Loose Knots:
Strong versus Weak Commitments to Save for Education in Uganda[*]

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Abstract:
Commitment devices offer an opportunity to restrict future choices. However, if severe restrictions deter participation, weaker restrictions may be a more effective means of changing behavior. We test this using a school-based commitment savings device for educational expenses in Uganda. We compare an account fully-committed to educational expenses to an account in which savings are available for cash withdrawal but intended for educational expenses. The weaker commitment generates increased savings in the program accounts and when combined with a parent outreach program, higher expenditures on educational supplies. It also increases scores on an exam covering language and math skills by 0.11 standard deviations. We find no effect for the fully-committed account, and we find no effect for either account on attendance, enrollment, or non-cognitive skills.

"Make it easy" – Richard Thaler, co-author of *Nudge: Improving Decisions about Health, Wealth, and Happiness* (Clement 2013)

Section I. Introduction

Commitment devices offer individuals an opportunity to restrict future choices. Self-aware individuals may prefer such restrictions in order to resist future temptations, or to deflect future claims on assets from family or extended social networks. Indeed, prior research has found demand for commitment savings accounts that restrict access to one's money in order to help with self-control issues (Ashraf, Karlan, and Yin 2006; Brune, Lasse et al. 2013; Dupas and Robinson 2013; Gine et al. 2013), and other research has found demand for commitment devices in other domains.

We primarily tackle two questions: How critical is the ability to change one's mind in the decision to engage in a commitment savings account? And, do commitment devices to save merely get unwound through offsetting behavior, and thus not change actual expenditures?

The specifics of what one means by "commitment" on a commitment savings account can vary in critical ways, and accordingly have large differential impacts on whether an account is opened, how much one deposits, when one withdraws, and perhaps most importantly, how ultimate consumption and investment choices differ. We focus here on one key dimension: whether the funds deposited are locked in for a specific "good" expenditure, or if individuals have freedom to spend withdrawals as they wish, but the "good" item is made easily available.[1]

The tradeoff is clear: a strong commitment device may be more effective in enforcing the behavior of the future self, but the current self may be less likely to participate in the contract at all. An individual may want to commit in some, but not all, future states of the world, since emergencies do happen. The challenge is finding a contract where a third party has the right level of discretion on whether to enforce. If an individual cannot trust any third parties with that discretion, a self-enforcing commitment contract may work instead. In such a contract, the increased price of vice is derived from psychic costs, i.e., disappointment with oneself and one's lack of adherence to a plan. This is akin to a model put forward by Benabou and Tirole (2004) on how personal rules can shift later behavior, and also could be construed as a test of whether "mental accounting" can be an policy instrument that induces behavior change (Shefrin and Thaler 1992).

Our second question examines whether commitment devices get unwound through offsetting behavior (Karlan, Ratan, and Zinman 2013). For example, more money saved in a commitment account may come at the expense of lower savings elsewhere, or worse, higher borrowing at

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[1] Clearly in a perfect market, specifically one with zero transaction costs, this would make no difference: any items purchased with the locked-in commitment account could simply be sold in exchange for the most desirable item for the same value. In our market, supplies and services associated with primary education in Uganda, there are significant enough transaction costs to make such an exchange quite costly, and thus the original expenditure sticky.

higher interest rates. By examining how actual expenditures change, rather than merely observing whether savings increases, we are able to make stronger statements about welfare outcomes, similar to Ashraf et al (2010) with respect to household durable goods purchases and Dupas and Robinson (2013) with respect to health investments.

We examine these questions in the context of a school-based commitment savings account in Uganda. Specifically, we test whether a strong versus weak savings commitment device helps children and their families save more, spend more on educational expenses, and achieve higher test scores.

The savings program, Supersavers, helps families save for school related expenses and generates random variation in the level of school supplies across students. Thus we also have two economics of education motivations: First, we gain a better understanding of the education production process (Kremer and Holla 2009), building on a growing body of evidence demonstrating the effects of basic school supplies – notebooks, uniforms, workbooks, etc. – on student performance (Das et al. 2013; Hidalgo et al. 2013) and parental involvement (Avvisati et al. 2013). Second, the results build on existing evidence of the importance of savings constraints for educational expenses (Barrera-Osorio et al. 2011).[2]

Our setup is as follows: working with a local nonprofit organization Private Education Development Network (PEDN) in the Busoga sub-region of the Eastern region of Uganda, and Innovations for Poverty Action (IPA), we randomly assigned 136 primary schools to one of three groups: a strong commitment savings account (funds could be withdrawn no earlier than the end of the term, and had to be spent on educational items), a weak commitment savings account (funds could be withdrawn no earlier than the end of the term, but were available in cash, to be spent as individuals wished)[3], or control. For both treatments, students could deposit cash into an account. At the end of each trimester they were able to use their cash or vouchers to purchase school supplies at a fair. This thus becomes a test between a stricter commitment device and a weaker "make it easy" nudge of individuals towards a specific behavior (Thaler and Sunstein 2009). Although the accounts were framed as their accounts, we cannot rule out that some of the funds were parent's funds.[4] We developed a brief teacher training component, and also coordinated the transfer of money from a savings box held at the school to a local bank for safekeeping. One year into the implementation, we implemented one sub-treatment in half of the treatment schools, a parental involvement workshop.

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[2] It is interesting to note that, while we find that relaxing savings constraints improves educational outcomes, we find improvements in academic performance rather than participation. This contradicts the results of Barrera-Osorio et al. (2011) which finds that distributing funds at the time that families have to pay enrollment expenses improves enrollment rates. The difference may, in part, be due to the fact that unlike Uganda, Colombian schools still charged official fees for enrollment.

[3] The weak commitment treatment arm is thus most similar to the SEED account in Ashraf et al (2006), i.e., a commitment merely to not withdraw funds until a certain future point in time.

4 As we show below, both the children and other family members contribute to the accounts, raising the possibility that multiple household mechanisms are involved.

The first stage is critical and revealing: students deposit significantly more money into the soft commitment savings account than the hard commitment savings account. And, for those with the parental outreach sub-treatment, the additional money deposited into the account leads to higher investment in school supplies, which then in turn leads to higher test scores. We find a 0.11 standard deviation (se=0.04) improvement in overall scores; this includes effects on each of the covered subjects: grammar (0.15 standard deviations, se=0.05), reading (0.11 standard deviations, se=0.05), and math (0.00 standard deviation, se=0.04). The implication for the school production function is simple: for a student to learn basic skills, having a pen, paper and workbook matters. Furthermore, the treatment effect on educational outcomes is sizable, as large as many direct educational interventions, and consistent with other estimates of the effects of such supplies (Das et al. 2013) We find no effect on student participation (either attendance or enrollment) or on a set of non-cognitive outcomes.

The remainder of the paper proceeds as follows: We provide an overview of the Ugandan education system and the individual treatments in Section II. Section III contains the research design and a description of the data. We assess the internal validity in Section IV and present the main results in Section V. Finally, we conclude in Section VI.

Section II. Background

A. Ugandan Primary Education System

Uganda abolished most primary school fees in 1997.[5] In the same year, the gross primary enrollment rate[6] ballooned from 87 percent in the early 1990s, to 123 percent in 1997. Between 1997 and 1996, 2.3 million children enrolled in primary school, increasing total enrollment to 5.7 million (*Uganda Hits Universal Primary Education Target* 2000).

Unfortunately, while most children now enroll in primary school, the majority of them fail to graduate. In 2008, for example, the gross enrollment rate[7] in lower secondary was 33 percent–11 percentage points below the average for Sub-Saharan Africa (UNESCO 2013). The transition from primary to secondary is a challenge, as in many countries. However, the majority of Ugandan students simply fail to complete primary school. As of 2010, only 32 percent of students entering primary school completed the seventh grade (*Opportunities Lost: The Impact of Grade Repetition and Early School Leaving* 2012).

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[5] Initially, up to four children per family could attend school without paying tuition fees. However, previously the government abolished tuition fees for all children (Murphy, Bertoncino, and Wang 2002).
[6] The gross primary school enrollment ratio is the ratio of the number of enrolled primary school children, regardless of age, to the total number of primary school-aged children in the population.
[7] The gross enrollment rate for lower secondary school is the ratio of the number of children enrolled in lower secondary school regardless of age relative to the total number of children in the population who are of age to attend secondary school.

While the poor quality of primary education is a likely factor (Piper 2010),[8] students still face financial barriers. Students no longer pay enrollment fees, but they face other expenses. Many schools require uniforms, and families are responsible for providing food and school supplies, such as paper, writing instruments, and workbooks. With the approval of the parent-teacher association and school management committee, schools can also charge fees for ancillary services such as supplementary lessons, practice exams and feeding programs. Official policy prohibits preventing a child from enrolling due to an inability to pay, but the majority of dropouts cite financial concerns. In the baseline survey described below, families paid an average of 5,790 UGX (2.30 USD) to send a child to school for a year, 0.5 percent of Uganda's per capita income in 2010 (UN data 2013).

Confusion and suspicion create additional complications. As we discovered through qualitative interviews and feedback from parents, politicians try to drum up support by claiming school fees are illegal. The terms "universal" and "free" education are sometimes used interchangeably. Many parents do not understand the official financing rules. Some believe that the government should provide for all school related expenses. Finally, rumors of corruption can make even knowledgeable parents reluctant to pay.

B. Description of the Intervention

To facilitate families' and children's saving for school, we evaluated four variations of a school-based savings program. The intervention had two primary objectives. First, it sought to facilitate and encourage the practice of children saving for education, and through saving, improve overall academic performance and support students' continued enrollment. The program targeted students in grades 5, 6, and 7, the last three years of primary school, in order to target students at high risk for dropping out of school.[9] At baseline, the mean student age was 12 (sd dev = 1.52).

We developed and implemented the programs in partnership with the Private Education Development Network (PEDN). PEDN is a Ugandan non-profit organization focusing on youth financial and entrepreneurial education. PEDN comprises five full and part time employees, often supplemented by project specific staff hired as needed. For the savings programs, IPA worked with PEDN to hire a local implementation team of about 10 people.[10]

Each of the four treatment variations included the same core components: a savings account administered through the school, and a program to support and encourage use of the accounts. During an introductory meeting, the implementation team described the program to a joint

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[8] The dramatic increases in enrollment have strained existing resources. In the average school in 2005, three children had to share the same textbook and 94 children crammed into a single classroom (Independent Evaluation Group (IEG) 2007).

[9] Uganda follows a 7+2+2 grade structure. Students attend primary school for seven years followed by two years each of lower and then upper secondary school.

