The Impact of Cash-Transfer Delivery Method on Savings Behavior: Experimental Evidence

Abhijit Banerjee Claudia Martínez A. Esteban Puentes*

Abstract

We examine the impact of offering conditional-cash-transfer beneficiaries the choice to receive cash transfers in bank accounts instead of cash. Specifically, we investigate how this option affects savings behavior and downstream outcomes such as assets and trust. We find overall positive effects on savings up to nine months after the offering, but no significant impact on downstream outcomes. Among individuals with nonpositive account balances prior to the offering, balances increased throughout the entire observed period (33 months post-offering), corresponding at month 12 to 0.6% of their annual income. These findings underscore the potential of using bank accounts to encourage savings, particularly for individuals with limited prior savings.

Keywords: financial access; banking accounts; savings
JEL Codes: G20; D14; E21

* Banerjee: MIT, banerjee@mit.edu; Martínez A.: IADB and PUC Chile, claudiam@iadb.org; Puentes: University of Chile, epuentes@econ.uchile.cl. We are grateful to Francisca Acuña and Maite Decouvieres from BancoEstado for their close collaboration in implementing the program and to Cecilia Vergara for her support. We are also grateful to Carolina Robino (IDRC), Carolina Trivelli (IEP), and Johana Yancari (IEP) for their support, and to Eduardo Fajnzylber for his comments. We also express our gratitude to Trinidad Moreno, Gabriela Jorquera, Nicolás Larrain, and Paula Espinoza for their essential assistance with the fieldwork, and to Cristian Jara, Selene Cuevas, and Antonia Riveros for their excellent research assistance. We thank the IDRC, IPA, and IDB Invest for their financial support. Martínez A. and Puentes are grateful for the funding provided by Fondecyt, project number 1140914. Regarding funding, Puentes is thankful for ANID—Millennium Science Initiative Program—Code: NCS17_015, and Martínez A. is thankful for Millennium Science Initiative Program—Center Code: 2021072. MIT IRB 1212005419. AEA RCT Registry 0002081. We used ChatGPT for some writing assistance.

1. Introduction

Low savings levels are prevalent worldwide, with 51% of adults not having saved in the last 12 months. This is particularly pronounced in developing countries, where only 42% of adults save compared with 76% in developed countries (Demirgüç-Kunt et al., 2022), and where individuals often confront limited financial resources without a robust safety net. Insufficient savings makes individuals more vulnerable and hinders their ability to invest and improve their financial well-being. Furthermore, a significant portion of the global population still lacks access to formal financial services, including bank accounts. In Latin America, for instance, while there is relatively high access to the formal financial sector, with 74% of individuals owning a bank account, only 18% of them use their accounts for savings (Demirgüç-Kunt et al., 2022). These findings underscore the need to address low savings rates and promote financial inclusion.

In collaboration with the Chilean government and BancoEstado, a state-owned bank, we evaluate a governmental initiative that transformed the payment method of transfers within the Chilean conditional cash transfer (CCT) program, Programa Puente (PP). Through random assignment, participants were divided into a treatment group and a control group. The treatment group was given the option to receive its transfers in a transactional bank account known as CuentaRUT. In contrast, individuals in the control group continued to receive their transfers in cash but had the opportunity to request a bank account for the disbursement. The experiment was conducted in Santiago from October 2012 to October 2013 and included 3,210 individuals.

We use high-frequency administrative data for 12 months before and up to 33 months after the offer was made, along with household survey data two to three years post-

intervention. The take-up rate of the program was 55%, and we find that for up to two years post-offering, the offering had positive effects on transactional account balances among the treatment group. It also increased these individuals' savings at the partner bank up to 6 months post-offering. However, there was no average impact on downstream outcomes such as assets and trust. Among the 17% of participants without positive account balances before the offering, savings increased by US $12 in the partner bank up to 33 months post-offering, corresponding to approximately 3.7% of total transfers received through PP. Balances increased not in the CuentaRUT accounts but in savings accounts, indicating a deliberate decision to use the best available savings instrument.

These results are most relevant in Chile, where, despite remarkable economic growth and a relatively developed financial system, in 2021 only 31% of the population aged 15 years or older and 27% of the poorest 40% had saved in a financial institution (Demirgüç-Kunt et al., 2022). In recent years, many countries have altered their cash-transfer payment systems to use bank accounts, driven by various factors that suggest potential advantages. For example, CCT programs in Brazil, Colombia, India, Indonesia, Mexico, and Peru now pay transfers through bank accounts. Paying transfers through bank accounts can enhance safety and reduce corruption risks as a step toward a secure payment infrastructure that decreases leakages (Muralidharan et al., 2014). Also, using bank accounts can offer faster and more cost-effective processing for the government. In Chile, there is no evidence of corruption or leakage in disbursement of transfers through cashier's offices. However, transferring money through bank accounts decreases government expenses by US $0.67 per transaction.

Third, bank account–based cash-transfer payments can provide convenience to recipients and reduce travel costs. Instead of dealing with cash, beneficiaries can access their

funds securely and conveniently through various banking channels, such as ATMs or online platforms, instead of traveling to payment centers (Dupas & Robinson, 2013). Bank payments also could help protect beneficiaries' savings from the demands of family or friends (Dupas & Robinson, 2013) and solve self-control problems—for example, by decreasing consumption of temptation goods (Bachas et al., 2021). Finally, adopting bank accounts for cash-transfer payments, or eventually for payment of all government subsidies, can promote financial inclusion. For individuals who previously lacked access to formal financial services, receiving transfers through bank accounts serves as a gateway to accessing a range of financial services, such as savings accounts, credit, and insurance products.

