

Mobile-izing Savings with Automatic Contributions: Experimental Evidence on Present Bias and Default Effects in Afghanistan*

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Abstract

This paper reports on an experiment examining why default savings assignments affect behavior. Working with Afghanistan’s largest firm, we designed and deployed a new mobile phone-based automatic payroll deduction system. Each of 967 employees at the firm was randomly assigned a default contribution rate (either 0% or 5%) as well as a matching incentive rate (0%, 25%, or 50%). We find that employees initially assigned a default contribution rate of 5% are 40 percentage points more likely to contribute to the account 6 months later than individuals assigned to a default contribution rate of zero; to achieve this effect through financial incentives alone would require a 50% match from the employer. We also find evidence of habit formation: default enrollment increases the likelihood that employees continue to save through the program substantially after the end of the trial (when matching incentives are removed), and increases employees’ self-reported interest in saving and sense of financial security. To understand the mechanism behind these effects, we conducted several experimental interventions to try to move employees away from their default contribution. Ruling out several competing explanations, we find evidence that the default effect is driven largely by a combination of present-biased preferences and the cognitive cost of calculating savings trajectories under alternate contribution levels.

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1 Introduction

Default options often substantially impact behavior. Indeed, this observation is among the most influential and policy relevant insights from behavioral economics (Madrian, 2014). From organ donation (Johnson and Goldstein, 2003; Abadie and Gay, 2006), to vaccine use (Chapman et al., 2010), and especially in the domain of retirement savings decisions (Madrian and Shea, 2001; Choi et al., 2004; Beshears et al., 2009; Carroll et al., 2009; Chetty et al., 2014), individuals tend to stick with their default election, even when switching costs are minimal. Yet, particularly as relates to retirement savings, economists still have an incomplete understanding of why defaults work.

This paper reports results from a field study designed to help identify the reason that default assignments have such large impacts on savings. The study takes part in two phases. First, we work with a firm to implement a randomized evaluation of the impacts of defaults (and of matching contributions). To our knowledge, this is the first randomized evaluation of defaulting employees to automatically have part of their salary deducted as savings. As in other environments, a substantial share of employees stick with their assigned default. After employees stop switching, we apply an additional set of experimental interventions to try to move them away from their default in order to better characterize why defaults have such a strong influence on behavior. Our results indicate that the cognitive cost of determining savings accumulation trajectories under different contributions, along with present-biased preferences, deter switching.

In the first phase, we randomly assign employees in Afghanistan’s largest firm to having either 0% or 5% of their salary automatically deducted and placed into a separate savings account. 967 full-time employees were given the option to deposit part of their salary in a new mobile phone-based savings account, called “M-Pasandaz.” Employees could elect to have up to 10 percent of their regular paycheck automatically deposited in the account. In addition to randomizing the default contribution, employees were further given a randomized level of matching incentives, whereby one third of employees received a 50% bonus for all

monthly contributions to M-Pasandaz; one third received a 25% match on all contributions; and the final third received no matching incentives. This permits a comparison of experimentally identified effects of ‘nudging’ employees to contribute through a default assignment and of inducing them to save using matching incentives. Employees were only eligible to receive the additional bonus contributed by their employer if they made no withdrawals from their M-Pasandaz account over an initial six-month commitment period. To change their contribution, employees merely needed to place a brief call to their human resources department.

This phase of the study produces four basic results. First, default assignments have large and significant impacts on contributions. Two months after the launch of the product and after almost all switching of contribution rates had ceased, employees with a default contribution rate of 5 percent were 40 percentage points more likely to contribute to the account than individuals with a default contribution of zero. Indeed, 51% of employees remained at their default six months into the study, even after experiencing a number of heavy-handed interventions intended to encourage switching.

Second, we “price” the default relative to matching contributions, and estimate the elasticity of participation with respect to financial incentives. While a substantial body of research suggests that savings programs that incorporate default contributions are more likely to increase participation than programs that rely on monetary incentives alone (Chetty et al., 2014; Madrian, 2012), to our knowledge our study is the first to provide an experimental comparison of defaults and matching incentives. We find that default assignment increases participation by roughly the same amount as a 50% match on employee contributions. The 50% match increases employee participation by 48 percentage points, while a 25% match increases participation by 26 percentage points, indicating that the elasticity of participation with respect to the match rate is about one, independent of default status.¹

¹By contrast, in developed countries, research finds that savings is not very responsive to employer matches. This suggests that the ‘price’ of defaults—the amount of money an employer would need to contribute in order to induce the same degree of participation as automatically enrolling employees—could be even higher in developing countries. See Madrian (2013) for a review.

Third, leveraging survey data with an extensive battery of questions meant to measure the full portfolio of assets, we find clear evidence that the M-Pasandaz product increased savings overall. Considering employees defaulted to zero contribution (so that we can consider the effect of matching only), employees assigned to receive a 50% match had a total savings balance 10,034 AFs (30.9% of the average monthly salary in the firm) than employees assigned a 0% match. While these data are noisy, it appears that, if anything, participating in M-Pasandaz crowded in other types of savings. We find no statistically significant average effect across the three levels of incentives of being defaulted in on total savings, the point estimate suggests an increase of 2,081 AFs (7% of the average monthly salary in the firm). For the group with a 25% match, the increase is 7159.95 AFs, which is highly statistically significant. Speculatively, this may be because, at a 0% employer match most employees leave the program and at a 50% match most employees join regardless of their initial default. Importantly, while the literature has long speculated that savings arising from defaulting employees into plans reflected new savings, ours is the first to confirm this based on surveys of employees designed to exhaustively measure all forms of savings.

Last, default enrollment in automatic contributions increased employees' long-term interest in saving and overall sense of financial security. Prior to the study, participants expressed a strong sense that they simply did not have enough money to consider saving and only one of the 161 employees defaulted to a 0% contribution with no matching incentive opted in. After the initial six-month trial, all matching incentives to contribute were removed, and employees were asked to make an active decision about whether to continue to contribute. Even with no matching incentives, 45% of employees elected to contribute, with participation 26% higher in the group that was initially assigned a positive contribution rate than in the group assigned a default contribution rate of zero. Even 18 months after the program terminated, savings balances were higher among those randomly assigned a 5% default 2 years prior. In surveys conducted at the end of the six month study period, the employees defaulted in were also significantly more likely to place a high value on saving for the

future, and were more likely to feel confident in their ability to meet financial obligations. These results can inform the broader discussion of whether using defaults to change financial behavior is welfare improving (Bernheim et al., 2015).

The rest of the paper explores *why* defaults have such large impacts on behavior. The literature provides several explanations. First, defaults may persist because decisionmakers, unsure of the best course of action, take the default as reflecting a recommendation by a benevolent planner (Madrian and Shea, 2001; Choi et al., 2004; Madrian, 2014). Related to retirement savings, this is often called the ‘employer endorsement’ effect. Second, employees may simply not be aware of the procedure to change their election. Third, employees may understand the steps involved, but getting around to changing the default may not be salient in their minds (Karlan et al., 2016). Fourth, because changing defaults involves some immediate procedural transaction or cognitive costs, while the benefits are delayed, individuals may not switch, particularly if they are present-biased and naive about their future preferences (O’Donoghue and Rabin, 1999).

Results from the second phase of our study run counter to the first three of these explanations. Regarding the first, both the default contribution, as well as the matching contribution, are explicitly assigned to employees in a public lottery and so it is clear to employees that assignments do not reflect the deliberation of a benevolent planner.² Even an explicitly randomly assigned default had a major effect on savings behavior. Second, survey responses reveal that employees are also clearly aware of their contribution level and know how to change it if they want to. Finally, three different interventions suggest a small role for limited attention, at least for employees who remained at their defaults after the first two months of the program: (i) all employees were notified each month of their paycheck amount (which is typically an even number) and the amount deposited in their M-Pasandaz account via text message on payday; employees were quite sensitive to this paycheck, and it

²To test for contamination due to awareness of the treatment assignment of others, we construct social networks using employees’ cell phone Call Detail Records (CDR). We find no evidence of learning in networks (see Section 6). In focus groups, employees expressed gratitude for the random assignment, because promotions and other favors in the firm otherwise can exhibit favoritism along tribal lines.

thus provided a tangible reminder of their enrollment status; (ii) we sent text messages to a randomly selected subset of employees to remind them of their current rate and provide information on how to switch, and observe no effect of these reminders on switching behavior; and (iii) to address concerns that our monthly follow-up surveys could directly impact employee behavior (cf. Zwane et al., 2011), we restricted our post-treatment surveys, which include a robust battery of questions on financial behavior, to a randomly selected panel of half of participants. These three interventions led to no appreciable change in switching behavior.

By contrast, there is much in our data to suggest that both present-biased preferences, and the specific cognitive costs associated with doing the math necessary to figure out how much savings would be available at the end of six months, play a major role in explaining defaults. First, employees who exhibited present bias in both hypothetical and incentivized behavioral elicitation were significantly more likely to remain at their default assignment six months later (even controlling for their long run discount factor). Second, of the several interventions designed to induce employees to choose a non-default contribution rate, the only one that proved effective was to provide employees with a thorough financial consultation. The consultation was designed to reduce the cost of developing a financial plan. Third, while the financial consultation asked employees whether they would like a general description of the project, the opportunity to ask open-ended questions, and an offer of assistance doing the financial math (in that order), it appears that doing the math for employees, specifically, is driving the change in their behavior (particularly for employees who had never changed their contribution). Last, between subjects we vary whether the financial consultation would commence immediately, or would happen with a one week delay. We find that employees who exhibit present bias in a preference measurement task are more likely to accept the consultation with a delay than when it is offered immediately. Collectively, this provides evidence that the cognitive cost of ‘doing the math’ is a major impediment to switching away from a default and that present-biased preferences also play a role. These results are

also consistent with recent non-experimental evidence linking default effects to self-reported indices of procrastination (Brown et al., 2015).

The experiment also provides a set of results of potential interest to development economists. Promoting savings and broader financial inclusion is a key goal of development research and policy. In Afghanistan, formal financial institutions are widely distrusted and only 4 percent of the population saves in a bank (Demirguc-Kunt et al., 2015). By contrast, 90 percent of Afghans have access to a mobile phone. In developed countries, defaults are widely used to increase participation in defined contribution accounts. Indeed, this is so pervasive that there are now government policies either encouraging or requiring employers to default employees into retirement accounts in the US, UK, and New Zealand (Madrian, 2014). The M-Pasandaz product potentially expands the possibility of using this approach to developing countries. The payment of salaries via mobile money is now happening in India, Afghanistan, and interest in this approach toward electronic payments is growing rapidly. It provides some potential to ‘leapfrog’ the development of brick-and-mortar banks to support defined contribution savings accounts in developing countries.

A key feature of default salary contributions to savings are that they are passive. Once enrolled, contributions are automatic and do not require any action from the saver (Chetty et al., 2014). This may be even more important in developing countries where many of the primary obstacles to saving, from simple transactions costs associated with traveling to the bank (Burgess and Pande, 2005; Callen et al., 2015), to intra-household disagreements regarding savings (Anderson and Baland, 2002; Ashraf, 2009; Schaner, 2015), behavioral issues of dynamic inconsistency (Ashraf et al., 2006; Karlan et al., 2016; Dupas and Robinson, 2013b), and ego depletion (Shah et al., 2012), all relate to the fact that savings must first pass through the saver’s hands, who must then make an active decision to save (Karlan et al., 2014; Madrian, 2012). Indeed, in developed countries it is frequently the poorest and least financially sophisticated who respond most strongly to automatic contributions (Madrian and Shea, 2001; Choi et al., 2004; Beshears et al., 2010). Taking this approach to its logical

conclusion, we show that one of the most effective means of increasing savings in a developed country context - automatic payroll deductions - also has broad potential relevance to the fast-growing population of individuals in developing countries receiving regular wage payments.³ With over 400 million unbanked adults currently receiving wages or government transfers in cash (Demirguc-Kunt et al., 2015), and with mobile phones quickly penetrating even the most remote regions of the globe, mobile phone-based automatic contribution accounts offer considerable promise for mobilizing savings in developing countries.

These quantitative results match with a more qualitative picture of the lives of the employees in our study. We conducted focus groups before and after the intervention, and what emerged was a picture of working people who face many of the same obstacles faced by their counterparts in stable, developed democracies. They pay their rent, electricity and school bills and then, after the month's groceries, there's often nothing left. They want to save, but feel they cannot afford to – and they are open to creative solutions, such as mobile money and automatic deductions. In our exit interviews, several employees were effusive in their praise of how the program gave them a painless new way to save, not least by protecting them from their own bad habits.

The rest of the paper proceeds as follows. Section 2 provides background on the Afghan context. Section 3 describes the M-Pasandaaaz product and the experimental design to evaluate its effect on savings. Section 4 reports the impact of default enrolment, and Section 5 discusses the role of present-biased preferences in creating a default effect. Section 7 concludes.

2 Financial Inclusion in Afghanistan

While Afghanistan remains one of the poorest countries in the world, it has experienced a sustained period of growth over the past decade from increased private investment, contracts

³The ILO estimates that the share of the developing world's workforce in the middle class or above grew from 23% to 42% between 2001 and 2011 (ILO, 2013).

and aid flows from international partners. While the Afghan labor force is largely employed in agriculture and small-scale trading activities, a small but growing salaried class has recently emerged, particularly in major urban areas like Kabul.

Afghanistan is characterized by low rates of participation in formal financial institutions, with only 10% of adults reporting ownership of a bank account, and 4% reporting any formal savings over the past year (Demirguc-Kunt et al., 2015). The supply of banks is limited, with approximately 2.5 bank branches per 100,000 adults, less than one-third of the South Asia average (World Bank 2015). Afghan banks offer short-term savings accounts with a floating interest rate and long-term “fixed deposit” accounts with a fixed interest and term, though the reported rates often fall below an annual inflation rate of between 5-10%. A demand for savings exists however, with about 25% of Afghans reporting any savings in the previous year - primarily informally through cash or in-kind holdings - with the most common reasons including retirement, school fees, and saving for a farm or business (Chipchase et al., 2013; Demirguc-Kunt et al., 2015).

Afghans have experienced over three decades of political instability and conflict, and the focus groups we conducted as part of this study, along with interviews conducted during scoping research, reveal an unsurprising mistrust of formal financial institutions. Many respondents report keeping American dollars rather than Afghanis, the local currency, and when making long-distance transfers forego wire services in favor of hawalas, a network of money brokers who operate simply by taking cash and phoning other agents to disburse money to the intended recipient. While saving money to buy a house or a car seems out of reach for most, saving money in case of death or illness is an unquestioned necessity. They often store their money in a metal box at home (a traditional method), or with a trustworthy (often richer) relative. They tell stories of themselves or people they know going hungry or reducing food quality after a shock of some kind, and describe the humiliation of young men unable to marry for lack of money. Along with the differences, however, we also find many similarities between working Afghans and their Western counterparts. Almost all

focus group members report struggling with bills and running out of cash before the end of the month. In the sessions held before the intervention, workers were nearly unanimous in saying they did not earn enough to save – but were open to methods that might help.

Formal financial inclusion may be low, but mobile phones are prevalent throughout the country, with approximately 75 mobile cellular subscriptions for every 100 Afghan adults (ITU, 2015). More recently, several operators in Afghanistan launched “mobile money” platforms, which deliver rudimentary financial services to subscribers over the mobile phone network. We focus on one such mobile money platform, “M-Paisa,” which was launched in 2008 by Roshan Telecom, and which at the time of our study was the nation’s largest mobile money network with 1.2 million unique subscribers. In Afghanistan as in other countries, mobile money uses SMS-like functionality to enable the exchange and storage of value over a basic mobile phone interface, complemented by a real-world network of agents providing “cash-in” deposit and “cash-out” withdrawal services. As mobile phone penetration rates surge in developing countries, mobile money has emerged as a possible financial instrument for the poor with more than 200 million active users using over 225 mobile money services in 89 countries (GSMA, 2015). While these accounts historically have been used primarily for interpersonal transfers (Jack and Suri, 2014; Blumenstock et al., 2016), many mobile operators now offer interest-bearing savings accounts, insurance, and credit products. As of December 2014, roughly 10 million individuals possessed mobile savings accounts in 22 different developing countries (GSMA, 2015).⁴

3 “Mobile-izing” Savings with M-Pasandaz

We worked with Roshan, Afghanistan’s largest mobile phone operator, to develop a new product for the M-Paisa mobile money system, called “M-Pasandaz.”⁵ M-Pasandaz facilitates automatic payroll deductions and employer matching contributions using mobile

⁴See Aker and Blumenstock (2014) for a review of recent literature, and GSMA (2014) for a survey of empirical data on mobile money in developing countries.

⁵“Pasandaz” means savings in Dari, the most common language spoken in Afghanistan.

money.⁶ Specifically, a Roshan subscriber who owns a mobile money (M-Paisa) account and is paid via mobile money can enable a parallel mobile M-Pasandaz wallet and select to have a portion of her salary automatically deducted into this wallet during each pay cycle. Consistent with Islamic principles, these contributions do not earn interest, but employers may provide matching incentives.

Through our study, we provided different versions of the M-Pasandaz account to all eligible Roshan employees. Our study population consists of 949 full-time Afghan national employees of Roshan, about 15% of whom are women (Table A1). Employees hold job titles such as Manager, Engineer, Security Guard and Janitor and are located in six major regional offices: Kabul, Kandahar, Mazar, Herat, Ghazni and Kunduz. Prior to our study and the launch of M-Pasandaz, all of these employees were being paid with M-Paisa direct deposits; that is, each month their monthly wages are deposited into their normal M-Paisa mobile money account.⁷

Several aspects of the M-Pasandaz account were held constant across all employees. Most relevant to our design, deposits into M-Pasandaz could only be made via direct deposit at the time of the regular monthly salary payment; there was no other way to transfer funds into the M-Pasandaz account. Each pay cycle, regardless of the amount contributed by the employee to M-Pasandaz, the employee would receive an SMS confirmation indicating how much had been paid via direct deposit and how much had been placed in the employee's M-Pasandaz

⁶Automatic payroll deductions are widely used to promote savings in developed countries (Beshears et al., 2009). There are also examples of automatic payroll deductions for savings in developing countries, such as publicly-mandated pension (or “provident”) funds for private sector workers in India, Malaysia and elsewhere, which require fixed employee contributions from automatic payroll deductions and employer matching contributions. While Afghanistan does not currently mandate pension plans for private sector employers, several of the larger employers, including telecoms and international NGOs, voluntarily offered such programs. During the period of this study, several private pension and savings schemes were active in Afghanistan, permitting employee contribution rates between 5-10% of monthly salaries with employer matches of up to 100% of deposits and vesting periods ranging from monthly to annual.

⁷At the time of our baseline survey in June 2014, Roshan had roughly 1,100 employees, of whom roughly 90% were Afghan national staff paid using mobile money. We exclude from our sample a group of 18 employees who participated in qualitative focus groups and pilot product development, as well as those employees who had left Roshan prior to the launch of M-Pasandaz in January 2015, leaving us with an experimental sample of 949 employees.

account.⁸ Employees were free to check the balance on their accounts and to electronically withdraw money at any time; this was done to enable access to liquidity in times of urgent need. However, any withdrawal made during the initial six-month commitment period would forfeit that employee’s eligibility for matching incentive payments and eliminate the accrued matches from their employer. All employees were required to attend a 60-minute training session, during which a representative from Roshan Human Resources described M-Pasandaz as a “new benefit offered by Roshan” and explained the details of the account.

Two key features of M-Pasandaz account were randomized between employees.⁹ First, employees were randomly assigned a *default contribution rate*. For half of employees, the default contribution was set to 5% of their monthly salary; for the other half, the default contribution was set to 0%. To simplify the later exposition, we will occasionally refer to the 5% group as the “default in” or “default enrolled” group, and the 0% group as the “default out” or “default unenrolled” group. Note, however, that all employees were given an account and enrolled, the difference between groups was simply their default-assigned contribution rate, which all employees had the option to change at any time.

Employees were informed of their default contribution rate at the end of the HR training session through a personalized card that was distributed by the HR representative. During training, employees were informed that they could change their contribution rate at any time by calling or visiting the HR department; the goal was to minimize the friction involved in switching contribution rates. Employees were free to set their contribution rate to any value between 0% and 10% of their monthly salary. Importantly, this created scope for the default in group to either increase or decrease their contribution, while the default out group could only decrease their contribution. Any change in the contribution rate was instantaneous and applied to all future salary payments, with the caveat that each month’s contribution was

⁸Appendix Figure A1 provides a screenshot of the text reminder.