[10] This includes only those individuals hired to implement the described programs. It does not include the research staff who conducted the surveys and monitoring visits described below.

meeting of the Parent Teacher Associate, the School Management Committee, and other interested parents. If they all voted to participate, we provided each school with metal lock boxes. A designated teacher assisted by student-elected[11] representatives from each class then managed the program. The implementation team conducted weekly visits to each school to encourage saving and to assist with accounting procedures. Interested students received a passbook in which their individual savings were recorded, and the designated teacher and the implementation team maintained an official register. Depending on a school's preference, students then deposited money into the lockboxes on a daily or weekly basis.

To provide security and transparency, two padlocks secured each box. Parents elected a representative to keep the key to one lock, while the bank held the other. At the end of each trimester,[12] the two key holders opened the box. The bank representative provided a deposit slip and deposited the funds into the school's account.[13] The accounts did not earn interest. Inflation varied but averaged around 10% in this time period, thus the accounts had a negative real interest rate. After the break between trimesters, the implementation team and bank representatives returned to the school for the payout of the funds. Two representatives signed a withdrawal slip to confirm the withdrawal. The designated teacher, student representatives and our team then distributed the money according to the savings register. At the same time, the implementation team organized a small market at each school where students could purchase school supplies or school services such as practice exams or tutoring sessions.[14]

On top of the core components above, there were four treatment variations, a 2x2 design: "cash" or "voucher" for the withdrawals, and "Parent Outreach" or "No Parent Outreach". For the cash treatment arm, students received, in cash, their savings from one trimester at the beginning of the next trimester. They could then spend the funds at their discretion—at the markets provided on the disbursement day (thus "making it easy" to spend on school supplies) or elsewhere. The voucher treatment arm, on the other hand, employed a stronger commitment — students had to buy educational products or services at the market, on the disbursement day.[15] In both variants, children could also re-deposit their savings for the next trimester.

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[11] The Ugandan educational system classifies children enrolled in primary school as "pupils" and those in secondary school as "students". In this article, we refer to all enrolled children as students.

[12] The academic year starts in February and follows a trimester system. Schools run for 12 weeks at a time. Students receive a three week break after the first and second terms, and schools are closed in December, January and February.

[13] Working with the bank, FINCA Uganda, we designed an account for the intervention modeled on a traditional group savings account. We also provided the minimum 5,000 UGX deposit and worked with the school's elected signatories to obtain the documentation required to open the accounts.

[14] Students were allowed to rollover vouchers to future terms, and upon completion of the final year (P7), were allowed to withdraw any remaining balance in cash.

[15] Early in the intervention there was concern that the teachers and community members mobilized to manage the supplies fair were marking up prices to take advantage of the situation. To avoid this, the supplies markets were taken over as part of the intervention. In collaboration with a wholesale distributer, prices were set to match typical alternative prices available to students, and the fairs were organized by the implementing NGOs directly. Managing the fairs as part of the intervention also ensured the essentials supplies were there. This does have implications for

The Parent Outreach component provided a means of addressing misconceptions about school fees and Universal Primary Education Policy. The implementation team hosted a meeting for sixth and seventh grade parents. The meetings began by identifying the various stakeholders in primary education, their roles and responsibilities. PEDN then discussed the various ways in which parents could support their children's education. In particular, PEDN explained that in addition to providing a student learning experience, the savings program provided an opportunity for the household. It could be a tool to help families finance their children's education. A snack and soda were provided to encourage attendance.

Section III. Design of the Evaluation

A.   Research Design

Figure 1 depicts the timeline and steps in the randomized trial and data collection. We selected 136 primary schools from the Jinja, Iganga, Mayuge, and Luuka districts of the Busoga Region because they predominantly comprised poor rural and peri-urban schools. We then administered a baseline survey and test during the final trimester of 2009. Finally, we randomly assigned schools to receive either the cash treatment, voucher treatment, or no treatment, stratifying by the total normalized score on the baseline exam and by geographic regions call sub-counties.[16] Each treatment group comprised 39 schools, and the remaining 58 schools became the control group.

Following the first randomization, school outreach began. It took two trimesters to recruit the majority of schools, but by the beginning of the third trimester of 2010, 95 percent of the treatment schools had agreed to participate.[17] In total, 77 schools joined and one school refused to participate. The school that refused to participate did, however, permit data collection. In what follows, we classify the school as if it had accepted the program.

In 2011, we conducted a second randomization for the parent sensitization program. To isolate the effect of the program while still treating all of the schools, we assigned schools either to the Parent Outreach group who received the intervention in the first trimester of 2011 or to the No Parent Outreach group who received the intervention too late to affect student behavior – immediately before the endline survey in second trimester. Half of the schools in each treatment were assigned to each group. We stratified assignment by the schools' initial treatment group and sub-county, and checked for balance using the demeaned savings rates from 2010.

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scale-up attempts, i.e., whether through explicit management or alternative approach, one likely needs to have a competitive market for supplies available for the students.

[16] In 2010, Uganda included four major jurisdictions called "regions." Spread across the four regions, were 111 "districts." Each district was divided into urban areas known as "municipalities" or rural areas called "counties." Counties were further sub-divided into sub-counties. Depending on the population, a district could have as few as three or as many as thirty or more sub-counties.

[17] When they were not canceled, meetings had to be held with school administrators, the school management committee, and the parent-teacher association for each school. Many were initially reluctant to hold additional meetings.

Finally, we conducted the endline survey and exam during the beginning of the third trimester of 2011.[18]

B. Description of the Datasets

We utilize two samples of students, as well as data at both the classroom and student level. First, we conduct classroom level surveys that include all students present in class at baseline and then all students present in class at endline. Second, we created a representative, longitudinal sample of students identified prior to the randomization. The first sample provides information on all students attending school. However, if the intervention had affected attendance or enrollment, it would have been subject to selection biases, both on entry and exit. The second sample provides information on a smaller subset of students that were tracked regardless of whether or not they continued to be enrolled in the original schools.

The classroom-level data included all classes in grades five, six, and seven. Enumerators counted the number of children present, enrolled and possessing notebooks, math set, uniform, or shoes.[19,20] We conducted these monitoring visits prior to the randomization as part of the baseline and at least once a trimester after the randomization.

The student-level data was created by selecting 4,716 students who then completed a baseline survey and aptitude test prior to the randomization. To identify the students for the longitudinal sample, we compiled a list of all students of the correct ages and grades who were on the teachers' rosters in September of 2009.[21] Teachers then classified each student using a five-point scale to rate frequency of attendance. In particular, this allowed us to identify students on the rosters who did not attend school. From the set of attending children, we randomly selected 35 students from each school in grades four and five, except for two schools in which we included all students because fewer than 35 students had enrolled.

The baseline survey completed by the students in the longitudinal sample was a 40 minute survey that included questions about their education history, experiences with saving, time preferences, and demographic information. Students also completed an hour-long, 35-question

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[18] In 2012, we conducted a second, smaller experiment in which we randomly assigned a fraction of the original control group to receive the cash with sensitization program. We also collected the classroom-level data described below. However, the remaining control group proved too small. The point estimates are consistent with those presented here, but the standard errors are too large to provide meaningful information. These results are available upon request.

[19] The enumerator only counted a student as having each item if the enumerator could see it.

[20] Notebooks cost approximately 200 UGX (0.08 $USD) each. In Uganda, they are usually called "exercise books." A math set costs approximately 1,000 UGX (0.40 $USD) and includes such tools as a ruler, protractor and compass. Uniform and shoes each cost about 6,000 UGX. (2.39 $USD) They are a traditional school requirement.

[21] For a small number of classes, rosters were unavailable. We had to create a list of students based on the students present in class and information provided by the teacher.

exam covering math, grammar, and reading comprehension. Students in each grade took separate exams based on the national curriculum for their grade.[22]

Students completed an endline survey about two years after the base line survey. The 40 minute survey included questions about saving behavior, possession of resources like those in the class-level survey, such as uniforms, books, math sets, and shoes. It also included a 60 minute exam in the same three subjects as the baseline exam. The grade level of the endline exam was based on the students' grade at baseline. We tracked students regardless of their enrollment status. We found 3,838 of the original respondents.

Finally, we verified the presence of each student in the longitudinal sample during each class-level monitoring visit. This provided an objective measure of students' attendance rates as well as whether students were still enrolled in school in the appropriate grade.

C. Econometric Model

Since the random assignment should ensure the orthogonality of treatment assignment and other student characteristics, we estimate the effects of the treatments via Ordinary Least Squares using the following specification:

$$Y_{ijk} = \alpha + \tau' treat_j + \delta' X_{ik} + \varepsilon_{ij}. \tag{1}$$

The variable Y_{ijk} is the dependent variable of interest. We perform estimates at the student and class level. The index i then represents either the student or class in school j and sub-county k. The vector $treat_j$ is a vector of indicator variables for each treatment, and X_{ik} is a vector of control variables. For each estimate, we control for baseline test scores, sub-county fixed effects and the baseline value of the outcome if available. We cluster standard errors by the unit of randomization, the school.

Section IV. Internal Validity

In Table 1, we verify the effectiveness of the randomization in creating observably similar treatment and control groups on average. Each row presents estimates for the indicated baseline characteristic. Columns 1-3 provide the sample size for each variable,[23] the pooled treatment mean and standard deviation, and the control mean and standard deviation. Column 4 provides the regression estimates of the difference between the combined treatment group and control group, while Columns 5-8 provide regression estimates of the difference between each treatment group and the control group. All differences are estimated using equation (1), controlling for the sub-counties in which the schools were stratified.

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[22] For both the baseline and endline exams, all scores are normalized within grade and subject relative to the contemporaneous control distribution.

[23] Sample sizes vary because subjects refused to respond to some questions.

Overall, the differences are minimal, i.e., the assignment to each treatment is orthogonal to a series of baseline variables. Of the 70 estimates presented, only seven are statistically significant: one at the one-percent level, four at the five percent level, and two at the ten percent level. And the overall joint test of significance presented in the bottom row is not significant for any treatment group. Most importantly, the magnitudes of the estimated differences are also all relatively small.

Even though the groups are comparable at baseline, differential attrition could result in differences in the analysis sample frame (i.e., those who complete the endline survey, or take the endline exams). Table 2 analyzes attrition. First, Row 1 presents the basic test for whether treatment led to differential attrition rates overall. Columns 2 and 3 show that we have identical survey completion rates in treatment and control (81 percent). Columns 5-8 show that we also find no differences across the four treatment groups.

However, even if overall survey completion rates are similar across treatment and control groups, the treatments may lead to different types of students completing the survey. To check for this, we replicate Table 1 analysis on various baseline measures. The table is organized similarly to Table 1 (except that the classroom variables are omitted, since there is no attrition at the classroom level). Overall, we find no evidence of compositional effects from differential attrition. Only five variables are statistically significant, and the only differences from Table 1 are the estimates for days missed per school term and the time preference measures. As with Table 1, the final row shows the aggregate tests, and we do not reject the null hypothesis of equality across treatment and control groups.