The literature finds that offering financial access has no effect or a small positive effect on savings (Bachas et al., 2021; Dupas & Robinson, 2013; Pomeranz & Kast, 2022; Prina, 2015). Furthermore, in Chile, the low take-up of savings accounts has prevented the evaluation of such offerings (Dupas et al., 2018). However, studies focusing on leveraging CCT programs to enhance financial outcomes (Aker et al., 2016 in Niger; Masino & Niño-Zarazúa, 2020 in Mexico) show potential positive impacts. Other studies highlight the positive effects of savings accounts' supplementary features, such as debit cards, commitment devices (Ashraf et al., 2006; Brune et al., 2017; Banerjee et al., 2023; Dupas & Robinson, 2013; Somville & Vandewalle, 2018), reminders (Karlan et al., 2016), and peer groups (Kast et al., 2018).

Our paper is consistent with both sets of results. We find no overall long-run effect on total savings of offering to send the transfers through bank accounts. But for the subgroup of participants who were not actively using accounts or did not have them, receiving the transfers through a bank account had a positive effect. Specifically, individuals who previously had positive bank balances increased their savings over time, independently of whether they were

offered the treatment. But for beneficiaries that did not have positive balances, only those who were offered the chance to receive their transfers on CuentaRUT increased their savings. The level of savings achieved by this group is less than a quarter of the level achieved by those that previously had savings. Furthermore, the increase in savings over time of the group with a previous positive balance is larger.

We make three contributions to the literature. First, we add new evidence from Chile to the scarce literature on the effect of bundling subsidies and bank accounts. Aker et al. (2016) use a randomized control trial in Niger to evaluate the effect of changing payments from cash to m-transfers, but in a different context (per capita GDP in 2021 was US $590 in Niger vs. US $16,265 in Chile[2]) and without a partnering bank that offers multiple financial services. Using survey data, they evaluate results only in the receiving account, not other accounts held by individuals. Our results, using survey and administrative data to study the intervention's impact in all bank accounts, show that incorporating a broad set of savings instruments is crucial in analyzing the program's effects. An earlier study (Masino & Niño-Zarazúa, 2020), using national survey data and a quasi-experimental design, found that adding electronic payments to Mexico's CCT program decreased informal savings and increased the use of savings to cope with shocks. Our use of administrative data and a designed survey instrument to test outcomes and mechanisms allows us to document the impact on formal and total savings.

Our second contribution concerns the scalability of savings-incentives interventions. We analyze an intervention based on an existing bank account and transfer program. This cost-effective intervention did not increase costs to the government but in fact decreased them,

[2] World Development Indicators, current US $.

and may have also decreased participants' transportation costs, making it scalable and sustainable. Third, we collect survey data to test different outcomes suggested in the literature. We find no effect of the program on informal savings, trust in the implementing bank, financial knowledge, expenditures on temptation goods, or fear of theft. However, we do observe an increase in knowledge of bank account costs.

The paper is divided into five sections. Section 2 describes the intervention, Section 3 describes the empirical strategy, Section 4 presents the results, and Section 5 concludes.

2. The Intervention and Experimental Design

A. The Chile Cuenta Program

Our evaluation focuses on Programa Puente, which targets the ultra-poor. Prior to our experiment, PP beneficiaries received their transfers in cash distributed by *Cajas de Compensación*, private nonbanking institutions affiliated with the social security system. Beneficiaries had to go to the institution each month to collect their payments.

PP is a 24-month program that provides psychosocial support and monetary subsidies. Beneficiary families receive visits from professionals called *apoyos familiares*, who provide psychosocial assistance and expands the family's network of social support. The monetary subsidies vary throughout the program. During the first 6 months, the transfer is set at US $16 per month. For months 7 to 12, the transfer is US $12. For months 13 to 18, it is US $9. For months 19 to 24, families receive the *Subsidio Único Familiar* (Family Subsidy), which was US $16 per month in 2017. After completing the program, families that achieve predetermined goals continue to receive a monthly transfer for 36 months, equal to the transfer received

during months 19 to 24. Participating families also have preferential access to other subsidies, so their total received transfers may surpass those under PP.

In collaboration with the Ministry of Social Development, *Chile Cuenta* (CC) was instituted, initially as a pilot program, to enhance access to the formal financial sector for the vulnerable population and in turn improve participants' budgeting practices, savings, borrowing practices, and investment. Our research team partnered with the Ministry to randomize the program's offering.

As part of CC, PP beneficiaries were given the option to receive their transfers through direct deposit into their CuentaRUT accounts instead of receiving cash. To be eligible for CC, beneficiaries had to be receiving cash transfers from PP, be at least 18 years of age, present a copy of their identity card, and sign a consent form to change their payment method and open a CuentaRUT if they did not have one. All subsidies received by CC participants (not only their PP subsidies) were transferred to their CuentaRUT if they accepted the offer to participate in CC. The CuentaRUT, which were opened for beneficiaries who did not already have one, do not charge interest or opening fees, though they do have some associated transactional costs.[3]

B. Experimental Design

[3] CuentaRUT is provided by BancoEstado, the largest financial institution in Chile, which is known for its broad coverage and focus on serving low-income populations. At the follow-up survey, 94% of study participants did not have an account with any other bank. In this case, participants had to consent to opening a bank account, visit a bank branch to pick up the account card, and sign the final documents. These accounts have per-transaction costs, varying based on the type and location of the transaction. The fee structure can be found at https://www.bancoestado.cl/bancoestado/inteditorformularios/genera.asp?datos=167. To make up for these transaction fees, the government provided a monthly subsidy of Ch $700 (approximately US$1.50) during the program.

For the evaluation, the research team, in collaboration with the Ministry of Social Development, chose five municipalities[4] in greater Santiago based on two criteria: (1) BancoEstado's branches had sufficient physical capacity to accommodate the new customers, and (2) enough families were participating in PP to allow us to evaluate the treatment.

