the internet via Wifi. The information on the tablets was then automatically sent to the SurveyCTO server. The field coordinator of the research team also contacted the BancoEstado central offices to ensure that BancoEstado received the information.
- Branch staff collected the completed Informed Consent forms every week at the braches. The consents were then manually typed and scanned at the bank's central offices. In this process, the RUTs were digitally erased, and this data was then merged with the survey.
- The staff at the BancoEstado's central offices replaced the participants' personal identifiers (RUT) with a non-identifying study ID and then sent the de-identified baseline information to the research team.
- The bank scanned the consents, digitally erased the RUT, and sent them to the research team every two weeks.

3.2. The research team followed the protocol below for the data collection:

[42] SurveyCTO Collector is an Android application that gathers and encrypts the information that is input into the tablet.

- During the offer process, branch associates recorded enrollment details(date, participant's name, treatment assignment, etc.) in a workbook. The branch service associates also filled out a form with the automatic saving information, indicated if the participant was assigned to the treatment as well as whether the participant agreed to have an automatic savings program with BancoEstado. Neither forms of documentation contained the participants' RUTs, so the research team was authorized to collect this data.
- Enumerators assisted during the enrollment and filled out the treatment card and a logbook with data about the enrollment process (date, participant's name, and treatment assignment). Neither forms of documentation contained the participants' RUTs; instead, each participant was identified by a unique study ID number.
- Members of the research team visited the branches once a week in order to collect all the documents and send them to the central research team's offices.
- The research team typed and scanned the documents and used the information to monitor the process. For example, the team checked the number of participants reported by the branch associates against the worksheets and the Informed Consent forms.

ANNEX 4

BANCOESTADO SAVINGS ACCOUNTS

BancoEstado offered four types of savings accounts when this study was being conducted. For the purposes of this study, however, we were unable to distinguish between these types of savings accounts because the data available to us grouped all of the savings accounts together.

4.1. *Cuentas de Ahorro Niño*

The *Cuentas de Ahorro Niño* is a savings account in Chilean pesos (CLP) with annual interest rates. Those who wish to open this account must make a minimum deposit of approximately $8.00 USD and are not required to have a savings record (i.e., a notebook with a record of all deposits and withdrawals). If a person does not have a savings record, however, then the interest rate is higher. Account holders can make withdrawals of up to 30 Unidad de Fomento (UF)[43] (approximately $1,200.00 USD) every day. If the account holder wishes to withdraw more, then he/she must notify the bank 30 days prior to the withdrawal. Account holders can make two free withdrawals every year. If an account holder does not make any withdrawals and has a savings record, then the interest rate for this account is 3.08%. If the account holder does not have a savings record, then the interest rate for this account is 3.74%. If the account holder makes one or more withdrawals, then the interest rate is 2.80% with a savings record and 3.40% without a savings record. There is no maintenance cost for this account.

4.2. Cuenta de Ahorro Estudio Seguro

This type of savings account is in UF. The purpose of this account is to finance the higher education of young students up to 16 years of age. Individuals can open this account with or without a saving record, but the interest rate is higher in the latter case. If the interested party has a savings transaction record, then the interest rate is 1 UF plus 0.5%. If the account holder opens the account without a savings transaction record then the interest rate is 1 UF plus 0.6%. When opening this account, the account holder must choose an amount between 50 UF and 1000 UF, which must be deposited in installments during a predetermined period. Account holders can make withdrawals of up to 30 UF[44] (approximately $1,200.00 USD) every day. If they wish to withdraw more than 30 UF, then they must give the bank at least 30 days notice before the withdrawal. The account also allows clients to make six free withdrawals without any adjustment to their interest rate during the year if they have maintained their balance for at least 90 days.

4.3. *Cuentas de Ahorro Multipropósito*

4.3.1 *Platino*

This type of account can be personal or shared with another person indefinitely. There is no maintenance cost for this account, which can be opened with or without a saving transaction record, but the interest rate is greater in the latter case. Those who wish to open this account must make a minimum deposit of approximately $8.00 USD.

[43] *Unidad de Fomento* (UF) is a monetary unit used in Chile, and its value of which fluctuates based on inflation.

There are three version of this account:

- ***Ahorro Platino con Giro Diferido***: This account allows the holder to make withdrawals of up to 30 UF on a daily basis. The holder can withdraw more than 30 UF if he/she notifies the bank at least 30 days before the withdrawal. With a savings transaction record, the interest rate is 2.6% and 3.2% without.