Section V. Results

First, we assess students' savings behavior. In Table 3, we provide two measures of total savings over the two years of the program: the total per school and per student (using two measures of the latter). Columns 1-4 provide the average for each research group. With a less restrictive measure of the student body (attendance at any point during the two year study period), the two cash payout treatment groups produce average per student savings of 2,196 UGX and 2,342 UGX in the parent outreach and no parent outreach groups, respectively. Using average attendance, these results approximately double to 4,212 and 4,560, respectively. In comparison, the two voucher treatments, with and without parent outreach, show average savings of 1,181 UGX and 1,118 UGX with a less restrictive measure of attendance, and 2,158 UGX and 2,167 UGX using average attendance. The differences between cash and voucher are statistically significant at the 99% level (Column 5), whereas the differences between parent and no parent outreach are not statistically significantly different from zero (Column 6).

We draw three conclusions from the savings data. First, the more restrictive savings vehicle, the voucher treatments, solicited significantly less savings than the less restrictive cash treatments. Second, for those in one of the savings treatment groups, we find no additional effect of the

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parent outreach on savings (and the parental outreach treatment was only implemented within the treatment groups, not within the control group, thus we can estimate its treatment effect in an environment without the savings treatments). Finally, we note that the within the cash treatment arm, the parent outreach has no additive. Thus this supports the upcoming evidence that while the cash treatment arm led to higher savings, the parent outreach component shifted *how* the funds were spent.[24]

Table 4 examines the other process and intermediate outcomes. First, in Panel A, we examine process outcomes from the program itself, as reported by students in the endline survey. We find that 79 percent of treatment students and only 11 percent of control students were familiar with the Supersavers program. Similarly, 44 percent of treatment group students and only 3 percent of control group students reported saving with Supersavers. There was little difference in program awareness as well as self-reported participation on the extensive margin across treatment groups. This thus supports the argument that the difference in outcomes is not due to differential marketing or promotion of the program, or differential compliance to experimental protocols, but rather to the attractiveness of the cash versus voucher condition and the parent outreach. We do not find any increase in total self-reported savings (which in theory includes "savings held at school", i.e., savings held as part of this program), but we also consider these data noisy, as it is difficult to obtain accurate information on balances of informal savings, particularly from children. We thus put more weight on the administrative data (reported in Table 3) that shows participation in the program, and the changes in more easily observable and measured process and outcome changes, such as school supplies and test scores.

We then examine intermediate outcomes, i.e., the possession of school supplies (measured both during classroom visits as well as in the endline survey[25]), parental involvement, savings attitudes, and payment of school fees. Analysis of these questions helps to understand the mechanism through which the program worked. We present the results for each, but only find an impact on the possession of school supplies, suggesting that the other mechanisms are not responsible for the observed impacts.

Table 4 Panel B presents the results on school supplies, as reported via classroom visits. The classroom visit school supplies index is normalized with respect to the control group mean and standard deviation, and takes the average of four proportions: proportion of students in the classroom possessing uniforms, notebooks, math sets, and shoes. In 2010, none of the treatment groups yields statistically significant increases relative to the control group. Relative to each other, the cash parent group is statistically different than the other treatment groups (Column 8), but this is partly the result of a decline in supplies experienced in two of the treatment groups.

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[24] Both parents and children contributed to the accounts. According to the endline survey, 57 percent of children reported having earned the money that they deposited.

[25] If control group household were buying school supplies earlier than treatment schools, because of the savings accounts and fairs, we would on average observe this because the classroom surveys were conducted during the term, not merely at the end of the term.

Relative to the control group, the cash with Parent Outreach treatment only improves by 0.12 standard deviations (se=0.13). Since the main difference between 2010 and 2011 is the addition of the Parent Outreach, the ineffectiveness of the cash treatments provides supporting evidence that the Parent Outreach is a necessary component.

For 2011, with an additional year of experience implementing the program and after the parent outreach had been fully launched, the Cash with Parent Outreach treatment arm performs considerably better than control, as well as the other three treatments (both when compared individually, as well as when the other treatments are pooled with control). Column 4 shows a 0.32 standard deviation improvement (se=0.14) compared just to control. This result is then reinforced by the endline survey, reported in Panel C: The school supplies index from the self-reported survey also shows in Column 4 a 0.11 standard deviation improvement (se=0.06) compared to control. We also find in Column 9, that the Cash with Parent Outreach is statistically different from the other treatments.[26] We do not however observe any statistically significant shifts in school fees expenditures (albeit with large standard errors), self-reported absence because of failure to pay school fees, or amount paid for most recent tests.[27]

Table 4 Panel C also reports on data from the endline survey on parental involvement and savings attitudes. Although the school supplies and test score impacts are strongest on the Cash with Parent Outreach treatment cell, we do not observe a direct impact on an index of three questions[28] regarding parental involvement in the child's education (or the individual components, as reported in Appendix Table 3b). Furthermore, we do not observe changes in a savings attitudes index of seven questions.[29] This may have implications for long-term change in saving behavior, if one posits that these attitudinal shifts are a necessary component for long-term behavior change, after the active involvement from the NGO and savings program. Alternatively, the measures may be flawed, or the attitudinal changes may be unnecessary; the

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[26] Appendix Tables 3d and 5 provide the details for each component of the supplies indexes in Panels B and C. The differences seem to be driven primarily by exercise books, although the individual components analysis is less robust statistically.

27 This pattern of results is consistent with students' reports on the endline survey regarding the disposition of the saved funds. While the quality of the data are poor, we do observe that students in the cash treatment with the parent sensitization report spending 3.63 percent more of the saved funds on school related expenses than students in the cash treatment without the sensitization. We observe no differences in the amount of the savings used to purchase food or clothing or given to other family members. The increase in school related expenditures primarily comes from "other" expenses. This difference, however, is likely too small to explain all of the observed increase in school supplies, suggesting that the parent sensitization functioned both to divert students' savings and other unsaved household resources towards school supplies.

[28] The three questions in the Parental Involvement Index are (1) Student thinks parents are responsible for children's education (2) Has your parent come to your school in the past year? (3) Has your parent seen a report of yours from school in the past year?

[29] Savings Attitude Index includes 7 statements each of which the student evaluated on a Likert scale, 1-5. All scales were converted after the fact so that higher on the scale meant more positive attitude toward saving. (1) Saving money is not necessary if you live at home with your family. (2) Saving is a good thing to do. (3) Saving is for adults only. (4) My parents or relatives would be proud of me for saving. (5) Managing to save makes me feel happy with myself. (6) It's better to spend money today than to save it for use in the future. (7) Every time I get money I put away some money for saving.

learned pattern of savings may be possible to change without changing underlying savings attitudes.

Next we turn to test score results in Table 5. We put forward two basic mechanisms here: first, the savings account enables the purchasing of school supplies that are necessary for learning; second, the parental outreach leads the households and children to use the savings accounts to actually spend the saved money on school supplies. This is consistent with the results in Table 4 on the impact on school supplies. And likewise, this mechanism predicts that the Cash with Parent Outreach treatment group should generate the largest (or only) positive impacts. Column 4 indicates that Cash with Parent Outreach improves overall scores by 0.11 standard deviations (se=0.04). Looking at the components of the test, we find improvements in grammar (0.15 standard deviations, se=0.05) and reading (0.11 standard deviation, se=0.05), but no effect on math. Consistent with the hypothesized theory of change, none of the other three treatment groups generate statistically significant improvements compared to the control group, either overall or for any subject.

We also examine whether the improved test scores arises through increased attendance or enrollment, but find no evidence for either. Table 6 Panel A reports results on attendance, and Panel B reports results on enrollment. None of the treatments generate statistically significant improvements relative to the control group.

Last we examine several attitudinal indices, and child labor, in Table 7. Starting with the five attitudinal indexes, we note caution in interpretation: in theory, these may be either intermediate outcomes influenced directly by the treatment(s), or consequences of the shift in resources and test scores. In practice, we observe only two statistically significant shifts out of 20 estimates..

In terms of child labor, critics of financial education for youth posit that introducing children to savings and financial decision-making may have the unintended consequence of focusing their attention on income, and then discourage school attendance in order to work (Varcoe et al. 2005). Berry, Karlan and Pradhan (2013) tests this in Ghana with students of similar age as this study, and finds that a financial education curriculum along with a savings box (but no directive or facilitation of using the savings for education expenses) did lead to higher child labor, whereas if a social values component was added to the financial education curriculum, there was no impact on child labor. In our setting, we find no impact from the program on child labor, either hours worked or total wages. Overall, the estimates from Tables 6 and 7, combined with the other outcomes, indicate that the observed effects on learning occur solely through changes in available supplies rather than changes in attitude or participation.

Section VI. Conclusion

Weaker rather than stronger commitments can, in some instances, prove more effective. In the context of an educational savings program, we find that families and children save more under a weaker savings strategy in which funds are not dedicated to educational expenses upon deposit

than they do under a strict commitment savings program in which all deposits are dedicated to educational expenses. The purpose of commitment savings devices is to intentionally limit the use of deposited funds. In some contexts, however, such services may need to strike a balance between providing sufficient limitations to make the savings mechanisms useful while being careful not to make the limitations so severe that they deter savings. The stricter limitations may work worse for behavioral reasons (e.g., wanting option value or judgment to change own's mind) or for institutional reasons (e.g., not trusting the institution that is offering the commitment device). In our setup, for example, the voucher treatment may work worse because individuals do not trust that proper and fairly priced school supplies will be available. However, although this seems plausible in the first year, we believe by the second year, after seeing the program work for a year, households should have learned that the right school supplies would be available at a reasonable price. Understanding the nature of this trade-off between strict and loose commitment is an important direction for future research.

When combined with a parent sensitization program, we find that families and children in the cash arm spend their savings on educational expenses (school supplies).[30] This does not, however, alter school participation – we find no effects on enrollment or attendance – but does improve students' scores on a basic math and language test by 0.11 standard deviations. This suggests that financial constraints may play an important role in students' academic performance and that understanding the role of families' financial decision process may be an important element in understanding the overall production process of education.

On a practical level, several implementation issues are important to explore. As a program designed to improve student learning, treatment effects of this magnitude are large compared to other evaluations of interventions designed to provide resources to schools or directly to children (Jameel Poverty Action Lab 2014), but they are small relative to many other types of programs (most notably, for example, programs that provide additional resources while also changing pedagogical strategies). Taking the programs relative low cost (2.24 USD per student per year) into account using the methodology proposed by Dhaliwal et. al.(2014), however, the program delivers learning gains at a cost of 1.49 USD per tenth of a standard deviation or 6.71 standard deviations per 100 USD.[31] This is very competitive relative to other programs. Relative to the 27 studies compared by J-PAL (2014), only four produce improvements in test scores more cost-effectively.