The treatment group was automatically provided with the option to receive transfers through a bank account, whereas control-group participants had to request this option if they desired it. We stratified the sample by age,[5] Social Security Index (SSI) score,[6] duration of program participation, and municipality. Stratifying by age addresses concerns related to older beneficiaries' lack of familiarity with banking systems, while the SSI score indicates vulnerability. The duration of program participation tracks the length of the remaining transfer period, and stratifying by municipality addresses variations in access to banking facilities' availability across space.

The research team randomly selected individuals to participate in CC. Selected beneficiaries were visited by *apoyos familiares* at their home or workplace. These visits aimed to provide information about the program, emphasize the benefits of having a bank account, and explain the advantages of receiving transfers in a bank account. The program offering spanned 13 months, from October 2012 to October 2013 (see detailed monthly offering in Appendix Table A1).

A total of 3,210 individuals participated in the study, with 803 assigned to the control group. Table 1 documents some contamination in the control group, with 36 individuals being offered CC (4.5%) and 32 of them accepting the offer (4.0%). In the treatment group, the

[4] Conchalí, Maipú, Peñaflor, Puente Alto, and San Bernardo.

[5] Three age groups were defined: under 30 years old, 30 to 44, and over 44.

[6] The SSI measures household vulnerability and is the government's main targeting instrument to deliver social programs.

program was offered to 2,130 individuals (88.5%). Of them, 277 individuals were not located or had already finished the PP program, while 1,315 chose to enroll, resulting in a take-up rate of 55%. Columns (3) and (4) show the figures for groups with and without savings balances at baseline (zero balance from November 2011 to September 2012). Take-up was higher for those with prior savings balances (56% vs. 47%). The main reason given for not accepting the offer was a preference for cash withdrawals (31.2%), followed by concerns about the charges associated with CuentaRUT (21.4%) and lack of information on how and where to use CuentaRUT (10.7%).[7]

C. Data and Descriptive Statistics

We use a combination of administrative data from BancoEstado, a follow-up household survey, and baseline demographic data from the Ministry of Social Development. The bank data cover November 2011 to February 2016, including one year before the intervention and three years following its implementation. We have 29 months of administrative data after the intervention for the entire sample and 33 months of data for 91% of the participants. As mentioned, the households that graduated from PP could receive subsidies as long as 36 months after the intervention, so our analysis considers ongoing transfer receipts for these households.

The household survey was conducted two to three years after the offering of CC, between December 2015 and February 2016. Because of budget limitations only 1,614 individuals were randomly selected for the survey, including all 803 individuals from the control group and 811 individuals from the treatment group (Appendix Table A3). The response rate was 58% for the control group and 56% for the treatment group, with no

[7] Take-up among the treated is negatively predicted by age and positively predicted by average CuentaRUT balance pre-offering. See Appendix Table A2.

statistically significant difference between the two. We examined whether the response rate varied based on observable characteristics and their interaction with the treatment assignment. The SSI score and the number of children in the household between 6 and 13 years of age had a statistically significant effect on response rates (see Appendix Table A4). Consequently, we include both variables in all our regression models.

In Table 2, we study the balance between the treatment and control groups. In Panel A we analyze the BancoEstado data before the program offering. The average monthly balances in savings accounts were US $122 for the control group and US $133 for the treatment group. For monthly CuentaRUT balances, the figures were US $13 for the control group and US $12 for the treatment group. Although we lack data on whether participants had a CuentaRUT or another savings account before the program, we can calculate the percentage of individuals that had positive balances in CuentaRUT or savings accounts prior to the intervention (Panel B).[8] In the control group, 49% of individuals had positive balances in a CuentaRUT before treatment, while in the treatment group the figure was 47%. Regarding savings accounts, 71% of the control group had a positive balance, compared to 72% in the treatment group. We also calculate the proportion of individuals who had positive balances in a CuentaRUT or savings account prior to the offering; it was 83% for both the treatment and control groups. All these figures are balanced across the treatment and control groups.

Analyzing the administrative data from the Ministry of Social Development (Panel C in Table 2), we observe that, on average, 85% of the sample consists of female participants who are around 36 years old, and the average household size is 3.7 members. These variables are balanced between the treatment and control groups, except for the number of children

[8] The data includes account opening dates but they are inconsistent with the observed balances, showing no zero balances before positive ones, only missing values.

aged 0 to 5 years. Consequently, we include this variable in all our estimations presented in the subsequent section. Finally, we conduct an F-test of differences for all variables, and the results indicate no statistical differences between these two groups across all variables (Panel D in Table 2). This further supports the comparability and balance of the two groups.

3. Empirical Strategy

Our empirical strategy relies on the random allocation of eligible individuals to the treatment or control group. To analyze the intervention's impact, we employ a staggered difference in difference regression model based on the following equation:

$$Y_{i,t} = b_0 + \sum_{k=1}^{12} \gamma_k D_{i,k} + \sum_{j=1}^{33} \mu_j T_{i,j} + \lambda_t + S_i + X_i^{'}\Omega + \varepsilon_i \quad (1)$$

Here, $Y_{i,t}$ is the outcome of interest (for example, savings or debt) for individual i in time t. $D_{i,k}$ is a binary variable indicating pre-event time k, indicating if $Y_{i,t}$ was observed k months before offering. $T_{i,j}$ is a binary variable indicating if $Y_{i,t}$ was observed j periods after the offering. λ_t are time effects, S_i represents strata fixed effects, and $X_i^{'}$ are the following covariates: number of children aged 0 to 5 years (which was unbalanced at time of the offering), SSI score, and number of children 6-13 years, as they predict attrition.[9] Robust standard errors are reported. The treatment parameter can be interpreted as an intent-to-treat effect (ITT). We also use Equation (1) to perform a monthly balance test using administrative data for the 12 months before the offering.