- ***Ahorro Platino con Giro Incondicional***: Withdrawal amounts from this account are unlimited. An account holder can make up to six withdrawals each year without losing interest. With a savings transaction record, the interest rate is 1.9%, and 2.3% without.

- ***Ahorro Platino con Giro Condicional***: This account allows its holder to specify a special condition that must be met in order to withdraw deposited funds.

4.3.2 *Máxima*

This is a personal account that pays an annual interest rate. Those wishing to open such an account can do so with or without a savings transaction record, but the interest rate is higher in the latter case. Account holders can make withdrawals of up to 30 UF on a daily basis or more if they notify the bank at least 30 days before the withdrawal. They can also make two free withdrawals during the year. If the account holder makes one or no withdrawals during the year, then the bank pays an additional interest rate. If the account holder does not make any withdrawals, then the interest rate is 2.80% with a savings record and 3.40% without. If one or more withdrawals are made the interest rate is 2.60% with a savings transaction record and 3.20% without. There is no maintenance fee for this account.

4.3.3 *Premium*

This type of savings account is in UF and lets account holders make withdrawals of up to 30 UF[45] (approximately $1,200.00 USD) or more every day if they notify the bank at least 30 days before the withdrawal. Moreover, it pays interest and readjusts the interest rate annually if account holders maintain their balance for at least 90 days. This account also allows clients to make three free withdrawals during the year. If an account holders does not withdraw any amount from the account or only make one withdrawal, the bank pays the account holder an additional increased interest rate for up to three consecutive cycles. If the account holder does not make any withdrawals during the first year, then the interest rate is 1 UF + 0.40% with a savings record and 1 UF + 0.50% without. In the second year, the interest rate is 1 UF + 0.60% with a savings transaction record and 1 UF + 0.70% without. In the third year, the interest rate is 1 UF + 0.70% with a savings transaction record and 1 UF + 0.80% without. If one or more withdrawals are made, then the interest rates are 1 UF + 0.60% with a savings transaction record and 1 UF + 0.3% without.

4.3.4. Savings Accounts for Housing Subsidies

This individual savings account in UF is necessary to apply to receive housing subsidies. It accrues an annual interest and readjusts for deposits saved in this account for more than 90

days. Account holders can make withdrawals of up to 30 UF (approximately $1,200.00 USD) or more every day if they notify the bank 30 days before the withdrawal.

In order to open this account, an account holder must make a minimum deposit of approximately $20.50 USD and must not have other savings accounts for housing in the financial system. An individual can open this account with or without a savings transaction record, but the interest rate is greater in the latter case.

ANNEX 5

THE TREATMENTS

This evaluation includes a control group and the following three treatments: an automatic savings plan (ASP), SMS reminders (SMS), and a set of savings strategies (SS) aimed to reduce spending on temptation goods. A more comprehensive explanation of the treatments follows.

5.1 Treatment 1: Automatic Savings Plan (ASP)

This treatment consists of offering bank clients the already-existing product automatic savings program (ASP) through BancoEstado. The treatment consists of offering the product, and not the product itself. If a participant assigned to another treatment arm asked to be enrolled in the ASP, then the branch associate proceeded with the enrollment according to bank protocol.

The ASP automatically transfers a specific amount of money from the participant's bank account to his/her savings account every month. Individuals can determine and specify the transfer date and amount. While there is no operational minimum, branch associates are instructed to set the minimum at 5,000 CLP per month (approximately $8.00 USD). However, after considering the vulnerability of the program's target population, the amount changed to a minimum of $1,000 CLP (approximately $1.50 USD) for program participants. The ASP itself is free to the client.

If, after one month, the amount in the bank account is less than the automatic transfer amount specified, the transaction is not made and does not accumulate for the next month.

For the first two months of the intervention, individuals assigned to this treatment arm could practice a savings planning exercise on the tablet before being offered the ASP. In this exercise, the participant indicates the amount he/she wants to save and the period in which he/she wants to achieve the goal. In response, the savings planning exercise showed the individual how much he/she should save daily, weekly, and monthly to reach his/her goal by the stipulated deadline. This planning tool was eliminated in December 2015, when, due to logistics, we incorporated enumerators in the offer process instead.

