

Savings Defaults and Payment Delays for Cash Transfers

Field Experimental Evidence from Malawi

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Abstract

Financial products and transfer schemes are often designed to help individuals improve welfare by following through on intertemporal plans. This paper implements an artefactual field experiment in Malawi to test the ability of households to manage a cash windfall. This study varies whether 474 households receive a payment in cash or through direct deposit into pre-established accounts at a local bank.

Payments are made immediately, with one day delay, or with eight days delay. Defaulting the payments into savings accounts leads to higher bank account balances, an effect that persists for several weeks. However, neither savings defaults nor payment delays affect the amount or composition of spending, suggesting that households manage cash effectively without the use of formal financial products.

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Savings Defaults and Payment Delays for Cash Transfers: Field Experimental Evidence from Malawi*

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1 Introduction

According to standard neoclassical theory, agents should be indifferent to the timing and modality of an expected windfall. In contrast, recent behavioral models suggest that both the timing and defaults have welfare implications. Quasi-hyperbolic preferences (Liaison 1997) and dual-self models (Thaler & Shefrin 1981, Fudenberg & Levine 2006) predict that choices made in one period will be regretted in the next. There is not much direct empirical evidence about regret in the economics literature, but the data indicate that even extremely poor households spend substantially on non-food goods such as alcohol and tobacco. Banerjee & Duflo (2007) report that across 13 countries, food accounts for only 56 to 78 percent of total consumption for those living on less than USD 1.08 per person per day (1993 PPP adjusted). Although these extremely poor households suffer from poor health and malnutrition, some still devote considerable portions of their budget – five percent in India, six percent in Indonesia, and eight percent in Mexico – to tobacco and alcohol.

Empirical studies of access to finance often report spending on temptation goods as an outcome measure, with reduced spending considered a positive impact. For example, five of the six randomized evaluations of microcredit published in a recent special issue of the *American Economics Journal: Applied Economics* measure “discretionary spending” (defined as spending on temptation goods, recreation, entertainment, and celebrations) and report a decline in this spending category as one of the few consistent findings across the studies (Banerjee, Karlan & Zinman 2015).

Related, time inconsistency can lead to suboptimal investments (Duflo, Kremer & Robinson 2011) and undermine the ability to follow through on planned use of future income (Giné et al. Forthcoming). Financial products and transfer programs designed to address time inconsistency, however, have been successful in increasing asset accumulation and improving welfare (Ashraf, Karlan & Yin 2006, Dupas & Robinson 2013*a*, Dupas & Robinson 2013*b*).

Thaler & Benartzi (2004) demonstrate the effect of default savings. In developing countries, Aker et al. (2014) find differences in the use of aid payments received via mobile money compared to those distributed in cash and Brune et al. (2016) show that savings balances and subsequent investments increase sharply when agricultural proceeds are directly deposited into individual accounts. Blumenstock et al. (2015) find that paying employees of an Afghan cell phone company via mobile money shifts the composition of savings from informal methods to balance stored in the mobile money account, but does not significantly change total expenditures.

In some contexts, then, individuals face important barriers to saving for investment or smoothing consumption, and appropriately designed financial products can help overcome these barriers. However, there is also reason to question whether these products are always

necessary. For example, tobacco farmers in Malawi did not benefit from the opening of a commitment savings account once a regular checking account was opened (Brune et al. 2016). Relatedly, entrepreneurs in Kenya failed to open savings accounts at an accessible local bank despite their apparently high returns (Dupas & Robinson 2013*a*). More generally, and despite the oft-expressed concern by policy makers, there is little evidence that money from transfer schemes paid in cash is actually used for the purchase of temptation goods (Evans & Popova 2014).

In order to learn whether savings defaults and the timing of transfers can be manipulated to improve welfare for households in Malawi, we implement an experiment varying the conditions under which 472 households receive a one-time, sixty dollar windfall.¹ Participants in our study either receive this large transfer in cash or deposited into their savings accounts. We vary whether the transfer is paid immediately, with one day delay, or with eight days delay.

Directly depositing income instead of paying in cash can affect savings and consumption through either transaction costs or psychological channels. Our study minimizes transaction costs by calling all respondents to the bank in order to receive the transfer. Thus, individuals whose money was directly deposited could withdraw it immediately, and conversely, those who received cash could make a deposit. By equating the transactions costs across experimental arms, differences in savings and consumption can be attributed to one of two psychological channels: the default effect, a pervasive phenomenon responsible for differences in behavior ranging from savings (Thaler & Benartzi 2004, Blumenstock, Callen & Ghani 2015) to organ donation (Johnson & Goldstein 2003), and mental accounting (Thaler 1999). Directly depositing money by default into the savings account may have signaled that the money was intended for saving rather than spending, causing respondents to treat money in the account as though it was to be used differently than cash on hand. We cannot distinguish between default effects and mental accounting, but we can separate these two behavioral explanations from transaction costs. Throughout the paper, we emphasize the psychological mechanism for the effect of direct deposit by referring to that treatment as creating a “savings default.”

Payment delays are used to test the presence of time inconsistency. Respondents with exponential discount rates should spend and save similarly whether they receive money immediately or with a short delay. However, those with quasi-hyperbolic preferences experience a discontinuous decrease in utility for all future periods, and are therefore expected to consume more when they receive transfers immediately than when their transfers are delayed. Savings defaults may mediate differences in consumption for immediate versus delayed payments

¹The transfer was MK 25,000, and was sufficient to purchase 50 kg of maize, 10 kg of beans, and two liters of cooking oil and is equivalent to relief payments made by Oxfam to flood victims in the region in early 2015. The exchange rate at the time of the transfer was MK 420 to USD 1.

through competing psychological channels.

The intervention takes place during the lean season when households may be most subject to temptation, and thus when nudges in the form of savings defaults or the ability to plan expenditures may be most relevant. Mani et al. (2013) show that economic scarcity by itself impedes cognitive performance in the lab and in the field as farmers perform worse on cognitive tasks during the lean season (pre-harvest) compared to the post-harvest period. Banerjee & Mullainathan (2010) develop a framework in which the poor are more susceptible to temptation spending than the rich. In their model, savings defaults or payment delays have the potential to arrest the temptation spending that would arise from windfall income received during the lean season.

We find that savings defaults do affect bank balances and thus cash on hand. Those who initially receive cash, deposit MK 1,637 (6.5 percent of the total transfer) into their accounts, while those who are defaulted into saving, withdraw MK 17,937 (71.7 percent of the total) from their accounts. On average, net deposits are MK 3,400 higher in the savings default group (compared to the cash group) a week after the transfer. The impact of the savings default on savings is larger and more persistent for female respondents, compared to males.

Despite differences in cash-on-hand, transfer recipients with different savings defaults do not differ in their spending patterns in the weeks following the transfer. Total spending by the cash and direct deposit recipients differs by only MK 111 – less than one percent of the value of the transfer – in the week following the transfers. Food accounts for about one-third of total spending.

The overall spending patterns and the comparison between cash and savings default recipients refutes the notion that poor households cannot manage an unexpected cash windfall when income sources are limited. Unplanned expenditures account for less than five percent of total spending, and are not different between the cash and direct deposit recipients. Compared to those who do not receive large transfers, recipients do not spend all cash on hand: after two weeks, 85% of the amount transferred is not in the bank, but only 60% has been spent. Similarly, and in contrast to the predictions of a model with strict quasi-hyperbolic preferences, delaying payment by either one or eight days does not meaningfully affect subsequent consumption patterns. Importantly and as we argue in the paper, these null results are not because of limited statistical power.

Our finding that defaulting funds into a savings account raises savings balances is consistent with existing behavioral economics research that savings defaults matter (Thaler & Benartzi 2004). At the same time, we find little indication that respondents' well-being is affected by savings defaults or payment delays. Savings defaults may be a valuable tool for smoothing consumption and alleviating barriers to saving in some settings, such as bulky income from agriculture or other seasonal enterprises, or when habit formation is possible

with repeat transfers like wages. However, our results indicate that even poor households facing high marginal utility of consumption during the lean season have some capacity to manage cash on hand.

Our paper thus contributes to the literature on the effect of savings defaults albeit in a specific context. We study a one-time transfer, precluding the opportunity for habit formation or learning which may be present in other savings schemes like Save More Tomorrow (Thaler & Benartzi 2004). A key and novel feature is that the transaction costs of saving or dis-saving are equalized. Our experiment is thus a strict test of the direct psychological effects of defaults, abstracting from the effects that arise from the asymmetric transaction costs typically present in real-world settings.

We describe our experiment and results in more detail, as follows. Section 2 offers a detailed description of the intervention and timeline. Section 3 describes the data. Section 4 explains our analytical framework. We discuss the effect of savings defaults in Section 5, and the impact of delayed payment in Section 6. We discuss heterogenous treatments effects as robustness checks in Section 7. Section 8 concludes.

2 Experimental design

The windfall income experiment described in this paper is one of a set of interventions designed to encourage savings and understand the mechanisms through which formal bank accounts affect consumption and spending.²

Crucially, the umbrella project offered subsidized bank accounts with the commercial bank NBS to households in villages located within six kilometers of the bank’s Mulanje branch location.³ The branch is located in the local trading center, an approximately one-kilometer stretch along the main road with shops, government offices, and branches of other local banks. The field teams completed village listings in ten villages and randomly selected 872 households for surveys and account offers in July 2012. Of those households, approximately five percent already had accounts with NBS and another 15 percent had accounts with one or more other banks. Ultimately, 742 individuals opened new accounts. The final sample included 704 new and existing NBS account holders who participated in the savings promotion studies. From that sample of account holders, a random subset of 600 were selected for the windfall cash experiment.

²Other interventions include using labeled accounts and showing respondents a video designed to raise their aspirations about future welfare. Random assignment in the windfall experiment was orthogonal to these other interventions, and controlling for treatment group in other arms of the design does not affect the results in this paper.

³Individual household locations were measured via GPS, and could exceed 6 KM.

The windfall experiment varied whether respondents received a payment of MK 25,000 (USD 59.52) in cash or directly deposited into their bank accounts. The savings default treatment was cross-randomized with the timing of payment: immediately, after one day, or after eight days. In order to equalize the transactions costs of accessing the payment, all participants had to return to the bank in order to receive their payment whether it was made in cash or directly deposited into a bank account. Twenty percent of respondents (118 individuals) received a small, immediate cash payment of MK 1,000 instead of the large transfer of MK 25,000 and serve as a control group although they are excluded from most of the analysis. Participants in the control group received a small payment to offset their travel and time costs and to preserve good will for participation in future survey waves. The final design thus includes six large transfer treatment arms that vary in savings default and timing of payment, and the control group. These groups are summarized in Figure 1.

The randomization into the different treatment (and control) arms took place at the bank itself to avoid differential take-up. First, each head of household was visited by a field team for a midline survey, after which they were told they were eligible for a cash prize of up to MK 25,000 if they visited the bank branch exactly two days after the survey (which becomes “day zero” in the intervention timeline). In advance of the midline visit, households were randomly assigned (by computer, and stratified by village) to either a morning or afternoon visit to the bank branch. The shift implicitly determined whether the household would receive the transfer in cash or directly deposited into the bank account. The correspondence between shift time and savings default alternated daily, so respondents who interacted with each other at the bank all received the transfer in the same way. The savings default determination was not known to respondents until they visited the bank.

Assignment to disbursement timing took place at the bank. Respondents drew (without replacement) a token from a bag assigned to their village and bank shift.⁴ The tokens corresponded to one of four groups: a control condition that received a small, immediate cash transfer or one of three timing conditions for the large transfers. The three timing conditions for the large payments were immediate, in one day, or in eight days. The savings default was cross-randomized and determined by pre-assignment to morning or afternoon shift as explained above, but was revealed to respondents following the token draw. From the respondents’ perspective, the token draw determined whether the transfer was large or small; whether it was defaulted into savings; and when it was received.