⁹This random assignment was common knowledge from the mandatory training session. Human Resources representatives informed all employees that Roshan was piloting this new product internally, and would learn how different features led to different savings outcomes. We address potential internal validity concerns in Section 5 below.

locked in on the 15th of the month to give HR sufficient time to prepare monthly payments, which typically occurred on the 20th of the month.

Subjects were also randomly assigned to one of three different levels of *matching incentive* for M-Pasandaz contributions, creating a 2 x 3 design. The employer characterized these as three different M-Pasandaz “plans” that are distinguished only by the level of matching incentives: White (0% match), Blue (25% match) and Red (50% match).¹⁰ Thus, for each monthly deposit to M-Pasandaz made by the employee, the employer would make a corresponding deposit at the level specified by the employee’s plan. Employees were informed that these matching incentives would be available at the end of the six-month commitment period, but that all accrued incentives would be lost if a withdrawal was made before then. As opposed to the contribution rate, which the employee could change easily, the employee did not have the power to change his or her matching incentive.

Both treatments were stratified by employee salary terciles, self-reported perceptions of physical insecurity, and provincial office locations, using data collected in a face-to-face baseline survey of all employees in May and June 2014. Table A1 reports balance tests on a range of observable characteristics across all six resulting combinations of the primary treatments. In December 2014, employees attended the HR training session and were informed of their default contribution rate and plan assignments. An “open enrollment” period during which employees could change their contribution rate lasted until January 15, 2015, and the first automatic contributions were made on January 21, 2015. The sixth and final automatic contribution occurred on June 21, 2015, and incentive payments were distributed on July 23, 2015. Throughout the study period, we conducted phone-based follow-up surveys with a randomly selected panel of employees. In August 2015 we conducted a final face-to-face endline survey with all employees participating in the study.

¹⁰These incentive levels are similar to those in prior literature from developed country (Duflo et al., 2006) and developing country settings (Carter et al., 2015), and were consistent with savings incentives provided by Roshan’s competitors in Afghanistan.

4 The Default Effect

4.1 The Default Effect on Participation and Contributions

During the six-month study window, 459 of the 949 employees (48.3%) elected to change their contribution rate from their default assignment; the remaining 490 employees remained at the default (Table 6). Employees who switched came from all plan types (0%, 25%, and 50% matching incentives) and from both default rates (0% and 5%). For instance, we observe that more than half of the individuals in the White plan (i.e., no financial incentives to contribute) who are assigned a 5% default contribution rate chose to reduce their contribution rate to 0%; similarly, more than half of the individuals in the Red plan (i.e., 50% matching incentives) with a default contribution rate of 0% chose to increase their contribution to the maximum of 10%.

While many employees did change their contribution rate, the powerful effect of the default is evident in the large number of employees who never moved from their default-assigned contribution rate (Figure 1). For instance, 39% of employees who were assigned a default contribution rate of 0% in the Red plan – all of whom would have received significant financial incentives to save – left “cash on the table” by continuing to contribute 0% of their salary to M-Pasandaz.¹¹ Similarly, 36% of the employees in the White plan who were assigned a default rate of 5% continued to contribute 5% of their salary to M-Pasandaz, even though they received no financial incentives to do so.¹²

We estimate the causal effect of the randomly-assigned default contribution rate in Table 1. Employees who are “defaulted in” to saving with a randomly assigned contribution rate of 5% are 40 percentage points more likely to contribute to the account than employ-

¹¹As we discuss in Section 5, a seemingly attractive option for employees in the Red and Blue plans would have been to increase the contribution rate to the maximum 10%, effectively providing a costless option to receive the employers’ match. Yet, despite the minimal cost of switching, very few employees appear to have exercised this option.

¹²These percentages reflect behavior after two months, and prior to the launch of several randomized follow-up interventions designed to nudge employees from their default assignment. Behavior after six months is presented in Table 6.

ees with a default contribution rate of 0% (Panel A, column 1).¹³ On the intensive margin, random assignment of a 5% default contribution rate increases 6-month contribution rates by 1.77 percentage points (Panel B, column 1), equivalent to a 49% increase over the population average contribution rate of 3.6%.¹⁴ Thus, the net effect of default enrollment was to increase employee contributions by 2,426 Afghanis (roughly US\$40, see Panel C of Table 1), nearly 10% of the median monthly wage. The robustness of this result is further discussed in Appendix A2.1.

4.2 Comparing the Default Effect to Matching Incentives

The employees in our study also responded strongly to the matching incentives provided by the employer. As can be inferred from the constant terms in columns 2-4 of Table 1 (Panel A), among employees initially assigned a contribution rate of 0%, the participation rate was 1% for employees with no matching contributions, 27% for employees with 25% matching contributions, and 57% for employees with 50% matching contributions.

Our design makes it possible to directly compare the effect of the default to the effect of matching incentives. To our knowledge, this comparison has not been performed experimentally in the literature, because automatic enrollment and matching incentives have not been cross-randomized in the same population. Figure 2 compares the default effect to the effect of matching incentives, using the coefficients estimated in Table 1. At all levels of matching incentives, participation and contribution rates are higher for the group of employees with a 5% default than for those with a 0% default, and for both groups the elasticity of participation with respect to the employer match rate is approximately one.

These results can inform the broader debate regarding the effectiveness of behavioral nudges relative to traditional incentives (cf. Chetty et al., 2014). In our context, the em-

¹³When participation is defined as making a non-zero contribution and never making a withdrawal, defaulting enrollment increases participation by 31 percentage points. See Appendix Table C3 for details.

¹⁴Whereas the extensive effect on participation is present for all levels of matching incentives (Panel B, columns 1-3), the intensive effect is only present in the White (0% matching contributions) and Blue (25% matching contributions) plans (Panel B, columns 2-4), suggesting that the strongest financial incentives may have been sufficient to overcome the default effect.

ployer would need to match employee contributions at 50% in order to achieve the same participation rate as from merely having employees contribute by default. More concretely, in our context we can calculate the value of the nudge to the employer: At the end of the six month pilot, the 159 employees in the 50% match plan who were defaulted out received a total payout of 699,323 AFA (\$13,986.46 USD at the time) or 736.91 AFA (\$14.73 USD) per employee. In this case, if the employer were considering only giving all employees a 50% match and defaulting them in at 0%, Roshan would need to provide \$83,919 USD (or \$88.42 USD per employee) in total incentives to achieve the same level of participation as it achieved merely by defaulting employees in at 5%.

4.3 The Effect on Total Savings

The results thus far indicate that both default contributions and matching incentives caused employees to increase contributions to their M-Pasandaz savings accounts. It is natural to wonder whether this represents a net increase in overall savings, or whether employees are instead substituting out of other savings instruments such as bank accounts or cash stored “under the mattress.”

In order to determine whether the changes we observe in the administrative data reflect new savings, and to better understand how defined contribution savings defaults affect financial behavior, we conducted a series of phone-based, follow-up surveys. These surveys contained a battery of questions regarding personal finances, and were only administered to a random subset of 470 employees. As we discuss in greater detail in Section 5.3, only half of all employees were asked to participate in these follow-up surveys because we were concerned that being surveyed might, by itself, change savings behavior (in short, it did not). Thus, in addition to our face-to-face baseline survey in January, we conducted phone surveys in March, May, June, and July of 2015, providing five waves of data.¹⁵ The monthly surveys captured flows in the four main formal and informal savings instruments in Afghanistan:

¹⁵We additionally collected an endline survey with all participants in August of 2016, after most employees had cashed out their M-Pasandaz accounts, to study employee expenditures and perceptions.

(i) the M-Pasandaz wallet; (ii) the M-Paisa wallet; (iii) as cash; (iii) in a bank account; or (iv) as loans given to family and friends. We also aggregate these four types of savings to look at a fifth savings measure: total savings. As we discuss in Appendix A2.2, these survey data are surely reported with some (potentially substantial) error, but correlate well with administrative data (e.g., $r = 0.87$ when comparing reported M-Pasandaz contributions to actual M-Pasandaz contributions).

We examine the effect of the default on the accumulation of savings over time with the specification:

$$Savings_{it} = \gamma_1 Default In_i \cdot Post_t + \eta_i + \psi_t + \varepsilon_{it}, \quad (1)$$

where $Savings_{it}$ is one of our five savings outcomes, $Default In_i$ is a dummy variable equal to one for employees assigned a default contribution rate of 5%, $Post_t$ is an indicator equal to 1 in the post-treatment period (survey waves 2 - 5), and η_i and ψ_t are employee and survey wave fixed effects, respectively. We are thus interested in γ_1 , the difference-in-difference estimator of the impact of default assignment, pooled across the three employer match rates. We also investigate whether the default effect varies depending on the assigned employer match rate by estimating the specification:

$$\begin{aligned} Savings_{it} = & \beta_1 25\% Match \cdot Default Out_i \cdot Post_t + \beta_2 50\% Match \cdot Default Out_i \cdot Post_t \\ & + \beta_3 0\% Match \cdot Default In_i \cdot Post_t + \beta_4 25\% Match \cdot Default In_i \cdot Post_t \\ & + \beta_5 50\% Match \cdot Default In_i \cdot Post_t + \eta_i + \psi_t + \varepsilon_{it}, \end{aligned} \quad (2)$$

such that each β coefficient provides the difference-in-difference estimate of the effect of treatment assignment relative to the omitted category (0% employer match and defaulted out). In this latter specification, our power for pairwise tests of differences in means is somewhat limited by the fact that we are comparing 6 different treatment conditions across only 470 employees.

The effects of default assignment are reported in Table 2. Panel A reports results corresponding to Specification (1). We see a positive but statistically insignificant change in total savings (column 1). And, as we saw earlier from administrative data on M-Pasandaz

balances, the default has a large impact on self-reported M-Pasandaz savings (column 2). Importantly, we find no evidence that this increase was offset by decreases in other forms of savings, including M-Paisa (column 3), cash (column 4), bank (column 5), and loans (column 6).

Panel B disaggregates the default effect by the level of financial incentives provided to each employee, as in Specification (2). Estimates in column 1 support the observation that, in addition to plan participation, employer matches increase total savings. Interestingly, defaults, by themselves, generated an increase in total savings of 7159.94 AFs ($\beta_4 - \beta_1$) for employees assigned a 25% match. Column 2 provides additional support that both matching incentives and defaults work to increase participation, though the effects of defaults is not significant for employees provided a 50% match. Speculatively, this could be because the financial incentive is substantial enough to overcome the default effect, which we later argue is linked to procrastination. Comparing columns 1 and 2, surprisingly, the effects of matches, defaults, and their interactions on total savings are always larger than just their effect on M-Pasandaz. While speculative, looking at columns 3 and 5, this appears to be from an increase in M-Paisa savings and bank savings. This is consistent with results described below, which indicate that participation in M-Pasandaz created a more general shift in savings behaviors.

4.4 The Effect on Employee Perceptions and Savings Behaviors

We also find evidence that employees who were induced to contribute to M-Pasandaz through our randomly-assigned experimental treatments were more likely to express long-term interest in saving. At the conclusion of the 6-month study period, all financial incentives were removed, effectively placing all employees into the White plan. Employees told that the M-Pasandaz trial period had ended, and were informed of this change. Then, employees were individually asked whether they would like to have a portion of their future salary automatically deposited into their M-Pasandaz account. We required that they make this decision actively, and the decision was the same for all employees independent of their treatment

status during the main experiment. 45 percent of employees elected to do so. As shown in the first row of Table 3, the desire to continue contributing was significantly higher for the employees who were exogenously induced to contribute more, both through a positive default-assigned contribution rate and through matching financial contributions. For example, employees defaulted in to participating during the experiment were 10 percentage points more likely to actively decide to continue to contribute a portion of their salary to M-Pasandaz.¹⁶

Survey evidence also suggests that participation in M-Pasandaz increased employees' perception that saving is important. Panel B of Table 3 reports average responses to three questions from our endline survey about the importance of savings. 63.1% of employees defaulted into M-Pasandaz indicated the program changed their desire to save, while 53.9% of defaulted out employees gave this response. Similarly, 70.1% of defaulted in employees report trying to save every month, which is 7.2 percentage points more than employees defaulted out. Results in Panel A of Table 3 indicate that defaulting employees into M-Pasandaz increased a composite index of these three survey scores by 0.142 standard deviations.

Of related interest is how employees perceived these savings and the M-Pasandaz account more generally. M-Pasandaz is a new product, with some features of a mobile money wallet, and some features of a defined contribution savings account. Employees thought M-Pasandaz was most similar to a savings account at a bank (Figure A3), and generally viewed their accumulated savings as long-term savings. Indeed, of the 349 employees who made contributions to their M-Pasandaz account, only about half (n=186) had made a withdrawal at the time of the endline survey, with the remainder opting to leave the accrued balance untouched. When asked about their plans for this money, the most common response (after "Don't know") was that employees planned to retain their M-Pasandaz balance as savings for the future (Figure A4).

¹⁶Among defaulted out employees, 33.6% of employees originally assigned a match rate of 0% elected to continue participation; 39.2% of those originally assigned a match rate of 25% continued (s.e. of difference = .058, $p = .328$), and 48.4% of those originally assigned a match rate of 50% opted to continue participation (s.e. of difference = 0.412, $p = 0.013$).

4.5 Perceived Financial Security and General Well-Being

A central objective of employer-sponsored savings programs is to increase employees' financial security. Here, a substantial literature explores the implications of savings defaults for welfare. For instance, Choi et al. (2004) find that many employees report wanting to save more, suggesting that defaults might help them overcome a behavioral issue that is impeding their savings goals. However, this view requires that policy makers privilege welfare determined using ex ante preferences (Bernheim et al., 2015). In our population, there is a real need for liquidity, with 27% of subjects reporting that at least one family member went without a meal in the week prior to the survey. Defaults could thus potentially cause this population to 'over save.'¹⁷

Our endline survey provides a broad set of self-reported measures of general and financial well-being, which we analyze collectively. This increases substantially the number of null hypotheses we test and so we focus on three summary indices: one for general well-being, one for financial well-being, and one for beliefs about the value of savings. For these results, which were not part of our pre-analysis plan, we report a set of p-values that asymptotically control the Family Wise Error Rate (the probability that any true null is rejected) at 0.05.¹⁸ In addition to reporting the indices in Panel A of Table 3, Panels B-D report the individual survey responses from which the indices are constructed, to ease interpretation.

The area in which M-Pasandaz appears to have had the most substantial impact on employee welfare is on financial behaviors and perceptions of financial security. As can be seen in Panel A of Table 3, we find that the defaulting employees into M-Pasandaz increased a summary measure of perceived financial security by 0.111 standard deviations. Results

¹⁷In our context, these considerations are made more important by the evidence we present later, which suggests the present-biased (and time-inconsistent) preferences indeed appear to play a role in driving the default effect.

¹⁸This practice follows a growing literature on addressing potential Type I error arising from multiple hypothesis testing in experiments (Casey et al., 2012; Bidwell et al., 2016). Romano (2010) provide a review. List et al. (2016) describe a technique that simultaneously controls for several sources of Type I error in field experiments. We control the Family Wise Error Rate for consumption and the three summary indices and then for all of the variables that comprise the indices separately.

for each of the specific measures of financial security are reported in Panel C. Effects are positive, of a relevant magnitude, and statistically significant for three of the five measures. Importantly, defaulting employees in substantially raised the share of employees who believed that they were not too financially constrained to save. This might reflect the relaxation of a real constraint, where participation in M-Pasandaz moved employees beyond some minimum threshold of savings to begin to feel comfortable saving every month, or might reflect a realization that their prior perception that they were too constrained to save was inaccurate. However, defaulting employees did not increase their confidence in their ability to meet future financial obligations or that they will retire someday (only 37% of employees hold this belief). This seems reasonable in the context of a six-month pilot that meaningfully affected short-run finances, but which was terminated before a sustained impact was realized.

We find no evidence that participation in M-Pasandaz affected consumption expenditure or general well-being (last two rows of Panel A, and Panel D).¹⁹ Of the five measures that comprise the well-being index, the only indicator that appears significantly different in the default-in group is the likelihood to report being in very good or good physical health. This is arguably an important outcome, but we mention it in passing as our surveys only superficially queried relevant health outcomes.

4.6 Long Run Effects

Our data also allow us to examine how long default effects persist after matching incentives were removed. We look at M-Pasandaz participation from Roshan’s administrative data from the start of the program in January 2015 until December 2016. Figure 6 depicts program participation separately by default status over this 24 month period. During the six months

¹⁹With respect to consumption, the potential effects are ambiguous: M-Pasandaz mechanically depresses current income, but provides a windfall at the conclusion of the program. A set of recent studies find that opening new savings opportunities increases income (Dupas and Robinson, 2013a; Callen et al., 2015; Prina, 2015). Unlike in previous studies, however, our subjects are salaried employees and so are unlikely to increase incomes either by working more or by saving and reinvesting in microenterprises. We also find no impact on consumption in post-treatment waves prior to endline. We also fail to reject the null, and find similarly small point estimates, when winsorizing our measure of consumption to deal with potential outliers. Results are available on request.

that comprise the study, savings balances increased substantially, as discussed above, and differentially for employees defaulted in. Once incentives were removed, after June 2015, participation dropped, but not all the way to zero. Employees defaulted in also save more in the program for as much as a year after the program.

Appendix Table A3 reports corresponding results on the persistence of the default effect. We see large and statistically significant differences by default status six months after the conclusion of the program (column 1). Columns 2 - 4 separate samples by the initial matching incentive. The group assigned a 25% matching incentive exhibits the largest separation for the longest period of time. This is consistent our savings results, where employees in the 0% match group tended disproportionately to exit the program and employees in the 50% match group tended disproportionately to join.

5 Understanding the Default Effect

The effect of the default rate assignment – approximately equivalent to a 50% employer match – is clear, but perhaps not surprising given existing evidence on automatic payroll deductions in wealthier nations. For instance, Madrian and Shea (2001) find that default enrollment increases retirement participation rates by more than fifty percentage points, and Choi et al. (2002, 2004) note that the vast majority of employees at several large U.S. corporations keep the contribution rate to which they are assigned.²⁰

Across such settings, there are several plausible mechanisms that might explain why default status can have such a profound impact on later behavior.²¹ In the context of defined-contribution accounts in Afghanistan, five theoretically distinct explanations seem most plausible. First, there may be large (real or perceived) *transaction costs* involved in switching contribution rates. Second, employees might stick to their default-assigned

²⁰Default effects have also been observed in a wide variety of unrelated decisions, from health club memberships (DellaVigna and Malmendier, 2006) to organ donation decisions (Johnson and Goldstein, 2003; Abadie and Gay, 2006).

²¹Madrian (2012) and Beshears et al. (2009) provide comprehensive reviews.

rate due to a lack of *awareness* or understanding: employees may be unaware of their participation or contribution rate, unaware that they are allowed to change their contribution rate, or uncertain about how to make such a change. Third, and closely related, is the issue of *saliency*: employees' cognitive capacity might be too limited to complete the task of switching (Karlan et al., 2016; Mullainathan and Shafir, 2013), even if they are aware of their contribution and know how to switch. Fourth, and prominent in the U.S. literature, is the possibility of an *endorsement effect*: employees may perceive their initial assignment as a signal that the employer chose that rate because it was optimal for the employee, leading the employee to defer to the employer's wisdom and remain at the assigned rate (cf. Beshears et al., 2009). Fifth and finally, employees with time-inconsistent preferences may *procrastinate* over the decision to change from the default assignment, repeatedly postponing today what they believe they will do tomorrow (O'Donoghue and Rabin, 1999; Carroll et al., 2009).

To differentiate between these mechanisms, we randomly assigned three additional experimental interventions, conducted a series of behavioral games to elicit employees' time preferences, and asked a battery of pointed questions in our panel surveys. We did not initiate these additional interactions with employees until roughly two months after the launch of the M-Pasandaz account, by which point almost all employees had ceased to switch contribution rates (see Figure 4 - by February 28, only one employee was switching per week). This was deliberate: we wanted to first observe the magnitude of the default effect *in situ*, before attempting to experimentally remove the distinct constraint predicted by each of the theories enumerated above. As we discuss below, the sum total of evidence indicates that naive present-bias, and the resultant tendency to procrastinate over financial planning, contributes quite significantly (though perhaps not exclusively) to the sizable effects of default enrollment.