In terms of encourage family savings, the program costs were high relative to the savings generated. However, if the program generated long term savings behavior change, then between

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[30] Although we find that the voucher treatment led to about half the deposits as that of the cash arm, we do not find that school supplies increased by half. We posit two possible explanations. First, although the point estimate is close to zero, we cannot reject, statistically, a point estimate of half of that of the cash treatment effect. Second, the voucher treatment arm may have led to a reduction in school supplies through an anchoring effect (if the amount saved in vouchers was smaller for some than they would have spent otherwise).

[31] Estimates are provided in 2011 USD.

the continued savings and the improvement in educational outcomes, it would surpass typical cost benefit calculations. In addition, it may be possible to reduce costs, particularly with implementation via mobile banking. This would obviate the need for physical transfer of cash to a bank, and would lower the risk of theft from keeping cash in a (albeit locked) box at the school. However, if the group nature of the intervention (i.e., the public and communal training) was an important element for take-up (through mimicking of peers, or learning from peers) and adherence (through monitoring and potential for social recognition), then a mobile banking implementation may lose that visual classroom element. Although these peer mechanisms were not emphasized in the training and implementation of the program, the fact that the savings were done publicly may have had such an effect.

On a more theoretical level, these results open up many related questions. How does the optimality of looser versus stricter commitments depend on whether savings is long term or short-term? If one is saving for potentially short-run needs, such as a buffer stock, looser knots may be optimal; whereas long-term savings, such as for retirement, may require tighter commitments as the benefits from savings are too remote. Also with respect to timing, are external interventions of this sort effective in changing long term behavior, i.e., does the psychic cost of deviation persist, even without an outsider-led intervention?

Questions also persist regarding how such interventions influence intra-household dynamics. Did the intervention shift the preferences of the child, or the parents, or both, and what does this imply for intra-household cross-generational bargaining issues?

Lastly, design issues may be critical for such a program to work. For example, how critical was the timing element of the "soft" commitment device, i.e., the fact that the school supplies were immediately available for purchase at the time of withdrawal? If that was critical, it is a ringing endorsement for the "make it easy" mantra, and also implies that the soft commitment device may have worked for reasons elaborated on in Mullainathan and Shafir (2013), because it increased the attention of individuals to educational expenses at exactly the right moment, when they had cash in their hands.

Figure 1: Research Timeline
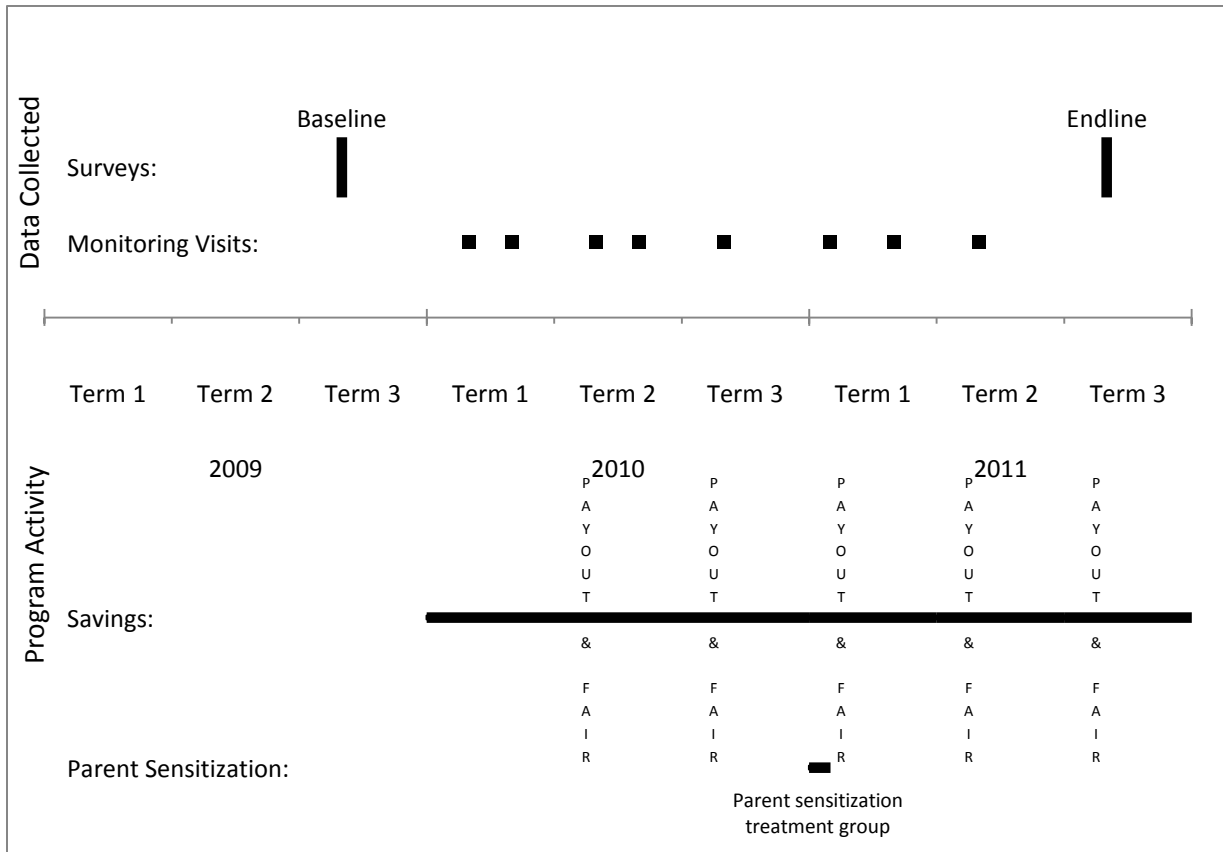
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Table 1: Summary Statistics and Orthogonality Verification of Random Assignment, Full Sample Frame from Baseline
Mean (standard deviation) and OLS

Dependent Variables	Number of Obs.	Mean (std dev) Any Treatment	Control	OLS (one specification per cell) Any Treatment	Cash with Parent Outreach	Voucher with Parent Outreach	Cash w/o Parent Outreach	Voucher w/o Parent Outreach	P-value for test of Cash Parent = Other Treatments
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Classroom Survey: % of students in attendance	811	0.09	0.10	-0.01	-0.02	-0.01	-0.01	-0.01	0.55
		(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	
Classroom Survey: Supplies Index	813	0.03	0.01	0.02	0.22*	0.04	-0.12	-0.05	0.02
		(0.05)	(0.05)	(0.10)	(0.11)	(0.15)	(0.19)	(0.14)	
Normalized Test Score: Grammar	4710	0.08	0.00	0.11	0.12	-0.02	0.18*	0.14	0.87
		(0.02)	(0.02)	(0.07)	(0.11)	(0.09)	(0.10)	(0.09)	
Normalized Test Score: Reading	4713	0.00	0.00	0.01	-0.02	-0.00	0.02	0.05	0.59
		(0.02)	(0.02)	(0.07)	(0.10)	(0.09)	(0.09)	(0.11)	
Normalized Test Score: Math	4715	0.00	0.00	0.02	-0.01	-0.07	0.07	0.08	0.72
		(0.02)	(0.02)	(0.06)	(0.09)	(0.08)	(0.10)	(0.10)	
Normalized Test Score: Total	4716	0.03	0.00	0.06	0.04	-0.03	0.11	0.11	0.77
		(0.02)	(0.02)	(0.07)	(0.11)	(0.09)	(0.10)	(0.11)	
Student Survey: Attendance Code (lower = more attendance)	4716	1.43	1.42	0.00	-0.07	0.10	-0.01	0.00	0.33
		(0.02)	(0.02)	(0.07)	(0.11)	(0.12)	(0.11)	(0.10)	
Student Survey: Days missed per school term	3886	1.63	1.64	-0.02	-0.04	-0.06	-0.07	0.10*	0.57
		(0.02)	(0.02)	(0.04)	(0.07)	(0.07)	(0.07)	(0.06)	
Student Survey: Prefer 500 UGX today to 800 UGX tomorrow	4702	0.65	0.64	0.01	0.02	-0.00	-0.04	0.07**	0.83
		(0.01)	(0.01)	(0.02)	(0.04)	(0.03)	(0.03)	(0.03)	
Student Survey: Prefer 500 UGX today to 800 UGX next week	4699	0.29	0.24	0.04**	0.06	0.07**	-0.02	0.07**	0.68
		(0.01)	(0.01)	(0.02)	(0.04)	(0.03)	(0.03)	(0.03)	
Student Survey: Child receives pocket money from family	4678	0.75	0.74	0.01	-0.02	0.03	0.07***	-0.02	0.04
		(0.01)	(0.01)	(0.02)	(0.02)	(0.03)	(0.02)	(0.03)	
Student Survey: Amount received in pocket money (UGX)	4698	204.20	214.45	-7.92	-17.84	-1.30	9.69	-21.83	0.30
		(5.13)	(6.65)	(13.91)	(16.31)	(19.61)	(18.07)	(19.39)	
Joint Significance Test F-stat, one regression per column with column header as dep var (p-value)				1.35	1.16	1.08	1.25	1.10	
				(0.21)	(0.32)	(0.38)	(0.27)	(0.37)	

% of students in attendance: The enumerators count of the number of students present during a classroom visit, divided by the enrollment in the class as provided by the teacher.
Supplies Index: the normalized mean of 4 binary measures: whether a student has a uniform, notebook, mathset, and shoes. The coefficient is expressed as standard deviations from the control mean. Attendance Code: A subjectively recorded code given with the enrollment data that indicates how frequently a student attends, from 1 (always attends) to 6 (never attends). OLS specifications: Columns 4 and in Colums 5-8 include robust standard errors, clustered by school (the unit of randomization), and subcounty fixed effects (the stratification variable). * p<0.10 ** p<0.05 *** p<.01

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Table 2: Summary Statistics and Orthogonality Verification of Random Assignment, Post-Attrition Sample Frame
Mean (standard deviation) and OLS