All analysis is conducted relative to the day a household was assigned to visit the bank. Follow up surveys were carefully timed to capture spending at key intervals. The recall period for each survey was one week. For those who received transfers immediately or one

⁴Two villages were very small and thus morning and afternoon shifts drew from the same bag. One village was so small that it was combined with the immediately adjacent, larger village.

day after the initial bank visit, pre-transfer expenditures come from the survey conducted at the initial visit, on day $t = -2$ as indicated in Figure 2. Spending in the week after the transfer (including day of the transfer) is measured in Survey 1, conducted on day $t = 7$ for the immediate-transfer group and day $t = 8$ for the one day delay group. For the eight day delay group, Survey 1 measures spending in the week after the announcement, but before the transfer was made. As we will discuss, households may spend in anticipation of receiving a large transfer. Survey 2, conducted on day $t = 15$, measures post-transfer expenditures for this group. The only exception to a one-week recall period is this survey, which includes an eight day recall period to capture spending on the day of the transfer.

Transfers were implemented in March and April 2014. They were timed to coincide with the end of the lean season, just before many households harvest and sell crops.

3 Data

The household survey described above is adapted from Malawi's Third Integrated Household Survey (IHS-3) and contains its detailed expenditure module. In addition to asking about the quantity purchased and total paid for 218 consumption goods, durable goods and services, we also ask whether each purchase was planned before the respondent arrived at the store or market, or was made on the spot.

We also use survey data collected between June and Aug 2013, before bank accounts were opened. These data include information about household demographics, expenditures, asset ownership and time preferences.

Panels A and B of Table 1 provide summary statistics for variables collected during baseline in 2013 and during round 0 of the midline interviews just prior to the transfer experiment. The majority of respondents are male. Sixty-three percent are married. Households have 4.7 members on average. Households own 1.5 acres of land on average and non-fixed assets worth MK 177,697 (about USD 555). During the 7 days leading up the round 1 interview, households spent a total of MK 11,500 (USD 36) on average, with MK 4,593 (USD 14) spent on food.⁵ Respondents reported spending an average of MK 422 on unplanned food purchases, and MK114 on unplanned non durable items.

Our outcomes of interest are computed using administrative data from NBS and expenditures measured in the household surveys. We use NBS data to measure the saving balances at different points in time. Savings defaults could change spending patterns through mental accounting even if all money was immediately withdrawn, as long as direct deposit recipients still treated the transfer as funds to be saved for the future. More likely, though, savings

⁵Using the March 2013 exchange rate of MK 320 to USD 1.

defaults may influence use of the transfer through a flypaper effect, with some of the money remaining in the account even though there were very low transaction costs to withdrawing it immediately.⁶ Therefore, we examine banking activity on the day of the transfer; within three days of the transfer; within seven days of the transfer; and within 14 days of the transfer. We consider three outcomes: withdrawals, deposits, and net deposits (deposits minus withdrawals).

In the period immediately preceding the intervention, respondents seldom use their accounts. Panel C of Table 1 shows that only 7% of respondents had any bank account transaction in the 7 days prior to round 0 survey collected just prior to respondent's first bank visit for this experiment. Thirty-three percent of respondents had at least one transaction in the 90 days prior to survey round 0. Deposits over the same period averaged MK 13,045 (about USD 41) and net deposits were slightly negative on average. The standard deviation for deposit and withdrawals values reveals large sample variation, with a relatively small number of very large deposit and withdrawals.

To confirm that the randomization produced comparable experimental groups, we present two sets of balancing tests. Table 2 compares the means and standard deviations of baseline variables in the cash transfer treatment and the savings default treatment. The last column reports the p-value for the test that the means are equal, conditional on the village and week-of-survey fixed effects used in the subsequent analysis. We examine a total of 22 variables. There are no statistically significant differences for any of the baseline characteristics. Inspection of the data shows that the economically meaningful differences in asset ownership and in net deposits in the 90 days before survey round 0 are driven by a few outlier observations.

The second set of balancing tests reported in Table 3 are comparisons across the three transfer timing conditions. As before, we report the p-value for the test of joint equality in the final column. There are statistically detectable differences in three sub-categories of spending which each account for small percentages of overall spending: transfers and fees, unplanned food, and unplanned non-durables. There are also statistically significant ($p=0.044$) differences in the percent of each group that recorded any banking activity in the 90 days before the survey. Transactions were somewhat more likely in the 1-day delay group (0.39) than the immediate payment group (0.31) or 8-day delay group (0.26). Overall, we conclude that the randomization produced balanced treatment groups.

⁶Withdrawal fees are flat and do not depend on the amount of the transaction.

4 Analysis

The experiment is designed to address three related questions. Does defaulting payment of a transfer into a savings account affect savings balances? Is income used differently when directly deposited to a bank account compared to when received in cash? And does delaying receipt of the transfer change consumption and savings decisions?

The experiment equated the transaction costs of accessing the transfer, and to either saving or dis-saving. This is most obvious for those who received their transfers on the day they visited the bank, but we argue it is also true for those receiving transfers with one- or eight-day delays. In the delayed payment groups, respondents in the cash treatment arms had to return to the branch once to receive the full payment in cash. Those in the direct deposit treatment arms could replicate the same outcome – receipt of the full transfer in cash – for the same transaction cost of visiting the branch once. The costs associated with additional visits to the branch by individuals that chose not to withdraw the full amount of the transfer immediately cannot be attributed to how the transfer was made; instead, these are costs of using a bank account, and are incurred equally by anyone who may chose to save money at the bank. Direct deposit recipients could have delayed visiting the bank instead of coming on the day of the transfer, and in this sense, this flexibility may have reduced their costs of receiving the transfer relative to the cash groups. In practice, however, this flexibility was unimportant: 95 percent of the one day delay direct deposit group and 97 percent of the eight day delay direct deposit group withdrew money within the first week, and 84 and 86 percent, respectively, came to the bank on the same day the transfer was made. Thus, cash and direct deposit recipients each have the opportunity to receive the same amount of money by visiting the bank once, and they each incur the cost of a visit within a narrow window.

We first examine the impact of the savings default on bank transactions, using the administrative data described in the previous section. We compare outcomes for respondents who received MK 25,000 in cash to those who received the same amount deposited directly into their savings accounts, by estimating the following equation:

$$Y_i = \alpha + \beta \text{SD}_i + \delta \overline{Y_{i,t-90}} + \Gamma \text{Interview week}_i + \Theta \text{Village}_v + \epsilon_i \quad (1)$$

The coefficient β measures the effect of the savings default. We control for the average of the outcome variable in the 90 days prior to the transfer (Y_{i0}). The specification includes village and week-of-first-survey fixed effects. Standard errors are robust to heteroskedasticity rather than clustered because randomization is at the individual level, a decision that is conservative in light of our emphasis on null results. We report results for each of the three outcomes – deposits, withdrawals, and net deposits – in four time horizons to observe

whether there is a persistent effect of the savings default. Results for dependent variables are in levels of Malawi kwacha (MK) to facilitate the interpretation of the economic importance of treatments.

Next, we look at spending in several categories, one and two weeks after the transfer. Recall that expenditure data were collected before prizes were announced (survey round 1). Specifications incorporate the pre-treatment value of outcomes and fixed effects as in equation (1). For outcomes measured with survey data, we use OLS to estimate

$$Y_i = \alpha + \beta SD_i + \delta Y_{i0} + \Gamma \text{Interview week}_i + \Theta \text{Village}_v + \epsilon_i \quad (2)$$

separately using data one week after the transfer (Panel A) and two weeks after the transfer (Panel B). We collected two-week follow up data only for the subset of respondents who received transfers immediately or with one day delay, so the sample size in Panel B is smaller than in Panel A, and differences between the point estimates of coefficients in the two panels reflect both the difference in the sample and any change in the impact over time.

Finally, we study the effect of payment delay on expenditures. The dependent variable is expenditures one week post-transfer since using the two-week follow up data would preclude using the eight day delay treatment group. The specification we run is

$$Y_i = \alpha + \beta_1 \text{Delay1}_i + \beta_2 \text{Delay8}_i + \delta Y_{i0} + \Gamma \text{Interview week}_i + \Theta \text{Village}_v + \epsilon_i \quad (3)$$

with village and week-of-first-survey fixed effects and standard errors computed as in equation (2). Here, β_1 is the marginal effect of a one day delay compared to an immediate payment, while β_2 is the marginal effect of an eight day delay instead of immediate payment, averaged across cash and direct deposit treatments.

5 Savings default results

5.1 Administrative outcomes

Estimates of equation (1) test whether the savings default had any impact on immediate cash-on-hand. Since we argue that the transaction costs associated with receiving the full transfer in (or converting it to) cash were equal, the mode of payment should affect outcomes only through psychological channels. Differences in bank activity for cash compared to direct deposit recipients is sufficient (though not necessary) evidence that savings defaults matter.

Table 4, Panel A estimates the effect of windfall income and savings defaults on deposits. For recipients defaulted into saving, the total deposits of MK 25,089 (the sum $\alpha + \beta$, from

column 1) on the day of the transfer is mechanical, and confirms that direct deposits were made as intended. Cash recipients deposited MK 1,637. These immediate deposits account for 6.5 percent of the cash transfer. Columns 2-4 indicate some additional deposits over time among the cash recipients, but none by the direct deposit recipients.

Results in Panel B indicate that those defaulted into saving immediately withdrew most but not all of the transfer. On the day of the transfer, savings default recipients withdrew MK 17,937 more than cash recipients – in other words, they withdrew 72 percent of the transfer. As expected, cash transfer recipients’ withdrawals were close to zero.

Panel C reports net deposits (changes in bank balances).⁷ On the day of the transfer, recipients whose transfer was directly deposited into their account have net deposits that are MK 5,224 higher than the cash transfer group. Initially, then, the savings default induced recipients to keep 21 percent of their transfer in the bank. The total amount saved by the savings default group is nearly constant over the two weeks following the transfers. Because deposits increase for the cash recipients, the initial effect of the savings default is significant after seven days (column 3) but not after 14 days (column 4).

The initial differences in savings between participants who received transfers in cash compared to those defaulted into savings are striking because the experiment design ensured similar conditions for the two groups. Yet, despite minimal transaction costs, directly depositing the transfer into the account induced 4.3 times higher savings on the day of the transaction (Panel C, column 1) and 2.9 times more savings a week later (Panel C, column 3).⁸

In total, the cash transfer group averaged MK 5,524 more cash on hand on the day of the transfer, and MK 3,737 more one week later. The savings default treatment shifted assets to formal bank accounts and, as we show in the next section, away from other types of savings. This evidence of a positive effect of the savings defaults on bank savings motivates the examination of the composition of expenditures in the next subsection.

5.2 Household survey outcomes

Data from the household survey confirm that the savings default treatment shifted funds towards NBS bank accounts and away from other types of saving. We follow the structure of our survey instrument (adapted from Malawi IHS-3) in categorizing savings as formal financial savings (accounts at NBS or other banks), informal savings (village savings groups,

⁷Reporting net deposits rather than the level of bank balances is a limitation of the administrative data we were able to obtain from NBS.

⁸While the focus is on assessing the impact of default savings, we note that recipients of the large transfer compared to the control group saved a significant portion of the transfer in the bank for more than two weeks and that higher net deposits (relative to the control group) persist for 90 days after the initial transfer (result not shown).

ROSCAs, and “cash kept at home or in a secret hiding place, that is not for daily living expenses”), and in-kind savings (advance purchase of farm inputs, business inventory, and bags of maize stored for later use). These three categories are mutually exclusive and exhaustive. For ease of comparison to the administrative data, the first column of Table 5 includes only savings in NBS accounts. Columns (2) - (4) are the three categories described above. Column (5) is total liquid savings, the sum of formal and informal savings, and column (6) is total household savings from all sources.

Directly depositing money into NBS accounts increases self-reported savings by MK 1,670 as measured one week after the transfers. The effect is smaller than in the administrative data, perhaps because the control group reports a higher level of savings at NBS than observed in the administrative data, but reflects the same trend: the savings default increases the amount of money in NBS accounts. Because we lack expenditure data after the transfer for the eight day delay group, Panel B has a smaller sample and thus results are not directly comparable to those using administrative data. Nonetheless, the magnitude of the effect of the savings default on NBS balances after two weeks is remarkably consistent with the administrative data.