5.1 Present Bias and the Default Effect

In the developed-country context, a series of recent studies indicate that there may be a link between present bias and the default effect. For instance, Brown and Previtro (2014) and Brown et al. (2015) find that employees who self-report the tendency to procrastinate are more likely to stay at their default portfolio allocation. Similarly, Goda et al. (2015) find that present bias is predictive of retirement savings behaviors in a heterogeneous sample of the U.S. population, and conclude that eliminating present bias would dramatically increase retirement savings.²²

Our study informs this literature by providing, to our knowledge, the first field evidence linking elicited measures of present bias to default effects in savings decisions, where default effects are cleanly identified with random assignment. Indeed, as shown in Table 4, we find that our measure of present bias (β) robustly predicts whether an employee remains at their default (column 1), even when controlling for a broad range of other factors including employee salary, gender, intelligence, salary withdrawal habits, banked status, and total baseline savings (column 2). The coefficient indicates that moving from the tenth percentile of β in our sample ($\beta = 0.67$) to the 90th percentile ($\beta = 1.36$) is associated with a 9 percentage point increase in the probability that the employee remains at his default assignment. This effect persists when we restrict the analysis to employees who are both at their default and who have never made any withdrawals (columns 3 and 4).

The measurement protocol for the present bias parameter used in the regression in Table 4 was a modified version of the time-dated price list method proposed by Andreoni et al. (2015) and described in detail in Appendix B3. This is an incentivized measure based on actual time-dated monetary payments. One drawback of this approach, especially given recent discussions on the elicitation of present-biased preferences using potentially fungible monetary payments (Cubitt and Read, 2007; Chabris et al., 2008; Andreoni and Sprenger,

²²Related, Jones and Mahajan (2015) find evidence of present-biased preferences among low-income tax filers, and Caplin and Martin (2012) link default effects to attention and fatigue in a lab setting.

2012; Augenblick et al., 2015; Carvalho et al., 2014; Andreoni et al., 2016), is the reliance on monetary payments.²³ Thus, we also separately re-estimate Table 4 using a simpler, unincentivized measure of present bias collected at baseline. These results, reported in Table A4 and described in Appendix B3, are qualitatively unchanged.

5.2 Experimental Evidence on Mechanisms

To further investigate the source of the default effect, we conducted three experimental interventions designed to induce people to switch from their default assignment. Each intervention was intended to probe a different mechanism, and all were initiated in March 2015, after two pay cycles had elapsed and virtually all switching had ceased (see Figures 4 and 5). Treatment assignment for these additional interventions was cross-randomized and stratified across the six primary experimental intervention combinations of default rate and matching contribution.

Intervention 1: Financial Consultations With Randomized Delays

The first intervention was to offer a random subset of employees a short financial consultation designed to simplify the decision about what contribution rate was optimal for that particular employee’s situation. Specifically, we had a representative from HR call the targeted employees to offer them customized consultations that would answer questions about the M-Pasandaz product, estimate the employee’s payouts under different contribution rates, and allow the employee to change his or her contribution rate immediately. The consultation script is provided in Appendix B1.

When employees were offered this consultation, they were either told that the consultation would occur immediately following the scheduling call, or that the consultation would occur roughly one week after the scheduling call. Whether the offer was for a consultation now or

²³Since we had a short window of time to survey each employee, and as surveys were conducted at the employee’s place of work, we had limited options for measuring present bias. We also felt that the protocol might be more appropriate in our context, given that a substantial share of our sample is credit constrained.

later was randomized, in order to experimentally vary each subject’s ability to procrastinate over developing a financial plan.

Table 5 reports results from this experiment. The consultations were very popular, with 73% of employees accepting when offered an immediate consultation and 79% accepting when offered a consultation with a week delay. This difference, reported in column 1, suggests slightly more demand for consultations offered with a delay, although this difference is not statistically significant (s.e. = 0.046, $p = 0.200$). The difference increases slightly when controlling for other employee characteristics (column 2: s.e. = 0.048, $p = 0.132$), but remains insignificant at conventional levels. Interestingly, estimates reported in column 3 indicate that for employees with $\beta < 1$, the difference is 19.6 percentage points, and is significant at conventional levels. This relationship is robust to adding a set of controls (column 4), but becomes less significant after adding a full set of covariates and their interactions with the consult later treatment dummy (column 5: s.e. = 0.096, $p = 0.092$).

In other words, present-biased employees are more likely to accept the consultation if it is offered with a week delay, rather than being offered immediately. As we discuss more extensively in Section 5.2.2 below, the financial consultation may have influenced employees in a variety of ways, but we interpret this as evidence that procrastination over the task of changing the contribution level because of present-biased preferences plays a key role in savings defaults. However, importantly, we do not find a differential tendency to delay this task when using our baseline unincentivized preference measure. These results are reported in Table A6.

Intervention 2: Monthly Phone Interviews

The second “intervention” was simply a series of monthly phone surveys, in which we asked employees questions about their financial behaviors as well as their understanding of the M-Pasandaz account. While the primary function of these interviews was to collect panel data on employee activities that could not be inferred from the administrative records, we

also suspected that the survey itself might impact employee behavior by increasing their awareness of M-Pasandaz and the salience of their financial decisions (cf. Zwane et al., 2011). Panel phone surveys were conducted with a randomly selected half of all employees.

Intervention 3: Text Message Reminders

The third intervention was designed to increase awareness and salience by reminding employees how to switch their contribution rate. The treatment consisted of a series of text messages, sent roughly at the halfway point of the study, which reminded the employee of his or her current M-Pasandaz contribution rate, as well as the phone number to call in order to change his or her contribution rate (Appendix Figure A1). These messages were sent in English, Dari, and Pashto, and came from an official Roshan phone number. Messages were sent to a random subset of employees, and were tailored to the current status of the employee. For instance, an example message read, “M-Pasandaz Reminder: Next payday, 5% of your salary will be deposited in your M-Pasandaz account. If you want to change your contribution, call 079999-3708.”

5.2.1 Which Intervention Moves Employees From Their Default Contribution?

Of the three experimental interventions, only the financial consultation had a pronounced impact on employee behavior. The number of switches that occurred immediately following each intervention are visible in the shaded regions of Figure 4, and are tabulated in Table 6. Only 0.68% of subjects receiving a phone survey switched their contribution rate on the day of or following the survey, and 2.68% of employees switched after receiving the text messages. By contrast, 11.59% of subjects to receive the offer of the consultation switched immediately after receiving the consultation (of those who actually completed the consultation, 18.37% switched after the consultation). For context, of the employees who did not receive any of these three additional interventions, only 1.6% switched in the period after February 28.

Table 7 estimates the effects of the financial consultation and the SMS reminders on the

employee’s decision to switch. To construct this table, we consider only those switches that occurred after February 28, i.e., after the initial sorting had ceased (as in Figure 4). As we discuss below, by this point in the study, we believe most employees were fully aware of the M-Pasandaz account and of how to switch. While the effect of the text messages is small and statistically indistinguishable from zero, the offer of the financial consultation has a large and significant effect. Results in Column 2 further indicate that the effect of consultation was much stronger for subjects still at their default election. Within this subsample, the effect of offering a financial consultation was even larger for those subjects who were enrolled by default, i.e., who were assigned a default contribution rate of 5% (column 3 of Table 7).

While the financial consultation is thus most effective at inducing employees to switch from their default rate, even this had only moderate effects. As can be seen most directly in Figure 5, quite a bit of switching occurs in the lead-up to the first payday – with significantly less switching by the present-biased employees – but after the first payday, very little switching occurs. The consultation induces some switching, but even this very heavy-handed treatment only moves a small fraction of employees.²⁴

5.2.2 Why Do Financial Consultations Move Employees From Their Default?

Collectively, these results suggest that the financial consultation removed some obstacle to switching away from the default, and did so particularly for employees who remained at a default-assigned rate of 5%. But what about this consultation – which may have affected employees in several ways – was critical to helping employees switch?

In our data, we observe employee response to the consultation offer at three key stages: (i) whether the consultation offer was accepted and scheduled; (ii) whether the employee answered the phone for the scheduled consultation; and (iii) whether the employee asked any the HR officer to walk him or her through different contribution scenarios.²⁵

²⁴As discussed above, and tabulated in Table 6, a random half of employees were offered the consultation. Thus, we expect that the switching seen during the consultation periods in Figure 5 would have been twice as large if the full population had been eligible.

²⁵476 of the 949 employees in our study were assigned to be offered a consultation. Of these, 444 employees

In results reported in Table 8, we find that it is the last stage – asking for assistance with financial consultations during the call – is the strongest predictor of whether an employee will subsequently switch his or her contribution rate, even after controlling for several characteristics of the employee. While the decision to solicit assistance is endogenous, this correlation provides some indication that the consultation was particularly effective in helping employees work through the financial implications of switching from their default-assigned contribution rate. Consequently, it seems that individuals are particularly likely to procrastinate over decisions that require a number of financial calculations.

Relating this observation back to the potential role for (naive) present bias in creating default effects, providing a consultation, and, providing assistance with financial math in particular, can be thought of as removing an important cost to switching. Even for naive and severely present-biased individuals, in the model of O’Donoghue and Rabin (1999), for example, completely eliminating transaction costs will eliminate procrastination. This is empirically what we observe. Deliberately working through the mental tasks associated with switching reduces the relevance of defaults. This also carries a policy implication: one way to eliminate persistent procrastination that is welfare-reducing, at least when evaluating using long run preferences, might be to eliminate switching costs.

Of course, the finding that financial consultations reduces the default effect is consistent with alternative explanations. For example, it could just be that an extended consultation is the only action that raises the salience of the decision enough to induce switching. However, as we discuss further in Section 5.3, it does not seem as though the consultation served chiefly to increase the salience of the account, and such an explanation would be hard to reconcile with other survey-based evidence indicating employees were acutely aware of M-Pasandaz activity. Alternatively, the financial consultation may have influenced employees in other ways as well, for instance by providing information that would help the employee choose

answered the first call making the initial offer. Of these 444, 327 employees agreed to a full consultation. Of the 327 employees who accepted the consultation, 293 were reached by the second caller offering the consultation. Of the 293 employees who both accepted and who were reached for a consultation, 86 requested assistance with calculating how much money they would earn in different contribution scenarios.

an optimal contribution rate. This may be a part of the explanation, but outside of the consultation, very few employees took the initiative to consult an HR representative for such advice.

5.3 Alternative Explanations

The evidence presented thus far indicates that present-biased employees are most likely to remain at their default-assigned contribution rate, that present-biased employees are more likely to accept a financial consultation when it is offered with a week delay, and that the financial consultation – which we believe reduced the mental costs faced by employees when deciding to switch – was the lone experimental intervention that induced a significant share of employees to switch. We next revisit the alternative explanations for the default effect outlined at the beginning of this section.

It is unlikely that the default effect we observe is driven by confusion on the part of the employee about how the savings account works, ambiguity about how to switch, or by perceived (physical and not mental) transaction costs involved in switching. Such factors may matter in other settings, but we do not believe they are important in this context. Roshan went to great lengths to train all employees on the M-Pasandaz account, and each employee was sent a monthly text message on payday to indicate how much of their salary was being direct deposited into their normal M-Paisa account, and how much was being put into M-Pasandaz. Through our follow-up surveys, we also find strong evidence that most employees understood their plan type and understood what was required to change their contribution rate. For instance, 284 of 293 (96%) of employees reached for the financial consultation were fully aware of their match rate and their contribution rate. Similarly, in a phone-based survey taken at midline, 87% of employees reported fully understanding how the M-Pasandaz product worked, more than 90% correctly identified their plan assignment, and over 70% knew that they could change their contribution rate by calling HR.

We also believe it unlikely that employer endorsement effects were important in determin-

ing employee response to the default assignment. The nature of the individual randomization, whereby each employee knew he or she had an equal chance to be given a 0% or 5% default contribution rate, largely eliminated the potential that employees would perceive that they were given a default rate for any reason other than random chance. Qualitatively, employees who participated in focus groups also expressed surprise (and pleasure) at observing that plan assignments appeared to them to be truly random, and not distributed in a manner that favored more senior employees.

It is quite plausible that inattention might lead to large default effects, which was a primary motivation for developing the SMS treatment and for administering the phone survey to only half of the total population. However, as is evident in Table 6 and in the regression results shown in Table A8, neither intervention did much to induce employees to switch contribution rates. Similarly, after the first pay cycle completed, we observed little impact of payday effects on rate switches. Given that employees are very sensitive to their salary (which was usually a round number prior to M-Pasandaz contributions being deducted), and that the monthly payday SMS's reinforced any contributions that were being made to M-Pasandaz, we would expect employees to be more likely to switch near payday if they simply needed to be reminded of their current rate. The spike in switches following the first payday (see Figure 4) indicates that inattention may indeed be a factor for those who switched during the first few weeks after the launch, but for the large number of people who remain at the default rate after the first payday, these basic reminders had little effect.

6 Robustness

6.1 Internal validity and peer effects

To our knowledge, this study is the first to estimate the effect of default assignments in automatic payroll deduction within the context of a randomized experiment, where employees within a single firm are randomly assigned different default contribution rates and different

financial incentives to contribute. This design offers some distinct advantages. It makes it possible to estimate the elasticity of the default effect with respect to financial incentives, where financial incentives are also randomly assigned to employees. It also reduces the likelihood that employees will perceive an endorsement effect in their default-assigned rate, which is helpful in disentangling the mechanism behind the persistent default effect.

At the same time, individual randomization raises concerns about the external validity of the effects we observe. If employees know that their initial contribution rate and their employer-provided matching incentives were determined by pure chance, they could respond differently than they would have if they were all assigned a uniform plan. This could lead us to overestimate the default effect for certain employees. For instance, an employee with no matching incentives and a default contribution rate of 0% may choose not to increase his contribution because he is aware that many of his coworkers are receiving a 50% match on contributions. If this employee would have changed his contribution rate in a world where everyone received the same 0% match, our estimates of the default effect would be inflated.²⁶ We address these concerns both qualitatively, and through a novel empirical approach that relies on our ability to observe the complete social network of all Roshan employees.

Qualitatively, we worked closely with Roshan HR on the messaging of the M-Pasandaz program and the framing of the 6-month evaluation period. The M-Pasandaz program was introduced to employees during hour-long training sessions that emphasized the private nature of the individually-assigned plan and the importance that each employee make a

²⁶There is also the possibility that employees might behave strategically if they believe their actions might impact future policy decisions made by the firm. We believe such strategic behavior to be unlikely for several reasons. First, as noted in Section 4, the default effect persisted even after all employees were standardized onto a single plan, when employees were asked to decide about future contribution to M-Pasandaz. Second, the vast majority of Roshan employees are liquidity constrained and live paycheck-to-paycheck, and even in the relatively short 6-month window, an employee's contribution decisions had major economic consequences. It thus seems unlikely that such a large portion of employees would intentionally forgo salary (or matching incentives) to influence policy. This is particularly true given the relatively high rates of employee churn: roughly 10% of all employees left the company in the year between our baseline and endline surveys. Particularly given the evidence of present bias discussed earlier, it seems unlikely that a large fraction of employees would intentionally act against their own interests in order to potentially influence the long-run decisions of the employer. We raised this concern with the HR department at the outset of the study, and they considered it a highly implausible proposition.

personal decision about his or her preferred contribution rate. Great care was taken to explain that the study was being run by academic researchers, and that each employee had an equal chance of being assigned to each of the different plans. Plan details were handed out on written information cards, and employees were instructed not to ask their coworkers about the details of their plans. While we do not believe these efforts eliminated information sharing or possible feelings of jealousy, every effort was made to encourage each employee to make a personal financial decision.

In addition, we use a novel source of data on the social ties between employees at Roshan in order to empirically estimate peer effects in the M-Pasandaz program. We are specifically interested in understanding whether a given employee’s decision to contribute to M-Pasandaz is affected by the plans to which her friends and close colleagues are assigned, and whether such peer effects might impact the primary treatment effects of default assignment and matching incentives presented in Table 1.

To measure each employee’s connections to other employees, we obtained the original transaction records of all phone calls placed between Roshan employees in October 2014, two months prior to the launch of the M-Pasandaz program. Roshan, the employer in our study, is also Afghanistan’s largest mobile phone operator, and provides each Roshan employee with a special phone that allows for free calling to any other Roshan employee. We use these data to model the structure of the social network formed by Roshan employees (Appendix Figure A5), and consider a social tie to exist between two Roshan employees if we observe phone or SMS-based communication between the two employees in that month. Note that SMS communication is extremely common in Afghanistan, where email is used less frequently than in developed countries. We consider several different thresholds of minimum communication that might reasonably be indicative of a social tie.

We find little evidence that employees’ financial decisions are influenced by the random assignments of their peers. To estimate these peer effects, we use an estimation framework similar to that of Miguel and Kremer (2004), where we estimate the primary treatment

effect (of default assignment) on an individual i , conditional on the treatment assignment of i 's peers. The intuition we are testing is that if peer effects exist, we would expect them to appear amongst employees who have an exogenously larger share of their social network assigned to a certain plan type. For instance, a “jealousy” effect might be manifest in lowered contributions among employees who have a larger share of their social network randomly assigned to the largest matching contribution incentive.

Column 1 of Table 9 shows the average treatment effect of i 's default assignment, replicated from Table 1. The subsequent columns include controls for the random assignment of i 's peers, where “peer” is defined as individuals with whom i had communicated over the mobile phone network on k different occasions, with k increasing from 1 to 10 in columns 2 through 11. Across all of these variants, the main treatment effect never significantly deviates from the original estimate from Table 1. The peer effects themselves are also generally insignificant, with no discernable pattern to the sign or magnitude of the coefficients.

7 Conclusions

Through the carefully planned launch of a new mobile phone-based savings account, we evaluate the impact of default enrollment and matching financial incentives on the savings decisions of a heterogeneous group of Afghan employees. To our knowledge, this represents the first experimental estimates of the effect of automatic payroll withdrawals in a poor country, and the first attempt to adapt an automatic salary withdrawal system to a mobile phone-based platform. In exit interviews with the subjects in our study, we were struck by the extent to which the Afghan employees embraced the new technology. One woman told us that on payday, all of the neighborhood clothing and cosmetics vendors would be excited to see her because they knew she was out to spend a good chunk of her paycheck. M-Pasandaz helped her precommit to cutting down on that spending, and she was happy with that change.

These simple innovations helped employees accumulate substantial savings, with the average participating employee saving 12,270 Afghanis, equal to 37.2% of the average monthly salary, over the initial 6-month evaluation period. Analyzing monthly panel surveys with employees – a feature not common in similar research in developed countries – we conclude that these savings are new, and do not represent substitution out of other savings instruments. The survey data also indicates that the act of participating in this savings account changed employee’s perceptions about savings, improved their sense of financial security, and increased the likelihood that they would continue to save after the trial period ended. While such effects were only evaluated in the short run, in a country with some of the lowest savings rates in the world, these results may be grounds for optimism that automatic contribution accounts can improve employee welfare.

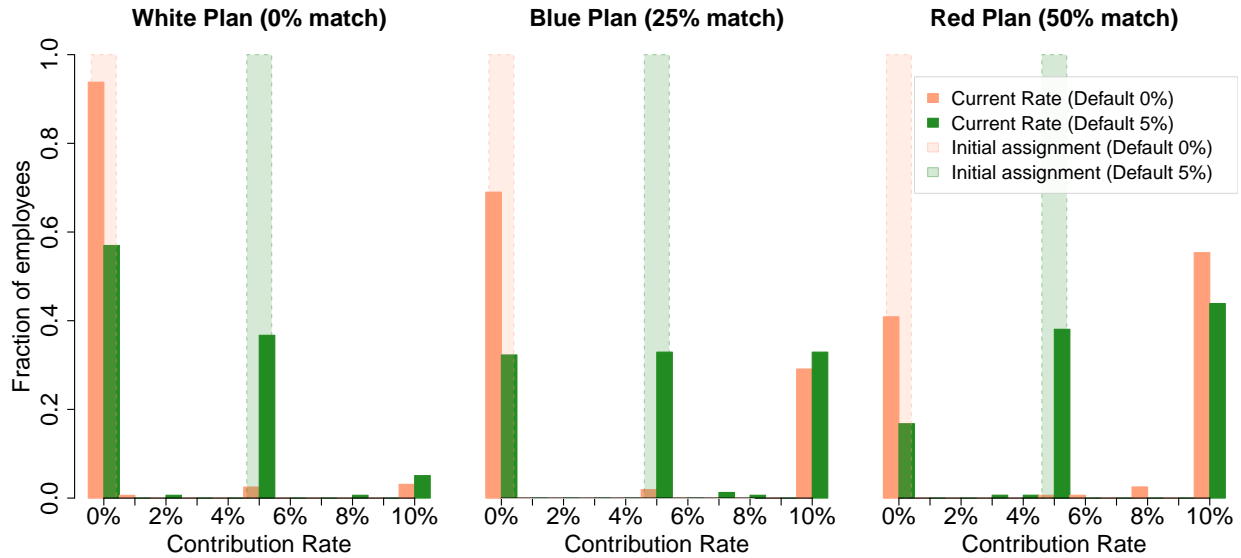
This paper also adds considerable nuance to our understanding of the default effect. By cross-randomizing default status with matching contributions, we directly compare the default effect to that of matching financial incentives. Both effects are large and significant: two months after the program launch, employees who are automatically enrolled with a 5% contribution rate into the account are 40 percentage points more likely to contribute to the account than individuals with a default contribution rate of zero. This effect of automatic enrollment on participation is approximately equivalent to providing 50% matching incentives. In addition, we provide what we believe is the first experimental evidence on the mechanism behind the default effect on savings participation. Here, our results support the notion that default effects exist in part because present-biased employees procrastinate over the task of making a non-default election. While the link between present bias and default effects was widely suspected in prior literature, our context allows us to experimentally rule out many alternative explanations.