To examine variations in treatment effects based on baseline bank balances, we estimate Equation (1) separately for individuals with positive and zero balances before the program offering. The analysis is conducted based on the offering date, but we only have the

[9] The strata encompass four groups of SSI scores. We also control for the SSI, a continuous variable that provides information within each strata cell.

actual offering date for 81% of the treatment group. For the remaining individuals in the treatment group, who either exited the program early or relocated before the offering, we impute the offering date using the median offering date of individuals from the same municipality and the same PP cohort.[10] A binary dummy variable indicating whether the offering date was imputed is included in all regression models.

4. Results

A. Average Effects

First, we analyze the impact of offering direct-deposit payments using the household survey, which provides a broader range of variables compared to the administrative data. These variables include informal savings, retail debt, investment, and trust. The results are presented in Table 3. Panel A demonstrates that the treatment group showed a 12-percentage point (pp) increase in the number of individuals with a CuentaRUT compared to the control group, in which 75.4% had a CuentaRUT.

Furthermore, individuals in the treatment group reported receiving subsidies in their account more frequently than individuals in the control group, with a difference of 31 pp. In the control group, 19% reported receiving subsidies in their CuentaRUT, which could be because the survey took place two to three years after the intervention, by which point some individuals in the control group may have been offered the option to receive subsidies in their bank accounts. Overall, we find that the treatment was implemented correctly.

[10] If no one from the same cohort and municipality was offered the program, we did not impute an offering date. For this reason, 15 individuals from the treatment group were excluded from the analysis.

The analysis in Table 3, Panel B reveals no significant impact on savings two to three years after the offering. The treatment group showed a nonsignificant decrease of US $8 in formal savings compared to the control group, along with a nonsignificant increase of US $1 in informal savings. When considering total savings (formal and informal), the effect is also nonsignificant: a decrease of US $5. These effects are also economically small, considering that the average savings in the control group was US $157.9.[11] We also examine the effect on having retail-card debt— the most common type of debt in this population, with 43.3% of the control group reporting it. Although the treatment group exhibited a slightly higher probability of having retail-card debt, there is no significant difference between the treatment and control groups, and the coefficient is relatively small.

The finding that the treatment did not reduce informal savings or increase formal savings contradicts previous research, which indicates that similar interventions decreased informal savings (Masino & Niño-Zarazúa, 2020), and runs counter to the expected result that this type of intervention would increase formal savings. Nonetheless, we show below that the program did increase savings for individuals who had no prior account balances before the intervention.

We next consider the program's effects on downstream outcomes in Table 3, Panel C. When it comes to potential effects on investment, while we observe a decrease in total assets (US $25), the effect is nonsignificant. This finding aligns with the previous finding of no effect on total savings. We also examine whether the program influenced trust in BancoEstado, in light of the argument by Bachas et al. (2021) that debit cards can enhance trust in bank accounts for CCT beneficiaries. We employ a dummy variable, with 1 indicating high trust in

[11] Since the amounts of savings exhibits large variances, we also consider another outcome: the probability of having positive balances. However, here we also found no impact.

BancoEstado and 0 indicating little or no trust.[12] Our findings suggest that the program had no impact on trust, with a small and nonsignificant coefficient. Notably, BancoEstado already enjoys relatively high trust, with 39% of the control group expressing trust in the institution, compared to 11% for other banks.

In addition, we examine whether the program affected participants' fear of theft. Treated individuals no longer need to withdraw and carry large amounts of cash, which may have reduced their fear of theft. In the follow-up survey, participants who entered the CC program were asked about their favorite aspect of it. The most common response was an enhanced sense of security, particularly a reduced risk of being robbed by not receiving resources in cash.[13] We use a dummy variable where 1 indicates a high fear of being robbed and 0 indicates low or no fear. We do not find a significant impact of the program on participants' fear of theft.

Next we investigate the program's impact on temptation-related expenses, based on Bachas's (2021) finding of reduced expenses with debit card monitoring. Our results indicate a small, nonsignificant negative impact. Additionally, we examine the effect of direct transfers to CuentaRUT on transportation costs, as participants no longer needed to visit a branch for withdrawals. Although our findings suggest a 13% decrease in transportation costs, this effect lacks statistical significance.

Finally, we investigate the impact of the program on financial knowledge, considering the potential enhancement resulting from access to financial products (Hilgert et al., 2003).

[12] The specific question is: 'How much do you trust the following institutions?' Response options were: none, little, enough, or a lot. The dummy variable is 1 if the individual responded 'enough' or 'a lot,' and 0 otherwise.

[13] Among all respondents, 41.3% mentioned an enhanced sense of security, 31% indicated more convenience from withdrawing cash from various locations, and 11.1% appreciated faster access to their money without waiting in queues. The least liked aspect of the program was the charges for transfers and balance inquiries, mentioned by 63% of participants.

We find that 13% of individuals in the control group mistakenly believed that CuentaRUT did not have associated costs, while this figure decreases by 5 pp in the treatment group. This indicates improved knowledge of CuentaRUT rules among treated individuals. However, when assessing knowledge of compound interest, we find no significant effect.[14] These results suggest that the program enhanced only aspects of financial knowledge directly related to the account used.