Columns (2) to (6) show that the increase in money saved at NBS reflects a change in the composition rather than the total value of savings. Focusing on results after one week, where data for the full sample are available, we see that total savings in formal financial instruments rise by an amount comparable to the increase in savings at NBS (column 2), and that the change is more than offset by a decline relative to the cash transfer group in informal savings (column 3), which includes cash kept at home. In other words, the cash transfer group kept money at home while the savings default group kept it at the bank. In-kind savings is somewhat lower for those who received direct deposit, though the difference is not statistically significant (column 4). Most tellingly, the effect of the savings default on total savings in column (6), is small relative to the mean in the cash transfer group and not statistically different from zero. In fact, we can rule out that savings defaults either increase total savings by more than 0.12 standard deviations or decrease them by more than 0.14 standard deviations relative to the cash treatment group.

While total savings did not change, the mix of formal and informal savings did. We examine expenditures to learn whether savings defaults affect welfare by changing consumption patterns.

We are interested in the magnitude and composition of expenditures by cash and savings default recipients. Table 6 reports spending in total and on four mutually exclusive and exhaustive categories: food, non-durables, durable goods, and transfers and fees.⁹ We find

⁹Transfers and fees include spending on ceremonies, funerals, school fees, loans given, formal insurance, fines, and government fees.

that in the first week after the transfer, people who received cash spent an average of MK 15,150 across all categories. Those who were paid by direct deposit spent MK 111 more, a difference that is neither economically nor statistically significant. The savings default increased spending on food by MK 744, or 15 percent of spending by the cash transfer group. Spending in other categories fell by small amounts.

Recall that the maintained null hypothesis is that savings defaults reduce spending. Instead, we can rule out reductions in total spending of more than MK 2,095, which is 8.4 percent of the total transfer, 13.8 percent of spending in the same time period by the cash transfer group, or 0.16 standard deviations (relative to spending by the cash transfer recipients). Figure 3 illustrates the magnitude of the effect of the savings default on categories of spending using standard deviation as a unit. The bars correspond to the coefficients reported in Table 6, divided by the standard deviation in the cash transfer group. Whiskers indicate the 95 percent confidence interval.

One can also compare the magnitude of the effect to that found in other studies of savings defaults. Thaler & Benartzi (2004) report savings rates (contributions to retirement accounts as a percent of wages) but not expenditures. But two more recent papers measure expenditures in ways that are comparable to our outcomes. Blumenstock, Callen & Ghani (2015) measure expenditures six to eight months after Afghani employees are switched to mobile wage payments and find that total expenditures *increase* by 27.8 percent of the control group mean (not statistically significant), and food expenditures increase by 42.1 percent (significant at the 5 percent level). Both of these increases are outside our confidence interval and in the opposite direction of our hypothesis. Because they measure outcomes after workers have adjusted to a new payment system, they can however be interpreted as tentative evidence of positive welfare impacts of mobile payments. Somville & Vandewalle (2015) reward Indian households either in cash or directly into basic savings accounts for answering detailed weekly surveys. Like us, they anticipate that savings defaults may reduce short term spending. They find that the savings default decreases spending on food and non-durables by 11.6 percent of spending in the cash payment group. We find that spending on food actually increases in the week following the transfer, and can rule out reductions of more than 2.2 percent of the cash group mean for food spending.¹⁰

If cash transfer recipients purchase durable goods as an alternative to saving in the bank or keeping cash at home, then changes in total expenditures might understate the effect of the savings default. However, we see no evidence of differential spending on durable goods.

¹⁰Our confidence interval for non-durables is wider. We can rule out reductions of more than 29.4 percent of spending among the cash group in this category. Somville & Vandewalle (2015) do not report expenditures separately for food and non-food items, but in our sample, expenditures on food is approximately twice as those on non-durables.

This rules out that either the savings default nudged people to “save” through purchase of durable goods, or that the cash transfer recipients substituted towards durable purchases as a smoothing strategy.

Estimated effects after two weeks are less precise, because only the 314 respondents¹¹ who received transfers with no or one day delays were surveyed twice after the transfer. In this sample, there is no evidence that the savings default reduced spending. If anything, total spending was higher by MK 770 (or 8.8 percent) in the savings default group compared to the cash group, and we can rule out reductions of more than MK 1,409 or 5.6 percent of the value of the transfer. The savings default group spent more than the cash transfer group on each of the four components of spending, but none of the differences were statistically significant and all were small relative to either the mean or the standard deviation in the cash group.

Comparing spending by cash or direct deposit recipients to those in the control group (who received MK 1,000) helps explain why the savings default did not reduce total spending. Recipients of the large cash transfers had nearly MK 23,000 more cash on hand than the control group, but they spent less than half of the windfall during the first week and only 58 percent after two weeks.¹² Savings default recipients had slightly less cash on hand initially and spent slightly more after two weeks, but both groups spent about half of a transfer (equivalent to one month’s food costs) in two weeks, and both groups had considerable amounts of unspent cash that was not in the bank. This is clear evidence of intertemporal smoothing, and evidence that households can overcome short-term constraints to saving without using bank accounts.

A second test of households’ ability to manage cash is presented in Table 7, which considers planned and unplanned expenditures separately. If saving in the bank protects against temptation spending, one would expect to see more unplanned expenditures for the cash transfer group than the savings default group. Instead, we see extremely low levels of unplanned spending in either group, and no economically meaningful or statistically significant differences between the two.

Only consumable expenditures (food and non-durables) were categorized as planned or unplanned, because piloting of the survey instrument indicated that durable purchases were rarely “unplanned.” The top panel of Table 7 shows that in the week after the transfer, consumables account for 49 percent of spending by cash transfer recipients and 52 percent by those in the savings default treatment. Unplanned purchases are only a small share of these purchases. In the cash treatment, MK 278 or 5.6 percent of food purchases were unplanned, while in the direct deposit group, MK 332 (MK 278 + MK 54) or 5.8 percent were unplanned.

¹¹Expenditure data are missing for two of these respondents.

¹²Results available upon request.

Neither the amounts nor the shares are significantly different between the two treatment groups, or between either treatment group and the control group. Unplanned spending on non-durables is also small in economic terms and not statistically different between the two treatment groups. As shown in Panel B, unplanned spending remains trivial in the second week after the transfer, with no significant effects of the savings default treatment.

Analyzing planned and unplanned expenditures avoids categorizing some goods as “temptation” goods, but for consistency with the existing literature, we also analyze spending on specific items that provide short-term utility with potential long-term costs. We use several different definitions of temptation goods in Table 8: alcohol and tobacco (D1); D1 plus fats and sugars (D2); and D2 plus prepared foods sold by vendors. Total spending on temptation goods is low by any definition, and there are no differences that depend upon savings defaults measured in the week after the transfer. Two weeks after the transfer, the savings default group appears to spend *more* than the cash transfer group on alcohol and tobacco, and the difference carries over to some of the more inclusive measures. However, the difference in spending is always less than USD 1, and accounts for one percent or less of the total transfer.

Together, Tables 6, 7, and 8 present compelling evidence of intertemporal smoothing and the ability to resist temptation or pressure to spend money immediately upon receiving a large windfall. These findings are strengthened by the fact that the transfers are made during the lean season when the marginal utility of consumption is high.

6 Payment delay results

We cross-randomize the savings default treatments with zero-, one-, and eight-day delays in transfers to test for time inconsistency and ability to plan. Quasi-hyperbolic discounters would be more likely to spend, and to succumb to temptation spending if they received money immediately. In a true test of quasi-hyperbolic discounting, a one day delay would have a meaningful effect on expenditures, but there would be minimal difference between a one day and an eight day delay. If instead delays operate through planning rather than discounting, those required to wait eight days for their payments have greater opportunity to plan their purchases. Planning does not necessarily affect overall spending, though it may reduce the tendency towards temptation spending or facilitate bargaining or comparison shopping that lowers purchasing price.

We estimate the effect of payment delays using equation (3). The reference group received transfers immediately. Since outcomes are measured in time relative to the receipt of the transfer, the delays by definition also change the timing of the outcome. Outcomes are measured only one week apart, but at the end of the lean season when food stocks are near

depletion, it is plausible that there is some seasonality in expenditures that affects our results.

Table 9 reports estimates of equation (3) for spending in total and on the four categories described above, during the week following the transfer.

Overall, delays have little effect on spending. The immediate transfer group spent an average of MK 15,314 in the following week. A one day delay increased total spending by MK 735, and an eight day delay decreased total spending by MK 1,042. Neither change is statistically significant, and we also reject that the effect of the one day delay is different from that of the eight day delay.

There are some shifts in the composition of spending, though none that follow a clear pattern. The one day delay increased spending on non-durables relative to either the immediate or eight day delay group, and the eight day delay decreased spending on transfers and fees.

In Table 10, we break spending into planned and unplanned categories. As mentioned, planned spending accounts for the majority of both food and non durable purchases. Recipients of immediate transfers spent MK 4,991 on planned food purchases. Those whose payments were delayed by one day spent slightly less and those whose payments were delayed by eight days, slightly more. While unplanned food expenditures were small for all three treatment groups, the eight day delay group spent MK 183 less than the immediate payment group (significant at the 10% level) and MK 233 less than the one day delay group (significant at the 5% level). The immediate payment group spent MK 2,470 on non-durables. Those whose payments were delayed by one day spent MK 586 more than the immediate payment group, a difference that is significant at the five percent level. Planned non-durable spending in the eight day delay group was almost identical to the immediate payment group. Unplanned spending on non-durable items is very low for all three treatment and the control groups.

Those who receive the transfer unexpectedly and without warning are no more likely to spend it, and do not spend it substantially differently, than people who receive advance notice of the transfer. As with the previous comparisons between cash transfers and direct deposit, this is remarkable for holding during the lean season, when marginal utility of consumption is likely highest and when individuals may be most subject to temptation (Banerjee & Mullainathan 2010, Mani et al. 2013).

In addition, the results of Table 10 indicate that the null results found are not the result of limited statistical power in the analysis. Indeed, the differences in unplanned expenditures across treatment and control arms are statistically significant but not economically meaningful, and thus we have power to detect small differences in the outcomes of interest.

As in Section 5.2, we also analyze the effect of payment delays on the level and expenditure share devoted to so-called “temptation” goods. Table 11 presents these results. Total

spending on temptation goods in the week following a large windfall transfer is less than \$2 USD by any definition, and neither one- nor eight-day delays in payments significantly effect spending on these goods.

7 Heterogeneous effects

Respondents differ along characteristics that may mediate the effect of direct deposit and payment delay on their savings or spending behavior. Heterogeneous responses to treatment could explain or refute our finding that direct deposit and payment delay do not affect spending, if average effects mask large positive effects for some respondents and large negative effects for others. Therefore, our motivation in testing for heterogeneous effects is both to understand whether the effect of direct deposit and payment delays are large and consistent with behavioral explanations for spending in any subgroups, and in doing so, to examine the robustness of our null findings.

We test for heterogeneous effects along five dimensions: gender of the household head, use of the bank in the 90 days preceding the experiment, distance from the bank branch, asset ownership, and impatience.¹³ We split the sample by gender of household head, any bank use in the preceding 90 days, and for the other three characteristics that are continuous, by an indicator that the characteristic is above the sample median. We then separately estimate treatment effects within each subsample. For each dimension of heterogeneity, we report the p-values for the tests of equal coefficients in the two subsamples. The regression specifications correspond to those used in the previous sections: equation (1) for administrative outcomes and equations (2) and (3) for survey outcomes.

7.1 Savings default

7.1.1 Administrative outcomes

Of the three outcome variables from the administrative data, we focus on net deposits (Panel C of Table 4) because they represent changes in savings at the bank. Table 12 reports the effect of savings defaults on net deposits on the day of the transfer for subsamples along each of the five dimensions discussed above. For example, in Panel A column (1), we see that net deposits the day of the transfer for male-headed households who received the cash transfers were MK 1,736. Male-headed households who received the transfer directly into their account had an additional MK 5,871 in net deposits. Panel B column (1) shows net deposits for female-headed households. The average net deposit in the cash transfer group was

¹³Randomization was stratified by village, but not on individual or household characteristics.

MK 1,442. Net deposits were MK 3,974 higher for female-headed households who received large transfers with a savings default. In the row below Panel B, we report the p-value for the null hypothesis that savings defaults had equal effects on male and female-headed households. We fail to reject this null with a p-value of 0.18.