Dependent Variables	Number of Obs.	Mean (std dev) Any Treatment	Control	OLS (one specification per cell) Any Treatment	OLS (one specification per row) Cash with Parent Outreach	Voucher with Parent Outreach	Cash w/o Parent Outreach	Voucher w/o Parent Outreach	P-value for test of Cash Parent = Other Treatments
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Endline survey completed (of baseline students)	4716	0.81	0.81	0.00	0.01	0.00	-0.02	0.02	0.16
		(0.39)	(0.39)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	
Normalized Test Score: Grammar	3832	0.09	0.01	0.06*	0.09**	0.00	0.10**	0.05	0.87
		(0.99)	(1.00)	(0.03)	(0.04)	(0.05)	(0.05)	(0.04)	
Normalized Test Score: Reading	3835	0.01	0.01	-0.03	-0.05	0.03	-0.07	-0.03	0.59
		(1.02)	(1.00)	(0.03)	(0.04)	(0.04)	(0.05)	(0.04)	
Normalized Test Score: Math	3837	0.00	0.01	-0.03	-0.04	-0.04	-0.03	-0.02	0.72
		(0.98)	(0.98)	(0.04)	(0.04)	(0.05)	(0.06)	(0.06)	
Normalized Test Score: Total	3837	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.77
		(0.99)	(0.99)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	
Student Survey: Attendance Code (lower = more attendance)	3837	1.42	1.42	-0.01	-0.08	0.07	-0.03	-0.01	0.33
		(0.94)	(0.90)	(0.07)	(0.12)	(0.13)	(0.10)	(0.10)	
Student Survey: Days missed per school term	3145	1.62	1.63	-0.01	-0.03	-0.05	-0.05	0.09	0.57
		(0.91)	(0.93)	(0.05)	(0.07)	(0.08)	(0.07)	(0.06)	
Student Survey: Prefer 500 UGX today to 800 UGX next week	3828	1.37	1.37	0.00	0.01	-0.01	0.01	-0.01	0.83
		(0.48)	(0.48)	(0.02)	(0.02)	(0.03)	(0.03)	(0.02)	
Student Survey: Prefer 500 UGX today to 800 UGX tomorrow	2415	1.49	1.52	-0.03	-0.05	0.00	-0.01	-0.03	0.68
		(0.50)	(0.50)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)	
Student Survey: Child receives pocket money from family	3805	0.75	0.74	0.01	-0.02	0.02	0.05**	-0.02	0.04
		(0.43)	(0.44)	(0.02)	(0.02)	(0.03)	(0.02)	(0.03)	
Student Survey: Amount received in pocket money (UGX)	3821	199.30	217.59	-16.08	-19.38	-12.07	3.27	-34.54*	0.30
		(248.80)	(303.02)	(15.17)	(18.37)	(21.01)	(18.98)	(18.34)	

% of students in attendance: The enumerators count of the number of students present during a classroom visit, divided by the enrollment in the class as provided by the teacher. Supplies Index: the normalized mean of 4 binary measures: whether a student has a uniform, notebook, mathset, and shoes. The coefficient is expressed as standard deviations from the control mean. Attendance Code: A subjectively recorded code given with the enrollment data that indicates how frequently a student attends, from 1 (always attends) to 6 (never attends). OLS specifications: Columns 4 and in Colums 5-8 include robust standard errors, clustered by school (the unit of randomization), and subcounty fixed effects (the stratification variable). * p<0.10 ** p<0.05 *** p<.01

Table 3: Super Savers Program Savings by Treatment Group in '000 UGX
Mean (standard error)

Dependent Variables	Mean (standard error)				p-value from t-test	
	Cash with Parent Outreach	Cash w/o Parent Outreach	Voucher with Parent Outreach	Voucher w/o Parent Outreach	Cash vs. Voucher	Outreach vs. No Outreach
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Both Years						
Average Cumulative Deposits Made per School	527.08	553.23	265.87	290.31	0.001***	0.761
	(132.23)	(68.83)	(32.59)	(42.12)		
Average Cumulative Deposits Made per Student (any attendance)	2.20	2.34	1.18	1.12	0.000***	0.985
	(0.37)	(0.34)	(0.17)	(0.18)		
Average Cumulative Deposits Made per Student (avg attendance)	4.21	4.56	2.16	2.17	0.000***	0.895
	(0.76)	(0.69)	(0.29)	(0.38)		
Panel B: 2010						
Average Cumulative Deposits Made per School (2010)	180.29	186.76	109.09	105.24	0.021**	0.969
	(53.34)	(28.26)	(19.46)	(19.33)		
Average Cumulative Deposits Made per Student in 2010 (any attendance)	0.95	0.99	0.58	0.48	0.006***	0.746
	(0.20)	(0.18)	(0.13)	(0.09)		
Average Cumulative Deposits Made per Student in 2010 (avg attendance)	1.28	1.43	0.78	0.69	0.005***	0.999
	(0.25)	(0.27)	(0.17)	(0.14)		
Panel C: 2011						
Average Cumulative Deposits Made per School (2011)	346.78	366.47	156.78	185.07	0.000***	0.659
	(81.99)	(50.49)	(16.30)	(28.77)		
Average Cumulative Deposits Made per Student in 2011 (any attendance)	3.60	2.91	1.26	1.51	0.013**	0.688
	(1.29)	(0.54)	(0.15)	(0.32)		
Average Cumulative Deposits Made per Student in 2011 (avg attendance)	4.41	3.67	1.60	1.77	0.014**	0.695
	(1.64)	(0.70)	(0.17)	(0.37)		
Observations (schools)	19	20	19	20		

Results from bank administrative school-level data. Exchange rate 2815 Ugandan Shillings per US dollar. Cumulative savings deposits for full two years of the program. Note that these data are collected at the school level, i.e., the Average Deposits per Student is the average across schools of the average deposits per student at each school. Number of students per school is calculated attendance data from 8 visits over 2 years. The top specification counts any student who attended during any of these 8 visits; the bottom uses the average number of students present over those 8 visits. * $p<0.10$ ** $p<0.05$ *** $p<.01$.

Dependent Variables	Number of Obs. (1)	Mean (std dev) Any Treatment (2)	Mean (std dev) Control (3)	OLS (one specification per cell) Any Treatment (4)	OLS Cash with Parent Outreach (5)	OLS Voucher with Parent Outreach (6)	OLS Cash w/o Parent Outreach (7)	OLS Voucher w/o Parent Outreach (8)	P-value for test of Cash Parent = Other Treatments (9)
Panel A: Process Outcomes (Endline Survey - 2011)									
Heard of Super Savers program	3831	0.79	0.11	0.67***	0.69***	0.67***	0.68***	0.64***	0.23
		(0.41)	(0.32)	(0.02)	(0.02)	(0.03)	(0.02)	(0.03)	
Saved with Super Savers	3832	0.44	0.03	0.40***	0.42***	0.39***	0.44***	0.35***	0.37
		(0.50)	(0.18)	(0.02)	(0.02)	(0.04)	(0.03)	(0.04)	
Ever Saves Money	3829	0.79	0.79	0.00	0.01	0.02	0.02	-0.02	0.86
		(0.40)	(0.41)	(0.02)	(0.02)	(0.03)	(0.03)	(0.02)	
Total self-reported savings ('000 UGX), 1% trimmed	3838	7.03	7.88	-719.99*	-0.36	-1.40**	-0.15	-0.95*	0.41
		(13.99)	(15.10)	(397.08)	(0.63)	(0.59)	(0.61)	(0.53)	
Primary Source of Savings was Work	3838	0.43	0.47	-0.04*	-0.06**	-0.04	0.00	-0.05**	0.24
		(0.50)	(0.50)	(0.02)	(0.03)	(0.03)	(0.03)	(0.02)	
Panel B: Intermediate Outcomes (Classroom Visits)									
School Supplies Index 2010	813	-0.23	-0.08	-0.08	0.12	-0.05	-0.17	-0.21	0.06
		(1.18)	(0.88)	(0.12)	(0.13)	(0.20)	(0.24)	(0.19)	
School Supplies Index 2011	882	0.30	0.21	0.08	0.32**	0.04	-0.09	0.07	0.02
		(0.95)	(0.92)	(0.12)	(0.14)	(0.17)	(0.21)		
Student Survey: Prefer 500 UGX today to 800 UGX tomorrow									
School Supplies Index	3838	0.01	0.00	0.01	0.11*	0.02	-0.06	-0.04	0.02
		(1.02)	(1.00)	(0.04)	(0.06)	(0.05)	(0.07)	(0.06)	
Parental Involvement Index	3838	0.01	0.00	0.00	0.04	-0.01	0.00	-0.01	0.42
		(1.04)	(1.00)	(0.04)	(0.06)	(0.06)	(0.06)	(0.06)	
Savings Attitude Index	3838	0.05	0.00	0.06	0.04	0.10	0.06	0.02	0.76
		(1.00)	(1.00)	(0.04)	(0.08)	(0.07)	(0.07)	(0.06)	
School Fees	3838	28,804.26	33,580.77	-4652.60	-6158.51	-6179.58	-3000.08	-3340.79	0.55
		(64594.63)	(76629.27)	(3802.75)	(4445.07)	(5017.89)	(4698.29)	(5229.41)	
Missed school because sent to look for fees or lack of scholastic materials	3583	0.18	0.18	0.00	-0.01	-0.00	0.02	-0.01	0.67
		(0.38)	(0.39)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	
Cost of most recent test	2348	1506.71	1589.22	-57.27	-68.45	78.24	-318.33	55.89	0.95
		(2658.92)	(2843.68)	(190.06)	(273.29)	(255.71)	(245.58)	(302.07)	

See next page for notes.

Table 4 Notes:

<u>Total</u> <u>Self</u> <u>Reported</u> <u>Savings</u> <u>(Endline</u> <u>Survey)</u>: sum of amount of money respondents reported savings in each of a variety of locations (at home in local bank, hidden at home, give to a family member, savings program at school -- which likely includes the savings held as part of the treatment, in a bank account of a family member, other). <u>School</u> <u>Supplies</u> <u>Index</u> <u>(Classroom</u> <u>Visits)</u>: Enumerators at several classroom visits each term counted the number of students with school supplies then we divided that number by the number of students in attendance. <u>School</u> <u>Supplies</u> <u>Index</u> <u>(Endline</u> <u>Survey)</u>: a standardized index of the count of categories for which at least one item is owned of the following: uniforms, notebooks, mathsets, and shoes. <u>Parental</u> <u>Involvement</u> <u>Index</u> <u>includes</u> <u>3</u> <u>questions</u>: 1) Student thinks parents are responsible for children's education. 2) Has your parent come to your school in the past year? 3) Has your parent seen a report of yours from school in the past year? <u>Savings</u> <u>Attitude</u> <u>Index</u> includes 7 statements each of which the student evaluated on a Likert scale, 1-5. All scales were converted after the fact so that higher on the scale meant more positive attitude toward saving. 1) Saving money is not necessary if you live at home with your family. 2) Saving is a good thing to do. 3) Saving is for adults only. 4) My parents or relatives would be proud of me for saving. 5) Managing to save makes me feel happy with myself. 6) It's better to spend money today than to save it for use in the future. 7) Every time I get money I put away some money for saving. <u>Column</u> <u>5</u> compares the Cash with Parent Outreach to the pool of the three other treatments and control group. <u>OLS</u> <u>specifications</u>: Columns 4-7 include robust standard errors, clustered by school (the unit of randomization), a control for children's mean testing score, and subcounty fixed effects (the stratification variables). *$p<0.10$ **$p<0.05$ ***$p<.01$. Column 8 is the p-value of an F-test of sigificance on a regression of the cash parent treatment against all other treatmnets and the same controls from Columns 4-7.