Next, we estimate the effect of CC using data from BancoEstado. In Figure 1, we present the effects of CC on CuentaRUT balances (Panel A), savings account balances (Panel B), and the combined balances of both account types (Panel C)—variables that were balanced before the program offering. We find a positive impact on CuentaRUT balances (Figure 1, Panel A). This effect is partially mechanical, as participants in the treatment group who accepted the offer received their subsidies through direct deposit in these accounts. The effect remains statistically significant every month over the 20-month period following the program's offering, and most months up to 33 months after program offering ranging from US $5 to US $11. This range is similar to the CuentaRUT balances at baseline and aligns with the monthly PP transfer amount, which varies between US $9 and US $16 depending on the month. As mentioned, after the 24 months of the PP program, households had the opportunity to receive transfers for an additional 36 months. Using survey data, we find that 53% of households received these additional transfers. The lower transfer rate, compared to the 100% at baseline, alongside the fact that 19% of individuals in the control group received transfers

[14] The variable, *Compound interest*, is a binary variable indicating a preference for an annual interest rate of 24% over a monthly interest rate of 2%.

in a CuentaRUT at the endline, may explain the diminishing effect of the program 26 months after the offering.[15]

For savings accounts (see Figure 1, Panel B), we observe similar results to the survey data. The effects on saving balances are positive and significant for the first 6 months after the offer, ranging from US $19 to US $26, and then decrease consistently and become negative, although these effects are not statistically significant. When considering the combined balances for all accounts (Panel C), we find a positive but significant effect for months 2 to 8, after which the effects decrease and are not significant, with a max amount of US $33. These results suggest that direct deposit did not lead to higher overall savings and that the effect on the account receiving the deposits disappeared in the long term. Both the treatment and control groups showed a consistent increase in savings balances over time. Balances gradually rose from approximately US $170 around the time of the offering to approximately US $230 around 33 months after the offering.[16]

We also investigate how the treatment affected individual transactions, focusing on the number of withdrawals from and deposits to CuentaRUT and savings accounts. In Figure A1, Panel A, we observe that treated individuals made more withdrawals from their CuentaRUT. These effects are significant for all the observed period, with an average of 0.3 more withdrawals compared to the control group. This outcome may be partly mechanical, as transfers went directly to the CuentaRUT, requiring individuals to make

[15] We cannot identify the cash transfers in our data, so we cannot test if savings decrease coincided with the end of the transfers. However, we can approximate the mechanical effect using the take-up rates. Since the difference in take-up is 50%, balances should increase between US $5 and US $8 because of the transfers. This mechanical effect constitutes 40-60% of the total effect.

[16] We analyzed the remaining time in the cash-transfer program to investigate whether increased income (attributed to the number of transfers) or habit formation affected the results. Larger effects were observed for individuals closer to completing the program, indicating that income or habit-formation effects do not significantly influence our findings.

withdrawals to access their transfers. Nonetheless, if individuals already made withdrawals before the offering, any increase might have been in the amount withdrawn rather than the frequency of withdrawals.[17] Regarding CuentaRUT deposits (Figure A1, Panel B), we generally find a positive effect, although it is smaller than the effect on withdrawals. These findings suggest that the receipt of transfers through CuentaRUT primarily stimulated increased usage through more withdrawals rather than more deposits.

We also study the offering's impact on the use of savings accounts. Table 2 shows that all participants tended to have larger and more likely positive balances in savings accounts than in CuentaRUT at baseline. Panels C and D of Figure A1 show that, although the coefficients are not significant, there seems to be an increase in both the number of withdrawals from and deposits to savings accounts up to month 9, followed by a decrease in activity. The figures align with the balance results and clearly show more activity in CuentaRUT compared to savings accounts.

In summary, our findings indicate that offering subsidies through debit accounts led to increased balances in these accounts. This increase did not extend to balances in savings accounts in the long run, suggesting that individuals tended to retain a portion of their cash transfers in their debit accounts without making major changes to their spending behavior. Consequently, we do not observe substantial changes in downstream outcomes. One possible explanation is the widespread access to financial services in Chile, which might limit the potential for further trust in the financial sector. However, as we discuss next, we observe

[17] Since the difference in take-up was 50%, the mechanical effect should be 0.5, which is similar to the total effect. On average, 26% of individuals in the control group made withdrawals in any given month, which suggests an increment of CuentaRUT use and not only larger withdrawals.

positive effects for individuals who previously had no balances in CuentaRUT or savings accounts.

The observed increase of US $13 in savings 12 months after offering represents about 0.6% of participants' annual income based on the baseline survey, an effect in the range of other interventions. For example, Somville and Vandewalle (2018) find a 0.3% increase and Bachas et al. (2021) find a 2% increase. This savings increase represents approximately 3.7% of the total transfers received throughout PP.[18]

B. Effects by Baseline Use of Bank Accounts

Next, we study how the treatment effects vary depending on individuals' prior access to the financial system. To measure use of the financial system, we define an indicator based on whether individuals had positive balances in either CuentaRUT or savings accounts, where individuals defined as having no access had zero balances before the offering. As shown in Table 2, 17% of the sample had zero balances in both types of accounts. This group's members may have particularly benefited from CC, as having their subsidies deposited in a CuentaRUT may have nudged them to start using bank accounts, especially if they did not have one before.[19] Appendix Tables A5 and A6 show that individuals with no previous balances were generally older, male, and lived in households with older adults. Baseline characteristics are balanced across treatment arms within groups. The results are presented in Figure 2, differentiating between participants' baseline balance statuses. Panel A shows a positive effect

[18] Using survey data, we find a significant drop in informal savings for those with baseline balances, while those without a balance showed a positive but statistically insignificant effect. There was no statistically significant effect on total savings, despite the point estimates' alignment with the administrative-data results. Table available by request. These findings suggest that the rise in savings balances identified in the administrative data was not due to a decline in informal savings.

[19] Account opening dates are not available in the administrative data, and therefore we cannot distinguish between having no account and having an account with zero balance.

on CuentaRUT balances for both groups. This effect is statistically significant for up to 24 months after the offering.

Turning to savings accounts, Panel B shows a positive impact of the offering on savings balances for the group with previous balances during the first six months of the intervention, then a decrease with the point estimate becoming negative by month 15. For those without previous balances, the effect is positive throughout, significant up to 33 months after the offering, with an average increase of US $12. Considering all account balances (CuentaRUT and savings accounts), Panel C shows a positive effect on total balances for those with previous balances up to month 6, then decreasing and becoming negative but not significant. On the contrary, for participants without previous balances, the point estimates are consistently positive and significant in several periods.