The remaining four columns split the sample by use of the bank in the 90 days prior to the experiment, distance from the bank branch (those closer to the bank in the top panel), asset ownership, and patience (requiring a below-median amount of money in one month in exchange for money today), all as measured at baseline.¹⁴ In the bottom row of the table, we test whether the coefficients in Panel A and Panel B are equal and find no significant differences in the impacts of the savings default. Direct deposit increases net deposits on the day of the transfer for all subgroups we examine.

We turn to net deposits one week after the transfer in Table 13. These estimates again suggest that savings defaults affect groups with different characteristics in similar ways. Male-headed households who received cash transfers have net deposits of MK 2,010, and those who were paid by direct deposit save an additional MK 2,791. For female-headed households, net deposits in the cash transfer group are MK 1,588 and the effect of the savings default is MK 4,310. Both effects are significantly different from zero. We reject that savings defaults have differential effects on male- and female-headed households, or along any of the other dimensions we test. The p-value for the test of no differences in the savings default coefficient between Panels A and B for all five columns jointly is 0.70. While the effect of savings defaults dissipates over time, it increases net deposits one week after the transfer for all subgroups.

After two weeks, the effect of the savings default is no longer significant in five of the 10 subgroups we consider. It remains positive and significant for female headed households ($\beta = 4,323$, with a cash-transfer mean of MK 1,431), and, at the ten percent confidence level, households that have not used the bank in the previous 90 days, that are closer to the bank branch, that have below median assets, and that are above the median in patience. The bottom row of the table reports p-values for tests that the coefficient in Panel A equals the coefficient in Panel B. We reject the null of equal treatment effects for male-headed households compared to female-headed households ($p=0.014$) and for households that are closer to versus further from the bank branch ($p=0.088$). The p-value for the joint test of no differences in any of the five dimensions is 0.151 (not included in the table).

¹⁴Gender of the household head, any previous transactions prior to the experiment, and MK required to prefer waiting one month are discrete variables, and splitting at the median does not result in equal sized samples above- and below-median.

7.1.2 Household survey outcomes

Panel A of Table 15 reports estimates of the effect of the savings default on total spending in the week following the transfer for male-headed households, for households with any bank activity before the experiment, and for those above the median for the other three characteristics; Panel B reports the corresponding estimates for female-headed households, for those without bank activity before the experiment, and those below the median for the other characteristics. For example, the average male-headed household that received a cash transfer spent MK 16,132 in the week following the survey. The savings default increased spending for male-headed households by MK 959. The average female-headed household that received a cash transfer spent MK 13,472, and savings default recipients spent MK 1,227 less. Neither effect is statistically different from zero. In fact, of the ten coefficients reported in Table 15, none is significant. Moreover, in each case, the magnitude of the coefficient is small relative to the mean for cash recipients.

We reject the null hypothesis that savings defaults affected pairs of subgroups equally for one pair. Savings defaults decreased total spending for households that had previously used their accounts and decreased it for households that had not (column 2), so while neither coefficient is significantly different from zero, the p-value for the test that they are equal (reported in the bottom row of the table) is 0.063. The p-value for the joint test that savings defaults affect all ten subgroups equally is 0.459 (not shown).

We analyze spending on each of the four categories of consumption in a similar fashion.¹⁵ In total, we estimate 40 coefficients, and only two are individually significantly different than zero. In 20 tests of equal effects between subgroups, we reject the null only once: spending on fees and transfers increases for patient respondents and falls for impatient respondents, but in either case, the effect is less than three percent of total weekly spending. Consumption is not significantly affected by mental accounting or defaults for any of the subgroups we examine, and it is therefore unlikely that the null effect we describe above masks large positive effects for any subgroup.

7.2 Payment timing

We conduct analogous tests for heterogeneous effects of delayed payments, though since the design includes two payment delay treatments, these estimates are imprecise. We report them for completeness, and because we can examine the sign and pattern of coefficients even when they are estimated imprecisely.

Table 16 examines effects on total spending in the week following transfer receipt, using

¹⁵See Tables A1 to A4.

the subgroups defined in the previous section. For example, male-headed households who receive transfers with a one-day delay spend MK 438 less than male-headed households who are paid immediately, and male headed households whose transfers are delayed by eight days spend MK 1,192 less than the immediate payment group. Neither delay significantly changes spending with respect to the control group. Female-headed households start with lower household spending than those headed by men (MK 12,272 for female-headed households in the control group, compared to MK 16,756 for male-headed households). For these households, a one-day delay increases spending by MK 3,049. While this is substantial relative to the magnitude of the transfer or spending in the immediate payment group, it is imprecisely estimated and in the opposite direction of the prediction of the quasi-hyperbolic discounting model. An eight-day delay has essentially no effect relative to immediate payments.

Table 16 reports additional p-values. We report the p-value for the test that the effects of one-day and eight-day delays were equal within panel (subgroup) for each variable. At the bottom of the table, we report three sets of p-values that test across panels. The first row tests whether the effect of one-day delays compared to immediate payments are the same for the subgroup in Panel A as for the subgroup in Panel B. The second row tests whether the effect of eight-day delays compared to immediate payments are the same for the two subgroups. The final row tests whether the difference between one-day and eight-day delays are the same for each subgroup.

Within gender subgroup, we fail to reject that shorter and longer delays have equal effects. The p-value for the test that one-day and eight-day delays have the same effect for men is 0.666, and for women it is 0.123. Across gender subgroups, we fail to reject that one-day delays have the same effect for men as for women ($p=0.198$), that eight-day delays have the same effect for men as for women ($p=0.621$), or that the extra effect of an eight-day delay compared to a one-day delay is different for men than women ($p=0.359$).

Considering other baseline characteristics, neither one- nor eight-day delays have significant effects on any of the 10 subgroups we examine in Table 16. Testing across all subgroups, we fail to reject the null that either the one-day delay (p -value for the joint test = 0.557, not included in the table) or the eight-day delay ($p=0.146$) had a significant effect on total spending for any subgroup. However, the point estimates in these specifications are imprecise, and the magnitudes of some are large enough to be economically meaningful.

To interpret these estimates, recall that the prediction of the quasi-hyperbolic discounting model is that a one-day delay will reduce spending, and that the effects of one-day and eight-day delays will be similar. The only subgroup that demonstrates the corresponding pattern of coefficients – a negative effect of both delays, with a larger magnitude for the eight-day delay – is households with above-median patience (Panel A, column 5), and even for these households, the effects are not statistically significant. The pattern of results complements

the finding in Section 6 that payment delays have little effect on spending, and that there is no evidence of spending driven by quasi-hyperbolic preferences in this sample.

We also examine heterogeneous effects of payment delays on each of the four components of spending (see Appendix Tables A5 to A8). The results mirror findings from Table 9. A one day delay significantly increased spending on non-durables in the full sample, and the same effect is observed in all 10 subgroups (with significant effects for six of the 10). An eight day delay significantly decreased spending on transfers and fees in the full sample and in all 10 subgroups (with significant effects for four of the 10). There is no clear pattern to the results, and no evidence that the main effects in Table 9 disguised important patterns for some subgroups.

As with savings defaults, estimates of heterogeneous effects of payment timing generally support the interpretation that payment timing is not a major determinant of spending. While we have limited power, we do not find statistically significant or economically meaningful effects that indicate payment delays help combat time-inconsistent preferences.

8 Conclusion

Depositing a one-time transfer directly into a savings account (savings default) compared to providing the transfer in cash leads to higher savings for transfer recipients in subsequent weeks. However, we find no evidence that either savings defaults or informing the recipient about the transfer in advance (delayed payment) affected respondents' consumption patterns. Households that received lump sum transfers during the lean season are able to smooth intertemporally without use of formal financial products, and report very low levels of unplanned spending. Formal financial products may be more important in other contexts: at different points in the year, for recurring payments, for earned income, or for different payment amounts.

The savings default we study differs in one crucial dimension from those in previous work: it virtually eliminates the transaction cost to undo the default. All participants come to the bank in order to receive their transfers; those who receive direct deposit need only walk through the bank door to withdraw funds, and those who receive cash can do the same to make a deposit. In contrast, changing automatic contributions to a retirement plan requires requesting and completing new benefit deduction forms, and increasing savings by making deposits from wages requires either a trip to the bank or logging on to the bank's website to make a transfer (and forgoing the tax advantages of pre-tax contributions). If defaults affect behavior because psychological costs are amplified by small time or monetary costs of accessing directly deposited funds, then they will be ineffective in a setting when the

transaction costs are equalized.

There are other potential explanations for our findings. Nutritional deprivation leading to very high marginal utility of consumption of food could explain the low levels of temptation spending observed, but in our study very little of the transfer is spent on food. This is consistent with the behavior of very poor households studied by Banerjee & Duflo (2007), who report considerable non-food expenditures despite very low incomes, and with recent findings that income earned through Malawi’s public works program (PWP) does not improve nutrition (Beegle, Galasso & Goldberg 2015).

We study a one-time transfer, which limits the opportunity for habit formation. Somville & Vandewalle (2015) study recurring transfers by paying Indian survey participants the equivalent of a daily wage for 7 to 13 weeks. They vary whether payments are in cash or through individual accounts with local banks, and find lower food consumption and nearly-equivalent higher savings for those paid through bank accounts. However, the effect dissipates as soon as payments are switched to cash. This works against the hypothesis that habit formation or learning is an important mechanism or a reason that our results would underestimate the impact of recurring direct deposits.

The transfers in our study are unearned and unanticipated. Previous work in Malawi shows that direct deposit of earned agricultural income does affect savings, investment, and consumption in the following year (Brune et al. 2016). In other studies of access to bank accounts, deposits come from the subjects’ own assets or income (Dupas & Robinson 2013*a*). Mental accounting could lead to different use of earned and unearned income, and to different effects of payment structure on earned income than what we measure, for unearned income. Blumenstock, Callen & Ghani (2015) find imprecise increases in spending six to eight months after wage payments for Afghani workers are converted to mobile money instead of in cash.

Similarly, payment delay does not affect the level nor composition of expenditures in our study, but it may in other contexts. While there is evidence that direct deposit does affect spending and investment for earned income, the evidence on payment frequency or delay is less conclusive. In Malawi, paying public works beneficiaries every three days compared to every week does not affect consumption (Beegle, Galasso & Goldberg 2015), but paying participants in an NGO’s livelihood program monthly instead of weekly reduces total short-run spending and increases take up of a high yield short term investment opportunity (Brune & Kerwin 2014). In Indonesia, unanticipated delays to planned disbursements of a government-sponsored unconditional cash transfer reduced consumption growth of beneficiaries relative to non-beneficiaries as well as to those who received payments on schedule (Bazzi, Sumatro & Suryahadi Forthcoming).

Previous studies have established that financial access and savings defaults can change savings and investments, and our results do not contradict those findings. Rather, they

suggest limits to the impact of or need for formal financial products to manage cash. Future research should identify situations in which savings defaults and other financial products are most likely to be effective in combating behavioral biases that lead to spending that is later regretted, and that an appreciation of the ability to manage cash will prevent unnecessary rigidities or complexities in the design of wage payments or cash transfers.

