

# DELIVERING CONDITIONAL CASH TRANSFERS VIA SAVINGS ACCOUNTS: DEFAULT AND MENTAL ACCOUNTING MECHANISMS

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## **I. Activities**

Recent research suggests that the complexity and chronic stress inherent in the lives of the poor may impede cognitive function and worsen decision making (Mani et al. 2013, Angelucci and Cordova 2014)<sup>1</sup>. Moreover, being focused on the pressing needs of the here and now, forward-looking behaviors, such as investing in education and health, may be beyond the poor's capacity. Therefore, the poor may spend little time parenting and may not adhere to healthy behaviors for themselves and their families because they lack the adequate mental resources to make simple changes with far-reaching consequences, even if they have the knowledge and the means.

Since a major source of worry in the life of the poor is related to financial complexity and uncertainty, we hypothesize that simplifying the financial lives of the poor will improve their mental health and free up the cognitive resources necessary to invest in their children's education (through parenting and schooling) and adopt healthy behaviors. In addition, we hypothesize that making the financial lives of the poor easier will have a positive effect on their welfare.

Focus group interviews showed that financial uncertainty and emergencies are a major source of stress and anxiety in our target population. Therefore, we hypothesize that access to credit and insurance improves cognitive resources and mental health (as well as their ability to cope with shocks) and that, in turn, these gains in cognitive resources and mental well being will favor the investment in education and health. Specifically, we have two hypotheses: (1) recipients of the conditional cash transfer *plus* credit and insurance have better parenting and higher adherence to healthy habits than recipients of the basic conditional cash transfer only; (2) experiencing unexpected income shocks reduces healthy habits and the quality of parenting by hurting mental health and cognition, but less so for recipients of the conditional cash transfer *plus* credit and insurance.

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<sup>1</sup> Mani, Mullainathan, and Shafir (2013), "Poverty impedes cognitive function," *Science*, 341(6149): 976-980; Angelucci and Cordova (2014), "Productivity and choice under stress: are men and women different?" University of Michigan, mimeo.

We test these hypotheses using as target population the recipients of PROSPERA (formerly known as *Oportunidades*), Mexico's flagship conditional cash transfer anti poverty program, which covers approximately 25% of the Mexican population. This is a policy-relevant target population for two reasons. First, because conditional cash transfer programs target the poor, are implemented in at least 33 countries worldwide (Bassett and Hoddinott 2008) and serve 90 million people in Latin America alone (Ferreira and Robalino, 2010). Second, because the typical conditional cash transfer program requires its recipients to have regular health checks and provides them with health and nutrition education, both of them free of charge. Therefore, we target a population that has neither knowledge nor financial constraints to the adoption of health behaviors, but that whose mental wellbeing a cognitive resources may be hurt by the stress and complexity in their lives.

The recipients, almost all women, receive cash transfers in a bank account every other month. In addition, a subset of participants receives additional benefits from a financial inclusion module called "*Programa Integral de Inclusión Financiera 'Prospera más con BANSEFF'*" (PROIIF), a supplemental program that provides beneficiaries with additional benefits at below-market prices. In particular, the main objective of PROIIF is to improve PROSPERA's beneficiaries formal financial inclusion. Through PROIIF beneficiaries have access to the following products: an additional savings account ("*Ahorro Más con BANSEFF'*"); two lines of credit at an interest rate substantially below market levels ("*Crédito Básico Más con BANSEFF'*" and "*Crédito Más con Ahorro'*"); a life insurance policy at a discounted price ("*Seguro Más con BANSEFF'*"); and additional benefits ("*Paquete de Beneficios Adicionales BANSEFF'*").