5.2 Treatment 2: Short Message Service (SMS)

In this SMS treatment, participants were sent monthly personalized (e.g., included the participant's name) SMS message reminders of the savings goals that they indicated in the baseline survey.

One of the questions contained in the baseline survey was, "What is your main reason for saving? (Mark only one option)." Participants had to choose one reason for saving among 17 options. The 17 options are as follows: (1) Contingencies (emergency, unemployment, sickness, funeral costs, or others), (2) Old age, (3) Medical or dental treatment, (4) Home extension or repairs, (5) Vacations, (6) Begin or improve business, (7) Having children, (8) Own education, (9) Children's education, (10) Home items, (11) Presents (Christmas, birthdays, anniversaries, baptisms, other), (12) Purchasing a home, (13) Car or motorcycle, (14) Electronic personal items (cellphone, tablet, console, etc.), (15) Weddings or other events (Baptisms, graduations, birthdays, anniversaries, other), (16) Other reasons, and (17) To have savings.

Thirteen messages were sent to each SMS treatment participant between November 2015 and April 2017. The first SMS was a welcome message that reminded participants about

the program. The remaining messages were related to their savings motive. The research team sent the SMS messages using a mass text messaging internet page. The participants received the first message approximately one month after they were invited to participate in the program.

The SMS messages were sent on the first Monday of every month. On the following day, the research team downloaded the message reports from the internet[46] and forwarded the messages that were not received. A second attempt to forward the messages was made one day later. After the three attempts at sending a message on three consecutive days, the research team could obtain the final message reception rate. The average reception rate was 70%.

Table A5.1 presents the monthly SMS messages that were sent to participants of Treatment 2.

Table A5.1: SMS Treatment

Savings Goal	SMS
Unexpected expenses (emergencies, unemployment, funeral, among others)	[Name], remember to make a deposit into your savings account this month. Get closer to reaching your savings goal for unexpected expenses! Greetings, BancoEstado.
Retirement	[Name], remember to make a deposit into your savings account this month. Get closer to reaching your savings goal for your retirement! Greetings, BancoEstado.
Medical/dental treatment.	[Name], remember to make a deposit into your savings account this month. Get closer to reaching your savings goal for medical or dental treatments! Greetings, BancoEstado.
Remodel/expand home	[Name], remember to make a deposit into your savings account this month. Get closer to reaching your savings goal for fixing up your home!

[46] The website allows users to download the status of each message (i.e., whether or not it was received).

	Greetings, BancoEstado.
Vacation	[Name], remember to make a deposit into your savings account this month. Get closer to reaching your savings goal for vacation! Greetings, BancoEstado.
Initiating or improving your own business	[Name], remember to make a deposit into your savings account this month. Get closer to reaching your savings goal for your own business! Greetings, BancoEstado.
Having children	[Name], remember to make a deposit into your savings account this month. Get closer to reaching your savings goal for having children. Greetings, BancoEstado.
Participant's education	Name], remember to make a deposit into your savings account this month Get closer to reaching your savings goal for your education! Greetings, BancoEstado.
Children's education	[Name], remember to make a deposit into your savings account this month. Get closer to reaching your savings goal for your children's education! Greeting, BancoEstado.
Household items	[Name], remember to make a deposit into your savings account this month. Get closer to reaching your savings goal for household items! Greeting, BancoEstado.
Gifts (Christmas, birthdays, anniversary, weddings, among others)	[Name], remember to make a deposit into your savings account this month. Get closer to reaching your savings goal for gifts! Greetings, BancoEstado.
Purchasing a home	[Name], remember to make a deposit into your savings account this month. Get closer to reaching your savings goal for purchasing a place of your own! Greetings, BancoEstado.
Purchasing a car/motorcycle	[Name], remember to make a deposit into your savings account this month. Get closer to reaching your savings goal for purchasing your own vehicle! Greetings, BancoEstado.
Electronic devices (cellphone, tablet, game console, among others)	[Name], remember to make a deposit into your savings account this month. Get closer to reaching your savings goal for your own electronic device! Greetings, BancoEstado.

Celebration (wedding, graduation, birthday, among others)	[Name], remember to make a deposit into your savings account this month. Get closer to reaching your savings goal for your own celebration! Greetings, BancoEstado.
Others/have savings	[Name], remember to make a deposit into your savings account this month. Get closer to reaching your savings goal! Greetings, Banco

5.3 Treatment 3: Savings Strategies (SS)

The SS treatment is a four-part treatment focused on strategies to save based on lowering one's consumption of temptation goods. This treatment consists of (1) an animated video with strategies, (2) a savings kit with reminders of the strategies, (3) a calendar with messages referring to the strategies, and (4) SMS message reminders of the strategies. A more detailed explanation of each part is below.