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Figures

Figure 1: Experimental design

	Cash	Direct Deposit
Immediate	74	82
+1 day	79	77
+8 days	81	79

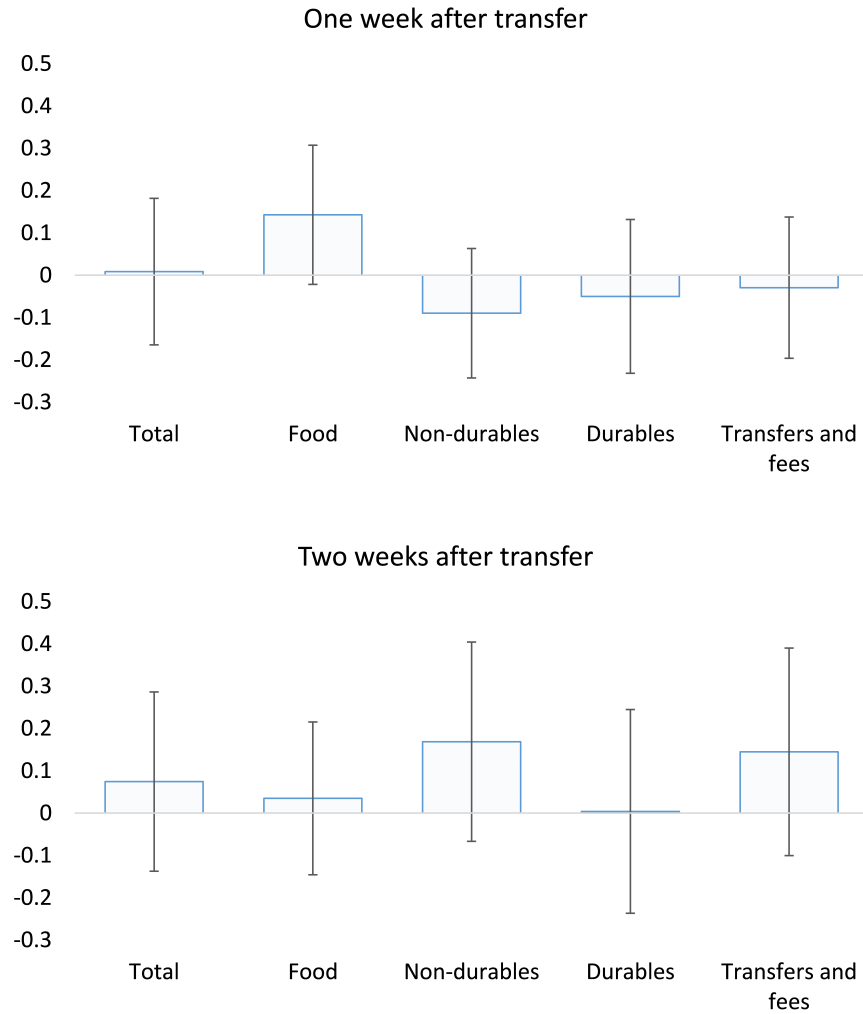
Figure 2: Intervention and survey timing

Day	+0 days			+1 day		+8 days	
-2	HH Visit and Survey: Announcement of Money Prize						
-1							
0	MK 1,000	MK 25,000	MK 25,000				
1				MK 25,000	MK 25,000		
2							
3							
4							
5							
6							
7	Survey 1	Survey 1	Survey 1			Survey 1	Survey 1
8				Survey 1	Survey 1	MK 25,000	MK 25,000
9							
10							
11							
12							
13							
14	Survey 2	Survey 2	Survey 2				
15				Survey 2	Survey 2	Survey 2	Survey 2

Activity at home
Activity at bank

Cash
Direct deposit

Figure 3: Effect of savings default on expenditures



Bars correspond to coefficients reported in Table 6, divided by the standard deviation in the cash transfer group. Whiskers indicate the 95 percent confidence interval. See Table 6 for additional notes.

Tables

Table 1: Summary statistics

	(1) Mean	(2) SD	(3) N	(4) 5th percentile	(5) 10th percentile	(6) Median	(7) 90th percentile	(8) 95th percentile
Panel A: Baseline survey (June to August 2013)								
Male	0.66	0.48	593	0	0	1	1	1
Married	0.63	0.48	593	0	0	1	1	1
Number of hh members	4.7	2.1	593	2.0	2.0	4.0	7.0	8.0
Acres of land	1.5	1.2	593	0.3	0.5	1.2	2.8	3.5
Value of non-fixed assets (MK)	177,697	595,306	593	4,590	7,100	40,500	264,000	517,300
Asset index	-0.05	3.23	593	-3.10	-2.85	-1.00	3.74	6.28
Distance to branch (km)	3.70	1.71	593	1.27	1.63	3.60	6.34	7.10
Hyperbolic	0.23	0.42	593	0	0	0	1	1
Patient now, impatient later	0.27	0.45	593	0	0	0	1	1
Impatience (switching point, out of 6)	2.90	2.03	593	1	1	2	6	6
Panel B: Total of itemized expenditures from round 1 survey								
Total	11,500	15,860	593	520	960	5,625	28,950	43,760
Food	4,593	5,377	593	220	480	2,780	10,710	16,386
non-durables	6,942	12,456	593	100	280	2,440	17,000	32,180
Unplanned food	422	815	593	0	0	60	1,300	2,130
Unplanned non-durables	114	428	593	0	0	0	200	700
Panel C: Bank transaction before round 1 survey								
Any activity 7 days prior	0.07	0.26	593	0	0	0	0	1
Any activity 90 days prior	0.33	0.47	593	0	0	0	1	1
Value of deposits 90 days prior	13,045	107,024	593	0	0	0	11,500	45,000
Value of withdrawals 90 days prior	15,230	171,546	593	40,500	11,440	0	0	0
Value of net deposits 90 days prior	-2,184	69,350	593	-2,000	-600	0	774	3,500

‘Asset Index’ is a principal component index based on 62 asset and seven livestock categories. The impatience measure is based on a series of questions asking whether the respondent would prefer MK 400 tomorrow or a different amount in one month. The choices increased as follows: MK 450, 500, 600, 800, 1000 or more. We report the ordinal number of the question for which the respondent preferred to wait; larger numbers indicate greater impatience. ‘Non-durables’ is the sum of spending on non-food non-durables. ‘Durables’ is the sum of spending on durable goods, assets, livestock and farm inputs. Withdrawals are represented as negative numbers. Exchange rate: MK 420 per USD.

Table 2: Balancing tests, cash transfer vs. savings default

	Cash Transfer			Savings Default			P-value:
	Mean	SD	N	Mean	SD	N	Cash = SD
Panel A: Baseline survey (June to August 2013)							
Male	0.63	0.48	234	0.68	0.47	240	0.356
Married	0.62	0.49	234	0.63	0.48	240	0.957
Number of hh members	4.7	2.2	234	4.7	2.1	240	0.811
Acres of land	1.4	1.1	234	1.5	1.3	240	0.174
Value of non-fixed assets (MK)	194,543	663,336	234	132,394	384,826	240	0.176
Asset index	-0.12	3.18	234	-0.19	3.07	240	0.831
Distance to branch (km)	3.73	1.71	234	3.66	1.74	240	0.914
Hyperbolic	0.26	0.44	234	0.21	0.41	240	0.335
Patient now, impatient later	0.27	0.44	234	0.26	0.44	240	0.790
Impatience (switching point, out of 6)	2.94	2.06	234	2.89	2.02	240	0.790
Panel B: Total of itemized expenditures from round 1 survey							
Total	15,150	12,766	233	14,888	13,779	239	0.812
Food	5,003	5,205	233	5,427	5,553	239	0.381
non-durables	2,414	2,929	233	2,143	2,497	239	0.251
Durables and investments	6,213	8,295	233	5,702	8,416	239	0.495
Transfers and fees	1,234	2,836	233	1,183	2,626	239	0.807
Unplanned food	278	621	233	325	666	239	0.412
Unplanned non-durables	65	303	233	96	356	239	0.328
Panel C: Bank transaction before round 1 survey							
Any activity 7 days prior	0.07	0.26	234	0.08	0.27	240	0.772
Any activity 90 days prior	0.33	0.47	234	0.32	0.47	240	0.793
Value of deposits 90 days prior	8802.447266	41571.29688	234	18609.83594	161433.9219	240	0.396
Value of withdrawals 90 days prior	-8018.194336	32845.48828	234	-24761.42383	266764.0313	240	0.353
Value of net deposits 90 days prior	784.25	13997.69	234	-6151.59	108023.50	240	0.333

Reported p-values from test of equality of means in Cash and Savings Default groups based on regressions that include village and week-of-first-survey fixed effects mirroring the results specifications. ‘Asset Index’ is a principal component index based on 62 asset and seven livestock categories. The impatience measure is based on a series of questions asking whether the respondent would prefer MK 400 tomorrow or a different amount in one month. The choices increased as follows: MK 450, 500, 600, 800, 1000 or more. We report the ordinal number of the question for which the respondent preferred to wait; larger numbers indicate greater impatience. ‘Non-durables’ is the sum of spending on non-food non-durables. ‘Durables’ is the sum of spending on durable goods, assets, livestock and farm inputs. Withdrawals are represented as negative numbers. Exchange rate: MK 420 per USD.

Table 3: Balancing tests, payment delays

	Mean	No Delay SD	N	Mean	1-day delay SD	N	Mean	8-day delay SD	N	P-value: equal means
Panel A: Baseline survey (June to August 2013)										
Male	0.68	0.47	156	0.66	0.48	158	0.64	0.48	160	0.837
Married	0.64	0.48	156	0.61	0.49	158	0.63	0.48	160	0.788
Number of hh members	4.7	2.1	156	4.7	2.3	158	4.7	2.2	160	0.997
Acres of land	1.5	1.3	156	1.4	1.0	158	1.5	1.2	160	0.321
Value of non-fixed assets (MK)	158,793	532,003	156	200,520	670,851	158	130,273	384,059	160	0.521
Asset index	-0.16	3.14	156	-0.10	3.38	158	-0.21	2.83	160	0.936
Distance to branch (km)	3.70	1.72	156	3.62	1.70	158	3.77	1.75	160	0.138
Hyperbolic	0.23	0.42	156	0.27	0.45	158	0.20	0.40	160	0.263
Patient now, impatient later	0.21	0.41	156	0.28	0.45	158	0.30	0.46	160	0.240
Impatience (switching point, out of 6)	2.85	2.11	156	3.06	2.04	158	2.84	1.97	160	0.546
Panel B: Total of itemized expenditures from round 1 survey										
Total	15,319	14,636	156	15,614	13,320	156	14,141	11,791	160	0.603
Food	5,337	5,393	156	4,960	5,122	156	5,353	5,638	160	0.761
non-durables	2,139	2,552	156	2,601	3,071	156	2,095	2,492	160	0.240
Durables and investments	5,959	9,020	156	6,115	7,632	156	5,793	8,395	160	0.936
Other	1,515	3,146	156	1,427	2,832	156	696	2,048	160	0.004
Unplanned food	343	621	156	388	794	156	177	460	160	0.003
Unplanned non-durables	73	281	156	129	455	156	41	206	160	0.072
Panel C: Bank transaction before round 1 survey										
Any activity 7 days prior	0.06	0.25	156	0.09	0.29	158	0.08	0.26	160	0.803
Any activity 90 days prior	0.31	0.47	156	0.39	0.49	158	0.26	0.44	160	0.044
Value of deposits 90 days prior	19716.02344	195063.9219	156	13610.76953	48414.94531	158	8124.574219	47994.42188	160	0.719
Value of withdrawals 90 days prior	-30057.94141	328546.6875	156	-12976.71777	46100.56641	158	-6747.744141	33820.91406	160	0.566
Value of net deposits 90 days prior	-10341.92	133819.36	156	634.05	5508.98	158	1376.83	17062.67	160	0.529

Reported p-values from test of equality of means in No-Delay 1-Day Delay and 8-Day Delay groups based on regressions that include village and week-of-first-survey fixed effects mirroring the results specifications. 'Asset Index' is a principal component index based on 62 asset and seven livestock categories. The impatience measure is based on a series of questions asking whether the respondent would prefer MK 400 tomorrow or a different amount in one month. The choices increased as follows: MK 450, 500, 600, 800, 1000 or more. We report the ordinal number of the question for which the respondent preferred to wait; larger numbers indicate greater impatience. 'Non-durables' is the sum of spending on non-food non-durables. 'Durables' is the sum of spending on durable goods, assets, livestock and farm inputs. Withdrawals are represented as negative numbers. Exchange rate: MK 420 per USD.