Table 5: Effect of Super Savers on Normalized Test Scores
Mean (standard deviation) and OLS

| | Number of Obs. | Mean (std dev) | | OLS (one specification per cell) | OLS (each row = one regression) | | | | P-value for test of Cash Parent = Other Treatments |
| | | Any Treatment | Control | Any Treatment | Cash with Parent Outreach | Voucher with Parent Outreach | Cash w/o Parent Outreach | Voucher w/o Parent Outreach | |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Grammar	3768	0.05	-0.01	0.05	0.15***	0.03	0.06	-0.05	0.01
		(1.05)	(0.99)	(0.04)	(0.05)	(0.05)	(0.05)	(0.07)	
Reading	3765	0.02	0.00	0.01	0.11**	0.00	-0.03	-0.03	0.00
		(1.01)	(1.00)	(0.04)	(0.05)	(0.05)	(0.05)	(0.07)	
Math	3768	-0.04	0.00	-0.05	0.00	-0.11**	-0.01	-0.09	0.09
		(1.00)	(1.00)	(0.04)	(0.04)	(0.04)	(0.05)	(0.07)	
Total	3765	0.01	0.00	0.01	0.11**	-0.02	0.00	-0.06	0.00
		(1.02)	(1.00)	(0.03)	(0.04)	(0.05)	(0.04)	(0.07)	

OLS specifications: Columns 4-7 include robust standard errors, clustered by school (the unit of randomization), a control for children's mean testing score, and subcounty fixed effects (the stratification variables). *p<0.10 **p<0.05 ***p<.01. Column 8 is the p-value of an F-test of sigificance on a regression of the cash parent treatment against all other treatmnets and the same controls from Columns 4-7.

Table 6: Effect of Super Savers on School Participation
Mean (standard deviation) and OLS

	Number of Obs.	Mean (std dev)		OLS (one specification per cell)	OLS (each row = one regression)				P-value for test of Cash Parent = Other Treatments
		Any Treatment	Control	Any Treatment	Cash with Parent Outreach	Voucher with Parent Outreach	Cash w/o Parent Outreach	Voucher w/o Parent Outreach	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Attendance rate									
2010	4705	0.35	0.35	-0.02	-0.06	-0.02	-0.03	0.02	0.24
		(0.42)	(0.42)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)	
2011	4705	0.20	0.17	0.00	-0.01	0.00	0.02	0.01	0.42
		(0.38)	(0.35)	(0.02)	(0.03)	(0.03)	(0.03)	(0.02)	
Overall (2010 & 2011 combined)	4705	0.29	0.28	-0.01	-0.04	-0.01	-0.01	0.02	0.27
		(0.37)	(0.36)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)	
Attendance Index	3586	-0.02	0.00	-0.01	0.02	-0.00	-0.05	-0.03	0.23
		(0.98)	(1.00)	(0.04)	(0.06)	(0.06)	(0.06)	(0.06)	
Panel B: Enrollment rate									
2010	4716	0.44	0.44	-0.03	-0.08	-0.03	-0.02	0.03	0.15
		(0.50)	(0.50)	(0.03)	(0.05)	(0.05)	(0.05)	(0.05)	
2011	4716	0.24	0.22	-0.00	-0.02	-0.00	0.02	-0.00	0.39
		(0.43)	(0.41)	(0.02)	(0.04)	(0.03)	(0.04)	(0.03)	

Attendance Rate: Based on a roll call of students on the official school enrollment list, counting only those students present in the class when roll call was done. Attendance Index: includes 3 self-reported questions on student attendance: 1) Of the five school days of last week, how many were you absent? 2) Think of a normal week from last term, of the five school days how many were you usually absent from school? 3) Think of a normal month from last term, how many days were you usually absent? Enrollment Rate: Based on teacher responses as to whether a student on the official school enrollment list, was still enrolled at that school. OLS specifications: Columns 4-7 include robust standard errors, clustered by school (the unit of randomization), a control for children's mean testing score, and subcounty fixed effects (the stratification variables). *p<0.10 **p<0.05 ***p<.01. Column 8 is the p-value of an F-test of sigificance on a regression of the cash parent treatment against all other treatmnets and the same controls from Columns 4-7.

Table 7: Effect of Super Savers on Student Attitudes
Mean (standard deviation) and OLS

	Number of Obs.	Mean (std dev)		OLS (one specification per cell)	OLS (each row = one regression)				P-value for test of Cash Parent = Other Treatments
		Any Treatment	Control	Any Treatment	Cash with Parent Outreach	Voucher with Parent Outreach	Cash w/o Parent Outreach	Voucher w/o Parent Outreach	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Self Esteem Index	3838	-0.02	0.00	-0.03	-0.05**	-0.03	-0.03	-0.01	0.23
		(0.44)	(0.44)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	
Time Preference Index	3838	-0.04	0.00	-0.04	-0.02	-0.05	-0.04	-0.06	0.55
		(1.01)	(1.00)	(0.04)	(0.07)	(0.07)	(0.06)	(0.06)	
Locus of Control	3826	1.58	1.60	-0.02	-0.01	-0.02	-0.01	-0.03	0.75
		(0.49)	(0.49)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	
Financial Independence Index	3838	-0.04	0.00	-0.04	-0.06	-0.13**	0.05	-0.01	0.64
		(0.97)	(1.00)	(0.04)	(0.06)	(0.06)	(0.06)	(0.05)	
Aspirations Index	3838	-0.01	0.00	-0.02	-0.04	-0.03	0.03	-0.03	0.56
		(1.04)	(1.00)	(0.04)	(0.06)	(0.06)	(0.04)	(0.06)	
Total annual hours worked, wins. 99%	3838	295.33	294.96	3.43	-4.32	-32.83	29.91	20.04	0.69
		(461.85)	(447.26)	(17.63)	(23.24)	(28.38)	(29.82)	(26.39)	
Total annual income from work (10k UGX), wins. 99%	3838	18.00	18.00	-0.05	-1.87	-2.91	3.59*	0.97	0.17
		(34.00)	(34.00)	(1.37)	(1.72)	(2.23)	(2.09)	(2.02)	

Self Esteem Index: includes 10 statements each of which the student evaluated on a Likert scale, 1-5. All scales were converted after the fact so that higher on the scale meant higher self esteem. 1) I am satisfied with myself. 2) Sometimes I think I am no good at all. 3) I believe I have a number of good qualities. 4) I am able to do things as well as most children. 5) I do not have much to be proud of. 6) Sometimes I feel useless. 7) I believe I am a valuable person, at least as much as my classmates. 8) I wish I could have more respect for myself 9) I sometimes think that I am a failure. 10) When I think of myself, I usually think good thoughts. In addition to those 10 statements, there is one question: 11) Are you confident that you will be successful in the future? Time Preference Index: includes 2 hypothetical time preference choices. 1) Would you rather receive 500 shillings today or 800 shillings next week? 2) Would you rather receive 500 shillings today or 1,000 shillings next week? From these, respondents were split into low, medium, and high future preference groups. Locus of Control: If a person is successful in life, is it because he or she was lucky or because he or she worked very hard? (1=yes, 2=no) Financial Independence Index: includes 3 questions: 1) How much money do you think you will get in the next 7 days? 2) How much money did you get in the past 7 days? 3) How much pocket money are you given to spend as you wish? Aspirations Index: includes 4 questions about academic and vocation aspirations: 1) If you graduate from primary school, will your life be better than if you hadn't graduated? 2) Do you think you will go to secondary school? 3) Do you think you will reach university? 4) What do you want to be when you grow up? (student responded with career that requires higher education) Exchange rate: 2815 Ugandan Shillings per US dollar. OLS specifications: Columns 4-7 include robust standard errors, clustered by school (the unit of randomization), a control for children's mean testing score, and subcounty fixed effects (the stratification variables). *p<0.10 **p<0.05 ***p<.01. Column 8 is the p-value of an F-test of sigificance on a regression of the cash parent treatment against all other treatmnets and the same controls from Columns 4-7.

Appendix Table 1: Data Collection Summary			
	2010	2011	2012
Student Survey			
Grades Covered	P5, P6	P6, P7	
Median age	12, 13	13, 14	
Sample Size (Students)	4983	4059	
Attendance Survey			
Grades Covered	P5, P6	P6, P7	P7
Median age	12, 13	13, 14	14
Sample Size (Students)	37874	29016	13681
Classroom Survey			
Grades Covered	P5, P6, P7	P5, P6, P7	P5, P6, P7
Median age	12, 13, 14	12, 13, 14	12, 13, 14
Sample Size (Classes)	406	408	340

Appendix Table 2: Additional Attrition Analysis

OLS

Dependent variable:	Endline Survey Completed (1)	Endline Survey Completed (2)	Endline Survey Completed (3)	Endline Test Completed (4)	Endline Test Completed (5)	Endline Test Completed (6)
Cash with Parent Outreach	-0.002	-0.004	-0.02	-0.0004	-0.002	-0.04
	(0.02)	(0.02)	(0.07)	(0.02)	(0.02)	(0.08)
Cash w/o Parent Outreach	-0.01	-0.006	0.06	0.002	0.003	0.04
	(0.02)	(0.02)	(0.08)	(0.02)	(0.02)	(0.08)
Voucher with Parent Outreach	0.004	0.007	0.06	0.008	0.008	0.04
	(0.02)	(0.02)	(0.07)	(0.02)	(0.02)	(0.07)
Voucher w/o Parent Outreach	0.02	0.02	0.10	0.02	0.01	0.05
	(0.02)	(0.02)	(0.07)	(0.02)	(0.02)	(0.07)
Constant	0.76***	0.71***	0.69***	0.75***	0.69***	0.69***
	(0.02)	(0.04)	(0.05)	(0.02)	(0.04)	(0.06)
Observations	4983	4057	4057	4983	4057	4057
Covariates	No	Yes	Yes	No	Yes	Yes
Interactions between each covariate and each treatment variable	No	No	Yes	No	No	Yes
Control mean	0.81	0.81	0.81	0.80	0.80	0.80
(Control sd)	(0.39)	(0.39)	(0.39)	(0.40)	(0.40)	(0.40)
F-test (p-value) of joint significance of the four treatment assignments	0.70 (0.59)	0.53 (0.71)		0.30 (0.88)	0.15 (0.96)	
F-test (p-value) of joint significance of interaction terms of each covariate with each treatment			1.57** (0.02)			1.45* (0.05)

All specifications are OLS, include subcounty (the stratification variable) fixed effects, and cluster standard errors by school. * $p<0.10$ ** $p<0.05$ ***