- *Strategies Video*

This treatment begins with a 3:26 minute video shown on a tablet during the enrollment process. Participants used headphones while watching the video. The video showed five strategies to help people lower their consumption of temptation goods. The research team developed these strategies in consultation with a psychologist. The video is available at: https://sites.google.com/site/clpmartineza/projects.

The five strategies are: 1) identify temptations, 2) calculate how much it is possible to save in a year by decreasing unnecessary expenses, 3) determine a concrete goal, 4) develop a budget plan and remember that it is not necessary to cut out all expenses related to temptation goods, and 5) save money in the bank.

The video transcript is below.

Video Script

"… Maybe you are wondering how to save money every month when it seems at times that you only have enough money to get by for one month. Don't worry! Here you can learn simple strategies to make saving money easier.

These strategies will help you save money by decreasing unnecessary expenses that you incur without even thinking.

There are five keys to saving money by decreasing your spending on temptation goods.

Key 1: Identify your temptations.

Start by writing down what temptation goods you spend your money on.

To do this, think about your small daily expenses, for example: drinks, beer, cookies, chocolates, sweets, ice cream, cigarettes, gambling, and snacks, among other things.

Key 2: Calculate how much can you save in one year if you decrease these unnecessary expenses.

Calculate approximately how much you spend per week on daily pleasures. For example, if you used to spend $300 weekly on drinks, beer, sweets, or gambling, then this turns out to be $15,600 in a year!

If you spend $50.00 weekly… That is $2,400.00 per year!

Key 3: Encourage yourself by making a concrete goal!

To decrease these expenses, the best thing to do is to set an achievable goal, but one that is strong enough to help you overcome any temptation.

Therefore, not only think about how much money you will save, but what you want to do with that money.

Maybe your goal is to save money for a house, your kids' education, or some another specific thing.

Key 4: It is not necessary to cut out all temptation goods. It is simply enough to decrease spending on them and plan for the other things you would like to have.

Even if you save money, sometimes you just want to treat yourself. Therefore, plan to give yourself a monthly allowance to spend on temptation goods.

For example, buy a drink only on the weekend, or determine a maximum amount of money per week that you will let yourself spend on the things you enjoy. This way, you can treat yourself without feeling guilty or compromising on your resolve to save.

Key 5: Save your money in the bank.

If you have your savings on hand, you are more likely to spend it before you reach your goal. Therefore, we recommend saving your money in a bank account every month, even if it is just a small amount.

Also, remember that you have different alternatives when it comes to saving your money in the bank: the Internet, any CajaVecina, ServiEstado, or a bank branch.

If at any point you do not follow your plan, do not be discouraged! Things happen…

Once you start saving, it is always easier to get back on track.

Along with providing these five keys to avoid unnecessary spending on temptation goods, this program seeks to support your resolve to save money, give you a few products that will be useful to remember about your savings goal, and provide strategies on how to achieve it.

Also, in order to help you save money, we will send you a monthly SMS message to remind you of the strategies.

Peso a Peso [Penny by penny], start saving! … Make your

dreams come true!

- *Savings Kit*

After the participants watched the video, the branch service associates gave them a savings kit. The kit contained a magnet, a credit card holder, and a calendar. The magnet was made up of five pieces, and each piece had one of the five savings strategies mentioned in the video. The credit card holder had the project's logo on it and was intended to serve as an item that the participants would use daily and, consequently, remember about their goals.

The magnet and credit card holder were given to the participants inside of a paper bag that had the project logo on it.

- *Calendar*

The desktop calendar served as a monthly reminder of the savings strategies presented in the video. A description of the calendar is below.

Cover page

Do you want to save but only have enough money to cover your expenses for a month?
We invite you to learn the simple strategy of decreasing spending on unnecessary things that you buy without even thinking—the dreaded temptation goods!

Peso a Peso, start saving! ... Make your dreams come true!

Back cover

Identify your temptations?