Table 4: Effect of savings default on bank transactions

	(1) Day of transfer	(2) +3 days	(3) +7 days	(4) +14 days
Panel A: Deposits				
Savings Default	23452.552*** (378.585)	23680.378*** (621.169)	23932.107*** (698.161)	22586.859*** (1256.521)
Observations	474	474	474	474
Mean of dependent variable in control group	1636.75	2190.82	2741.40	5122.17
R-squared	0.90	0.78	0.81	0.80
Panel B: Withdrawals				
Savings Default	-17937.270*** (649.696)	-19966.633*** (565.638)	-20456.032*** (703.387)	-21086.793*** (1264.565)
Observations	474	474	474	474
Mean of dependent variable in control group	-9.02	-254.79	-886.54	-2426.92
R-squared	0.68	0.81	0.75	0.50
Panel C: Net Deposits				
Savings Default	5524.446*** (721.615)	3738.687*** (821.783)	3437.037*** (704.077)	1479.645 (1057.334)
Observations	474	474	474	474
Mean of dependent variable in control group	1627.74	1936.03	1854.86	2695.25
R-squared	0.28	0.24	0.13	0.63

All specifications include village and week-of-first-survey fixed effects, and the value of deposits, withdrawals, net deposits, respectively, in the 90 days prior to survey 1. Withdrawals are represented as negative numbers. Exchange rate: MK 420 per USD. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 5: Effect of savings default on savings

	(1) NBS account	(2) Formal savings	(3) Informal savings	(4) In-kind savings	(5) Total financial assets (2)+(3)	(6) Total savings (2)+(3)+(4)
Panel A: One week after transfer						
Savings Default	1669.683** (828.824)	1277.934 (1581.009)	-3050.113** (1238.233)	-1112.016 (3973.808)	-647.722 (2366.426)	-908.143 (4903.924)
Observations	474	474	474	474	474	474
Mean of dependent variable in Cash group	5576.86	8917.03	14849.70	22076.32	24347.50	47799.98
SD of dependent variable in Cash group	10141.54	21269.97	17075.07	48092.90	35367.95	73605.06
R-squared	0.30	0.34	0.39	0.33	0.46	0.50
Panel B: Two weeks after transfer						
Savings Default	1691.103* (1018.838)	734.006 (2090.709)	-925.735 (1355.932)	-15013.889** (7626.461)	630.532 (2687.514)	-15344.649* (8935.366)
Observations	314	314	314	314	314	314
Mean of dependent variable in Cash group	5308.10	9429.67	11392.61	46683.69	20852.68	68490.62
SD of dependent variable in Cash group	8950.40	23826.40	17025.50	88591.66	37473.69	120342.79
R-squared	0.27	0.36	0.41	0.29	0.53	0.46
<p>‘Formal savings’ is the sum of balances at NBS, any other bank or microfinance institution, and employee savings accounts. ‘Informal savings’ is the sum of balances in ROSCAS, village savings clubs, cash at home or in a secret hiding place, cash given to someone else for safe keeping. ‘In-kind savings’ is the sum of advance purchases of farm inputs, business inventory, bags of maize. Panel A shows regressions with outcome variables measured one week after the transfer, Panel B uses the same outcomes measured two weeks after the transfer. The sample for Panel B is smaller since two-week follow-up data were only collected for respondents who received transfers immediately or with one day delay. All specifications include village and week-of-first-survey fixed effects, and the value of the outcome measured at survey 1. Exchange rate: MK 420 per USD. Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.</p>						

Table 6: Effect of savings default on expenditures

	(1) Total	(2) Food	(3) Non- durables	(4) Durables	(5) Transfers and fees
Panel A: One week after transfer					
Savings Default	110.674 (1125.239)	743.611* (435.474)	-262.969 (227.998)	-414.721 (766.860)	-83.273 (240.874)
Observations	472	472	472	472	472
Mean of dependent variable in Cash group	15149.95	5003.48	2414.48	6213.47	1233.89
SD of dependent variable in Cash group	12765.54	5204.55	2929.28	8295.42	2836.18
R-squared	0.25	0.24	0.22	0.10	0.12
Panel B: Two weeks after transfer					
Savings Default	770.108 (1111.960)	163.045 (427.687)	337.003 (239.114)	22.935 (697.530)	265.871 (228.800)
Observations	312	312	312	312	312
Mean of dependent variable in Cash group	8751.50	3920.65	1378.50	2830.26	640.00
SD of dependent variable in Cash group	10331.99	4660.08	1997.26	5699.57	1835.09
R-squared	0.30	0.35	0.25	0.20	0.07

‘Non-durables’ is the sum of spending on non-food non-durables. ‘Durables’ is the sum of spending on durable goods, assets, livestock and farm inputs. ‘Transfers and fees’ is the sum of spending on ceremonies, funerals, school fees, loans given, formal insurance, fines and fees. Panel A shows regressions with outcome variables measured one week after the transfer, Panel B uses the same outcomes measured two weeks after the transfer. The sample for Panel B is smaller since two-week follow-up data were only collected for respondents who received transfers immediately or with one day delay. All specifications include village and week-of-first-survey fixed effects, and the value of the outcome measured at survey 1. Exchange rate: MK 420 perUSD. Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 7: Effect of savings default on planned vs. unplanned expenditures

	(1)	(2)	(3)	(4)
	Planned	Food Unplanned	Planned	non-durables Unplanned
Panel A: One week after transfer				
Savings Default	652.018 (432.842)	54.034 (52.608)	-275.008 (213.848)	31.277 (31.092)
Observations	472	472	472	472
Mean of dependent variable in Cash group	4711.85	278.37	2315.56	64.89
SD of dependent variable in Cash group	5085.93	620.60	2764.69	303.39
R-squared	0.21	0.28	0.23	0.05
Panel B: Two weeks after transfer				
Savings Default	158.904 (425.306)	-10.275 (40.799)	297.821 (235.307)	23.619 (33.923)
Observations	312	312	312	312
Mean of dependent variable in Cash group	3748.37	185.56	1334.38	39.54
SD of dependent variable in Cash group	4540.24	454.46	1998.36	228.99
R-squared	0.32	0.19	0.26	0.04

Categorization into planned and unplanned purchases is based on respondents' answers during itemized elicitation of expenditures. For each item respondents were asked if they had planned to purchase the item before they arrived at the market or store, or if the decision was made on the spot. Panel A shows regressions with outcome variables measured one week after the transfer, Panel B uses the same outcomes measured two weeks after the transfer. The sample for Panel B is smaller since two-week follow-up data were only collected for respondents who received transfers immediately or with one day delay. All specifications include village and week-of-first-survey fixed effects, and the value of the outcome measured at survey 1. Exchange rate: MK 420 per USD. Robust standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.01

Table 8: Effect of savings default on temptation spending

	(1)	(2)	(3)	(4)	(5)	(6)
	Definition 1:		Definition 2:		Definition 3:	
	Alcohol and tobacco Amount	Share	D1 + sugars and fats Amount	Share	D2+ prepared foods Amount	Share
Panel A: One week after transfer						
Savings Default	19.056 (30.316)	-0.000 (0.003)	43.064 (41.079)	0.005 (0.004)	61.353 (49.105)	0.005 (0.005)
Observations	472	471	472	471	472	471
Mean of dependent variable in Cash group	106.78	0.01	284.94	0.02	414.87	0.03
SD of dependent variable in Cash group	405.86	0.03	565.35	0.04	685.35	0.06
R-squared	0.29	0.15	0.31	0.07	0.35	0.08
Panel B: Two weeks after transfer						
Savings Default	46.818* (28.211)	0.002 (0.004)	76.756 (53.163)	0.007 (0.006)	112.750* (63.829)	0.011 (0.008)
Observations	312	309	312	309	312	309
Mean of dependent variable in Cash group	60.13	0.01	234.18	0.03	361.05	0.05
SD of dependent variable in Cash group	285.40	0.04	564.04	0.05	675.35	0.07
R-squared	0.40	0.24	0.31	0.16	0.38	0.19

Panel A shows regressions with outcome variables measured one week after the transfer, Panel B uses the same outcomes measured two weeks after the transfer. The sample for Panel B is smaller since two-week follow-up data were only collected for respondents who received transfers immediately or with one day delay. All specifications include village and week-of-first-survey fixed effects, and the value of the outcome measured at survey 1. Exchange rate: MK 420 perUSD. Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 9: Effect of delayed transfers on expenditures

	(1)	(2)	(3)	(4)	(5)
	Total	Food	Non-durables	Durables	Transfers and fees
1-day delay	735.111 (1343.973)	-254.224 (510.050)	725.832** (281.049)	375.094 (888.467)	-77.818 (329.711)
8-day delay	-1042.097 (1260.499)	-189.175 (552.714)	3.378 (249.935)	-26.334 (942.140)	-713.099** (288.540)
Observations	472	472	472	472	472
Mean of dependent variable in Immediate group	15318.73	5337.47	2139.36	5959.10	1515.09
SD of dependent variable in Immediate group	14635.63	5392.90	2552.21	9019.54	3145.75
R-squared	0.253	0.240	0.232	0.097	0.135
P-value: 1 day delay = 8 day delay	0.179	0.906	0.014	0.660	0.013

'Non-durables' is the sum of spending on non-food non-durables. 'Durables' is the sum of spending on durable goods, assets, livestock and farm inputs. 'Transfers and fees' is the sum of spending on ceremonies, funerals, school fees, loans given, formal insurance, fines and fees. All specifications include village and week-of-first-survey fixed effects, and the value of the outcome measured at survey 1. Exchange rate: MK 420 perUSD. Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 10: Effect of delayed transfer on planned vs. unplanned expenditures

	(1)	(2)	(3)	(4)
		Food		non-durables
	Planned	Unplanned	Planned	Unplanned
1-day delay	-345.572 (507.704)	49.913 (69.217)	585.623** (258.329)	59.427 (41.551)
8-day delay	12.099 (554.377)	-182.968** (56.217)	8.179 (241.477)	-29.253 (26.274)
Observations	472	472	472	472
Mean of dependent variable in Immediate group	4990.51	343.08	2058.43	72.63
SD of dependent variable in Immediate group	5244.06	620.51	2470.42	280.68
R-squared	0.204	0.298	0.241	0.061
P-value: one day delay = 8 day delay	0.515	0.000	0.033	0.027

Categorization into planned and unplanned purchases is based on respondents' answers during itemized elicitation of expenditures. For each item respondents were asked if they had planned to purchase the item before they arrived at the market or store, or if the decision was made on the spot. All specifications include village and week-of-first-survey fixed effects, and the value of the outcome measured at survey 1. Exchange rate: MK 420 per USD. Robust standard errors in parentheses.
* p<0.10, ** p<0.05, *** p<0.01

Table 11: Effect of payment delay on temptation spending

	(1)	(2)	(3)	(4)	(5)	(6)
	Definition 1:		Definition 2:		Definition 3:	
	Alcohol and tobacco	Share	D1 + sugars and fats	Share	D2+ prepared foods	Share
	Amount	Share	Amount	Share	Amount	Share
1-day delay	-52.016 (41.260)	-0.002 (0.004)	17.218 (52.260)	0.002 (0.005)	-18.558 (63.391)	-0.003 (0.006)
8-day delay	-17.146 (35.168)	-0.002 (0.003)	43.432 (44.932)	0.005 (0.005)	-13.346 (54.080)	0.001 (0.006)
Observations	472	471	472	471	472	471
Mean of dependent variable in Immediate group	119.49	0.01	277.92	0.02	451.63	0.04
SD of dependent variable in Immediate group	502.15	0.03	591.82	0.04	747.27	0.05
R-squared	0.297	0.152	0.312	0.068	0.350	0.082
P-value: one day delay = 8 day delay	0.352	0.850	0.631	0.637	0.935	0.588

All specifications include village and week-of-first-survey fixed effects, and the value of the outcome measured at survey 1. Exchange rate: MK 420 per USD. Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 12: Heterogeneous effects of savings default on net deposits, day of transfer (+0 days)

	(1)	(2)	(3)	(4)	(5)
Panel A:	Male HH head	Any previous bank use	Close to branch	Assets	Above median: Patience
Savings Default	5871.069*** (949.451)	5264.667*** (1508.287)	4774.141*** (993.112)	6065.325*** (1113.276)	5600.016*** (1164.604)
Observations	312	153	234	227	191
Mean of dependent variable in control group	1735.74	3076.49	1807.74	1744.83	1758.24
R-squared	0.34	0.44	0.42	0.42	0.20
Panel B:	Female HH head	No previous bank use	Far from branch	Assets	Below median: Patience
Savings Default	3973.744*** (1108.769)	5513.853*** (814.781)	6206.099*** (1068.182)	4596.604*** (939.405)	5544.467*** (938.608)
Observations	162	321	240	247	283
Mean of dependent variable in control group	1441.86	917.20	1453.78	1508.62	1544.69
R-squared	0.17	0.18	0.15	0.18	0.37
P-value: equal effect of savings default	0.180	0.881	0.316	0.302	0.969