These findings highlight the program's effectiveness in promoting savings among individuals who previously had no balances in bank accounts. The subsidies not only increased balances in CuentaRUT, which affected both groups equally and can be attributed to the automatic-deposit mechanism, but also led to increased balances in savings accounts. This is particularly notable considering that the CC program did not have any automatic mechanism to deposit into or even open savings accounts. Therefore, the program successfully facilitated long-term savings for individuals previously unable to use financial instruments, while the effects for those with prior access were temporary. Regarding the mechanisms, Figures A2 and A3 show an increase in CuentaRUT transactions for both groups. Individuals without prior savings saw an increase in savings account transactions, while those with existing savings experienced a decrease.

One possible explanation is that access to a CuentaRUT account reduces the likelihood of spending on unplanned expenses, enabling greater long-term savings (Aker et al., 2016). Another potential mechanism is reduction of fund leakage, as family members were unaware of the timing and percentage of subsidies spent (Aker et al., 2016). In the endline survey, we asked individuals about the main advantage of receiving subsidies in a CuentaRUT. More than 40% of all individuals mentioned the lower risk of theft as a main advantage, but only 2% mentioned the opportunity of withdrawing money only when needed. This suggests that better planning or fund leakage does not explain the observed increase in account balances.

The small increase in savings did not enable the group with no previous balances to catch up with the group that already had balances. Figure A4 shows that participants without previous balances reached a plateau in their savings levels around month 20, indicating a persistent difference. Therefore, while the CCT program allowed this group to save more, it did not bring them to the same level of savings as the other group, suggesting that savings targets or opportunities may vary among these groups. Our results highlight the potential to enhance savings for individuals and households who do not have formal savings, in particular older individuals; therefore, interventions need to be tailored to different groups' needs.

5. Conclusion

Our study used an experimental design to examine the impact of a cost-saving intervention that used existing government monetary transfers and financial products to transition from cash payments to direct deposits into a bank account for monetary subsidies.

We showed that the program had a high take-up rate and an average positive effect on savings in the medium term, but no effects on debt, investment, trust in the implementing

bank, financial knowledge, expense on temptation goods, or fear of theft. We observed an increase in knowledge of the receiving account's rules. When we analyzed the treatment effect on individuals who held no previous balances with the partner bank, we observed large increases in account balances, not only in the account in which the transfer was deposited but also in savings accounts, up to 33 months after the intervention. These effects are in line with other interventions in the literature, and the program saved money for the government. It is rare to come across interventions that not only potentially improve financial outcomes but also reduce government spending. At a broad level, our findings suggest that savings can be stimulated with financial inclusion, but that several interventions need to be bundled together and need to be customized to particular contexts to be effective.

References

Aker, J. C., Boumnijel, R., McClelland, A., & Tierney, N. (2016). Payment Mechanisms and Antipoverty Programs: Evidence from a Mobile Money Cash Transfer Experiment in Niger. *Economic Development and Cultural Change*, *65*(1), 1–37. https://doi.org/10.1086/687578

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

Banerjee, A., Martinez, C., & Puentes, E. (2023). *Better Strategies for Saving More: Evidence from Three Interventions in Chile*. Economía Universidad de Chile. https://econ.uchile.cl/es/publicacion/Better-Strategies-for-Saving-More-Evidence-from-Three-Interventions-in-Chile

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

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.

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

Hilgert, M., Hogarth, J., & Beverly, S. (2003). Household Financial Management: The Connection Between Knowledge and Behavior. *Federal Reserve Bulletin*, *89*, 309–22.

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

Kast, F., Meier, S., & Pomeranz, D. (2018). Saving more in groups: Field experimental evidence from Chile. *Journal of Development Economics*, *133*, 275–94. https://doi.org/10.1016/j.jdeveco.2018.01.006

Masino, S., & Niño-Zarazúa, M. (2020). *Improving Financial Inclusion through the Delivery of Cash Transfer Programmes: The Case of Mexico's Progresa-Oportunidades-Prospera Programme*. https://www.tandfonline.com/doi/epdf/10.1080/00220388.2018.1546845?needAccess=true&role=button

Muralidharan, K., Niehaus, P., & Sukhtankar, S. (2014). *Payments infrastructure and the performance of public programs: Evidence from biometric smartcards in india*. National Bureau of Economic Research.

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.

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

Table 1: Take-up

	[1]	[2]	[3]	[4]	[5]
	All		**Treatment**		**Control**
Survey		Total	Had Balances before the offering	Did not have balances before the offering	
Total assigned	3,210	2,407	1,999	408	803
Program offering	2,166	2,130	1,765	365	36
%	66.4	88.5	88.3	89.5	4.5
Accept Offer	1,315	1,315	1,124	191	32
%	41.0	54.6	56.2	46.8	4.0

Note: Column [1] reports the number of people to whom the treatment was offered and the number who participated in the program. The percentages in Column [1] are fractions of the total number assigned. Columns [2] and [5] report statistics on the take-up of the program by treatment arm. Columns [3] and [4] report statistics on the take-up of the program for individuals in the treatment group, depending on whether they had positive bank balances prior to the offering. The percentages of the program-offering row in Columns [2] and [5] are fractions of the number of people assigned to the treatment group. The percentages of the accept-offer row in Columns [2] to [5] are fractions of the number of people assigned to the treatment and control group respectively.