- What do you spend on temptation goods?
    - Everyday expenses that do not seem to cost too much.
- How much could you save in one year if you decreased your spending on temptation goods?
    - Calculate approximately how much you spend per week on temptation goods.
    - Then, check the table below to see how much you could save in one year if you eliminated those expenses.

Spending on temptation goods per week	In one year, I could save…
$1.500 CLP	$78.000 CLP
$3.000 CLP	$156.000 CLP
$5.000 CLP	$260.000 CLP
$6.000 CLP	$312.000 CLP
$10.000 CLP	$520.000 CLP
$15.000 CLP	$780.000 CLP
$20.000 CLP	$1.040.000 CLP
$25.000 CLP	$1.300.000 CLP

August 2015

Calculate… How much could you save in one year if you decreased your spending on temptation goods?

- How much do you spend on temptation goods?
-
    - Everyday spending on things that do not seem to be that expensive.

September 2015

Motivate yourself by setting a concrete goal!

- If you want to overcome temptations …
    - Motivate yourself with a concrete goal.

October 2015

It is not necessary to eliminate all spending on temptation goods; it is simply enough to decrease such spending and plan ahead if you want to treat yourself.

- Do not be discouraged if you spend more than you planned in a given month!
    - Once you start saving, it is always easier to get back on track if you fall off the bandwagon.

November 2015

Save money in a bank account.

- In order to avoid the temptation to spend your savings, keep your money in the bank!
    - You have different alternatives for saving money in the bank: the Internet, any CajaVecina, ServiEstado, or a bank branch.

December 2015

It is not necessary to eliminate all spending on temptation goods; it is simply enough to decrease such spending and plan ahead if you want to treat yourself.

- Remember, one strategy to save is to decrease spending and plan your expenses on temptation goods ahead of time. In this way, you do not necessarily have to eliminate temptation goods altogether.
    - This month we recommend setting aside a certain amount of money for gifts and celebrations in order to avoid the temptation to spend more than you can afford!

January 2016

Motivate yourself by setting a concrete goal!

- Sometimes it is hard not to be tempted to buy something that you do not really need.
    - Remembering your concrete goal could be help you avoid this.

February 2016

Calculate… How much could you save in one year if you decreased your spending on temptation goods?

- Calculate how much you could save in one year if you decreased your spending on temptation goods.
    - You can save your money in the bank using the internet, any CajaVecina, ServiEstado, or a bank branch.

March 2016

It is not necessary to eliminate all spending on temptation goods; it is simply enough to decrease such spending and plan ahead if you want to treat yourself

- To save does not mean that you cannot treat yourself!
    - The important thing is to decrease spending and plan your expenses on temptation goods ahead of time. In this way, you do not necessarily have to eliminate temptation goods altogether.

April 2016

Save money in a bank account.

- If you have your savings on hand…
    - You are more likely to spend it before you reach your goal.
    - Therefore, keep your savings in the bank.

May 2016

Calculate… How much could you save in on year if you decrease your spending on temptation goods?

- Spending money on candy and soda can appear to be minimal, but those expenses add up.
    - We recommend that you to calculate how much you spend on these kinds of products in one year.

June 2016

Motivate yourself by setting a concrete goal!

- What is your savings goal?
    - Remember what you are saving for! In this way, is easier to resist the temptation to spend money on sodas or other things every day.

July 2016

Save money in a bank account.

- In order to avoid the temptation to spend your savings, save your money in a bank account!
    - To save your money in the bank, you have different alternatives: the Internet, any CajaVecina, ServiEstado, or a bank branch.

August 2016

Calculate… How much could you save in on year if you decreased your spending on temptation goods?

- How much do you spend on temptation goods?
    - Everyday expenses that do not seem to cost that much.

September 2016

Motivate yourself by setting a concrete goal!

- If you want to overcome temptation …
    - Motivate yourself by setting a concrete goal.

October 2016

Calculate… How much could you save in one year if you decreased your spending on temptation goods?

- Do not be discouraged if you fail to follow your savings plan!
    - Things happen!
    - Do not forget that once you start saving, it is always easier to get back on track if you fall off the bandwagon.

November 2016

It is not necessary to eliminate all spending on temptation goods; it is simply enough to decrease such spending and to plan ahead of time if you want to treat yourself.

- To save does not mean that you cannot treat yourself!
    - The important thing is to decrease and plan your spending on temptation goods. You do not necessarily have to eliminate them.

December 2016

Save money in a bank account.