The top panel includes respondents from female-headed households, those with above-median values for number of transactions at NBS in the 90 days preceding the transfer, those who live above the median distance from the bank branch, those with above-median values of a principle-index of asset ownership, and those with above-median patience, as measured at baseline by amount required to prefer a transfer in one month instead of immediately. P-values are from tests of equality of Savings Default coefficients in Panels A and B. All specifications include village and week-of-first-survey fixed effects, and the value of the outcome measured at survey 1. Exchange rate: MK 420 per USD. Robust standard errors in parentheses.
* p<0.10, ** p<0.05, *** p<0.01

Table 13: Heterogeneous effects of savings default on net deposits, within one week of transfer (+7 days)

	(1)	(2)	(3)	(4)	(5)
Panel A:	Male HH head	Any previous bank use	Close to branch	Assets	Above median: Patience
Savings Default	2790.733*** (833.627)	3574.589** (1452.477)	3751.677*** (1081.432)	4305.833*** (1220.779)	2724.841** (1016.825)
Observations	312	153	234	227	191
Mean of dependent variable in control group	2009.78	3143.35	2246.09	1963.03	1871.67
R-squared	0.18	0.24	0.16	0.17	0.13
Panel B:	Female HH head	No previous bank use	Far from branch	Assets	Below median: Patience
Savings Default	4309.503** (1328.855)	3016.663*** (791.269)	3138.095*** (936.787)	2339.635** (798.693)	3892.723*** (972.297)
Observations	162	321	240	247	283
Mean of dependent variable in control group	1588.26	1222.93	1476.79	1744.83	1844.17
R-squared	0.17	0.08	0.09	0.10	0.17
P-value: equal effect of savings default	0.336	0.734	0.663	0.168	0.400

The top panel includes respondents from female-headed households, those with above-median values for number of transactions at NBS in the 90 days preceding the transfer, those who live above the median distance from the bank branch, those with above-median values of a principle-index of asset ownership, and those with above-median patience, as measured at baseline by amount required to prefer a transfer in one month instead of immediately. P-values are from tests of equality of Savings Default coefficients in Panels A and B. All specifications include village and week-of-first-survey fixed effects, and the value of the outcome measured at survey 1. Exchange rate: MK 420 per USD. Robust standard errors in parentheses.
* p<0.10, ** p<0.05, *** p<0.01

Table 14: Heterogeneous effects of savings default on net deposits, within two weeks of transfer (+14 days)

	(1)	(2)	(3)	(4)	(5)
Panel A:	Male HH head	Any previous bank use	Close to branch	Assets	Above median: Patience
Savings Default	-426.248 (1460.488)	-690.794 (2951.815)	2929.975** (1028.894)	1432.075 (2067.610)	1831.533** (892.766)
Observations	312	153	234	227	191
Mean of dependent variable in control group	3429.71	5637.63	2399.13	3732.18	1583.10
R-squared	0.68	0.71	0.89	0.68	0.11
Panel B:	Female HH head	No previous bank use	Far from branch	Assets	Below median: Patience
Savings Default	4323.073*** (1269.949)	2150.497** (720.566)	631.954 (921.983)	1443.579** (698.556)	1603.971 (1673.170)
Observations	162	321	240	247	283
Mean of dependent variable in control group	1431.28	1252.17	2981.41	1640.43	3402.98
R-squared	0.18	0.07	0.68	0.11	0.67
P-value: equal effect of savings default	0.014	0.230	0.088	0.995	0.882
<p>The top panel includes respondents from female-headed households, those with above-median values for number of transactions at NBS in the 90 days preceding the transfer, those who live above the median distance from the bank branch, those with above-median values of a principle-index of asset ownership, and those with above-median patience, as measured at baseline by amount required to prefer a transfer in one month instead of immediately. P-values are from tests of equality of Savings Default coefficients in Panels A and B. All specifications include village and week-of-first-survey fixed effects, and the value of the outcome measured at survey 1. Exchange rate: MK 420 per USD. Robust standard errors in parentheses.</p> <p>* p<0.10, ** p<0.05, *** p<0.01</p>					

Table 15: Heterogeneous effects of savings default on total spending

	(1)	(2)	(3)	(4)	(5)
Panel A:	Male HH head	Any previous bank use	Close to branch	Assets	Above median: Patience
Savings Default	958.512 (1391.385)	-2568.115 (1951.350)	-651.466 (1510.431)	-766.624 (1726.694)	2203.133 (1953.386)
Observations	310	152	233	226	190
Mean of dependent variable in Cash group	16131.82	16846.46	16023.01	16754.24	15148.79
R-squared	0.296	0.442	0.337	0.301	0.288
Panel B:	Female HH head	No previous bank use	Far from branch	Assets	Below median: Patience
Savings Default	-1227.160 (1753.121)	1645.099 (1364.611)	543.324 (1684.321)	672.508 (1464.241)	-1104.029 (1289.129)
Observations	162	320	239	246	282
Mean of dependent variable in Cash group	13471.64	14328.71	14299.08	13531.83	15150.68
R-squared	0.207	0.203	0.204	0.208	0.275
P-value: equal effect of savings default	0.306	0.063	0.586	0.509	0.140

The top panel includes respondents from female-headed households, those with above-median values for number of transactions at NBS in the 90 days preceding the transfer, those who live above the median distance from the bank branch, those with above-median values of a principle-index of asset ownership, and those with above-median patience, as measured at baseline by amount required to prefer a transfer in one month instead of immediately. P-values are from tests of equality of Savings Default coefficients in Panels A and B. All specifications include village and week-of-first-survey fixed effects, and the value of the outcome measured at survey 1. Exchange rate: MK 420 per USD. Robust standard errors in parentheses.
* p<0.10, ** p<0.05, *** p<0.01

Table 16: Heterogeneous effects of payment delays on total spending

	(1)	(2)	(3)	(4)	(5)
Panel A:	Male HH head	Any previous bank use	Close to branch	Assets	Above median: Patience
1-day delay	-438.000 (1627.285)	3278.722 (2362.448)	5.191 (2038.724)	1150.498 (2047.030)	-1387.772 (2369.923)
8-day delay	-1192.477 (1700.539)	2282.270 (2161.679)	-2120.740 (1701.914)	569.199 (2041.364)	-2118.200 (2420.014)
Observations	310	152	233	226	190
Mean of dependent variable in Immediate group	16755.85	12634.49	17367.79	15774.29	16009.12
R-squared	0.296	0.443	0.341	0.301	0.286
P-value: one day delay = 8 day delay	0.666	0.685	0.208	0.779	0.782
Panel B:	Female HH head	No previous bank use	Far from branch	Assets	Below median: Patience
1-day delay	3048.881 (2339.617)	271.584 (1749.049)	2023.454 (1877.547)	583.753 (1876.455)	1641.853 (1598.743)
8-day delay	-5.482 (1856.776)	-2329.353 (1656.275)	484.689 (1838.687)	-2224.241 (1603.749)	-924.840 (1545.776)
Observations	162	320	239	246	282
Mean of dependent variable in Immediate group	12272.04	16547.96	13321.54	14874.71	14695.70
R-squared	0.220	0.207	0.208	0.217	0.281
P-value: one day delay = 8 day delay	0.123	0.130	0.463	0.125	0.088
P-value: equal effect of 1-day vs 0-day	0.198	0.281	0.451	0.832	0.267
P-value: equal effect of 8-day vs 0-day	0.621	0.074	0.282	0.262	0.663
P-value: equal effect of 1-day vs 8-day	0.359	0.572	0.821	0.400	0.526
The top panel includes respondents from female-headed households and those with above-median values for number of transactions at NBS in the 90 days preceding the transfer, those who live above the median distance from the bank branch, those with above-median values of a principle-index of asset ownership, and those with above-median patience, as measured at baseline by amount required to prefer a transfer in one month instead of immediately. P-values in the bottom three rows are from tests of equality of the 1-day delay coefficients, the 8-day delays, and the differences between 1-day and 8-day delay coefficients, respectively, in Panels A and B. All specifications include village and week-of-first-survey fixed effects, and the value of the outcome measured at survey 1. Exchange rate: MK 420 per USD. Robust standard errors in parentheses.					
* p<0.10, ** p<0.05, *** p<0.01					

Online Appendix (not for publication)

Table A1: Heterogeneous effects of savings default on food spending

	(1)	(2)	(3)	(4)	(5)
Panel A:	Male HH head	Any previous bank use	Close to branch	Assets	Above median: Patience
Savings Default	719.535 (512.267)	3.352 (740.115)	751.418 (553.440)	741.532 (663.829)	1020.331 (806.345)
Observations	310	152	233	226	190
Mean of dependent variable in Cash group	5412.12	5753.05	5400.02	5968.22	5442.41
R-squared	0.343	0.425	0.346	0.279	0.260
Panel B:	Female HH head	No previous bank use	Far from branch	Assets	Below median: Patience
Savings Default	749.872 (770.867)	1080.755* (560.881)	680.691 (678.413)	525.873 (590.914)	669.625 (478.437)
Observations	162	320	239	246	282
Mean of dependent variable in Cash group	4305.00	4640.64	4617.03	4030.43	4727.24
R-squared	0.149	0.203	0.194	0.204	0.251
P-value: equal effect of savings default	0.973	0.223	0.934	0.801	0.696

The top panel includes respondents from female-headed households, those with above-median values for number of transactions at NBS in the 90 days preceding the transfer, those who live above the median distance from the bank branch, those with above-median values of a principle-index of asset ownership, and those with above-median patience, as measured at baseline by amount required to prefer a transfer in one month instead of immediately. P-values are from tests of equality of Savings Default coefficients in Panels A and B. All specifications include village and week-of-first-survey fixed effects, and the value of the outcome measured at survey 1. Exchange rate: MK 420 per USD. Robust standard errors in parentheses.
* p<0.10, ** p<0.05, *** p<0.01

Table A2: Heterogeneous effects of savings default on non-durable spending

	(1)	(2)	(3)	(4)	(5)
Panel A:	Male HH head	Any previous bank use	Close to branch	Assets	Above median: Patience
Savings Default	-307.617 (297.868)	-505.040 (426.939)	-177.042 (347.639)	-332.661 (345.476)	-165.889 (357.228)
Observations	310	152	233	226	190
Mean of dependent variable in Cash group	2768.27	2957.83	2606.91	2715.30	2385.11
R-squared	0.267	0.368	0.269	0.320	0.225
Panel B:	Female HH head	No previous bank use	Far from branch	Assets	Below median: Patience
Savings Default	-86.431 (314.279)	-81.618 (263.568)	-514.477* (304.330)	-227.691 (315.036)	-229.478 (279.581)
Observations	162	320	239	246	282
Mean of dependent variable in Cash group	1809.77	2151.46	2226.95	2111.08	2432.97
R-squared	0.210	0.167	0.183	0.153	0.299
P-value: equal effect of savings default	0.594	0.374	0.451	0.815	0.884
<p>The top panel includes respondents from female-headed households, those with above-median values for number of transactions at NBS in the 90 days preceding the transfer, those who live above the median distance from the bank branch, those with above-median values of a principle-index of asset ownership, and those with above-median patience, as measured at baseline by amount required to prefer a transfer in one month instead of immediately. P-values are from tests of equality of Savings Default coefficients in Panels A and B. All specifications include village and week-of-first-survey fixed effects, and the value of the outcome measured at survey 1. Exchange rate: MK 420 per USD. Robust standard errors in parentheses.</p> <p>* p<0.10, ** p<0.05, *** p<0.01</p>					