More generally, a growing literature has documented the importance of automatic payroll deductions in promoting savings in developed countries. Our study suggests that this approach may be similarly successful in developing countries, particularly if such accounts can

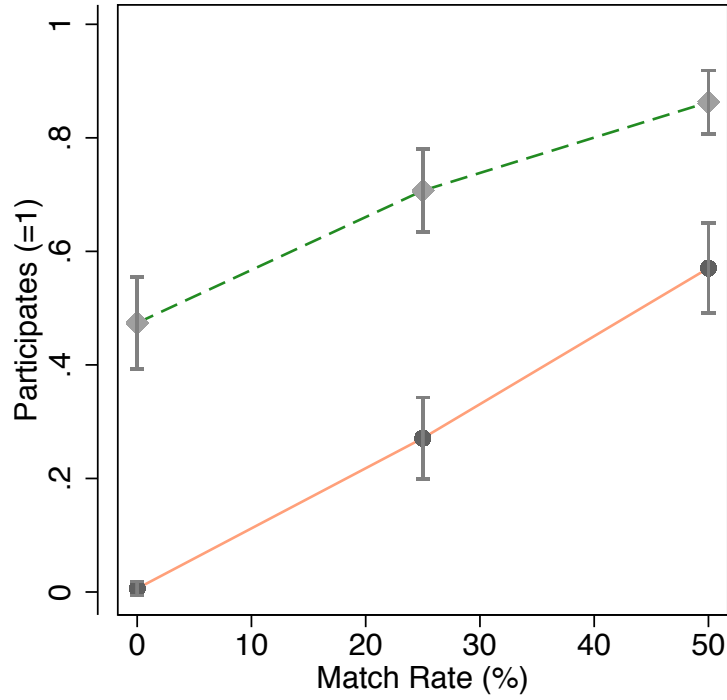
be made available through the mobile phone networks that are quickly becoming ubiquitous in even the world's poorest regions. Recent estimates indicate that the number of regular wage earners who might benefit from automatic payroll deductions is rapidly expanding: the share of the developing world's workforce in the middle class or above nearly doubled between 2001 and 2011 (ILO, 2013), and 400 million unbanked adults currently receive wages or government transfers in cash (Demirguc-Kunt et al., 2015). For policymakers interested in increasing savings among this emerging middle class, default enrollment in automatic, phone-based contributions provides a novel and compelling option.

Tables and Figures

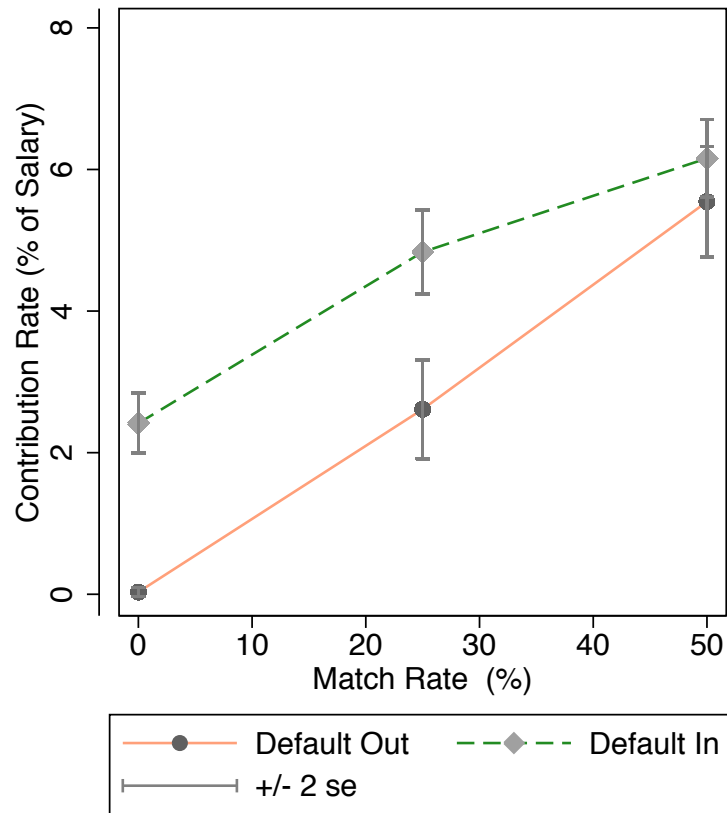
Figure 1: Employee contributions: Initial assignments and final contribution rates



Notes: Distribution of final M-Pasandaz contribution levels in July 2015, as a percentage of monthly salary. Individuals were randomized into either a default 0% contribution (peach bars, N=478) or a default 5% contribution (green bars, N=471). Individuals were further randomized into three different incentive rates: White (0% match, N=319), Blue (25% match, N=316) and Red (50% match, N=314). Semi-transparent bars indicate the original assigned contribution rate, solid bars indicate final contribution rate.

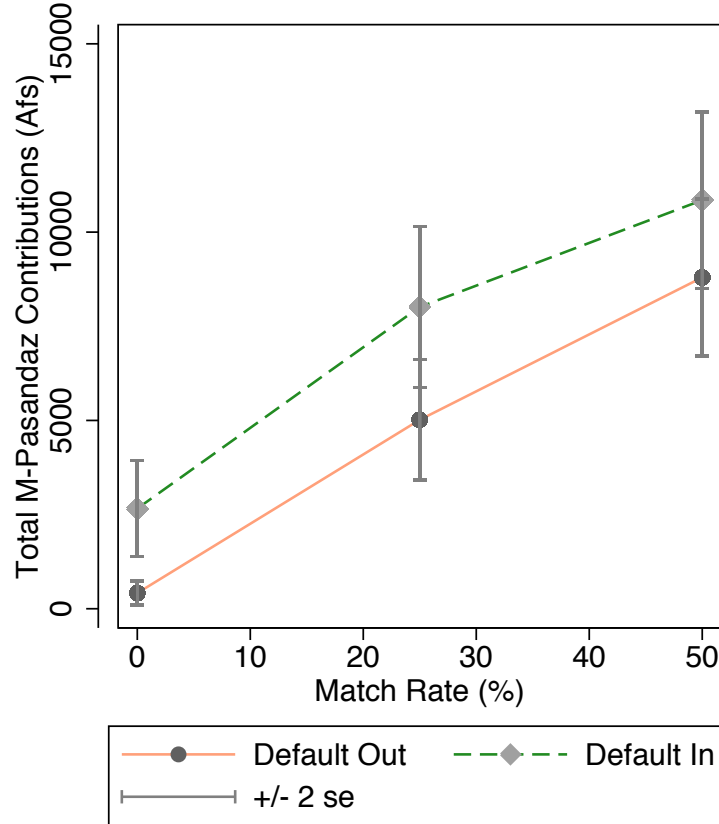


(a) Participation Rate

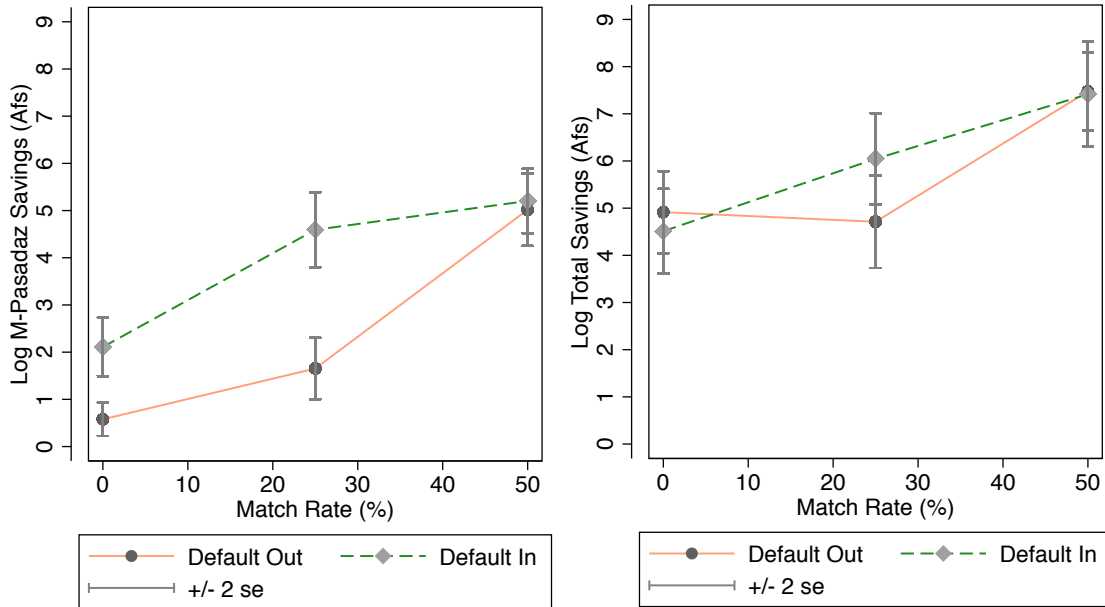


(b) Contribution Rate

Figure 2: Effect of automatic enrollment and matching contributions on (a) participation rates (non-zero contributions), measured on February 28, 2015, following the first two pay-days but prior to the rollout of phone surveys or secondary interventions; and (b) contribution rates, as a fraction of the employee's total salary, measured on February 28, 2015.



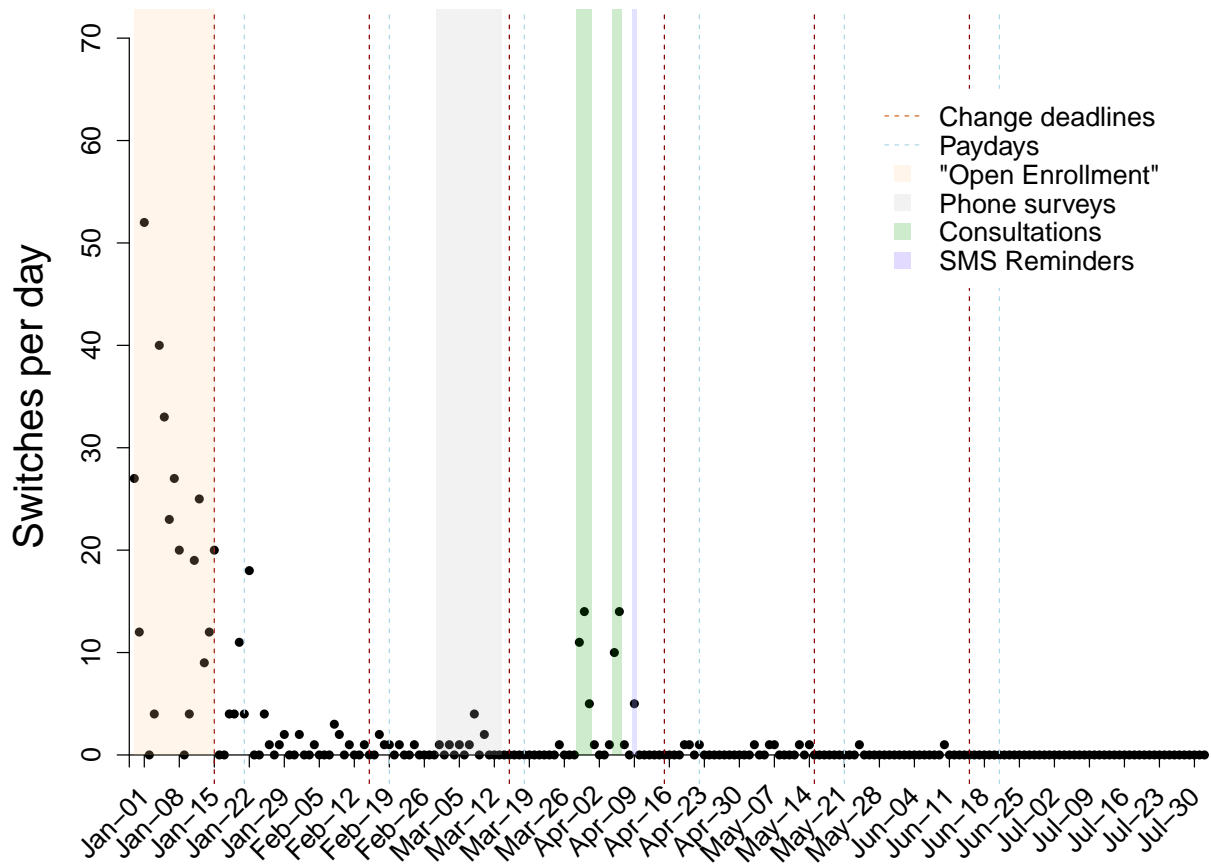
(a) Total M-Pasandaz Contributions (administrative data)



(b) Monthly Contributions (self-report data)(c) Monthly Total Savings (self-report data)

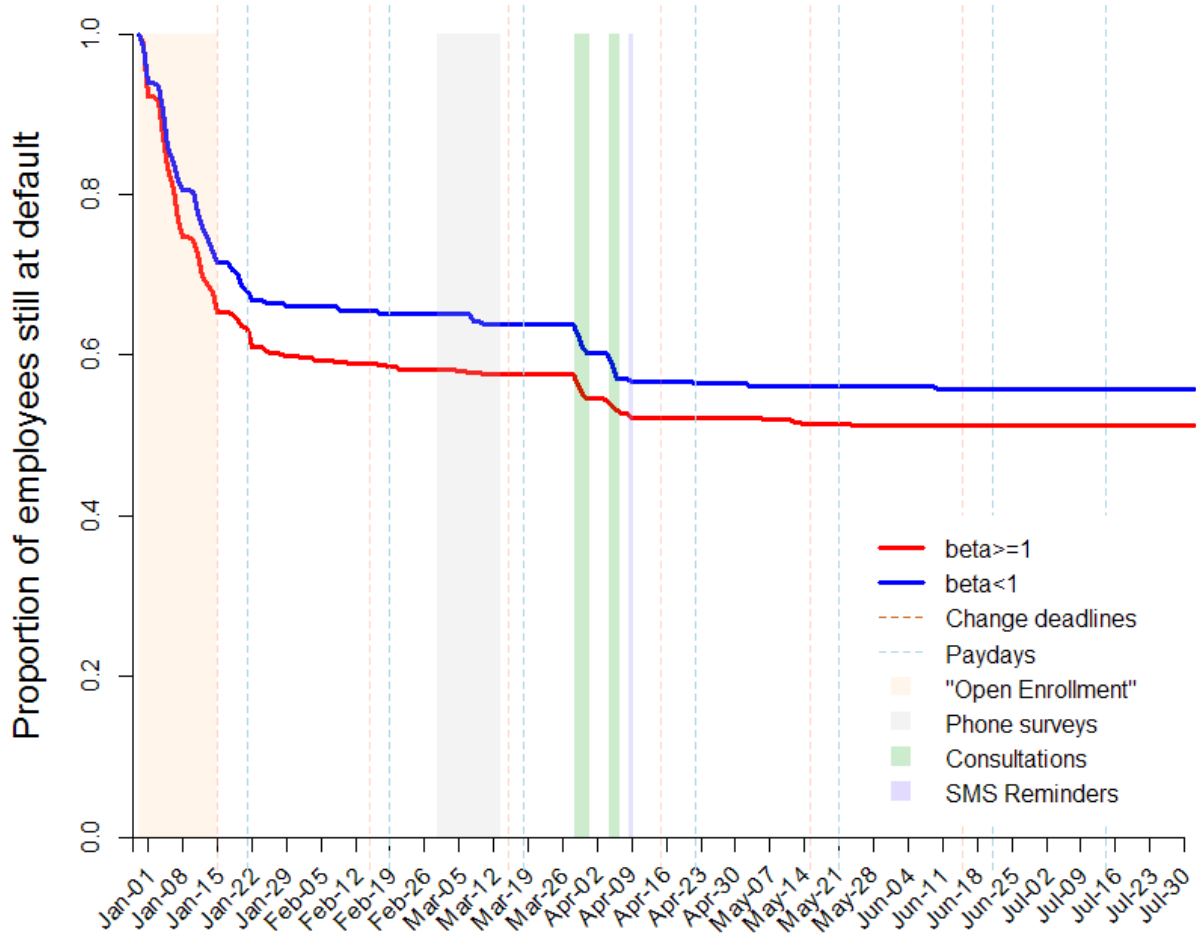
Figure 3: Effect of automatic enrollment and matching contributions on total savings. Coefficients and standard errors estimated with a cross-sectional regression of administrative data on (a) Total M-Pasandaz Contributions, and a panel fixed effects regression of self-reported monthly survey data of (b) Log(M-Pasandaz savings) and (c) Log(Total Savings)).

Figure 4: Switching behavior over time



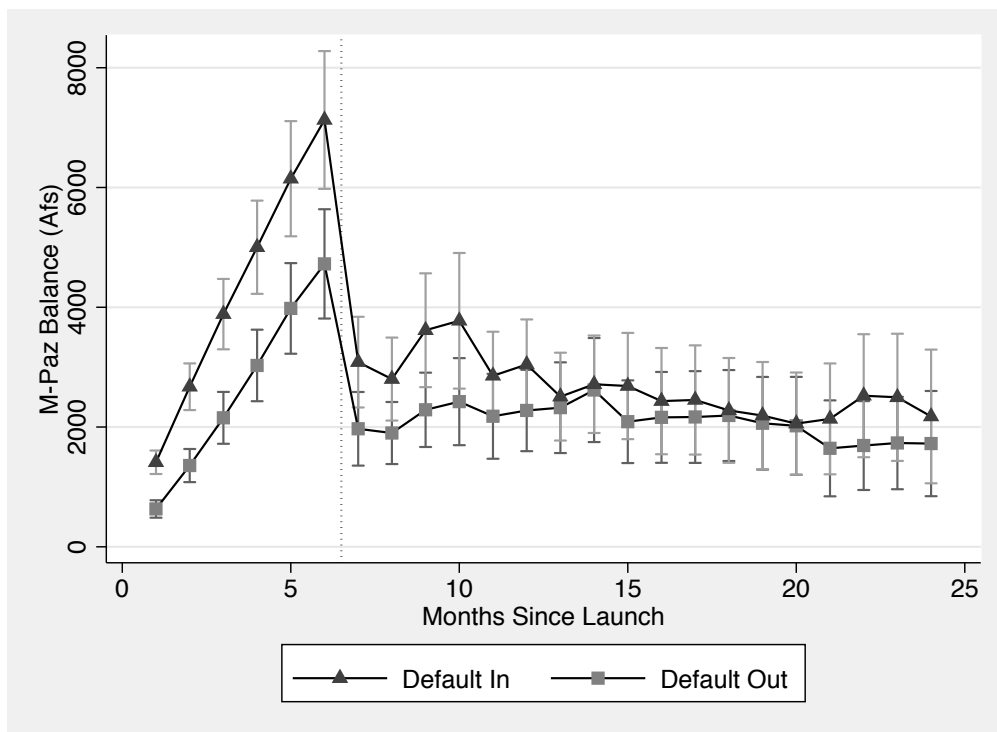
Notes: Black dots indicate the number of employees calling in, on each day of the study, to change their contribution rate. Dashed vertical lines indicate the pay cycle, and shaded regions denote experimental interventions.

Figure 5: Employees who remain at their default, by present bias



Notes: Lines show fraction of employees who are still at their default-assigned contribution rate, over the course of the study. Red line indicates employees who were present-biased in an incentivized behavioral elicitation; blue line indicates those who were not present-biased. Dashed vertical lines indicate the pay cycle, and shaded regions denote experimental interventions. Phone surveys and consultations were offered to half of all employees; SMS reminders were sent to one quarter of all employees.

Figure 6: Long-run Effects of Defaulting Employees Into M-Pasandaz



Notes: This figure depicts M-Pasandaz balances in Afis over the period January 2015 (month 1) until December 2016 (month 24) separately for employees defaulted to contribute 0% of their salary (Default Out) and employees defaulted to contribute 5% of their salary (Default In) into the program.