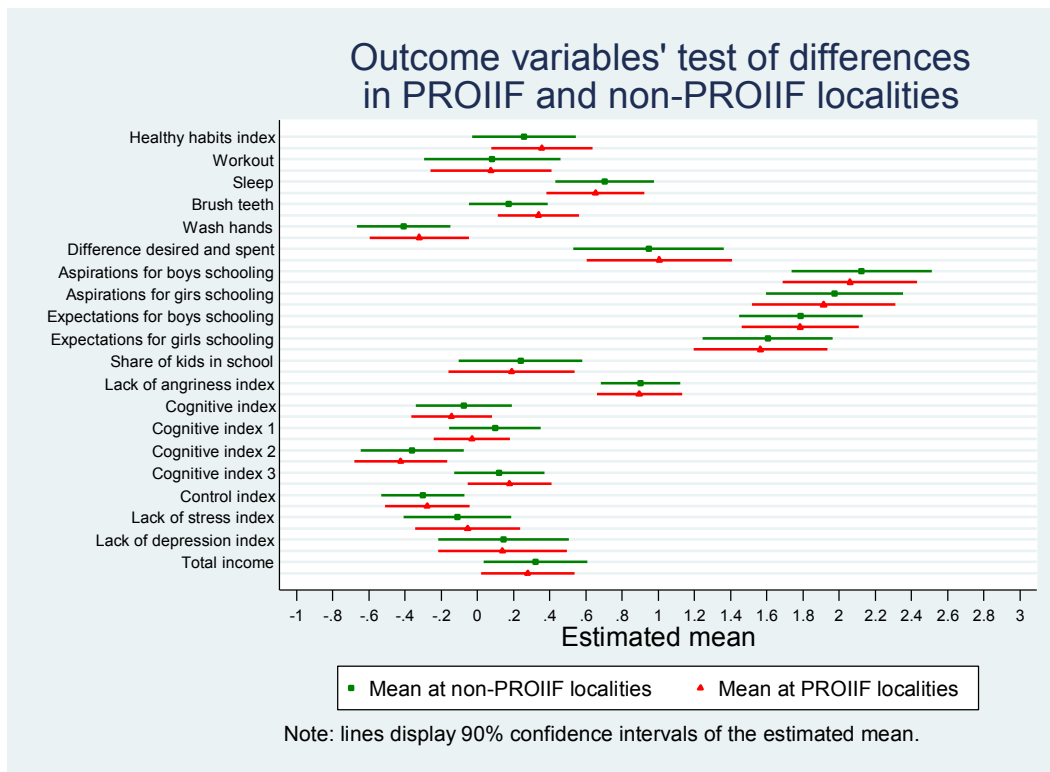
To test hypothesis (1), we can compare healthy habits, parenting, children's schooling, mental health, and cognition of PROIIF and non-PROIIF households. In particular, healthy habits are measured through separate measures of the time the beneficiary spent exercising and sleeping the day prior to the interview date, as well as the number the beneficiary brushed teeth the day prior to the interview and a categorical variable of the quality of washing hands for the beneficiary. We also construct a healthy index with mean zero and standard deviation one that equally weights the four healthy habits measures. Parenting is measured as the difference between actual and desired time spent with children the day prior to the interview. We also have measures of parental aspirations and expectations for their children's education and a lack of anger index, which measures how well beneficiaries relate to their children when they misbehave. Furthermore, we include the share of children 6-16 years of age enrolled in school. Regarding cognition, we measure beneficiaries' cognition via four cognition indexes. The first index quantifies the number of correct answers in a 6-tasks cognitive battery (memorizing a series of numbers and repeating it out loud). The second quantifies the number of answers in another 4-tasks cognitive battery (memorizing a series of numbers and repeating it backwards). The third index quantifies the number of correct answers in a variation of the Raven's test where the beneficiary completes 10 sequences of patterns and designs. The fourth index is built standardizing the three individual cognitive indexes, adding them up, and standardizing again the total score. We also have a measure of beneficiaries' control index (a battery of four questions that assesses to what extent the

beneficiaries feel in control of their future), lack of stress index (a battery of four questions that assesses to what extent the beneficiaries manage stressful situations), and lack of depression index (a battery of six questions that assesses how happy and content the beneficiaries are with their lives). Finally, we consider total household income last week. The difference in outcomes for PROIIF and non-PROIIF recipients identifies the average treatment effect of PROIIF under the assumptions that (i) PROIIF affects only its recipients and not other subjects (e.g., it rules out spillover effects of PROIIF) and (ii) there are no systematic differences between PROIIF and non-PROIIF recipients.

The first assumption is likely to hold because PROIIF and non-PROIIF recipients were geographically distant from each other. Therefore, spillover effects are unlikely. To check the validity of the second assumption, we compare the predetermined socio-economic characteristics of PROIIF and non-PROIIF recipients and their households. We find that these two groups of recipients and their households are fairly similar.

Figure 1 reports the means of the aforementioned outcomes for PROIIF and non-PROIIF recipients, as well as the p-value of the difference between the two estimates. This table shows that healthy habits, parenting, children’s schooling, mental health, and cognition do not differ between PROIIF and non-PROIIF beneficiaries, thus rejecting our first hypothesis.