Table A3: Heterogeneous effects of savings default on durable spending

	(1)	(2)	(3)	(4)	(5)
Panel A:	Male HH head	Any previous bank use	Close to branch	Assets	Above median: Patience
Savings Default	-77.066 (979.265)	-669.228 (1238.126)	-135.749 (935.781)	-1094.647 (1106.193)	339.052 (1251.232)
Observations	310	152	233	226	190
Mean of dependent variable in Cash group	6582.93	5866.50	6102.43	6122.34	6158.32
R-squared	0.136	0.268	0.210	0.151	0.165
Panel B:	Female HH head	No previous bank use	Far from branch	Assets	Below median: Patience
Savings Default	-398.757 (1147.975)	83.061 (990.830)	-695.900 (1229.078)	154.155 (1107.395)	-1055.342 (980.221)
Observations	162	320	239	246	282
Mean of dependent variable in Cash group	5581.97	6381.43	6321.69	6305.39	6248.18
R-squared	0.122	0.088	0.115	0.100	0.082
P-value: equal effect of savings default	0.823	0.619	0.708	0.407	0.360

The top panel includes respondents from female-headed households, those with above-median values for number of transactions at NBS in the 90 days preceding the transfer, those who live above the median distance from the bank branch, those with above-median values of a principle-index of asset ownership, and those with above-median patience, as measured at baseline by amount required to prefer a transfer in one month instead of immediately. P-values are from tests of equality of Savings Default coefficients in Panels A and B. All specifications include village and week-of-first-survey fixed effects, and the value of the outcome measured at survey 1. Exchange rate: MK 420 per USD. Robust standard errors in parentheses.
* p<0.10, ** p<0.05, *** p<0.01

Table A4: Heterogeneous effects of savings default on transfers and fees spending

	(1)	(2)	(3)	(4)	(5)
Panel A:	Male HH head	Any previous bank use	Close to branch	Assets	Above median: Patience
Savings Default	69.067 (280.881)	-114.786 (518.859)	-522.847 (374.370)	131.335 (428.443)	428.595 (347.383)
Observations	310	152	233	226	190
Mean of dependent variable in Cash group	1267.63	1465.71	1402.56	1401.66	1030.78
R-squared	0.192	0.277	0.187	0.136	0.229
Panel B:	Female HH head	No previous bank use	Far from branch	Assets	Below median: Patience
Savings Default	-370.776 (434.824)	-74.800 (277.759)	225.796 (308.838)	-332.797 (256.943)	-329.216 (327.598)
Observations	162	320	239	246	282
Mean of dependent variable in Cash group	1176.21	1121.67	1069.51	1064.67	1361.72
R-squared	0.066	0.061	0.084	0.134	0.117
P-value: equal effect of savings default	0.372	0.943	0.111	0.334	0.098
<p>The top panel includes respondents from female-headed households, those with above-median values for number of transactions at NBS in the 90 days preceding the transfer, those who live above the median distance from the bank branch, those with above-median values of a principle-index of asset ownership, and those with above-median patience, as measured at baseline by amount required to prefer a transfer in one month instead of immediately. P-values are from tests of equality of Savings Default coefficients in Panels A and B. All specifications include village and week-of-first-survey fixed effects, and the value of the outcome measured at survey 1. Exchange rate: MK 420 per USD. Robust standard errors in parentheses.</p> <p>* p<0.10, ** p<0.05, *** p<0.01</p>					

Table A5: Heterogeneous effects of payment delays on food spending

	(1)	(2)	(3)	(4)	(5)
Panel A:	Male HH head	Any previous bank use	Close to branch	Assets	Above median: Patience
1-day delay	-405.642 (591.647)	69.188 (832.794)	-592.747 (654.067)	269.010 (766.502)	-223.956 (1017.129)
8-day delay	-536.167 (646.155)	1116.841 (1060.085)	-148.727 (742.053)	390.424 (839.486)	-1593.299 (967.504)
Observations	310	152	233	226	190
Mean of dependent variable in Immediate group	5737.41	4722.45	5600.39	5575.52	5866.08
R-squared	0.340	0.433	0.343	0.275	0.265
P-value: 1-day=8-day	0.841	0.270	0.545	0.895	0.212
Panel B:	Female HH head	No previous bank use	Far from branch	Assets	Below median: Patience
1-day delay	-281.353 (928.737)	-9.718 (691.840)	-181.439 (811.692)	-508.851 (683.831)	-278.239 (545.759)
8-day delay	883.401 (983.251)	-597.075 (701.526)	-488.375 (847.991)	-791.491 (758.031)	616.483 (659.203)
Observations	162	320	239	246	282
Mean of dependent variable in Immediate group	4489.60	5619.11	5081.20	5105.44	4860.43
R-squared	0.153	0.196	0.192	0.205	0.253
P-value: 1-day=8-day	0.239	0.404	0.710	0.689	0.154
P-value: equal effect of 1-day vs 0-day	0.905	0.939	0.683	0.430	0.961
P-value: equal effect of 8-day vs 0-day	0.204	0.155	0.755	0.276	0.048
P-value: equal effect of 1-day vs 8-day	0.248	0.144	0.481	0.716	0.059
OLS regressions. All specifications include village and week-of-survey fixed effects. The top panel includes respondents from female-headed households and those with above-median values for number of transactions at NBS in the 90 days preceding the transfer, those who live above the median distance from the bank branch, those with above-median values of a principle-index of asset ownership, and those with above-median patience, as measured at baseline by amount required to prefer a transfer in one month instead of immediately. * p<0.10, ** p<0.05, *** p<0.01					

Table A6: Heterogeneous effects of payment delays on non durable spending

	(1)	(2)	(3)	(4)	(5)
Panel A:	Male HH head	Any previous bank use	Close to branch	Assets	Above median: Patience
1-day delay	869.462** (357.434)	1228.607** (520.654)	952.246** (438.515)	813.509* (427.750)	430.304 (429.888)
8-day delay	46.452 (321.023)	764.800 (499.231)	42.299 (380.555)	-167.709 (370.209)	217.823 (411.239)
Observations	310	152	233	226	190
Mean of dependent variable in Immediate group	2362.97	1759.18	2456.62	2434.22	2076.89
R-squared	0.282	0.387	0.289	0.337	0.229
P-value: 1-day=8-day	0.036	0.423	0.043	0.024	0.671
Panel B:	Female HH head	No previous bank use	Far from branch	Assets	Below median: Patience
1-day delay	540.827 (443.654)	381.768 (344.910)	461.733 (365.426)	770.039** (389.136)	940.626** (372.254)
8-day delay	266.054 (444.633)	-368.425 (294.287)	31.080 (335.316)	231.328 (349.389)	-124.735 (317.100)
Observations	162	320	239	246	282
Mean of dependent variable in Immediate group	1665.30	2313.46	1830.13	1851.96	2195.73
R-squared	0.218	0.181	0.179	0.166	0.326
P-value: 1-day=8-day	0.553	0.027	0.267	0.181	0.004
P-value: equal effect of 1-day vs 0-day	0.545	0.152	0.374	0.938	0.348
P-value: equal effect of 8-day vs 0-day	0.674	0.039	0.982	0.414	0.490
P-value: equal effect of 1-day vs 8-day	0.341	0.651	0.401	0.434	0.149
<p>The top panel includes respondents from female-headed households and those with above-median values for number of transactions at NBS in the 90 days preceding the transfer, those who live above the median distance from the bank branch, those with above-median values of a principle-index of asset ownership, and those with above-median patience, as measured at baseline by amount required to prefer a transfer in one month instead of immediately. P-values in the bottom three rows are from tests of equality of the 1-day delay coefficients, the 8-day delays, and the differences between 1-day and 8-day delay coefficients, respectively, in Panels A and B. All specifications include village and week-of-first-survey fixed effects, and the value of the outcome measured at survey 1. Exchange rate: MK 420 per USD. Robust standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.01</p>					

Table A7: Heterogeneous effects of payment delays on durable spending

	(1)	(2)	(3)	(4)	(5)
Panel A:	Male HH head	Any previous bank use	Close to branch	Assets	Above median: Patience
1-day delay	-254.340 (1059.041)	1951.916 (1361.749)	496.637 (1273.910)	440.985 (1223.070)	-776.129 (1406.079)
8-day delay	430.667 (1242.231)	1912.118 (1608.583)	-773.758 (1101.532)	1481.456 (1368.852)	394.681 (1668.041)
Observations	310	152	233	226	190
Mean of dependent variable in Immediate group	6507.55	4572.04	6861.69	5256.23	6107.70
R-squared	0.137	0.278	0.214	0.152	0.167
P-value: 1-day=8-day	0.569	0.979	0.262	0.494	0.495
Panel B:	Female HH head	No previous bank use	Far from branch	Assets	Below median: Patience
1-day delay	2015.864 (1591.954)	120.694 (1191.955)	1211.731 (1263.819)	419.958 (1367.684)	798.280 (1189.733)
8-day delay	-602.216 (1469.580)	-512.217 (1196.297)	1614.169 (1472.043)	-1077.400 (1320.772)	-563.747 (1257.438)
Observations	162	320	239	246	282
Mean of dependent variable in Immediate group	4796.40	6594.30	5079.37	6644.18	5825.00
R-squared	0.144	0.089	0.119	0.106	0.083
P-value: 1-day=8-day	0.059	0.598	0.787	0.227	0.211
P-value: equal effect of 1-day vs 0-day	0.211	0.288	0.680	0.990	0.372
P-value: equal effect of 8-day vs 0-day	0.573	0.202	0.179	0.161	0.631
P-value: equal effect of 1-day vs 8-day	0.058	0.744	0.354	0.177	0.191

The top panel includes respondents from female-headed households and those with above-median values for number of transactions at NBS in the 90 days preceding the transfer, those who live above the median distance from the bank branch, those with above-median values of a principle-index of asset ownership, and those with above-median patience, as measured at baseline by amount required to prefer a transfer in one month instead of immediately. P-values in the bottom three rows are from tests of equality of the 1-day delay coefficients, the 8-day delays, and the differences between 1-day and 8-day delay coefficients, respectively, in Panels A and B. All specifications include village and week-of-first-survey fixed effects, and the value of the outcome measured at survey 1. Exchange rate: MK 420 per USD. Robust standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.01

Table A8: Heterogeneous effects of payment delays on transfer and fee spending

	(1)	(2)	(3)	(4)	(5)
Panel A:	Male HH head	Any previous bank use	Close to branch	Assets	Above median: Patience
1-day delay	-33.475 (392.927)	-369.376 (647.934)	-575.246 (496.903)	-193.834 (559.991)	77.228 (407.588)
8-day delay	-729.221** (322.901)	-1119.101* (587.006)	-752.333 (461.228)	-1057.882** (492.529)	-335.109 (421.113)
Observations	310	152	233	226	190
Mean of dependent variable in Immediate group	1608.13	1552.29	1815.74	1957.17	1316.35
R-squared	0.206	0.293	0.191	0.155	0.227
P-value: 1-day=8-day	0.042	0.183	0.643	0.060	0.282
Panel B:	Female HH head	No previous bank use	Far from branch	Assets	Below median: Patience
1-day delay	-178.377 (582.873)	-160.676 (375.611)	575.481 (452.081)	46.441 (339.262)	-238.399 (489.439)
8-day delay	-597.176 (539.522)	-812.426** (349.030)	-673.182* (348.521)	-367.269 (333.372)	-1026.894** (421.200)
Observations	162	320	239	246	282
Mean of dependent variable in Immediate group	1317.84	1498.06	1222.05	1084.20	1694.44
R-squared	0.070	0.082	0.125	0.136	0.138
P-value: 1-day=8-day	0.275	0.024	0.001	0.129	0.013
P-value: equal effect of 1-day vs 0-day	0.828	0.768	0.076	0.702	0.606
P-value: equal effect of 8-day vs 0-day	0.825	0.635	0.887	0.226	0.225
P-value: equal effect of 1-day vs 8-day	0.571	0.869	0.040	0.378	0.427
The top panel includes respondents from female-headed households and those with above-median values for number of transactions at NBS in the 90 days preceding the transfer, those who live above the median distance from the bank branch, those with above-median values of a principle-index of asset ownership, and those with above-median patience, as measured at baseline by amount required to prefer a transfer in one month instead of immediately. P-values in the bottom three rows are from tests of equality of the 1-day delay coefficients, the 8-day delays, and the differences between 1-day and 8-day delay coefficients, respectively, in Panels A and B. All specifications include village and week-of-first-survey fixed effects, and the value of the outcome measured at survey 1. Exchange rate: MK 420 per USD. Robust standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.01					