Appendix Table 3a: Effect of Super Savers on Financial Indices and their Components
Mean (standard deviation) and OLS

	Number of Obs.	Mean (std dev)		OLS (one specification per cell)	OLS (each row = one regression)				P-value for test of Cash Parent = Other Treatments
		Any Treatment	Control	Any Treatment	Cash with Parent Outreach	Voucher with Parent Outreach	Cash w/o Parent Outreach	Voucher w/o Parent Outreach	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Savings Attitude Index & Components									
Savings Attitude Index	3838	0.05	0.00	0.06	0.04	0.10	0.06	0.02	0.76
		(1.00)	(1.00)	(0.04)	(0.08)	(0.07)	(0.07)	(0.06)	
Saving money is not necessary if you live at home with your family.	3819	3.07	2.96	0.11***	0.14**	0.12**	0.11*	0.07	0.50
		(0.81)	(0.85)	(0.04)	(0.06)	(0.05)	(0.06)	(0.05)	
Saving is a good thing to do.	3830	3.49	3.50	-0.01	-0.06	0.04	-0.04	0.00	0.09
		(0.54)	(0.54)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)	
Saving is for adults only.	3818	3.36	3.33	0.03	0.03	0.07*	0.00	0.01	0.95
		(0.64)	(0.65)	(0.03)	(0.05)	(0.04)	(0.04)	(0.04)	
My parents or relatives would be proud of me for saving.	3769	3.21	3.20	0.01	0.01	0.01	0.03	-0.02	0.97
		(0.58)	(0.61)	(0.02)	(0.04)	(0.03)	(0.04)	(0.03)	
Managing to save makes me feel happy with myself.	3819	3.38	3.35	0.03	0.04	0.05	0.01	0.03	0.81
		(0.58)	(0.61)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)	
It's better to spend money today than to save it for use in the future.	3813	3.16	3.13	0.03	0.00	0.06	0.08**	0.00	0.30
		(0.70)	(0.70)	(0.03)	(0.05)	(0.04)	(0.04)	(0.04)	
Every time I get money I put away some money for saving.	3812	3.04	3.05	-0.01	0.01	-0.05	0.03		0.63
		(0.68)	(0.71)	(0.03)	(0.04)	(0.05)	(0.05)	(0.05)	
Financial Independence Index & Components									
Financial Independence Index	3838	-0.04	0.00	-0.04	-0.06	-0.13**	0.05	-0.01	0.64
		(0.97)	(1.00)	(0.04)	(0.06)	(0.06)	(0.06)	(0.05)	
How much money do you think you will get in the next 7 days? winsorized at 99%	3650	2245.60	2399.59	-129.85	-229.96	-447.79*	201.19	-40.54	0.53
		(4225.71)	(4587.07)	(167.64)	(213.72)	(252.52)	(250.32)	(243.15)	
How much money did you get in the past 7 days? winsorized at 99%	3838	1957.95	2038.95	-71.56	-125.25	-412.22**	269.55	-18.67	0.69
		(3332.84)	(3464.53)	(119.46)	(191.67)	(189.24)	(187.60)	(154.55)	
How much pocket money are you given to spend as you wish? winsorized at 99%	3838	4394.88	4584.16	-205.17	-336.91	-436.43	-4.05	-51.66	0.78
		(7170.65)	(7246.93)	(284.54)	(357.98)	(413.56)	(534.25)	(428.97)	

All specifications are OLS, include subcounty (the stratification variable) fixed effects, and cluster standard errors by school. * p<0.10 ** p<0.05 *** p<0.01

Appendix Table 3b: Effect of Super Savers on Academic Indices and their Components
Mean (standard deviation) and OLS

	Number of Obs.	Mean (std dev)		OLS (one specification per cell)	OLS (each row = one regression)				P-value for test of Cash Parent = Other Treatments
		Any Treatment	Control	Any Treatment	Cash with Parent Outreach	Voucher with Parent Outreach	Cash w/o Parent Outreach	Voucher w/o Parent Outreach	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Parental Involvement Index & Components									
Parental Involvement Index	3838	0.01	0.00	0.00	0.04	-0.01	0.00	-0.01	0.42
		(1.04)	(1.00)	(0.04)	(0.06)	(0.06)	(0.06)	(0.06)	
Has parent seen a report from school in the past year?	3838	0.90	0.90	-0.01	0.01	0.00	-0.02	-0.02	0.19
		(0.30)	(0.29)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	
Has your parent come to your school in the past year?	3838	0.71	0.71	-0.00	0.00	-0.02	0.00	0.01	0.69
		(0.46)	(0.45)	(0.02)	(0.03)	(0.02)	(0.03)	(0.03)	
Student thinks parents are responsible for education.	3838	0.72	0.70	0.02	0.02	0.01	0.04	0.02	0.96
		(0.45)	(0.46)	(0.02)	(0.03)	(0.03)	(0.03)	(0.02)	
Aspirations Index & Components									
Aspirations Index	3838	-0.01	0.00	-0.02	-0.04	-0.03	0.03	-0.03	0.56
		(1.04)	(1.00)	(0.04)	(0.06)	(0.06)	(0.04)	(0.06)	
Do you think you will go to secondary school?	3699	-0.05	0.00	-0.05	-0.10	-0.03	0.00	-0.09	0.39
		(1.11)	(1.00)	(0.04)	(0.06)	(0.06)	(0.04)	(0.06)	
Do you think you will reach university?	3057	-0.05	0.00	-0.06	-0.05	-0.10*	0.00	-0.09	0.95
		(1.04)	(1.00)	(0.04)	(0.06)	(0.06)	(0.06)		
If you graduate from primary school, will your life be better than if you hadn't graduated?	3838	0.05	0.00	0.04	0.08	0.00	0.06	0.04	0.26
		(0.94)	(1.00)	(0.03)	(0.05)	(0.04)	(0.05)	(0.05)	
What do you want to be when you grow up? (student responded with career that requires higher education)	3838	0.02	0.00	0.01	-0.04	0.05	0.01	0.02	0.09
		(0.98)	(1.00)	(0.03)	(0.04)	(0.05)	(0.05)	(0.04)	
Attendance Index & Components									
Attendance Index	3586	-0.02	0.00	-0.01	0.02	0.00	-0.05	-0.03	0.23
		(0.98)	(1.00)	(0.04)	(0.06)	(0.06)	(0.06)	(0.06)	
Of five school days of last week, was absent for	3585	0.75	0.70	0.05	0.13	0.07	0.04	-0.02	0.33
		(1.33)	(1.27)	(0.06)	(0.11)	(0.08)	(0.09)	(0.09)	
In normal week from last term, how many days were you usually absent from school?	3586	1.27	1.31	-0.02	0.00	-0.01	-0.04	-0.02	0.44
		(1.48)	(1.54)	(0.07)	(0.08)	(0.09)	(0.10)	(0.10)	
Think of a normal month from last term, how many days were you usually absent?	3463	3.34	3.59	-0.24*	-0.27	-0.18	-0.37**	-0.16	0.80
		(3.13)	(3.55)	(0.13)	(0.17)	(0.21)	(0.17)	(0.19)	

Notes: All specifications are OLS, include subcounty (the stratification variable) fixed effects, and cluster standard errors by school. * p<0.10 ** p<0.05 *** p<0.01

Appendix Table 3c: Effect of Super Savers on Self Esteem and Time Preference Indices and their Components
Mean (standard deviation) and OLS

	Number of Obs.	Mean (std dev)		OLS (one specification per cell)	OLS (each row = one regression)				P-value for test of Cash Parent = Other Treatments
		Any Treatment	Control	Any Treatment	Cash with Parent Outreach	Voucher with Parent Outreach	Cash w/o Parent Outreach	Voucher w/o Parent Outreach	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Self Esteem Index & Components									
Self Esteem Index	3838	-0.02	0.00	-0.03	-0.05**	-0.03	-0.03	-0.01	0.23
		(0.44)	(0.44)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	
I am satisfied with myself.	3812	3.20	3.21	-0.01	-0.01	-0.01	-0.01	-0.02	0.98
		(0.67)	(0.64)	(0.03)	(0.05)	(0.04)	(0.04)	(0.05)	
Sometimes I think I am no good at all.	3817	2.55	2.54	0.00	-0.05	0.01	0.01	0.03	0.09
		(0.79)	(0.77)	(0.03)	(0.04)	(0.05)	(0.04)	(0.05)	
I believe I have a number of good qualities.	3800	3.14	3.19	-0.05**	-0.07	-0.08*	-0.03	-0.04	0.68
		(0.71)	(0.69)	(0.03)	(0.05)	(0.05)	(0.03)	(0.05)	
I am able to do things as well as most children.	3822	3.31	3.33	-0.03	-0.05	-0.01	-0.03	-0.04	0.38
		(0.62)	(0.62)	(0.02)	(0.03)	(0.03)	(0.04)	(0.04)	
I do not have much to be proud of.	3777	2.42	2.43	-0.01	0.03	-0.07	-0.02	0.01	0.23
		(0.77)	(0.78)	(0.03)	(0.05)	(0.04)	(0.05)	(0.05)	
Sometimes I feel useless.	3816	3.08	3.08	-0.01	-0.05	-0.01	0.05	-0.02	0.05
		(0.80)	(0.81)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)	
I believe I am a valuable person, at least as much as my classmates.	3808	3.25	3.28	-0.04	-0.07*	0.01	-0.06		0.34
		(0.62)	(0.64)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)	
I wish I could have more respect for myself.	3755	1.96	1.94	0.01	0.03	-0.06	0.05	0.02	0.61
		(0.62)	(0.61)	(0.03)	(0.04)	(0.05)	(0.04)	(0.04)	
I sometimes think that I am a failure.	3814	2.98	2.96	0.02	-0.03	0.04	-0.04	0.09**	0.11
		(0.84)	(0.86)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)	
When I think of myself, I usually think good thoughts.	3828	2.96	2.98	-0.03	-0.04	0.02	-0.10**	0.01	0.83
		(0.81)	(0.82)	(0.03)	(0.05)	(0.05)	(0.04)	(0.05)	
Are you confident that you will be successful in the future ?	3652	0.96	0.97	-0.01*	-0.01	-0.02**	-0.01	-0.01	0.91
		(0.21)	(0.18)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	
Time Preference Index & Components									
Time Preference Index	3828	2.05	2.07	-0.02	-0.02	-0.02	0.00	-0.03	0.96
		(0.83)	(0.82)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)	
Would you rather receive 500 UGX today or 800 UGX next week?	3828	1.37	1.37	-0.00	0.01	-0.01	0.01	-0.01	0.44
		(0.48)	(0.48)	(0.02)	(0.02)	(0.03)	(0.03)	(0.02)	
Would you rather receive 500 UGX today or 1,000 UGX next week?	2415	1.49	1.52	-0.03	-0.05	0.00	-0.01	-0.03	0.31
		(0.50)	(0.50)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)	