**Figure 1. Outcome variables’ test of differences in PROIIF and non-PROIIF localities**



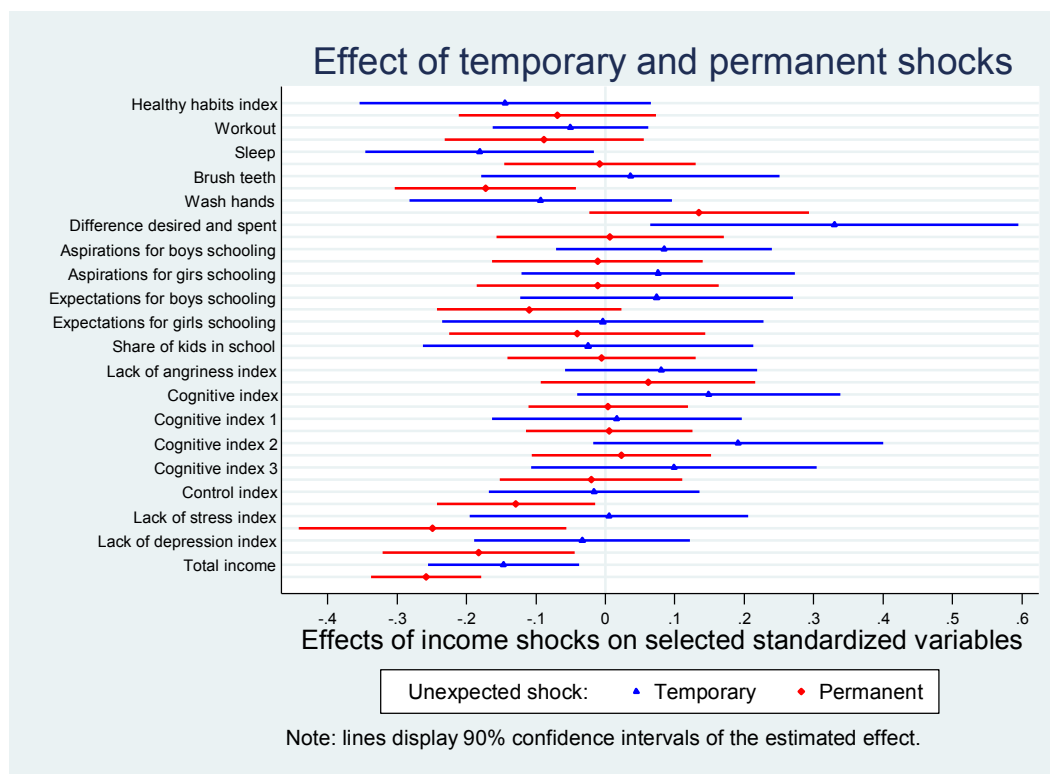
To test hypothesis (2), we can compare the healthy habits, parenting, children's schooling, mental health, and cognition of households that have and have not suffered from unexpected shocks in the previous 14 days prior to the interview date. Since the experience of unexpected shocks may not be random, as poorer and more vulnerable households may be more prone to suffer these shocks, we restrict the sample to households who have experienced at least one unexpected shock in the previous 12 months. Therefore, the variation that we exploit is in the timing, and not the experience, of these shocks.

The difference in outcomes for households that were hit by an unexpected shock in the previous 14 days and households that experienced these shocks in the previous 12 months, but earlier than two weeks before the interview date, identifies the effect of unexpected shocks under the assumptions that (i) the shocks affect only their recipients and not other subjects and (ii) there are no systematic differences between households that experienced the shocks sooner and later.

Spillover effects of these shocks are unlikely, as only 7.16 percent of the sample experienced shocks in the previous 14 days prior to the interview date and these households are geographically spread out, so the data support the first assumption. Moreover, the socio-economic characteristics of the two groups of households are similar, consistent with the second hypothesis.

Figure 2 shows that transitory and more permanent shocks reduce income of PROSPERA's beneficiary households by similar magnitude (as the effects on income are not statistically different from each other). Consistently, permanent shocks do not overall significantly reduce adherence to healthy habits. Similarly, we see no effects schooling or on parenting, and on parental aspirations and expectations for their children's schooling.

**Figure 2. Effect of temporary and permanent shocks**



Further analysis reported in Table 1 shows that the magnitudes of the shocks of more permanent and transitory shocks on the outcomes of interest are not statistically different for PROIIF beneficiaries. There are two exceptions. First, receiving PROIIF attenuates the negative effects of experiencing transitory income shocks on household income. Second, while receiving PROIIF does not attenuate the negative effects of experiencing more permanent income shocks on income, it increases the amount of time desired to spend with children.