Table 1: The Effect of Automatic Enrollment - Total Contributions

	(1)	(2)	(3)	(4)
<i>Panel A.</i> Dependent Variable = Participates (non-zero contribution rate)				
Default In (=1)	0.40*** (0.03)	0.47*** (0.04)	0.44*** (0.05)	0.29*** (0.05)
Constant	0.28*** (0.02)	0.01 (0.01)	0.27*** (0.04)	0.57*** (0.04)
<i>Panel B.</i> Dependent Variable = Contribution Rate (% of Salary)				
Default In (=1)	1.77*** (0.26)	2.38*** (0.21)	2.22*** (0.46)	0.61 (0.48)
Constant	2.70*** (0.20)	0.03 (0.03)	2.61*** (0.35)	5.54*** (0.39)
<i>Panel C.</i> Dependent Variable = Total M-Pasandaz Contributions (Afs)				
Default In (=1)	2426.40*** (750.24)	2244.30*** (656.96)	2996.73** (1335.00)	2052.39 (1567.93)
Constant	4724.44*** (465.52)	416.75*** (157.60)	5015.57*** (802.11)	8797.03*** (1040.07)
Sample	Complete	0% Match	25% Match	50% Match
# Observations	949	319	316	314

Notes: Dependent variable in top panel, Participates (=1), is a binary variable that equals one if the contribution rate is greater than zero, and dependent variable in middle panel, Contribution Rate (% of Salary), is the monthly contribution rate into M-Pasandaz as a percent of total salary. Participates and Contribution Rate reflect values observed as of February 28, 2015, following the first two paydays but prior to the rollout of phone surveys or secondary interventions. Dependent variable in bottom panel is total contributions made by the employee to M-Pasandaz, in Afghanistan, as observed in administrative data. Value reflects total contributions net of withdrawals as of July 15, 2015, just prior to the disbursement of matching incentives. Value does not include matching contributions made by the employer. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors reported in parentheses.

Table 2: The Impact of Being Defaulted Into M-Pasandaz on Savings

	Total Savings (1)	M-Paz Savings (2)	M-Paisa Savings (3)	Cash Savings (4)	Bank Savings (5)	Loans Given (6)
Panel A - Default Effects						
Defaulted In x Post	2081.56 (2464.98)	806.73** (387.12)	1040.57 (827.04)	-509.41 (896.96)	146.72 (1826.19)	419.22 (656.13)
# Employees	470	470	470	470	470	470
# Observations	1962	1964	1965	1962	1962	1962
R-Squared	0.006	0.079	0.003	0.013	0.006	0.010
Waves	1 - 5	1 - 5	1 - 5	1 - 5	1 - 5	1 - 5
Trim	.5%	.5%	.5%	.5%	.5%	.5%
Panel B - Savings by Treatment Group						
β_1 : Default Out x 25% Match x Post	1312.66 (4810.36)	398.17** (179.22)	-1065.33 (1415.58)	689.30 (1502.85)	1874.10 (4276.49)	-437.74 (1257.38)
β_2 : Default Out x 50% Match x Post	10033.52** (4725.10)	3492.22*** (665.73)	2089.97 (1691.02)	1423.98 (1413.49)	1763.79 (3613.72)	1002.28 (1131.56)
β_3 : Default In x 0% Match x Post	5062.24 (5011.31)	733.77*** (265.81)	695.29 (1170.39)	-1011.86 (1655.18)	2568.75 (4070.88)	800.99 (1208.40)
β_4 : Default In x 25% Match x Post	8472.60* (4575.27)	3263.13*** (720.74)	2569.92* (1310.88)	2042.33 (1888.45)	1180.78 (3680.74)	371.93 (1249.01)
β_5 : Default In x 50% Match x Post	4293.60 (5219.88)	2413.57*** (384.43)	1017.12 (1354.31)	-371.86 (1631.62)	260.49 (4341.44)	680.75 (984.22)
# Employees	470	470	470	470	470	470
# Observations	1962	1964	1965	1962	1962	1962
Default Effect At 0% Match: $\beta_3 = 0$ (p-value)	0.313	0.006	0.553	0.541	0.528	0.508
Default Effect At 25% Match: $\beta_1 = \beta_4$ (p-value)	0.033	0.000	0.008	0.420	0.786	0.532
Default Effect At 50% Match: $\beta_2 = \beta_5$ (p-value)	0.163	0.163	0.525	0.160	0.563	0.716
R-Squared	0.011	0.108	0.008	0.016	0.007	0.012
Waves	1 - 5	1 - 5	1 - 5	1 - 5	1 - 5	1 - 5

Notes: Dependent variables indicate monthly flow into accounts of different types (in Afghanis, or Afs). Each observation is a respondent-month. Sample includes baseline pre-treatment responses and 4 follow-up surveys. All regressions include employee fixed effects, survey wave fixed effects and a "Post" binary variable that equals one for all waves after the baseline. All variables are trimmed at 0.5%. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors, clustered at employee level, reported in parentheses.

Table 3: The Default Effect on Savings Behavior, Financial Security, and Well-Being

Outcome:	Control Mean	Default Effect	Naive p-Value	List et al p-Value	Bonferonni p-Value
<i>Panel A: Composite Indices</i>					
Continued M-Pasandaz After Program (=1)	0.400	0.104	0.003	0.011	0.015
Importance of Saving Index	-0.004	0.142	0.002	0.012	0.013
Financial Security Index	0.002	0.111	0.005	0.019	0.033
Well-Being Index	-0.001	0.025	0.512	0.757	1
Weekly Consumption Expenditure (AF.)	7326.109	487.179	0.618	0.623	1
<i>Panel B: Importance of Saving Index Variables:</i>					
M-Paz Changed Desire to Save	0.539	0.092	0.009	0.032	0.034
Savings is Important (=1)	0.954	0.004	0.756	0.767	1
Attempts to Save Each Month (=1)	0.627	0.074	0.026	0.051	0.078
<i>Panel C: Financial Security Index Variables:</i>					
Financial Satisfaction (1 - 10)	6.443	0.323	0.027	0.083	0.142
Confident Meeting Current Fin. Obligations (=1)	0.929	0.036	0.020	0.091	0.097
Confident Meeting Future Fin. Obligations (=1)	0.798	0.023	0.412	0.663	1
Will Retire Someday (=1)	0.373	0.001	0.971	0.973	1
Not Too Financially Constrained to Save (=1)	0.639	0.073	0.026	0.100	0.128
<i>Panel D: Well-Being Index Variables:</i>					
Nights No One Without Food During Prior Week	6.616	0.042	0.518	0.892	1
Happy Overall (=1)	0.932	0.003	0.853	0.851	1
Life Satisfaction (1 - 10)	7.863	0.036	0.810	0.965	1
Good Physical Health (=1)	0.768	0.072	0.010	0.051	0.055
Healthy Last Three Months (=1)	0.968	0.010	0.441	0.902	1

Notes: This table reports the effects of defaulting employees into the M-Pasandaz automatic salary withdrawal savings account. Indices are created as the covariance-weighted sum of z-scores of the underlying variables, following the technique described in Anderson (2008). List et al. (2016) and Bonferonni P-values are calculated controlling for the Family Wise Error Rate for the first five variables reported in the table, and then for each set of variables underlying the index respectively. Full text of the survey questions used to create indices is available in Appendix B2.

Table 4: Present Bias and Contribution Changes

Dependent Variable:	Still at Default on February 28		Still at Default and No Withdrawal on Feb. 28	
	(1)	(2)	(3)	(4)
Present Bias Parameter (β)	-0.132** (0.051)	-0.132** (0.052)	-0.088* (0.052)	-0.089* (0.052)
Long Run Discount Factor (δ)		0.025 (0.052)		0.026 (0.052)
Intelligence (0-3)		-0.059** (0.025)		-0.069*** (0.025)
Risk Preference (1-10)		0.009 (0.006)		0.010 (0.006)
Salary (AFs.)		0.000 (0.000)		0.000 (0.000)
Tenure at Roshan (Years)		-0.009 (0.007)		-0.004 (0.007)
Uses a Bank Account (=1)		-0.038 (0.040)		-0.036 (0.041)
Withdraws Entire Salary on Payday (=1)		0.024 (0.039)		0.026 (0.040)
Capable of Fixing Phone (=1)		0.076** (0.038)		0.055 (0.039)
Constant	0.726*** (0.054)	0.711*** (0.093)	0.634*** (0.055)	0.609*** (0.095)
R-Squared	0.009	0.031	0.004	0.024
# Employees	702	679	702	679

Notes: This table reports on the variables that predict whether a participant remains at their default election on February 28, 2015, two months after the start of the experiment. β is a measure of present bias obtained using a hypothetical price list at baseline. The remaining variables are described in Appendix B2. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors reported in parentheses.

Table 5: Consultation Offer Results By Present Bias

	Accepted Consultation (=1)				
	(1)	(2)	(3)	(4)	(5)
Consult Later	0.056 (0.046)	0.069 (0.048)	-0.020 (0.062)	-0.005 (0.064)	0.012 (0.065)
Present Biased (=1)			-0.057 (0.069)	-0.058 (0.071)	-0.028 (0.072)
Consult Later x Present Biased			0.186** (0.093)	0.179* (0.094)	0.136 (0.094)
Consult Later x Intelligence					-0.045 (0.055)
Consult Later x Risk Preference					-0.040 (0.048)
Consult Later x Salary					-0.116*** (0.043)
Consult Later x Tenure at Roshan					0.022 (0.051)
Consult Later x Uses a Bank Account					0.045 (0.049)
Consult Later x Withdraws Entire Salary on Payday					-0.089* (0.048)
Consult Later x Capable of Fixing Phone					-0.026 (0.050)
Constant	0.734*** (0.033)	0.728*** (0.034)	0.757*** (0.042)	0.751*** (0.044)	0.737*** (0.045)
Covariates	No	Yes	No	Yes	Yes
# Observations	339	330	339	330	330
R-Squared	0.004	0.019	0.017	0.031	0.066

Notes: Accepted Consultation Offer (=1) is a binary variable that equals one if the employee agreed to participation in a financial consultation regarding their participation in the M-Pasandaz program (see paper text for details). Consult Later (=1) is a binary variable that equals zero if the employee was randomly assigned to receive a consultation on the same day as the consultation offer was made, and equals one if the consultation was assigned to take place one week later. Present Biased (=1) is a binary variable that equals one if an employee is identified as having $\beta < 1$ in an experimental present bias elicitation completed at endline with real stakes (see paper text for details). The additional covariates are: intelligence, risk preference, salary, tenure at Roshan, uses a bank account, withdraws entire salary on payday, and a dummy equal to one for respondents capable of fixing a phone. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors reported in parentheses.

Table 6: Contribution rate switches, by default contribution and matching incentives

	<i>N</i>	Total	%	Default Out			Default In		
				0%	25%	50%	0%	25%	50%
Changed In Open Enrollment	326	943	34.57	0	32	68	75	80	71
Changed After 1st Payday	22	943	2.33	0	7	4	3	6	2
Changed By February 28th	385	936	41.13	1	42	89	84	89	80
Changed After Other Payday	2	936	0.21	0	1	0	0	0	1
Changed After Survey	3	441	0.68	0	0	0	1	2	0
Changed After SMS	6	224	2.68	0	0	2	2	2	0
Changed After Consultation	54	466	11.59	10	7	6	8	11	12
Changed More Than Once	14	949	1.48	2	2	5	2	3	0
Ever Changed Contribution	459	949	48.37	11	49	96	100	107	96
Never Changed Contribution	456	890	51.24	142	101	57	51	50	55
Observations				161	158	159	158	158	155

Notes: “*N*” indicates the number of unique employees who changed their contribution rate as a result of the action. “Total” indicates the number of participants that were treated and is adjusted to account for attrition at the time of calculation. Payday, Survey, SMS and Consultation switches are recorded if corresponding to the day of the intervention or the day immediately afterwards.

Table 7: Which Treatments Move Participants From Their Default Contribution?

Dependent Variable:	Changed Contribution After Feb. 28 (=1)		
	(1)	(2)	(3)
Financial Consultation (=1)	0.078*** (0.025)	0.045 (0.028)	0.045 (0.042)
Financial Consultation x Still at Default		0.059 (0.047)	
Financial Consultation x Defaulted In			0.155** (0.079)
SMS Reminder (=1)	0.002 (0.026)	0.029 (0.033)	-0.016 (0.044)
SMS x Still at Default		-0.045 (0.050)	
SMS x Defaulted In			0.010 (0.083)
Still at Default (=1)		0.080** (0.034)	
Defaulted In (=1)			0.059 (0.058)
Constant	0.088*** (0.018)	0.041** (0.020)	0.096*** (0.033)
R-squared	0.013	0.039	0.065
# Employees	949	949	552
Sample	Full	Full	Still at Default

Notes: This table reports the comparative effectiveness of different treatments designed to move participants from their default election. SMS Reminder is a dummy variable equal to one for participants receiving an SMS reminder message, Consultation is dummy equal to one for subjects receiving an offer of a financial consultation, Still at Default is a dummy variable equal to one for participants who have not moved from their default election, and β is a measure of present-bias obtained from a hypothetical price list experiment at baseline. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors reported in parentheses.

Table 8: Which Element of the Consultation is Associated with Switching

Dependent Variable:	Changed Contribution After February 28 (=1)			
	(1)	(2)	(3)	(4)
Calculation Assistance (=1)	0.434*** (0.057)	0.427*** (0.058)	0.187** (0.080)	0.365*** (0.075)
Calculation Assistance x Still at Default			0.334*** (0.107)	
Calculation Assistance x Defaulted In				0.154 (0.115)
Reached for Consultation (=1)	0.010 (0.047)	0.016 (0.047)	0.022 (0.021)	-0.009 (0.084)
Reached for Consultation x Still at Default			-0.002 (0.073)	
Reached for Consultation x Defaulted In				0.046 (0.104)
Accepted Consultation (=1)	-0.032 (0.051)	-0.046 (0.051)	-0.151*** (0.052)	-0.018 (0.089)
Accepted Consultation x Still at Default			0.179** (0.087)	
Accepted Consultation x Still at Default				-0.050 (0.111)
Still at Default (=1)			-0.086 (0.058)	
Defaulted In (=1)				0.039 (0.055)
Constant	0.094*** (0.027)	0.084 (0.053)	0.126* (0.065)	0.066 (0.057)
Covariates	No	Yes	Yes	Yes
R-squared	0.212	0.220	0.288	0.234
# Employees	444	433	433	433

Notes: This table reports which elements of the financial consultation predict whether an employee switches their contribution. 476 of the 949 employees in our study were assigned to be offered a consultation. Of these, 444 employees answered the call making the initial offer. The analysis in this table is restricted to the 444 employees who were both assigned to be offered a consultation and who were initially contacted. Of these 444, 327 employees agreed to a full consultation. Accepted Consultation is a dummy variable equal to 1 for these employees. Of the 327 employees who accepted the consultation, 293 were reached by the second caller offering the consultation. Reached for Consultation is a dummy variable equal to one for these employees. Of the 293 employees who both accepted and who were reached for a consultation, 86 requested assistance with calculating how much money they would earn in different contribution scenarios. Calculation Assistance is a variable equal to one for these employees. Requesting assistance was not required to change the level of contribution to M-Pasandaz during the consultation call. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors are reported in parentheses.

Table 9: Peer Effects - Participates (=1)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Participates (=1)										
Default In (=1)	0.40*** (0.03)	0.39*** (0.03)	0.39*** (0.03)	0.40*** (0.03)	0.40*** (0.03)	0.40*** (0.03)	0.40*** (0.03)	0.40*** (0.03)	0.40*** (0.03)	0.40*** (0.03)	0.40*** (0.03)
Degree Red		-0.01* (0.01)	-0.02* (0.01)	-0.01 (0.01)	-0.00 (0.01)	0.01 (0.02)	0.01 (0.02)	0.02 (0.02)	0.01 (0.02)	0.02 (0.02)	0.01 (0.02)
Degree White		-0.00 (0.01)	-0.00 (0.01)	0.01 (0.01)	0.02 (0.01)	0.03* (0.01)	0.03 (0.02)	0.03 (0.02)	0.03 (0.02)	0.04** (0.02)	0.03 (0.02)
Degree Default In		0.00 (0.01)	-0.00 (0.01)	-0.01 (0.01)	-0.00 (0.01)	0.00 (0.01)	-0.01 (0.01)	-0.00 (0.02)	-0.00 (0.02)	-0.00 (0.02)	0.01 (0.02)
Degree Total		0.00 (0.01)	0.01 (0.01)	0.00 (0.01)	-0.00 (0.01)	-0.02 (0.01)	-0.01 (0.01)	-0.02 (0.01)	-0.01 (0.01)	-0.03* (0.02)	-0.03 (0.02)
Constant	0.28*** (0.02)	0.28*** (0.03)	0.28*** (0.03)	0.29*** (0.03)	0.29*** (0.03)	0.30*** (0.03)	0.30*** (0.03)	0.29*** (0.03)	0.29*** (0.03)	0.30*** (0.03)	0.30*** (0.03)
Degree Cutoff	N/A	1	2	3	4	5	6	7	8	9	10
P-Value of Equality		0.80	0.80	0.88	0.97	0.98	0.94	0.96	0.94	0.92	0.93
Mean Degree Total		23.72	14.61	10.31	8.01	6.40	5.30	4.53	3.90	3.38	2.92
# Observations		936	936	936	936	936	936	936	936	936	936
R-Squared		0.161	0.165	0.165	0.164	0.166	0.165	0.164	0.163	0.166	0.165

Notes: Dependent variable, Participates (=1), is a binary variable that equals one if the monthly M-Pasandaz contribution rate is greater than zero, and reflects values observed as of February 28, 2015, following the first two paydays but prior to the rollout of phone surveys of secondary interventions. Remaining columns control for the number of social network contacts the employee has which were randomly assigned to each plan type. For instance, "Degree Red" indicates the number of social contacts the employee has who were randomly assigned to the Red plan (50% matching incentives). A social contact is defined as an coworker of the employee with whom the employee was observed to communicate k or more times over the mobile phone network in October 2015 (two months prior to the study period), where k is the "Degree Cutoff" and varies from 1 to 10. Column 1 replicates results from Table 1. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors reported in parentheses.

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A1 Present Bias and the Default Effect

A1.1 A Simple Model of Present Bias

We provide a simple model to understand the savings decision faced by employees. To fix ideas, we roughly follow the approach in O’Donoghue and Rabin (1999). Consider first the case of exponential discounters. Assume they contribute some fixed amount every month, s , are assigned a match rate r , and can begin contributing in any month $t \in \{0, 1, \dots, T\}$ such that if they begin contributing in month t they receive a total payoff (combining the principal and the employer match) of $(T - t)(1 + r)s$. Let c be the cost of participating in the program, which includes both the psychic cost of enrolling and the present value of interest from using s every month in an alternative investment. In our environment, it is reasonable to interpret c as primarily being a psychic cost, given that the enrollment protocol is straightforward, elaborately explained at training, and very few participants have interest-bearing outside options (8% from the data). Assuming linear utility, an exponential discounter will participate in month t if

$$\delta^{(T-t)}(T - t)(1 + r)s > c \tag{3}$$

When the above condition is satisfied, the employee should opt to participate.²⁷ Applied to our context, over the six months of the M-Pasandaz program, with a monthly investment of 50 AFs, a monthly discount factor of 0.95, and a 25 percent employer match, then the cost of participation c must be greater than 275 AFs for an employee not to participate.

Now consider a quasi-hyperbolic discounter with a present-bias parameter $\beta < 1$ who is potentially naive about future preferences such that her belief about the future present bias parameter is $\hat{\beta} \in [\beta, 1]$, where $\hat{\beta} = \beta$ reflects full sophistication and $\hat{\beta} = 1$ reflects full

²⁷This formulation abstracts from the fact that the present disutility of a payment s into the plan will vary depending on t . Extending the model to allow for this does not change the predictions of the model, but does improve the fit of the model to the data (at the cost of some expositional cleanliness). These results are available on request.

naivete.

At the start of the program ($t = 0$), it is optimal to invest immediately if the present value of doing so is greater than the present value in any future period:

$$\begin{aligned}
 -c + \beta\delta^T(1+r)sT &\geq \beta\delta^t(-c + \hat{\beta}\delta^{T-t}(1+r)s(T-t)) \\
 \Leftrightarrow t &\leq T\left[\frac{\hat{\beta}-1}{\hat{\beta}}\right] - \frac{c}{\hat{\beta}}\left[\frac{(\beta\delta^t-1)}{\beta\delta^T s(1+r)}\right].
 \end{aligned}$$

This replicates the result that the exponential discounters should be subject to only a slight delay, equal to $\left[\frac{-c(\delta^t-1)}{\delta^T s(1+r)}\right]$ and should not delay at all if $\delta = 1$ or if $t = 0$.²⁸

To take the equation to the data, we assume $\delta = 1$, and that switch timing satisfies the above inequality subject to an additive error term, ε and estimate:

$$t = T\left[\frac{\hat{\beta}-1}{\hat{\beta}}\right] - \frac{c}{\hat{\beta}}\left[\frac{(\beta-1)}{\beta s(1+r)}\right] + \varepsilon. \tag{4}$$

This formulation links experimental variation in r , along with employees contribution s and their discount factor β , which we measure. We can recover two key parameters of interest, the cost of switching c and a measure of the degree of naivete, $\hat{\beta}$ from a linear regression of the empirical switch timing t on $\frac{(\beta-1)}{\beta s(1+r)}$.