Notes: All specifications are OLS, include subcounty (the stratification variable) fixed effects, and cluster standard errors by school. * p<0.10 ** p<0.05 *** p<0.01

Appendix Table 3d: Effect of Super Savers on School Supplies Index and its Components

Mean (standard deviation) and OLS

	Number of Obs.	Mean (std dev)		OLS (one specification per cell)	OLS (each row = one regression)				P-value for test of Cash Parent = Other Treatments
		Any Treatment	Control	Any Treatment	Cash with Parent Outreach	Voucher with Parent Outreach	Cash w/o Parent Outreach	Voucher w/o Parent Outreach	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: School Supplies Index & Components (Classroom Surveys 2010 and 2011)									
School Supplies Index (2010)	813	-0.161 (1.175)	-0.099 (0.886)	-0.08 (0.12)	0.12 (0.13)	-0.05 (0.20)	-0.17 (0.24)	-0.21 (0.19)	0.06
Shoes	813	0.246 (0.256)	0.251 (0.256)	0.00 (0.02)	0.00 (0.03)	0.04* (0.03)	-0.04 (0.04)	0.00 (0.03)	0.99
Uniform	813	0.847 (0.108)	0.839 (0.118)	-0.01 (0.02)	-0.00 (0.02)	0.01 (0.02)	-0.03 (0.04)	-0.01 (0.03)	0.70
Math Set	813	0.378 (0.113)	0.364 (0.097)	0.01 (0.01)	0.03 (0.02)	0.00 (0.02)	-0.01 (0.03)	0.01 (0.02)	0.24
Pencils	813	0.992 (0.029)	0.992 (0.038)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	-0.00 (0.01)	0.35
Exercise Book	813	0.990 (0.043)	0.997 (0.017)	-0.00 (0.00)	0.00 (0.00)	-0.01 (0.01)	0.00 (0.00)	-0.01 (0.01)	0.10
School Supplies Index (2011)	882	0.370 (0.914)	0.254 (0.892)	0.08 (0.12)	0.32** (0.14)	0.04 (0.17)	-0.09 (0.21)	0.07 (0.16)	0.02
Shoes	882	0.349 (0.264)	0.319 (0.242)	0.04 (0.02)	0.05 (0.04)	0.05* (0.03)	0.01 (0.03)	(0.03)	0.59
Uniform	882	0.883 (0.111)	0.861 (0.115)	-0.00 (0.02)	0.03* (0.02)	-0.01 (0.03)	-0.04 (0.04)	0.01 (0.03)	0.02
Math Set	882	0.440 (0.125)	0.437 (0.121)	-0.00 (0.01)	0.01 (0.02)	-0.00 (0.02)	0.00 (0.02)	-0.01 (0.02)	0.41
Exercise Book	882	0.903 (0.094)	0.902 (0.105)	0.02 (0.02)	0.05** (0.02)	0.01 (0.02)	0.00 (0.03)	0.01 (0.02)	0.03
Panel B: School Supplies Index & Components (Endline Survey - 2011)									
School Supplies Index	3838	0.01 (1.02)	0.00 (1.00)	0.01 (0.04)	0.11* (0.06)	0.02 (0.05)	-0.06 (0.07)	-0.04 (0.06)	0.02
Shoes	3838	0.20 (0.40)	0.19 (0.39)	0.01 (0.01)	0.02 (0.02)	0.02 (0.02)	0.00 (0.03)	0.00 (0.02)	0.72
Uniform	3838	0.70 (0.46)	0.70 (0.46)	-0.00 (0.02)	0.04 (0.03)	0.01 (0.02)	-0.03 (0.03)	-0.02 (0.03)	0.05
Math Set	3838	0.38 (0.49)	0.36 (0.48)	0.01 (0.02)	0.03 (0.02)	0.02 (0.04)	-0.01 (0.03)	0.01 (0.03)	0.55
Pencils	3838	0.66 (0.47)	0.67 (0.47)	-0.01 (0.02)	-0.01 (0.03)	-0.02 (0.02)	-0.01 (0.03)	-0.01 (0.02)	0.98
Exercise Book	3838	0.44 (0.50)	0.44 (0.50)	-0.00 (0.02)	0.07** (0.03)	-0.02 (0.03)	-0.03 (0.04)	-0.04 (0.04)	0.00

Notes: All specifications are OLS, include subcounty (the stratification variable) fixed effects, and cluster standard errors by school.
* $p<0.10$ ** $p<0.05$ *** $p<0.01$

	Number of Obs. (1)	Mean (2)	Std Dev (3)	Min (4)	25th Percentile (5)	Median (6)	75th Percentile (7)	Max. (8)
Panel A: Annual School Fees for Each Student (in USD), winsorized at 90%								
Total of All Fees	3793	13.53	14.05	0.00	2.66	6.93	21.31	42.56
General Fee	3791	7.44	11.63	0.00	0.00	0.00	13.50	31.90
Food Fees	3792	1.24	1.70	0.00	0.00	0.09	1.83	5.12
Lunch Fee	3792	0.89	1.49	0.00	0.00	0.00	1.13	4.39
Chef/Grinding Fee	3791	0.22	0.42	0.00	0.00	0.00	0.00	1.07
Testing Fees	3792	2.13	2.52	0.00	0.00	1.07	3.20	7.46
Standardized Test Fee	3791	1.03	1.71	0.00	0.00	0.00	1.28	4.97
Practice Test Fee	3792	0.54	0.65	0.00	0.00	0.00	1.07	1.60
Test Paper Fee	3791	0.00	0.00	0.00	0.00	0.00	0.00	0.00
School Infrastructure Fees	3792	0.16	0.37	0.00	0.00	0.00	0.00	1.07
Development Fee	3791	0.11	0.33	0.00	0.00	0.00	0.00	1.07
School Necessities Fee	3792	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Extra Lessons Fee	3791	0.40	1.03	0.00	0.00	0.00	0.00	3.20
Panel B: Average Annual School Fees per Student for Each School (in USD), winsorized at 90%								
Total of All Fees	136	16.47	10.84	2.93	8.51	13.35	20.74	41.22
General Fee	136	10.60	9.52	0.00	3.80	7.80	12.58	32.74
Food Fees	136	2.21	1.97	0.00	0.90	1.58		6.92
Lunch Fee	136	1.92	2.05	0.00	0.62	1.02	2.18	6.88
Chef/Grinding Fee	136	0.27	0.27	0.00	0.02	0.16	0.47	0.78
Testing Fees	136	2.39	1.12	0.01	1.54	2.24	3.26	4.38
Standardized Test Fee	136	1.28	0.84	0.00	0.62	1.20	1.88	2.71
Practice Test Fee	136	0.69	0.46	0.00	0.33	0.71	1.04	1.42
Test Paper Fee	136	0.31	0.48	0.00	0.00	0.00	0.55	1.43
School Infrastructure Fees	136	0.32	0.35	0.00	0.04	0.17	0.50	1.01
Development Fee	136	0.23	0.29	0.00	0.00	0.06	0.37	0.83
School Necessities Fee	136	0.06	0.08	0.00	0.00	0.03	0.12	0.23
Extra Lessons Fee	136	0.74	1.00	0.00	0.00	0.30	1.02	3.20

The data here incorporate student-reported fees across three terms. Numbers are in USD, converted from UGX in Sept 2011 (when endline survey was conducted) at 2815UGX = 1USD. General Fee: A fee required to attend school. Because the government discourages General Fees, most schools do not charge them, but some schools, especially in urban areas still do. Food Fees: include lunch fees and chef/grinding fees. The chef/grinding fee can either be monetary or in-kind (e.g., maize). We imputed the value of maize at 450 UGX/kg. Testing Fees: include standardized test fees, practice test fees, and test paper fees. Practice test fee is often optional. School Infrastructure Fees: include Development Fee and School Necessities Fee. The Development Fee is generally for infrastructure projects such as latrines, building repair, etc. The School Necessities Fee includes recurring costs such as toilet paper (and other supplies) and utilities.

Appendix Table 5: Effect of Super Savers on Individual School Supplies Items
Mean (standard deviation) and OLS

	Number of Obs.	Mean (std dev)		OLS (each row = one regression)				P-value for test of Cash Parent = Other Treatments
		Any Treatment	Control	Cash with Parent Outreach	Voucher with Parent Outreach	Cash w/o Parent Outreach	Voucher w/o Parent Outreach	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Reports owning at least 1 pair of shoes	3838	0.63	0.62	0.01	-0.02	0.00	0.02	0.89
		(0.48)	(0.49)	(0.02)	(0.03)	(0.03)	(0.03)	
Student wearing shoes during survey	3838	0.20	0.19	0.02	0.02	0.00	0.00	0.72
		(0.40)	(0.39)	(0.02)	(0.02)	(0.03)	(0.02)	
Reports owning at least 1 uniform	3837	0.84	0.86	0.01	0.00	-0.05*	-0.04	0.09
		(0.36)	(0.35)	(0.02)	(0.02)	(0.02)	(0.02)	
Child wearing uniform during interview	3838	0.70	0.70	0.04	0.01	-0.03	-0.02	0.05
		(0.46)	(0.46)	(0.03)	(0.02)	(0.03)	(0.03)	
Reports owning a math set	3838	0.38	0.36	0.03	0.02	-0.01	0.01	0.55
		(0.49)	(0.48)	(0.02)	(0.04)	(0.03)	(0.03)	
Shows enumerator math set	3838	0.24	0.21	0.04**	0.04	-0.01	0.02	0.18
		(0.42)	(0.41)	(0.02)	(0.03)	(0.02)	(0.03)	
Reports owning at least 1 pen or pencil	3838	0.93	0.94	-0.01	-0.01	-0.03	-0.01	0.55
		(0.25)	(0.23)	(0.01)	(0.01)	(0.02)	(0.01)	
Shows enumerator at least 1 pen or pencil	3838	0.82	0.82	-0.00	0.00	-0.03	0.00	0.80
		(0.38)	(0.38)	(0.02)	(0.02)	(0.03)	(0.02)	
Student Survey: Prefer 500 UGX today to 800	3838	0.91	0.93	0.00	-0.01	-0.04*	-0.00	0.24
		(0.28)	(0.26)	(0.01)	(0.01)	(0.02)	(0.01)	
Shows enumerator at least 1 exercise book	3838	0.73	0.73	-0.01	0.03	-0.04	-0.00	0.82
		(0.45)	(0.44)	(0.03)	(0.03)	(0.03)	(0.03)	

Notes: All specifications are OLS, include subcounty (the stratification variable) fixed effects, and cluster standard errors by school. * p<0.10 ** p<0.05 *** p<0.01