Table 2: Summary Statistics and Balance

	[1]	[2]	[3]	[6]
		Level		p-values
Product Category	N obs	Control	Treatment	Treatment=Control
Panel A: Monthly Average Balances				
Balance in Savings Accounts	3,210	122,1	132,8	0.614
		240,0	256,7	
Balance in CuentaRUT	3,210	13,2	11,5	0.756
		40,1	36,7	
Total Balance (Savings Acc. & CuentaRUT)	3.210	142,6	150,1	0.744
		268,2	280,4	
Panel B: Probability (>0)				
Balance in Savings Accounts	3.210	0,71	0,72	0.792
		0,45	0,45	
Balance in CuentaRUT	3.210	0,49	0,47	0.300
		0,50	0,50	
Total Balance (Savings Acc. & CuentaRUT)	3.210	0,83	0,83	0.945
		0,38	0,38	
Panel C: SocioEconomic Data				
Age	3.209	36,11	35,66	0.273
		10,97	10,92	
Gender (Male=1)	3.210	0,15	0,15	0.589
		0,36	0,35	
Household Head Gender (Male=1)	3.210	0,13	0,14	0.192
		0,33	0,35	
SSI Score	3.210	2471	2471,58	0.688
		712,1	754,9	
Children 0-5 years old	3.210	0,93	0,96	0.0155
		0,75	0,88	
Children 6-13 years old	3.210	0,79	0,74	0.571
		0,80	0,82	
Children 14-19 years old	3.210	0,47	0,46	0.754
		0,73	0,72	
Adults 20-29 years old	3.210	0,61	0,60	0.875
		0,67	0,67	
Adults 30-45 years old	3.210	0,59	0,60	0.114
		0,62	0,66	
Adults 46-60 years old	3.210	0,21	0,21	0.251
		0,47	0,48	
Adults older than 60 years old	3.210	0,06	0,05	0.214

		0,26	0,26	
Household Size	3.210	3,67	3,64	0.232
		1,50	1,68	
Panel D: P.values of F-test				
Treatment vs. C	0.441			

Note: Column [1] shows the number of observations. Columns [2]-[3] show the mean value for the control and treatment group, respectively. Column [4] reports the p-values of the regressions of treatment assignment, controlling by strata (defined by a socioeconomic index computed by the government using the Social Security Card score, municipality of residence, age ranges and cohort) and fixed effects by offering date and municipality. Variables in Panel A are in US dollars, using the exchange rate of January 2015 (US $1=620.91 Chilean pesos). We use robust standard errors. Panel A and B data are from the partner's bank administrative products data. Panel C data are from the Ministry of Social Development. The sample size varies because of missing values.

Table 3: ITT Effects of Chile Cuenta on Savings Balance (Survey Data)

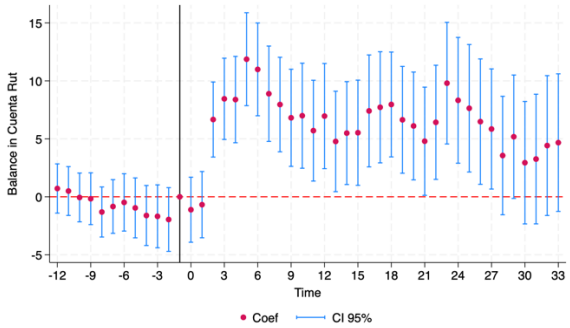
	[1] Control mean	[2] Treatment	[3] P-value	[4] Sample size
Panel A: Mechanisms				
Has CuentaRUT	0.754	0.116***	0.001	917
	(0.431)	(0.034)		
Has received subsidies in CuentaRUT	0.191	0.313***	0.000	918
	(0.394)	(0.038)		
Panel B: Savings and debt (US dollars)				
Formal savings	149.1	-8.148	0.775	916
	(341.1)	(28.511)		
Informal savings	8.906	1.079	0.776	916
	(41.78)	(3.790)		
Total savings (including informal savings)	157.9	-4.982	0.863	916
	(346.6)	(28.857)		
Debt in retail cards	0.433	0.040	0.350	917
	(0.496)	(0.043)		
Panel C: Downstream outcomes				
Housing and business assets (US dollars)	753.8	-24.999	0.853	918
	(1546)	(135.114)		
Fear of theft	0.685	0.018	0.645	917
	(0.465)	(0.039)		
Trust in BancoEstado	0.389	0.024	0.579	918
	(0.488)	(0.044)		
Expense on temptation goods (US dollars)	5.780	-0.376	0.723	896
	(13.34)	(1.059)		
Commuting cost to get the transfer (US dollars)	1.958	-0.254	0.289	830
	(2.728)	(0.239)		
Compound interest	0.125	0.004	0.894	918
	(0.331)	(0.029)		
There are no costs to using CuentaRUT	0.131	-0.051*	0.0540	915
	(0.338)	(0.027)		

Note: Column [1] reports the control-group mean and standard deviation values from Chile Cuenta's follow-up survey. Column [2] reports the intent-to-treat (ITT) estimate and standard error (in parentheses) of the program assignment from Chile Cuenta's follow-up survey. Column [3] reports the p-value of the null hypothesis that Treatment=Control. Variables are measured in US dollars, using the exchange rate of January 2015 (US $1=620.91 Chilean pesos).Variables in dollars are winsorized at the 99%. *Fear of theft* is a dummy variable equal to 1 if the respondent answered they are very afraid of being robbed and zero if they are not afraid or only a little afraid. *Trust in BancoEstado* is a dummy variable equal to 1 if the respondent said they have very much trust in Banco Estado, and 0 for no trust or little trust. *Expenditure on temptation goods* includes alcohol, cigarettes, and entertainment. *Compound interest* is a dummy variable equal to 1 if the respondent prefers a yearly interest rate of 24% to a monthly interest rate of 2%. *There are no costs to using CuentaRUT* is a dummy variable equal to 1 if the respondent said there are no costs associated with using a CuentaRUT account. Regressions include dummies for strata (defined by a socioeconomic index computed by the government using the Social Security Index, municipality of