- If you have your savings nearby on hand…
    - You are more likely to spend it before you reach your goal.
    - Therefore, it is very helpful keep your savings in the bank.

January 2017

Motivate yourself with a concrete goal!

- Do not be discouraged if you spend more than you planned in a given month!
- Once you start saving, it is always easier to get back on track if you fall off the bandwagon.

- *Text messages*

Monthly text messages (SMS) were sent to the participants' cellphones with the saving strategies shown in the video and the advice in the calendar. The research team developed the content of the messages with the help of a team of psychologists.

Thirteen personalized SMS messages that included the participant's name were sent to each participant. The first SMS contained a welcome message reminding the participant about the program. All other messages included savings strategy reminders. The research team sent text messages from November 2015 to April 2017 by using a mass text messaging system on the Internet and keeping the staggered enrollment process in mind. The participants received the first message approximately one month after agreeing to participate in the intervention.

The research team sent the text messages on the first Monday of every month. The following day the research team downloaded the message reports from the Internet and forwarded the messages that were not received. A second attempt to send unreceived messages was made the following day. After three attempts, the research team calculated the message reception rate.

The SMS messages that were sent to the participants every month are presented in table A.5.2.

Table A5.2: SMS Savings Strategies (Treatment 3)

Month	SMS
November 2015	[Name], if you want to save, then depositing money in the bank will help you to avoid the temptation to spend it. BancoEstado.
December 2015	[Name], if you want to save, then remember to reduce spending and plan your expenses. BancoEstado.
January 2016	[Name], if you want to save money, but it is difficult to avoid the temptation to spend, then it helps to remember about your savings goal. BancoEstado.
February 2016	[Name], if you want to save money, then remember that spending $4,000 weekly on unnecessary expenses or temptation goods adds up to $208,000 per year. BancoEstado.
March 2016	[Name], if you want to save money, then remember that it is important to reduce and plan your spending, rather than eliminating it altogether. BancoEstado.
April 2016	[Name], if you want to save money, then remember that it helps not to have too much cash on hand. To avoid this temptation, deposit it in the bank. BancoEstado.
May 2016	[Name], if you want to save money by reducing spending on temptation goods, then it is helpful to remember what you are saving for. BancoEstado.
June 2016	[Name], if you want to save money, then remember that spending $2,500 weekly on unnecessary expenses or temptation goods adds up to $130,000 per year. BancoEstado.
July 2016	[Name], if you want to save money, then it is helpful to avoid having cash on hand. That is why you should deposit it into your bank account. BancoEstado.
August 2016	[Name], if you want to save money, then calculating how much you can save in a year will help you reduce your spending on temptation goods. BancoEstado.
September 2016	[Name], if you want to save money by reducing spending on temptation goods, then think about your savings goal. BancoEstado.
October 2016	[Name], do not be discouraged if you have spent more than what you planned this month! Once you start saving, it is always easier to get back on track. BancoEstado.
November 2016	[Name], if you want to save, then regularly depositing money in your savings account will help you to avoid spending on temptation goods and reach your goal. BancoEstado
December 2016	[Name], if you want to save money, then remember to reduce and plan your spending. BancoEstado
January 2017	[Name], if you want to save, but it is difficult to avoid spending money unnecessarily, then it is helpful to remember what you are saving for. BancoEstado.
February 2017	[Name], if you want to save money, then remember that spending $4000 weekly on unnecessary expenses or temptation goods adds up to $208,000 in one year.

March 2017	[Name], if you want to save money, then remember that it is important to reduce and plan your expenses rather than eliminating them. BancoEstado.
April 2017	[Name], if you want to save, then it is helpful not to have cash on hand. That is why you should deposit it in your bank account. BancoEstado.

5.4 Control group

The participants assigned to the control group received only the small gift that was given to each participant in every treatment arm.

ANNEX 6

DATA

6.1 Products and Account Balance Data

The data contains all information regarding the financial products and accounts that each of the 6,242 participants holds in the bank and shows the average balance for every month considered in the study as well as the date on which the product was acquired. The information had to be sent one week after 3 months had passed since the first study participant was enrolled. The data considered information from 15 months before enrollment and from 18 months after the end of the treatment. At this point, BancoEstado has sent information from September 2014 to December 2016.