**Table 1. Effect of temporary and permanent shocks**

	Unexpected temporary shock	Unexpected permanent shock	H0: Transitory shock size in PROIIF localities differs to non-PROIIF localities (p-value)	H0: Permanent shock size in PROIIF localities differs to non-PROIIF localities (p-value)
<b>Healthy habits variables</b>				
Healthy habits index	-0.1443 (0.125)	-0.0693 (0.0848)	0.5342	0.9937
Workout	-0.0503	-0.0881	0.9991	0.1658

	(0.067)	(0.0854)		
Sleep	-0.1809*	-0.0078	0.9331	0.3939
	(0.0981)	(0.0824)		
Brush teeth	0.0364	-0.1727**	0.6199	0.8444
	(0.1282)	(0.0777)		
Wash hands	-0.0932	0.1349	0.3361	0.6413
	(0.1127)	(0.0943)		

### Parenting variables

Time spent with kids	0.0628	0.1132	0.9653	0.6145
	(0.1357)	(0.099)		
Time desired to spent with kids	0.3077*^	0.0816	0.477	0.0633
	(0.1593)	(0.0906)		
Difference desired and spent	0.3298**	0.0069	0.3521	0.074
	(0.1581)	(0.0978)		
Aspirations for boys schooling	0.0845	-0.0112	0.6255	0.3346
	(0.093)	(0.0906)		
Aspirations for girls schooling	0.0759	-0.0111	0.6174	0.9295
	(0.1176)	(0.1039)		
Expectations for boys schooling	0.0739	-0.1095	0.7901	0.3966
	(0.1174)	(0.0792)		
Expectations for girls schooling	-0.0036	-0.0405	0.8911	0.702
	(0.1379)	(0.11)		
Share of kids in school	-0.0249	-0.0054	0.1826	0.5916
	(0.1419)	(0.0811)		
Lack of angriness index	0.0804	0.0615	0.7649	0.0914
	(0.0824)	(0.0921)		

### Cognitive and mental health variables

Cognitive index	0.1487	0.0042	0.6582	0.4583
	(0.1131)	(0.0684)		
Cognitive index 1	0.0165	0.0055	0.4887	0.1372
	(0.1073)	(0.0714)		
Cognitive index 2	0.1912	0.0232	0.7159	0.685
	(0.1247)	(0.077)		
Cognitive index 3	0.0989	-0.0206	0.6389	0.7681
	(0.1227)	(0.0786)		
Control index	-0.0161	-0.1287*	0.0644	0.816
	(0.0904)	(0.0678)		
Lack of stress index	0.0052	-0.2491**	0.6697	0.548
	(0.1198)	(0.1151)		
Lack of depression index	-0.0332	-0.1826**	0.7205	0.1012
	(0.0927)	(0.0826)		

### Economic variables

Total income	0.1467***^^	0.2583***^^^	0.0408	0.4771
	(0.0649)	(0.0473)		

Note: to test the hypothesis that the magnitudes of shocks differ across PROIIF and non-PROIIF localities we run a regression of each outcome controlling for weekday of the interview, the presence of any kind of shock during the past year, and the interaction of an indicator for the more permanent and temporary shock, each one interacted with an indicator for PROIIF localities. The reported p-values correspond to each of the interacted terms.

## II. Challenges

Our initial plan was to partner with BANSEFI, the bank that handled the *Oportunidades* cash transfers, and open, for a random group of beneficiaries, additional savings accounts to beneficiaries in which they could save by default 10% of the conditional cash transfer. Unfortunately, during our study *Oportunidades* was replaced by the new program PROSPERA and our new partner was no longer willing to let us set up this experiment. At the same time, though, the Mexican government began to experiment with PROIIF. Therefore, we had to change our plans and, rather than studying the effect of default savings, we decided to test the effect of the credit and insurance offer. In sum, while the details of our project changed, we were still able to test whether the complexity and uncertainty of the financial lives of the poor affect their healthy habits, parenting, children's schooling, mental health, and cognition.

## III. Other Sources of Support

Source	Amount (including in-kind)	Type
University of Michigan, Office of Research (UMOR)	\$10,000	Research grant
Grand Challenges Explorations grant, Bill and Melinda Gates Foundation	\$100,000	Research grant
Population Studies Center, University of Michigan – Small Grant	\$10,000	Research grant
Inter-American Development Bank - Domestic Savings in Latin America and the Caribbean	\$60,000	Research grant
Citi Foundation & Innovation for Poverty Action (IPA) - Financial Capability Research Fund	\$150,000	Research grant
Ford Foundation, International Development Research Center (IDRC), Proyecto Capital, Fundación Capital	\$150,000	Research grant