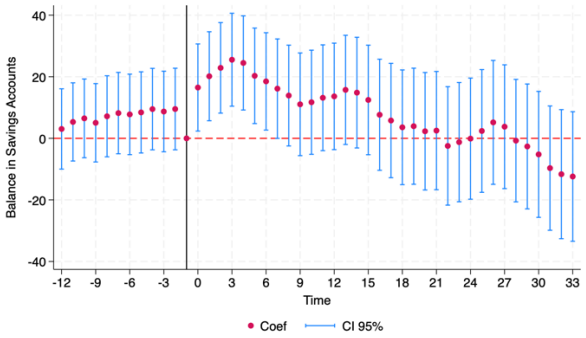
residence, age ranges, and cohort) and fixed effects by offering date and municipality. We also control for SSI, as it is a significant predictor for attrition in our sample, and a dummy to account for the number of children in the household between zero and five years old, which is unbalanced. We use robust standard errors. The sample size varies because of missing values. *** p<0.01, ** p<0.05, * p<0

Figure 1: Intent-to-Treat Effects Using Administrative Data from Chile Cuenta

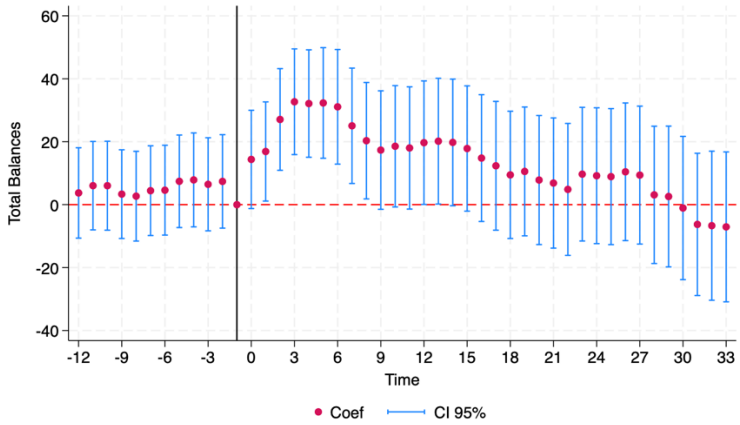
Panel A: Balances in CuentaRUT Accounts



Panel B: Balances in Savings Accounts



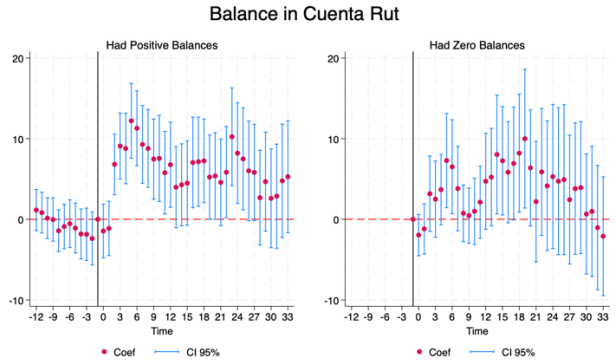
Panel C: Total Balance (Savings and CuentaRUT Accounts)



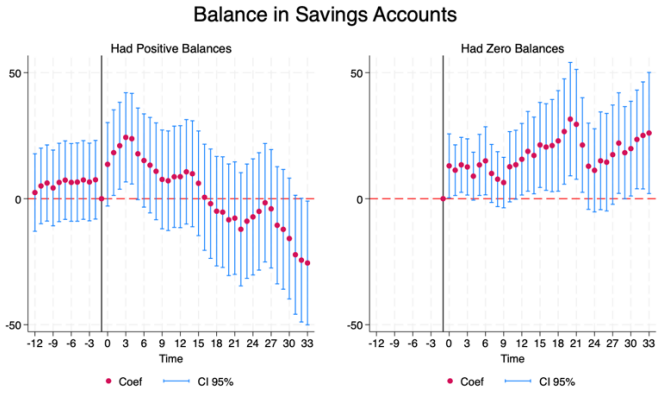
Note: The figure reports intent-to-treat coefficients using administrative bank data. Panel A reports the coefficients on balances in CuentaRUT accounts, Panel B reports coefficients on balances in savings accounts, and Panel C reports coefficients on total balances (savings and CuentaRUT accounts). All variables are measured in real US dollars using the exchange rate for January 2015. Variables are top-coded at the 99th percentile. All regressions include dummies for strata (defined by a socioeconomic index computed by the government using the Social Security Index score, municipality of residence, age ranges, and cohort) and time fixed effects. We also control for the Social Security Index score and number of children in the household between 6 and 13 years of age (both significant predictors of attrition in our sample), as well as the number of children in the household between zero and five years old, which is unbalanced at baseline. In the case of post-enrollment regressions, we also include the baseline value of the dependent variable. We use robust standard errors.

Figure 2: Heterogenous Effects by Having Balances before the Treatment

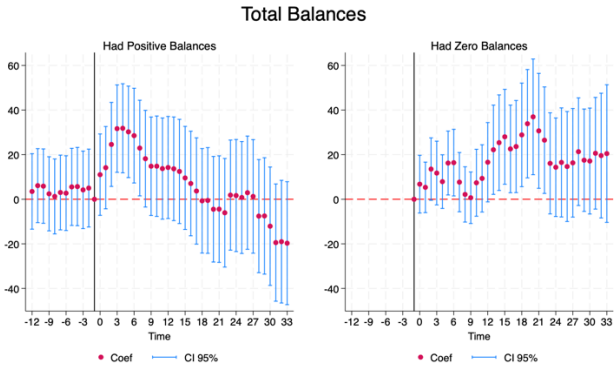
Panel A: CuentaRUT by Group



Panel B: Savings Accounts by Group



Panel C: Total Balances by Group



Notes: Similar to Figure 1