For our analysis, we classify balances into 4 different categories:

1) *Balances in Savings Accounts:* Considers traditional savings accounts, *Ahorro vista* accounts (used mainly for alimony), and accounts for housing subsidies.
2) *Balances in CuentaRUT Accounts:* This bank account does not pay interest and has no maintenance fee, but it has a withdrawal fee of $0.50 USD (from an ATM), $1.00 USD (at a branch), and all other transactions are free.
3) *Total Balances (Savings Accounts and CuentaRUT Accounts)*: The sum of the account balances of the savings accounts and *CuentaRUT* accounts (1+2).
4) *Debt Balances:* Consumption, education, and mortgage debts.
    a. *Consumption*: Includes any type of consumption credits and insurances associated with them.
        i. Commercial credits
        ii. Lines of credit (linked to commercial credit)
        iii. Consumption
        iv. Credit card debts
    b. *Education*: Considers education credits (with and without the state's guarantee).
    c. *Mortgage*: Considers mortgage credits.

All of the variables we use are generated for the five categories mentioned above. Particularly, we calculated the probability of having a positive balance in any of these products and the amounts associated to them 13 months before, and after the enrollment process. Since the offer was not made to all of the participants on the same day, there is more information on certain participants in some months and other participants in other months before or after enrollment. This information includes the following:

Probability: We define probability by having a positive balance in product X as a dummy variable that takes the value of 1 if the amount that appears in the data is greater than 0 and different from missing, or in any other case, the value of 0. When there is a missing value in product x in month y, and a positive value in month z, it means that the product was acquired in month z.

Amounts: These variables correspond to the sum of the amounts in each category. That is, we add up the amounts of the balances for each category and for each participant.

6.2. Bank Transaction Data

The data contains all transfers made by each of the 6,242 participants, the dates on which the transfers were made, the types of transfer, the product involved, and the channels used. Each line in the data represents a different transfer, so participants will not necessarily have the same number of observations. This information had to be sent one week after 3 months had passed since the first individual enrolled in the program. The data consider information from 13 months before enrollment and from 17 months after the treatment ended.

For the analysis of this data we consider only information regarding transfers made to and from *savings* and *CuentaRUT* accounts. Particularly, we consider the following categories:

1) *Savings Accounts*: Considers traditional savings accounts, *Ahorro vista* accounts (mainly used for alimony), and accounts for housing subsidies.
2) *CuentaRUT Accounts*
3) *Total Transactions*: Savings accounts and *CuentaRUT* accounts (1+2)

On the other hand, we also consider the following type of variables in our analysis: the probability of making a transaction, the number of transactions, and the amount of each transaction:

Probability: As in *Products data*, we worked with transactions greater than 0. That is, the probability of a positive transaction (deposits or withdrawals) is defined as dummy that takes the value 1 if the transaction is greater than 0, and the value of 0 otherwise.

Number*:* These variables correspond to the number of times the participant made a transfer related to one of the two categories considered. If the participant made five transfers using a *CuentaRUT* account, then the number of transfers associated with this individual's de-identified study ID is five.

Amounts*:* These variables correspond to the sum of the amounts in each category. That is, for both categories (savings account and *CuentaRUT* accounts) and for each participant, we add up the amounts of the transfers. For example, if a participant has 10 transfers related to savings in month x, we add up these amounts.

6.3 BancoEstado Administrative Data

The administrative data provided by BancoEstado shows all of the sociodemographic information and contact information that the bank collected from participants. Specifically, it includes information about: age, gender, education, occupation, marital status, cellphone number, and municipality. The data also includes information on the checking and savings accounts that participants opened, the dates on which the accounts were opened, as well as the amounts the participants deposited when they opened the accounts.

6.4. Baseline Survey Data

The participants completed the baseline survey on a tablet as part of the enrollment process. The data includes the participants' sociodemographic information, including: gender, age, income, education, occupation, people per household, and bank branch office.

6.5. Follow-Up Survey Data

A sample of 2,049 participants took the follow-up household survey. Variables included in the final data considered: savings, entrepreneurship, subjective well-being, financial perception, temptation good spending, and the probability of spending on savings goals.

ANNEX 7

THE TIMING OF TRANSACTIONS

In this appendix, we study if there is a correlation between the dates on which the text messages for the SMS and SS treatment arms were sent and the participants' transactions (deposits and withdrawals). To this end, we use the administrative transactions data provided by BancoEstado, since it contains all of the transfers that the participants made from September 2014 to September 2017, which is three years of data of all of their deposits and withdrawals.