Table ?? reports parameter estimates based on Equation (4). Across the sample, the cost of switching, c is estimated to be about 1500 AFs (about 20 USD at the time of the study). The sample appears substantially naive $\hat{\beta} > 1$, indicating that, if anything, employees believe that their future selves will be forward-looking.

A1.2 Unpacking the Financial Consultation

Table 8 attempts to disentangle which elements of the financial consultation were most strongly associated with subsequent switches. Variation in which of the four stages partici-

²⁸To solve explicitly in terms of t , note that applying a Taylor expansion gives that $\delta^t \cong (1 + \delta(t-1))$ as δ approaches 1.

pants agreed to permits further investigation into the reasons that the consultation proved effective in undoing the default. We examine which of the elements of the consultation is associated with switching by running a regression of the form:

$$Switched\ After\ Feb\ 28_i = \beta_0 + \beta_1 Accepted\ Consult_i + \beta_2 Reached\ for\ Consult_i + \beta_3 Calculation\ Assistance_i + \epsilon_i \quad (5)$$

Where *Switched After Feb 28_i* is a dummy equal to one if an employee *i* switched their contribution after February 28, *Accepted Consult_i* is a dummy equal to one for employees who responded affirmatively to the consultation offer, *Reached for Consult_i* is a dummy variable equal to one for employees who were reached for the consultation, and *Calculation Assistance_i* is a dummy variable equal to one for employees who requested assistance in calculating values for the call. 284 of 293 (96%) of employees reached for the consultation were fully aware of their match rate and their contribution rate.

Table 8, column (1), indicates that asking for assistance during the call is by far the strongest predictor of employees who would later switch their contribution. Of the 87 employees who requested assistance, 45 switched their contributions up and none switched their contribution down. A key challenge to interpreting this result is that subjects decided whether they wanted calculation assistance or not. It is possible that all subjects requesting assistance planned to switch prior the assistance. Results in column (2) indicate that this relationship remains unchanged, even after adding controls for financial literacy, salary, tenure at Roshan, whether the employee actively uses their bank account, whether they withdraw their entire salary on payday, and whether they are able to fix their phone on their own. These variables could plausibly control for some of the selection into calculation assistance. The estimated coefficient remains unchanged, assuaging some concerns that the relationship between seeking calculation assistance and changing contributions merely reflects selection. Column (3) provides evidence that this effect is particularly strong for subjects who remain at their default. Indeed of the 45 subjects who switched their contributions after requesting assistance doing calculations, 39 were still at their default prior to the consultation.

A2 Additional Tests of Robustness

A2.1 Robustness of Main Effects

Employees assigned a default contribution rate of 5% could also exit their account by making monthly withdrawals, rather than calling Human Resources and switching their contribution. In Table C3, we test robustness of the observed default effect when participation is redefined to mean both contributing some portion of salary to the program and never having made a withdrawal. Using this definition, defaulting employees in increases employee participation by 34 percentage points in the white and blue plans, and by 26 percentage points in the red plan, with all three differences being highly statistically significant.

A2.2 Measurement Error in Survey Data

To assess the quality of our panel survey data, we first examine whether survey data on M-Pasandaz balances, which is potentially subject to measurement error due to inaccurate recall or misreporting, corresponds to our administrative data which is measured without error. The correlation between the administrative and the self-reported total savings in M-Pasandaz is 0.87. To further examine the correlation, Figure 3a plots total contributions (unconditional on participation) against the matching incentive separately for the groups defaulted in and defaulted out. Figure 3b plots log total contributions reported in the survey against the matching rate. Both figures indicate that contributions increase in the matching rate and that defaulting employees in raises the total value of contributions, particularly for matching incentive rates of 0% and 25%.²⁹

²⁹Table A2 Panel A, reports estimates of the effects of defaults on self-reported M-Pasandaz savings, finding a similar positive effect

Figure A1: M-Pasandaz reminder message

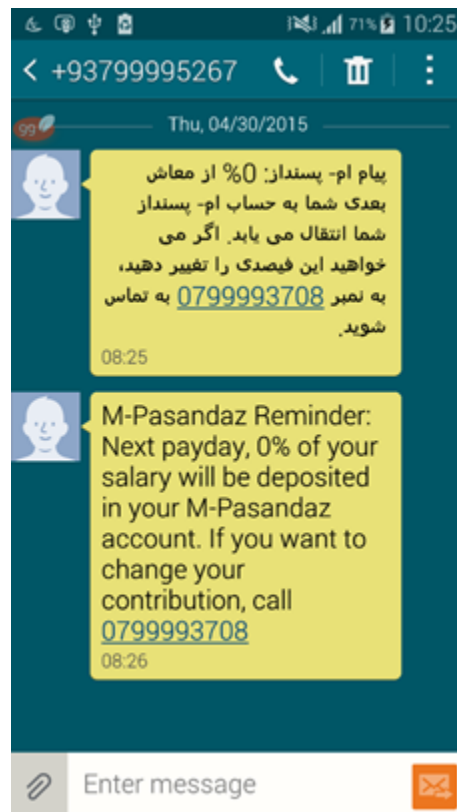
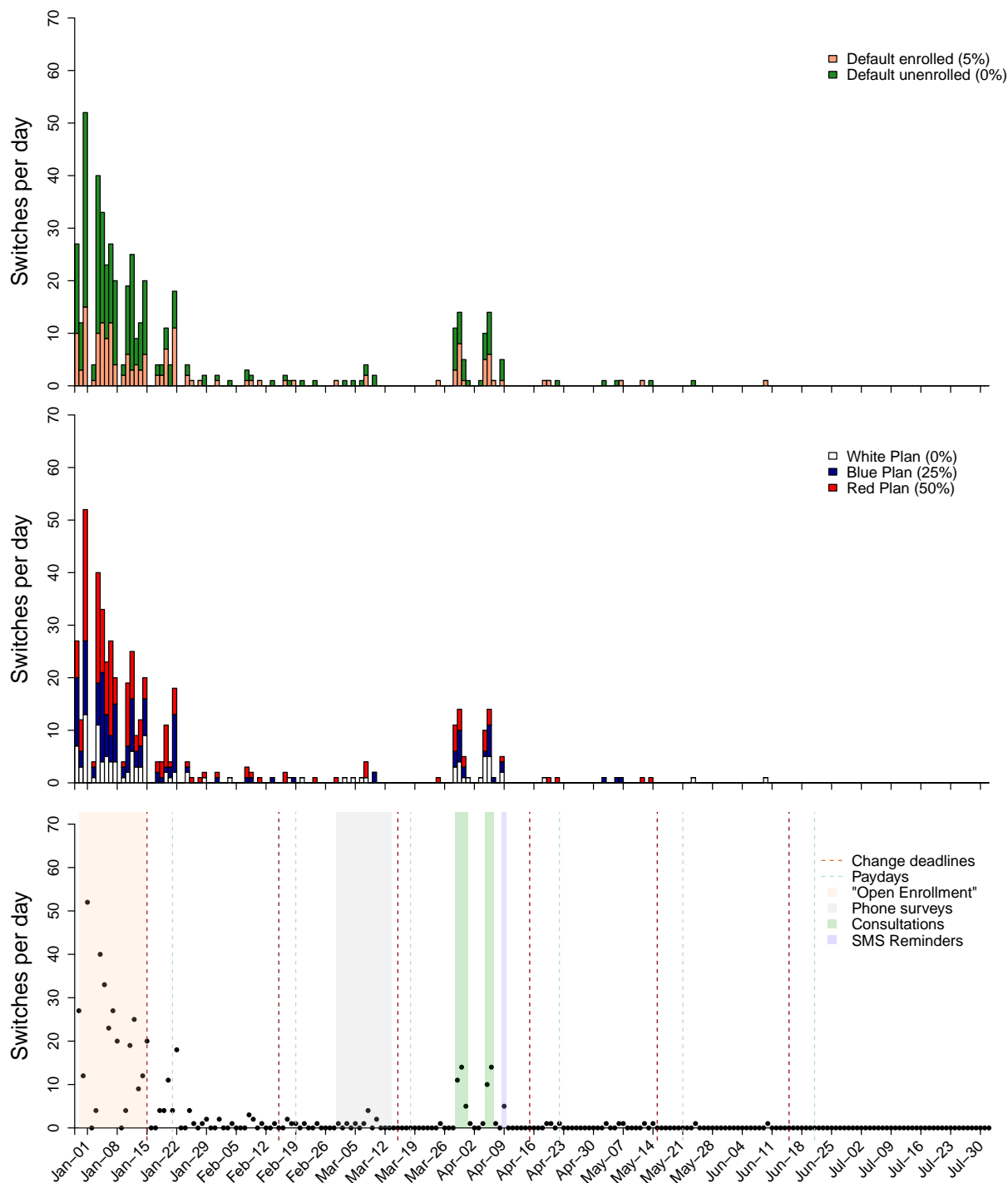
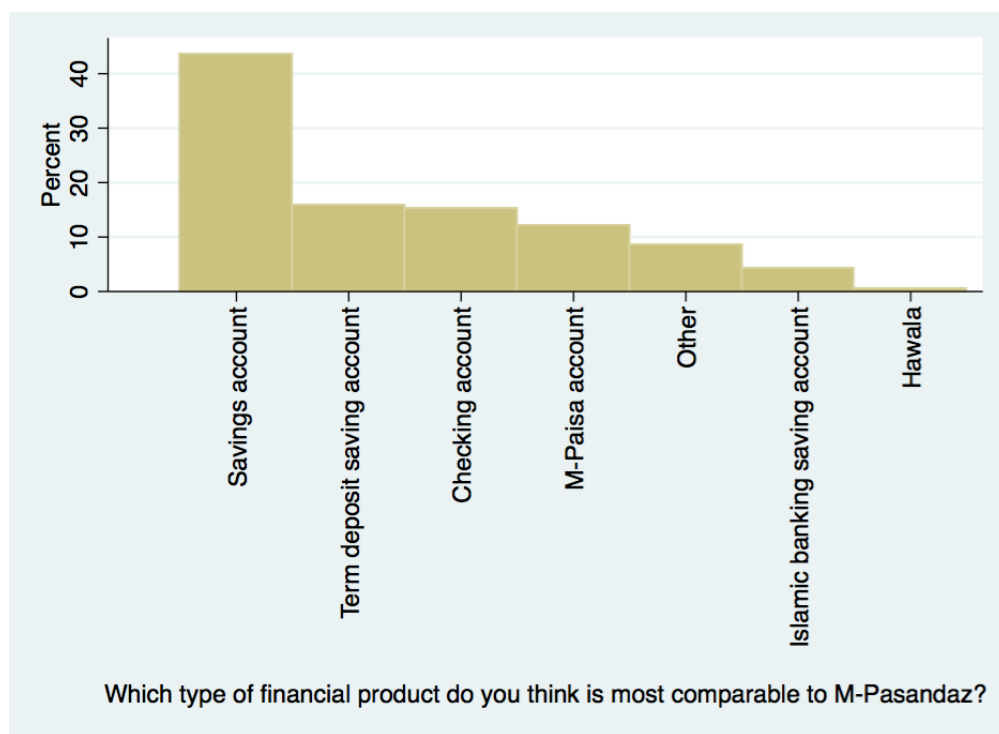


Figure A2: Switching behavior over time



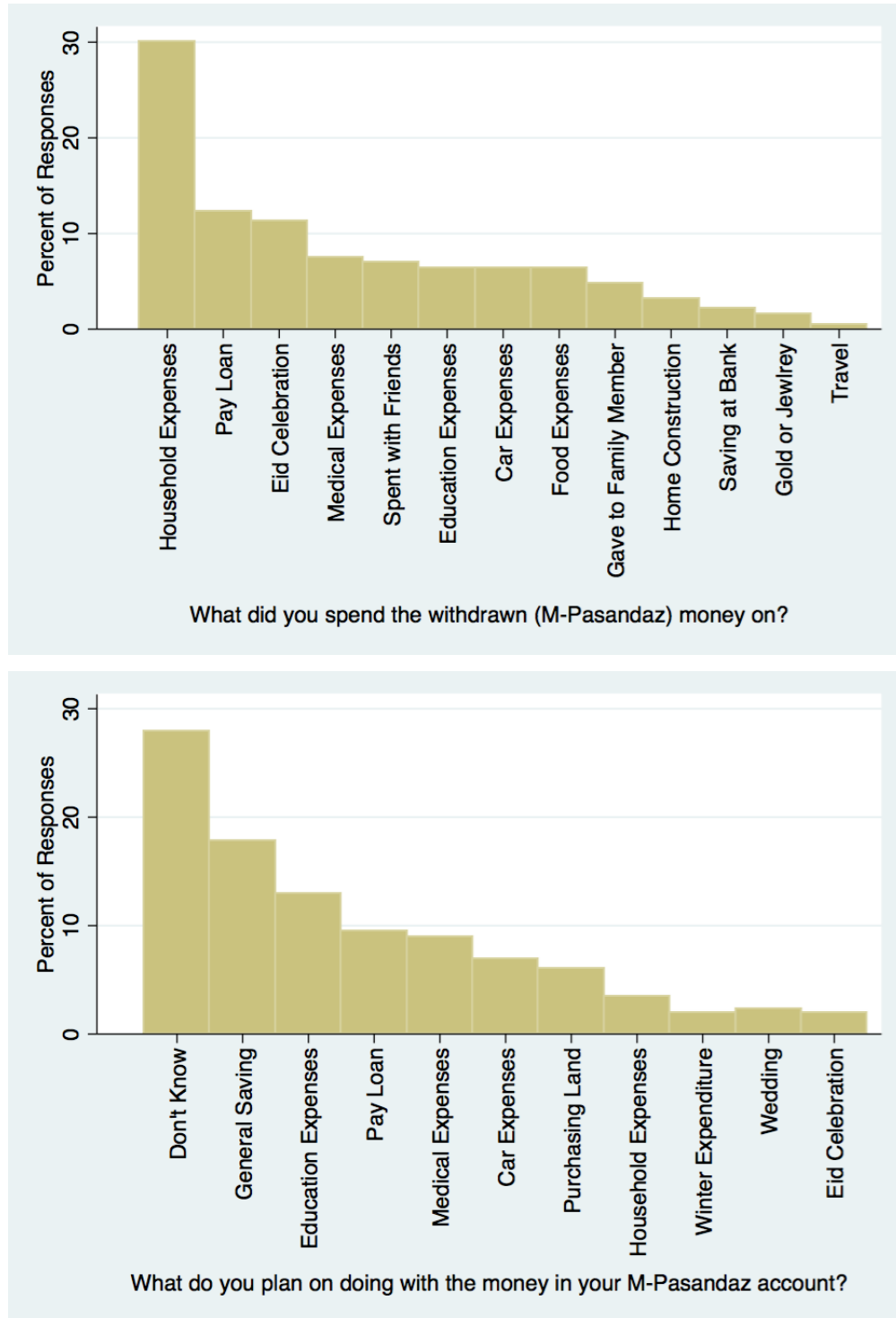
Notes: Dots indicate the number of individuals calling in, on a given day, to change their contribution rate. Top figure shows number of switches by default enrollment status; middle figure shows switches by plan assignment; bottom figure shows these switches in the context of the treatments that were administered to random subsets of the population over the course of the study.

Figure A3: Employee perceptions of M-Pasandaz



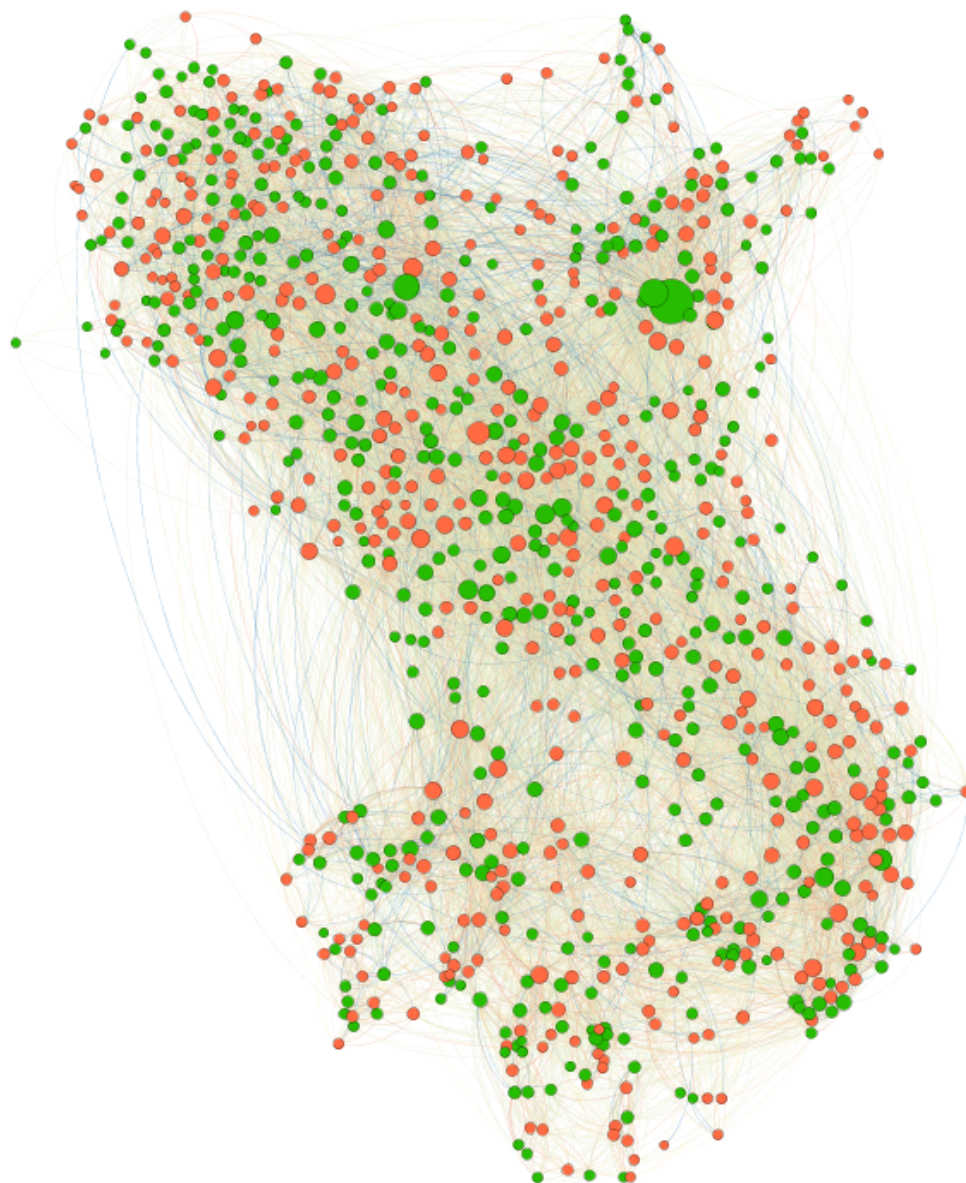
Notes: Responses collected in the endline survey, after the termination of the study period. Bars indicate the percent of employees who chose each option. Employees could only choose one option.

Figure A4: Employee uses and plans for M-Pasandaz savings

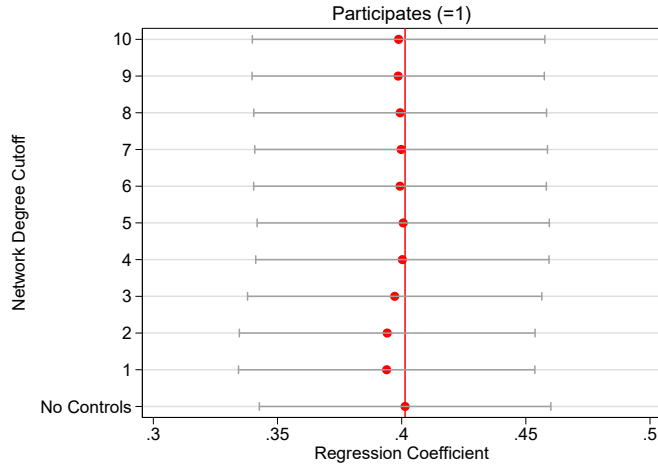


Notes: Responses collected in the endline survey, after the termination of the study period. Employees could give multiple responses to each question. Bars indicate the fraction of all employee responses that were affirmative for each expenditure category.