Transactional daily data was collapsed by month and merged with project data of the day that each SMS reminder was sent. In total 12 SMS messages per participant were supposed to be sent. However, since the enrollment process lasted 8 months, the SMS messages were sent in 18 rounds. For example, the first SMS was sent on November 2, 2015, but only 14 SMS messages were sent on this date. The reminder of the participants received their first message on different dates. Table A7.1 reports the specific dates on which the SMS messages were sent. All of the participants received the messages in the same sequence. When they received these messages, however, depended on when they enrolled in the study.

Table A7.1

SMS dates

SMS number	Date
1	11-02-2015
2	12-07-2015
3	01-04-2016
4	02-01-2016
5	03-01-2016
6	04-04-2016
7	05-02-2016
8	06-06-2016
9	07-04-2016
10	08-01-2016
11	09-05-2016

12	10-03-2016
13	11-07-2016
14	12-05-2016
15	01-02-2017
16	02-06-2017
17	03-06-2017
18	04-03-2017

With this information, we generate a dummy variable that takes the value 1 if a transaction was made between 0 (the same day the SMS was sent) and 3 days after the text message was sent and the value of 0 in other cases.

This dummy is used as a dependent variable in the following equation:

$$Any\ transaction_i = b_0 + b_1 ASP_i + b_2 SMS_i + b_3 SS_i + a_1 X_i + u_i$$

where $Any\ transaction_i$ is a dummy variable that takes the value 1 if a transaction i was made between 0 and 3 days after the text message was sent. All regressions include dummies for strata (defined by the reception of subsidy and savings motive), fixed effects by the offer date, branch associate fixed effects, branch fixed effects, and a dummy indicating whether an enumerator or a branch associate recruited the individual. We also include the pre-treatment mean values of CuentaRUT, savings and debt balances because of unbalance. In addition, we include gender and per capita income because they are significant predictors for attrition in our sample We use robust standard errors.

The coefficients of interest are b_1 - b_3, which correspond to the treatment assignment. For example, a positive sign for b_1 means that there was an increase in the probability of making a transaction between 0 and 3 days after the text message was sent for those who received the ASP offer.

Table A7.2 presents estimates for withdrawals and Table 6.3 for deposits. For savings account deposits, we observe that all coefficients of the treatment assignment have the same sign, and it is only significant for ASP. This positive effect is consistent with ASP deposits being made in the first days in a month: for example, in March 2016, 50% of the ASP deposits in the control group were during the first 5 days of the month. Regarding withdrawals from savings accounts, the coefficients are positive for SS and SMS and negative for ASP. The

coefficients for CuentaRUT are all negative and significant, consistent with a decrease in withdrawals for all treatments at the beginning of the month.

Table A7.2 Withdrawals in the first 3 days after the text message

	[1] Savings Accounts	[2] CuentaRUT	[3] Savings Accounts+CuentaRUT
SS	0.001	-0.010**	-0.008
	(0.002)	(0.005)	(0.005)
SMS	0.004	-0.012**	-0.008
	(0.002)	(0.005)	(0.005)
ASP	-0.003	-0.014***	-0.016***
	(0.002)	(0.004)	(0.004)
Constant	-0.029***	0.078***	0.057**
	(0.011)	(0.027)	(0.028)
Observations	74,112	74,112	74,112
R-squared	0.014	0.046	0.046

Note: Columns [1] to [3] report the intent-to-treat (ITT) estimate and standard error (in parentheses) of the program assignment to each treatment arm on withdrawals in the 3 days after the text message was sent. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A7.3 Deposits in the first 3 days after the text message

	[1] Savings Accounts	[2] CuentaRUT	[3] Savings Accounts+CuentaRUT
SS	0.002	0.004	0.006*
	(0.003)	(0.003)	(0.004)
SMS	0.001	-0.003	-0.002
	(0.003)	(0.003)	(0.004)
ASP	0.014***	-0.003	0.009***
	(0.002)	(0.002)	(0.003)
Constant	-0.056***	0.046***	-0.005
	(0.013)	(0.017)	(0.021)
Observations	74,112	74,112	74,112
R-squared	0.018	0.015	0.020

Note: Columns [1] to [3] report the intent-to-treat (ITT) estimate and standard error (in parentheses) of the program assignment to each treatment arm on deposits in the 3 days after the text message was sent. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1