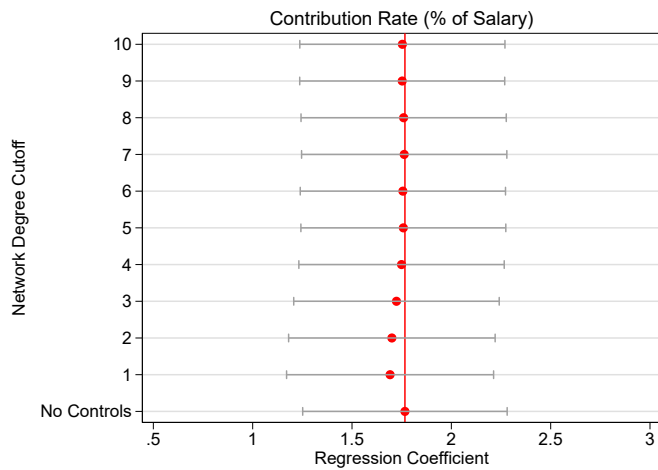
Figure A5: Roshan employee social network



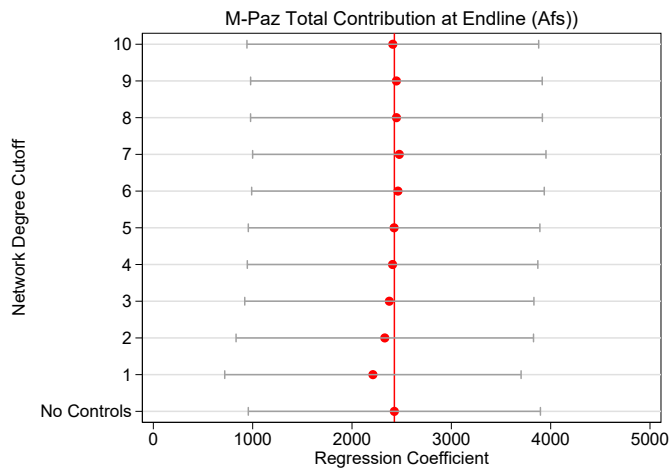
Notes: Each dot represents an employee. Red dots indicate employees who were assigned a contribution rate of 5%; green dots indicate employees assigned a default contribution rate of 0%. Dots are sized proportional to the degree centrality of the employee (i.e., the number of unique contacts in the employee's network). Edges indicate the presence of one or more phone calls between a pair of employees; edge color is shaded by the number of calls, ranging from one call (blue) to many calls (red). The layout of the graph is determined by an algorithm that places connected nodes close to each other on the 2-dimensional plane (Jacomy et al., 2014).



(a) Participation Rate



(b) Contribution Rate



(c) Total M-Pasandaz Contributions

Figure A6: Coefficients and confidence intervals estimated from peer effects regressions on (a) participation rates (non-zero contributions), measured on February 28, 2015; (b) contribution rates, as a fraction of a employee's total salary, measured on February 28, 2015; and (c) Total M-Pasandaz Contributions, measured at the end of the six-month study period.

Table A1: Summary Statistics

	All	Default Out			Default In			P-Value of F-Test
		0% Match	25% Match	50% Match	0% Match	25% Match	50% Match	
Gender (Male = 1)	0.85 0.36	0.85 0.36	0.87 0.33	0.85 0.36	0.84 0.37	0.81 0.39	0.88 0.33	0.59
Head of Household (=1)	0.52 0.50	0.43 0.50	0.56 0.50	0.58 0.50	0.51 0.50	0.52 0.50	0.54 0.50	0.11
Married (=1)	0.64 0.48	0.66 0.47	0.64 0.48	0.62 0.49	0.66 0.48	0.64 0.48	0.65 0.48	0.98
Age	30.39 7.88	30.30 7.51	30.13 7.33	30.58 8.34	30.51 8.14	29.98 7.63	30.87 8.38	0.94
Hazara (=1)	0.46 0.50	0.42 0.50	0.43 0.50	0.44 0.50	0.49 0.50	0.50 0.50	0.48 0.50	0.73
Monthly Salary (1000 Afs)	32.43 30.79	30.41 25.01	31.20 24.12	33.86 38.68	34.39 34.84	31.72 26.25	33.04 33.27	0.84
Monthly Savings (1000 Afs)	21.09 127.55	13.05 28.84	45.47 256.84	12.01 26.39	17.10 35.96	12.47 25.34	26.79 168.68	0.33
Has Bank Account (=1)	0.41 0.49	0.42 0.49	0.39 0.49	0.38 0.49	0.41 0.49	0.44 0.50	0.40 0.49	0.88
Delayed a Bill Payment (=1)	0.41 0.49	0.43 0.50	0.36 0.48	0.47 0.50	0.41 0.49	0.37 0.48	0.42 0.50	0.40
Withdraws Entire Salary (=1)	0.41 0.49	0.37 0.48	0.42 0.49	0.42 0.50	0.41 0.49	0.44 0.50	0.40 0.49	0.82
Interested in M-Pasandaz (=1)	0.85 0.35	0.85 0.36	0.87 0.33	0.84 0.37	0.83 0.38	0.89 0.31	0.84 0.37	0.63
Expects Violence (=1)	0.57 0.50	0.56 0.50	0.57 0.50	0.56 0.50	0.57 0.50	0.56 0.50	0.58 0.49	1.00
Experienced Violence (=1)	0.57 0.50	0.63 0.49	0.56 0.50	0.61 0.49	0.52 0.50	0.53 0.50	0.56 0.50	0.28
Observations	949.00	161.00	158.00	159.00	158.00	158.00	155.00	

Notes: Standard deviations reported in parentheses.

Table A2: Impact of M-Pasandaz on Log Savings

	(1)	(2)	(3)	(4)
<i>Panel A: Dependent Variable = Log M-Pasandaz Savings (Afs)</i>				
Default In * Post	1.52*** (0.32)	1.56*** (0.34)	2.94*** (0.53)	0.15 (0.54)
Constant (Post =1)	2.46*** (0.25)	0.58** (0.22)	1.57*** (0.39)	5.11*** (0.46)
# Employees	470	160	154	156
# Observations	1984	668	643	673
R-Squared	0.276	0.119	0.329	0.449
<i>Panel B: Dependent Variable = Log Total Savings (Afs)</i>				
Default In * Post	0.28 (0.44)	-0.39 (0.68)	1.37* (0.75)	-0.03 (0.77)
Constant (Post =1)	-1.65*** (0.35)	-2.60*** (0.61)	-2.86*** (0.63)	0.39 (0.52)
# Employees	470	160	154	156
# Observations	2032	675	671	686
R-Squared	0.023	0.077	0.055	0.019
Employee FE	YES	YES	YES	YES
Wave FE	YES	YES	YES	YES
Sample	Complete	0% Match	25% Match	50% Match

Notes: Dependent variables are the Log values of self-reported M-Pasandaz savings in Panel A and self-reported Total Savings in Panels B (original values in Afghanis, or Afs). Each observation is a respondent-month. Sample includes baseline pre-treatment responses and 4 follow-up surveys. All regressions include employee fixed effects, survey wave fixed effects and a “Post” binary variable that equals one for all waves after the baseline. All variables are trimmed at 0.5%. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors, clustered at employee level, reported in parentheses.

Table A3: Long Term Effect of Defaults on M-Paz Balances by Quarter

	(1)	(2)	(3)	(4)
	M-Paz Balance (Afs)	M-Paz Balance (Afs)	M-Paz Balance (Afs)	M-Paz Balance (Afs)
Defaulted In X 2015:Q1 (During Study)	1276.151*** (243.711)	1451.145*** (266.035)	1232.411*** (426.033)	1149.819** (497.305)
Defaulted In X 2015:Q2 (During Study)	2181.255*** (619.173)	2328.027*** (558.224)	2548.884** (1103.583)	1676.520 (1289.838)
Defaulted In X 2015:Q3 (Post Study)	1101.753*** (424.186)	437.328 (319.477)	1910.186** (884.962)	854.693 (830.137)
Defaulted In X 2015:Q4 (Post Study)	937.288* (508.617)	62.507 (770.410)	2298.533*** (883.006)	251.866 (963.910)
Defaulted In X 2016:Q2 (Post Study)	214.531 (569.544)	733.462 (1043.831)	-103.568 (909.243)	1.781 (1035.179)
Defaulted In X 2016:Q3 (Post Study)	216.215 (577.237)	1122.238 (1173.663)	-57.349 (905.239)	-427.992 (941.989)
Defaulted In X 2016:Q4 (Post Study)	689.448 (660.593)	1390.079 (1254.212)	662.317 (1112.137)	9.217 (1078.826)
Employer Match		0%	25%	50%
Month FE	YES	YES	YES	YES
Employee FE	YES	YES	YES	YES
# Employees	949	319	316	314
# Observations	17051	5672	5805	5574
R-Squared	0.03	0.02	0.04	0.07

Notes:

Table A4: Present Bias and Contribution Changes (Using Baseline Unincentivized Measure)

Dependent Variable:	Still at Default on February 28		Still at Default and No Withdrawal on Feb. 28	
	(1)	(2)	(3)	(4)
Present Bias Parameter (β)	-0.143** (0.064)	-0.161** (0.063)	-0.143** (0.064)	-0.159** (0.063)
β x Defaulted In	-0.003 (0.103)	0.028 (0.102)	0.094 (0.103)	0.116 (0.102)
Defaulted In (=1)	-0.263** (0.109)	-0.297*** (0.109)	-0.454*** (0.109)	-0.474*** (0.109)
Intelligence (0-3)		-0.051** (0.024)		-0.058** (0.022)
Risk Preference (1-10)		0.009 (0.006)		0.011* (0.006)
Salary		0.000 (0.000)		0.000 (0.000)
Tenure at Roshan (Years)		-0.012* (0.006)		-0.008 (0.006)
Uses a Bank Account (=1)		-0.034 (0.039)		-0.029 (0.038)
Withdraws Entire Salary on Payday (=1)		0.025 (0.038)		0.029 (0.037)
Capable of Fixing Phone (=1)		0.056 (0.037)		0.027 (0.036)
Constant	0.870*** (0.068)	0.901*** (0.084)	0.870*** (0.068)	0.888*** (0.083)
R-Squared	0.082	0.104	0.135	0.152
# Employees	702	679	702	679

Notes: This table reports on the variables that predict whether a participant remains at their default election on February 28, 2015, two months after the start of the experiment. β is a measure of present bias obtained using a hypothetical price list at baseline. The remaining variables are described in Appendix B2. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors reported in parentheses.

Table A5: Consultation Offer Results By Present Bias

	Accepted Consultation (=1)				
	(1)	(2)	(3)	(4)	(5)
Consult Later	0.056 (0.046)	0.069 (0.048)	-0.020 (0.062)	-0.005 (0.064)	0.012 (0.065)
Present Biased (=1)			-0.057 (0.069)	-0.058 (0.071)	-0.028 (0.072)
Consult Later x Present Biased			0.186** (0.093)	0.179* (0.094)	0.136 (0.094)
Consult Later x Intelligence					-0.045 (0.055)
Consult Later x Risk Preference					-0.040 (0.048)
Consult Later x Salary					-0.116*** (0.043)
Consult Later x Tenure at Roshan					0.022 (0.051)
Consult Later x Uses a Bank Account					0.045 (0.049)
Consult Later x Withdraws Entire Salary on Payday					-0.089* (0.048)
Consult Later x Capable of Fixing Phone					-0.026 (0.050)
Intelligence (0-3)		0.033 (0.027)		0.033 (0.027)	0.050 (0.036)
Risk Preference (1-10)		0.025 (0.024)		0.023 (0.024)	0.042 (0.033)
Salary		-0.039 (0.030)		-0.040 (0.030)	0.024 (0.030)
Tenure at Roshan (Years)		-0.002 (0.026)		-0.001 (0.026)	-0.016 (0.038)
Uses a Bank Account		0.019 (0.025)		0.022 (0.025)	-0.001 (0.036)
Withdraws Entire Salary on Payday		0.005 (0.024)		0.005 (0.024)	0.044 (0.034)
Capable of Fixing Phone		-0.002 (0.025)		-0.001 (0.025)	0.007 (0.037)
Constant	0.734*** (0.033)	0.728*** (0.034)	0.757*** (0.042)	0.751*** (0.044)	0.737*** (0.045)
Covariates	No	Yes	No	Yes	Yes
# Observations	339	330	339	330	330
R-Squared	0.004	0.019	0.017	0.031	0.066

Notes: Accepted Consultation Offer (=1) is a binary variable that equals one if the employee agreed to participation in a financial consultation regarding their participation in the M-Pasandaz program (see paper text for details). Consult Later (=1) is a binary variable that equals zero if the employee was randomly assigned to receive a consultation on the same day as the consultation offer was made, and equals one if the consultation was assigned to take place one week later. TPresent Biased (=1) is a binary variable that equals one if an employee is identified as having $\beta < 1$ in an experimental present bias elicitation completed at endline with real stakes (see paper text for details). Not Switched is the sample of employees who had not changed their default contribution rates as of February 28, 2015, following the first two paydays but prior to the rollout of secondary interventions. From column (1) to column (2), the sample size falls by 74 observations; 52 did not complete the endline survey and 22 did not complete the incentivized inconsistency elicitation. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors reported in parentheses.

Table A6: Consultation Offer Results By Present Bias (Using Unincentivized Baseline Preference Measure)

	Accepted Consultation (=1)				
	(1)	(2)	(3)	(4)	(5)
Consult Later	0.056 (0.044)	0.061 (0.045)	0.051 (0.052)	0.057 (0.053)	0.060 (0.054)
Present Biased (=1)			-0.027 (0.073)	-0.041 (0.075)	-0.039 (0.076)
Consult Later x Present Biased			0.021 (0.098)	0.018 (0.100)	0.014 (0.102)
Consult Later x Intelligence					-0.021 (0.048)
Consult Later x Risk Preference					0.001 (0.046)
Consult Later x Salary					-0.095** (0.048)
Consult Later x Tenure at Roshan					0.002 (0.050)
Consult Later x Uses a Bank Account					0.048 (0.046)
Consult Later x Withdraws Entire Salary on Payday					-0.027 (0.047)
Consult Later x Capable of Fixing Phone					-0.003 (0.049)
Intelligence (0-3)		0.027 (0.024)		0.027 (0.024)	0.038 (0.036)
Risk Preference (1-10)		0.008 (0.022)		0.009 (0.023)	0.009 (0.032)
Salary		-0.046* (0.024)		-0.046* (0.024)	-0.010 (0.035)
Tenure at Roshan (Years)		-0.003 (0.024)		-0.004 (0.024)	-0.006 (0.038)
Uses a Bank Account		0.032 (0.023)		0.032 (0.023)	0.012 (0.035)
Withdraws Entire Salary on Payday		0.011 (0.023)		0.011 (0.023)	0.022 (0.033)
Capable of Fixing Phone		-0.008 (0.024)		-0.009 (0.024)	-0.008 (0.036)
Constant	0.724*** (0.032)	0.719*** (0.033)	0.731*** (0.037)	0.730*** (0.039)	0.725*** (0.039)
Covariates	No	Yes	No	Yes	Yes
# Observations	390	380	390	380	380
R-Squared	0.004	0.022	0.005	0.023	0.039

Notes: Accepted Consultation Offer (=1) is a binary variable that equals one if the employee agreed to participation in a financial consultation regarding their participation in the M-Pasandaz program (see paper text for details). Consult Later (=1) is a binary variable that equals zero if the employee was randomly assigned to receive a consultation on the same day as the consultation offer was made, and equals one if the consultation was assigned to take place one week later. Present Biased (=1) is a binary variable that equals one if an employee is identified as having $\beta < 1$ in an unincentivized present bias elicitation completed at baseline (see paper text for details). Not Switched is the sample of employees who had not changed their default contribution rates as of February 28, 2015, following the first two paydays but prior to the rollout of secondary interventions. From column (1) to column (2), the sample size falls by 74 observations; 52 did not complete the endline survey and 22 did not complete the incentivized inconsistency elicitation. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors reported in parentheses.

Table A7: Self-reported Reasons for Switching Contribution Rates

	<i>N</i>	Total	%	Default Out			Default In		
				0%	25%	50%	0%	25%	50%
<i>Panel A: Reasons for increasing contribution rate</i>									
Increased - Savings Important	189	285	66.32	7	32	59	9	36	46
Increased - Wanted Incentives	107	285	37.54	0	15	46	0	18	28
Increased - Support Roshan	10	285	3.51	1	1	1	1	3	3
Increased - Demand Commitment	8	285	2.81	0	3	3	0	2	0
Increased - Thought Automatic	5	285	1.75	0	3	2	0	0	0
<i>Panel B: Reasons for decreasing contribution rate</i>									
Decreased - Salary Too Low	52	170	30.59	0	0	0	22	17	13
Decreased - Incentives Too Low	49	170	28.82	0	0	0	48	0	1
Decreased - Expenses Too High	35	170	20.59	0	0	0	10	19	6
Decreased - Un-Islamic Product	24	170	14.12	0	0	0	5	10	9
Decreased - Better Options	4	170	2.35	0	0	0	3	1	0

Notes: Total in column 2 reports number of participants that either decreased their contribution rate (rows 1-5) or increased their contribution rate (rows 6-10). Reasons were not mutually exclusive and respondents were asked to report all relevant reasons for changing their contribution. “Decreased - Salary Too Low” indicates that respondents felt their salary was not sufficiently large to allow for savings. “Decreased - Incentives Too Low” indicates that respondents felt the incentives were not sufficiently high for savings. “Decreased - Expenses Too High” indicates that respondents felt their other expenses were too high for savings. “Decreased - Un-Islamic Product” indicates that respondents felt the M-Pasandaz product did not conform with Islamic practices. “Decreased - Better Options” indicates that respondents reported having better alternative savings options available. “Increased - Savings Important” indicates that respondents said savings was an important goal for them. “Increased - Wanted Incentives” indicates that respondents mentioned the incentives as important to their decision. “Increased - Support Roshan” indicates that respondents mentioned wanting to support Roshan’s development of a new product. “Increased - Demand Commitment” indicates that respondents mentioned needing commitment devices to help save. “Increased - Thought Automatic” indicates that respondents mentioned thinking they were automatically enrolled in the program when they were not.

Table A8: “Top of the Mind” Treatments

Dependent Variable:	Changed After Phone Survey (=1)			Changed After SMS Reminder (=1)		
	(1)	(2)	(3)	(4)	(5)	(6)
Phone Survey (=1)	0.006*	-0.000	0.006			
	(0.004)	(0.000)	(0.006)			
Default * Phone Survey		0.013*				
		(0.007)				
25% Match * Phone Survey			0.007			
			(0.011)			
50% Match * Phone Survey			-0.006			
			(0.006)			
SMS Reminder (=1)				0.026**	0.017	0.026
				(0.010)	(0.012)	(0.018)
Default * SMS Reminder					0.018	
					(0.021)	
25% Match * SMS Reminder						-0.001
						(0.025)
50% Match * SMS Reminder						-0.000
						(0.026)
Default In (=1)		-0.000			-0.000	
		(0.000)			(0.000)	
Match Rate = 25%			0.000			-0.000
			(0.000)			(0.000)
Match Rate = 50%			0.000			-0.000
			(0.000)			(0.000)
# Observations	949	949	949	473	473	473
R-Squared	0.003	0.010	0.008	0.013	0.016	0.013

Notes: Changed After Phone Survey equals one if an employee changed their contribution rate either on the day they received a phone survey or the day immediately following. Changed After SMS Reminder is a binary variable that equals one if an employee changed their contribution rate either on the day they received a sms reminder or the day immediately following. Phone Survey is a binary variable if the employee was randomly assigned to receive a phone survey. SMS Reminder is a binary variable if the employee was randomly assigned to receive an sms reminder. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors reported in parentheses.

Table A9: Peer Effects - Contribution Rate (% of Salary)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Contribution Rate (% of Salary)										
Default In (=1)	1.77*** (0.26)	1.69*** (0.27)	1.70*** (0.27)	1.72*** (0.26)	1.75*** (0.26)	1.76*** (0.26)	1.76*** (0.26)	1.76*** (0.26)	1.76*** (0.26)	1.75*** (0.26)	1.75*** (0.26)
Degree Red		-0.14* (0.07)	-0.18** (0.09)	-0.12 (0.11)	-0.08 (0.13)	-0.00 (0.14)	0.09 (0.16)	0.18 (0.17)	0.10 (0.18)	0.19 (0.19)	0.05 (0.20)
Degree White		-0.06 (0.07)	-0.10 (0.09)	0.02 (0.11)	0.04 (0.12)	0.14 (0.13)	0.15 (0.15)	0.17 (0.16)	0.12 (0.17)	0.24 (0.18)	0.09 (0.19)
Degree Default In		0.02 (0.06)	-0.02 (0.07)	-0.07 (0.09)	-0.02 (0.11)	0.03 (0.11)	-0.04 (0.12)	0.01 (0.13)	0.01 (0.14)	0.02 (0.16)	0.11 (0.17)
Degree Total		0.06 (0.05)	0.12* (0.07)	0.08 (0.09)	0.03 (0.09)	-0.07 (0.10)	-0.07 (0.11)	-0.13 (0.12)	-0.08 (0.13)	-0.19 (0.13)	-0.15 (0.14)
Constant	2.70*** (0.20)	2.54*** (0.27)	2.50*** (0.27)	2.62*** (0.28)	2.68*** (0.28)	2.73*** (0.27)	2.77*** (0.27)	2.72*** (0.26)	2.71*** (0.26)	2.82*** (0.26)	2.85*** (0.25)
Degree Cutoff	N/A	1	2	3	4	5	6	7	8	9	10
P-Value of Equality		0.77	0.79	0.86	0.95	0.97	0.97	0.99	0.98	0.96	0.96
Mean Degree Total		23.72	14.61	10.31	8.01	6.40	5.30	4.53	3.90	3.38	2.92
# Observations		936	936	936	936	936	936	936	936	936	936
R-Squared		0.046	0.051	0.052	0.047	0.048	0.047	0.048	0.047	0.049	0.048

Notes: Dependent variable, Contribution Rate (% of Salary), is the monthly contribution rate into M-Pasandaz as a percent of total salary, and reflects values observed as of February 28, 2015, following the first two paydays but, prior to the rollout of phone surveys of secondary interventions. Column 1 replicates results from Table 1. For remaining columns, see Table Notes in Table 9. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors reported in parentheses.

Table A10: Peer Effects - Total M-Pasandaz Contributions (Afs)

	M-Paz Total Contribution at Endline										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Default In (=1)	2426.40*** (750.24)	2210.47*** (761.11)	2330.03*** (763.93)	2375.80*** (742.59)	2408.37*** (746.15)	2423.68*** (748.88)	2462.68*** (751.48)	2476.21*** (753.39)	2447.68*** (749.38)	2447.14*** (748.91)	2410.88*** (749.25)
Degree Red		-290.50 (204.23)	-205.36 (235.05)	-357.33 (268.39)	-214.46 (295.47)	-187.85 (332.50)	268.34 (378.89)	647.42* (377.57)	652.59 (425.98)	541.28 (465.14)	273.49 (508.01)
Degree White		-123.72 (209.74)	-197.29 (254.26)	-323.42 (285.94)	-69.86 (305.71)	-93.39 (357.61)	95.50 (419.49)	204.21 (425.43)	296.45 (448.85)	292.45 (473.17)	229.76 (523.62)
Degree Default In		135.64 (154.46)	210.01 (197.06)	233.66 (242.55)	118.54 (275.56)	280.76 (307.96)	266.88 (340.91)	493.02 (359.03)	412.32 (387.10)	473.59 (403.96)	489.54 (415.54)
Degree Total		143.55 (138.44)	145.39 (179.12)	234.30 (218.15)	150.57 (231.91)	98.54 (255.61)	-95.39 (296.74)	-375.61 (289.01)	-354.13 (317.94)	-392.28 (341.70)	-292.81 (367.55)
Constant	4724.44*** (465.52)	3026.58*** (618.95)	3057.41*** (639.13)	3458.18*** (640.59)	3812.13*** (661.14)	3800.65*** (654.70)	3868.02*** (676.11)	4002.85*** (676.53)	4057.53*** (662.89)	4305.63*** (688.13)	4400.56*** (666.95)
Degree Cutoff	N/A	1	2	3	4	5	6	7	8	9	10
P-Value of Equality		0.76	0.89	0.94	0.98	1.00	0.96	0.94	0.98	0.98	0.98
Mean Degree Total		23.75	14.60	10.30	8.01	6.40	5.31	4.53	3.90	3.37	2.92
# Observations		949	949	949	949	949	949	949	949	949	949
R-Squared		0.011	0.022	0.019	0.015	0.015	0.015	0.017	0.016	0.014	0.013

Notes: Dependent variable is total contributions made by the employee to M-Pasandaz, in Afghamis, as observed in administrative data. Value reflects total contributions net of withdrawals as of July 15, 2015, just prior to the disbursement of matching incentives. Value does not include matching contributions made by the employer. Column 1 replicates results from Table 1. For remaining columns, see Table Notes in Table 9. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors reported in parentheses.

Online Appendix B - Experimental Scripts

B1 Financial Consultation

Hello XXX. I am calling on behalf of the M-Pasandaz research team department. I am calling because you recently requested that a representative call you to provide you with additional information about M-Pasandaz, and determine how to use M-Pasandaz in the way that is best for you. This consultation will last roughly 5-10 minutes. Are you able to speak to me now? [RECORD RESPONSE]

Thank you for taking the time to speak with me. As you know, M-Pasandaz is a new benefit that is being offered to Roshan employees. In this call, you will have the opportunity to ask questions about M-Pasandaz. I will provide information about how much savings you would have for different levels of monthly contribution. At the end of the call, you will also have the opportunity to change the level of your contribution if you would like.

First of all, would you like me to give you a brief overview of the M-Pasandaz account? [YES/NO]

If YES: M-Pasandaz is a new benefit for all Roshan employees that was designed to help increase your savings. It is a mobile savings account that is linked to your M-Paisa account. A portion of your monthly salary - up to a maximum of 10% - can be automatically deposited into your M-Pasandaz account each month. Participating in the M-Pasandaz account is voluntary and you may receive benefits from Roshan to encourage you to save for the future. You can access the money in your M-Pasandaz account at any time, but if you contribute and don't make any withdrawals for 6 months, you may be eligible for a bonus from Roshan as a reward for savings.

To begin, we would like to ask if there are any questions we might answer about M-Pasandaz. [YES/NO]

Now, since every person has a different situation, I would like to explain several different scenarios, to help you understand how different levels of M-Pasandaz contributions would

work for you. According to our records, you are in the [WHITE/BLUE/RED] plan, and you currently have a monthly contribution rate of [XX%]. Were you aware that this was your plan and contribution rate? [YES/NO]

According to our records, you have a monthly salary of XXX. Since you are in the [WHITE/BLUE/RED] plan, you are eligible to receive a matching contribution Roshan of [0/25/50] percent for all money that you save in your M-Pasandaz account. Our records also show that you [HAVE/HAVE NOT] made a withdrawal from your M-Pasandaz account, meaning that you [ARE NOT/ARE] still eligible to receive your matching contribution. Therefore, if you continue to contribute at your current rate and make no withdrawals, at the end of the trial period in July, you would have a total value of MMM in your M-Pasandaz account. This reflects both your contribution and the contribution of Roshan to the account on your behalf. Would you like me to repeat this information for you? [YES/NO]

Thank you. Of course, you are always free to change your monthly contribution rate. If you like, I can explain to you exactly what would happen if you decided to change your match to a different amount. Would you like me assist you by explaining what would happen if you changed your contribution rate to a different amount? [YES/NO]

If YES: What scenario would you like me to explain? The contribution rate can be anywhere between 0% and 10% of your monthly salary. [RECORD ANSWER]

Do you have any additional questions about how M-Pasandaz works, or can I provide any additional information that can help you determine how to use M-Pasandaz in the way that is best for you? [YES/NO]

Thank you. Now, I would like to offer you the opportunity to change your contribution rate. If you wish, you can tell me your preferred rate, and I will change it for you. Alternatively, you always have the opportunity to call HR at a later date and change the contribution. Would you like me to change your contribution rate? [YES/NO]

If YES: What would you like your new rate to be: [RECORD RESPONSE]

Thank you very much for your time. Goodbye.

B2 Survey instrument (selected questions)

Endline survey questions (savings behavior, financial security, and wellbeing)

Roshan leadership is reviewing the results of the M-Pasandaz pilot program, and will be making a decision in the next few months about its future. In the meantime, we would like to offer you the opportunity to continue to have a portion of your salary deposited automatically in the M-Pasandaz account each month. For deposits made starting in August there will be no matching incentive paid, but you are welcome to continue to have part of your salary deducted and placed in savings if you find this useful. For these deposits, you will be free to make withdrawals at any time without penalty.

Would you enroll now to have part of your salary deposited each month starting in August?			
1	Yes	98	Don't Know
2	No	99	Refuse to Answer

How important do you think savings is - extremely important, very important, somewhat important, not very important, not at all important?			
1	Extremely important	4	Not very important
2	Very important	5	Not at all important
3	Somewhat important		

Do you attempt to save money each month?			
1	Yes	98	Don't Know
2	No	98	Refuse to Answer

If "1" means you are completely dissatisfied on this scale, and "10" means you are completely satisfied, where would you put your satisfaction with your household's financial situation?	
_ _ _	
99	Refuse to Answer

On a scale of 1-10, how satisfied are you personally with the financial situation of your household?	
_ _ _	
99	Refuse to Answer

How confident do you feel that you will be able to meet your financial obligations (pay your bills, buy food/clothes) during the coming month: Highly confident, somewhat confident, Somewhat not confident, Not confident at all?			
1	Highly confident	3	Some What not confident
2	Somewhat confident	4	Not confident at all

How confident do you feel that you will be able to meet your financial obligations 1 year from now: Highly confident, somewhat confident, Somewhat not confident, Not confident at all?			
1	Highly confident	3	Some What not confident
2	Somewhat confident	4	Not confident at all

Do you feel that you will be able to someday retire, stop working, and live off of your accumulated savings?			
1	Yes	2	No

What prevents you from saving? (not important, too many expenses, benefits are too small, no place to save, etc)			
1	Not important	3	Benefits too small
2	Too many expenses	4	No place to save
5	Other (Specify)		

During the last seven days how many times did one or more people in your household not receive a regular daily meal?	
_ _ Times	

Taking all things together, do you think you are, Very happy, Somewhat happy, little happy or Not at all Happy:			
1	Very happy	3	little happy
2	Somewhat happy	4	Not at all happy
99	Refuse to Answer		

All things considered, how satisfied are you with life as a whole? Please tell me your answer on a 10 point scale, where 1 represents Most Dissatisfied, 10 represents Most Satisfied."	
10 point scale: 10=Satisfied; 1=Dissatisfied	
_ _ _	
99	Refuse to Answer

All in all, how would you describe your state of physical health these days? Would you say it is...?			
1	Very good	4	Poor
2	Good	98	Don't Know
3	Fair		

Over the past 3 months were you unable to perform normal activities for at least 7 days due to an illness/injury?			
1	Yes	2	No

Has your participation in M-Pasandaz changed your desire to save?			
1	Yes	98	Don't Know
2	No	99	Refuse to Answer

Baseline survey questions (intelligence, risk, preferences)

<p>If it takes five machines five minutes to make five widgets, how long does it take 100 machines to make 100 widgets?</p>			
<input style="width: 50px;" type="text"/> <input style="width: 50px;" type="text"/> Min			
98	Don't Know	99	Refuse to Answer

<p>In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake?</p>			
<input style="width: 50px;" type="text"/> <input style="width: 50px;" type="text"/> Days			
98	Don't Know	99	Refuse to Answer

<p>Suppose Ahmad earns a salary of 1000 dollars a month. He obtains a ten percent raise this year and a ten percent raise next year. How much exactly will his income be after the second raise?</p>			
<input style="width: 100px;" type="text"/>			
98	Don't Know	99	Refuse to Answer

There are many decisions we make in life that could lead to a range of outcomes. For example, when we make a business investment, we are not sure that the business will be successful. This phenomenon is called risk. Many decisions involve risk. For example, if you decide to sell a new type of product or service, how much profit will you earn? We are interested in understanding more about how business owners think about risk.

<p>How do you see yourself - are you in general a person who takes risk or do you try to avoid risks? Please self-grade your choice (ranging between 0-10), where 0 represents "not at all prepared to take risk" and 10 represents extremely prepared to take risk.</p>			
<input style="width: 50px;" type="text"/>			

<p>How many bank accounts do you personally do you have?</p>		<input style="width: 50px;" type="text"/>	
98	Don't Know	99	Refuse to Answer

If you had a technical problem with your cell phone, who would you mainly ask for help? (for example if your phone would not turn on or allow you to make calls)			
1	I can fix it myself	4	Cell phone retailer/repair shop
2	A relative	5	I would purchase a new phone
3	A neighbor or friend		
6	Other (Specify)		

Do you withdraw your entire salary each month after you are paid, or do you leave a fraction on M-paisa?	
1	Withdraw entire monthly salary
2	Leave some fraction on as an M-paisa balance

B3 Present Bias Elicitation

Below, we provide the survey instrument used to elicit the present bias parameter used in the regression in Table 4. This instrument is a modified version of the time-dated price list method proposed by Andreoni et al. (2015), where payments were made using M-Paisa (mobile money). In our case, the incentivized measure leverages the fact that employees had received their salaries using mobile money for several years, and therefore had a high degree of confidence that they would receive their payments.

As noted in the text, however, this measure may my fungible to respondents (Cubitt and Read, 2007; Chabris et al., 2008; Andreoni and Sprenger, 2012; Augenblick et al., 2015; Carvalho et al., 2014; Andreoni et al., 2016). In addition, we lack endline inconsistency measures for 175 employees, or 18.4% of our sample. Of these, 131 (13.8% of sample) did not complete an endline survey - primarily due to leaving Roshan before the end of the experiment. The remaining 44 employees (4.6% of sample) completed endline surveys but did not complete the inconsistency elicitation.

For this reason, we also separately estimate the regressions in Table 4 using a different measure of present bias, elicited at baseline. In this protocol, subjects were asked: “Suppose someone was going to pay you USD 450 in one month. He/she offers to pay you a lower amount today. What amount today would make you just as happy as receiving USD 450 in one month?” and “Suppose someone was going to pay you USD 450 in 13 months. He/she offers to pay you a lower amount in 12 months time. What amount in 12 months would make you just as happy as receiving USD 450 in 13 months?” We identify someone as present-biased if the response to the first question is a lower amount than the response to the second question.

Results using this measure of present bias are reported in Table A4, and are qualitatively similar to those in the main text. All employees in our sample completed a baseline survey but 53 employees (5.5% of sample) did not complete the baseline elicitation.

TODAY and 4 WEEKS from today

For each decision number (1 to 5) below, decide the AMOUNTS you would like for sure today AND in 4 weeks by checking the corresponding box.

Example: In Decision 1, if you wanted AFN 250 today and AFN 0 in four weeks you would check the left-most box. Remember to check only one box per decision!

1. Would you like to receive	Payment TODAY	AFN 250	AFN 125	AFN 0
	<u>and</u>			
	payment in 4 WEEKS	AFN 0	AFN 125	AFN 250
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Would you like to receive	Payment TODAY	AFN 225	AFN 113	AFN 0
	<u>and</u>			
	payment in 4 WEEKS	AFN 0	AFN 125	AFN 250
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Would you like to receive	Payment TODAY	AFN 200	AFN 100	AFN 0
	<u>and</u>			
	payment in 4 WEEKS	AFN 0	AFN 125	AFN 250
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Would you like to receive	Payment TODAY	AFN 175	AFN 88	AFN 0
	<u>and</u>			
	payment in 4 WEEKS	AFN 0	AFN 125	AFN 250
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Would you like to receive	Payment TODAY	AFN 150	AFN 75	AFN 0
	<u>and</u>			
	payment in 4 WEEKS	AFN 0	AFN 125	AFN 250
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4 WEEKS and 8 WEEKS from today

For each decision number (6 to 10) below, decide the **AMOUNTS** you would like for sure **in 4 weeks** **AND in 8 weeks** by checking the corresponding box.

Example: In Decision 6, if you wanted AFN 250 in four weeks and AFN 0 in eight weeks you would check the left-most box. Remember to check only one box per decision!

6. Would you like to receive	payment in 4 WEEKS...	AFN 250	AFN 125	AFN 0
	<i>and</i>			
	payment in 8 WEEKS	AFN 0	AFN 125	AFN 250
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Would you like to receive	payment in 4 WEEKS...	AFN 225	AFN 113	AFN 0
	<i>and</i>			
	payment in 8 WEEKS	AFN 0	AFN 125	AFN 250
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Would you like to receive	payment in 4 WEEKS...	AFN 200	AFN 100	AFN 0
	<i>and</i>			
	payment in 8 WEEKS	AFN 0	AFN 125	AFN 250
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Would you like to receive	payment in 4 WEEKS...	AFN 175	AFN 88	AFN 0
	<i>and</i>			
	payment in 8 WEEKS	AFN 0	AFN 125	AFN 250
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Would you like to receive	payment in 4 WEEKS...	AFN 150	AFN 75	AFN 0
	<i>and</i>			
	payment in 8 WEEKS	AFN 0	AFN 125	AFN 250
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Online Appendix C - Additional Robustness Tables

Table C1: The Effect of Automatic Enrollment - July 15 Values

<i>Panel A: The effect on participation</i>				
Dependent Variable:	Participates (=1)			
	(1)	(2)	(3)	(4)
Default In (=1)	0.33***	0.36***	0.38***	0.23***
	(0.03)	(0.05)	(0.05)	(0.05)
Constant	0.32***	0.07***	0.32***	0.60***
	(0.02)	(0.02)	(0.04)	(0.04)
Sample	Complete	0% Match	25% Match	50% Match
# Observations	890	298	299	293
R-Squared	0.108	0.174	0.148	0.064
<i>Panel B: The effect on contribution rate</i>				
Dependent Variable:	Contribution Rate (% of Salary)			
	(5)	(6)	(7)	(8)
Default In (=1)	1.56***	1.89***	2.20***	0.42
	(0.29)	(0.29)	(0.50)	(0.50)
Constant	3.11***	0.46***	3.07***	5.92***
	(0.22)	(0.16)	(0.38)	(0.40)
Sample	Complete	0% Match	25% Match	50% Match
# Observations	890	298	299	293
R-Squared	0.032	0.125	0.062	0.002

Notes: Participates (=1) is a binary variable that equals one if the contribution rate is greater than zero, Contribution (% of Salary) is the monthly contribution rate into M-Pasandaz as a percent of total salary, and an observation is an employee. Variables reflect contribution rate values observed as of July 15, 2015, just prior to the disbursement of matching incentives. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors reported in parentheses.

Table C2: The Effect of Matching Incentives - Participation and Contribution Rates

Dependent Variable:	Participates (=1)			Contribution Rate (% of Salary)		
	(1)	(2)	(3)	(4)	(5)	(6)
Match Rate = 25%	0.26*** (0.04)	0.26*** (0.04)	0.23*** (0.05)	2.53*** (0.27)	2.58*** (0.35)	2.42*** (0.36)
Match Rate = 50%	0.48*** (0.04)	0.56*** (0.04)	0.39*** (0.05)	4.65*** (0.27)	5.51*** (0.39)	3.74*** (0.35)
Constant	0.23*** (0.02)	0.01 (0.01)	0.47*** (0.04)	1.20*** (0.12)	0.03 (0.03)	2.42*** (0.21)
Sample	Complete	Default Out	Default In	Complete	Default Out	Default In
# Observations	936	472	464	936	472	464
R-Squared	0.154	0.266	0.117	0.214	0.266	0.182

Notes: Participates (=1) is a binary variable that equals one if the contribution rate is greater than zero, Contribution Rate (% of Salary) is the monthly contribution rate into M-Pasandaz as a percent of total salary, and an observation is an employee. Variables reflect contribution rate values observed as of February 28, 2015, following the first two paydays but prior to the rollout of phone surveys or secondary interventions. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors reported in parentheses.

Table C3: The Effect of Defaults - Robustness to Withdrawing to Exit the Account

Dependent Variable:	Participates and No Withdrawal (=1)			
	(1)	(2)	(3)	(4)
Default In (=1)	0.33*** (0.04)	0.33*** (0.05)	0.25*** (0.05)	0.31*** (0.03)
Constant	0.01 (0.01)	0.26*** (0.04)	0.55*** (0.04)	0.27*** (0.02)
Sample	0% Match	25% Match	50% Match	Full Sample
# Observations	316	313	309	938
R-Squared	0.194	0.111	0.073	0.096

Notes: Participates and No Withdrawal (=1) is a binary variable that equals one if the contribution rate is greater than zero and the employee never withdrew from their account. The dependent variable reflect employees' status as of February 28, 2015, following the first two paydays but prior to the rollout of phone surveys or secondary interventions. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors reported in parentheses.