Transnational Household Finance:
A Field Experiment on the Cross-Border Impacts of Financial Education for Migrant Workers

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December 2012

Abstract

We randomly assigned invitations to a savings-focused financial literacy workshop for migrant Indian workers in Qatar. Via surveys of migrants as well as their wives remaining behind in India, we provide a unique window into financial decision-making in transnational households. We examine impacts on financial decision-making of the migrant workers, migrants' attempts to influence the financial decision-making of their wives in the home country, migrant beliefs about their wives' behaviors, and the wives' actual behaviors. The treatment led to substantial changes in migrant financial practices, and more joint financial decision-making with their wives. Migrants with below-median baseline savings are most responsive to the treatment, increasing their own savings and the remittances sent to their wives. Comparison of treatment effects on financial outcomes reported separately by migrants and wives provides evidence of substantial information asymmetries within transnational households.

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1. Introduction

The dramatic recent growth of international migration means that increasing numbers of households in the developing world have members working in other countries, and are therefore engaged in *transnational household finance*. By this we mean household financial management that faces the complexities of extended separation from important income earners, management of international remittance transfers, and, often, large increases in household income.

A better understanding of financial decision-making in transnational households – households with one or more migrant members – is practically important due to the large increases in income afforded by international migration (see, among others, Clemens et al. 2009 and Clemens 2011) and the large size of migrant remittance flows to developing countries. In 2009, migrant remittances sent to developing countries amounted to US$307 billion. By contrast, developing country receipts of foreign direct investment (the largest type of international financial flow going to the developing world) were only less than a fifth higher in that year ($359 billion). Receipts of official development assistance (foreign aid) came in a poor third to remittances and FDI in 2009, amounting to just $127 billion.[2]

There is concern that transnational households may be making suboptimal financial decisions. It is often found that households receiving international remittances have high consumption levels, but do not have substantially higher savings than the general population (Adams 1991, Acosta et al 2005, Ashraf et al 2012). Low savings may be a matter of concern at the household level if migrants are overseas on temporary labor contracts, since savings is central to strategies for ensuring that consumption does not return to pre-migration levels after migrants return.[3] Many policy-makers in remittance-receiving countries are interested in enhancing the impact of current international remittance inflows on long-run household (and, potentially, national) outcomes, for example by channeling more remittances towards savings, human capital investments, and capital for business enterprises.[4]

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[2] Data are from World Development Indicators 2011. The 2008-09 financial crisis had a substantial negative impact on FDI flows, while remittances and ODA were by contrast relatively stable. In 2007, the year prior to the crisis, FDI, remittance, and ODA flows to developing countries were $516, $278, and $107 billion, respectively.

[3] Of course, investment in human or enterprise capital in the household can also help achieve higher living standards post-migration. For evidence on human capital and enterprise investment in migrant households, see (among others), Massey and Parrado (1998), Cox-Edwards and Ureta (2003), Taylor et al (2003), Woodruff and Zenteno (2007), and Yang (2008). Stark et al (1997), Dustmann and Kirchkamp (2002), Mesnard (2004), and Yang (2006) focus in particular on investments tied to return migration.

[4] Policy-oriented publications include Pew Hispanic Center (2002), Terry and Wilson (2005), and World Bank (2006, 2007). Yang (2011) reviews recent research on the economics of migrant remittances.

In the context of transnational household finance, three interrelated questions might serve as starting points for a research agenda. First, do transnational households make high-quality financial decisions, and are there ways in which their decision-making can be improved? Second, do physically separated members of transnational households attempt to operate in a coordinated fashion, making joint decisions on financial matters? And third, is there evidence of asymmetric information problems between physically separated members of transnational households, and what form do the asymmetries take?

We make progress on these questions by implementing a randomized control trial of a financial literacy intervention among migrant workers. Our paper has several key features that, in combination, help shed light on these questions, and distinguish it from related research. First, our randomized methodology allows us to credibly estimate the causal impact of the financial literacy intervention on the outcomes studied. Second, we simultaneously assess impacts of the intervention on both "sides" of the transnational household by interviewing not only migrants but also their spouses remaining behind in the home country. This approach provides a window on attempts at joint decision-making within the household, and also allows us to reveal within-household information asymmetries by comparing a migrant's report with a spouse's report of the same financial outcomes.

Another innovation in our study is motivated by a concern over misreporting of survey responses, and in particular that responses may be affected by "experimenter demand effects." For example, treatment group respondents who thought that experimenters would be interested in finding a positive impact of the intervention on savings might over-report their savings in the follow-up survey. We therefore complement our survey data with a measure from an artefactual field experiment implemented during the follow-up survey, wherein respondents make incentivized budget allocation and savings choices. The concordance between treatment effects on these incentivized savings choices and on self-reported savings in the follow-up survey provides confidence that the treatment effects found are less likely to simply be due to biases in reporting related to treatment status.

Our study population is married, male Indian migrant workers in Doha, Qatar and their wives who remain behind in India. We randomly assigned migrant study participants to either a treatment group that was invited to attend a short financial literacy workshop, or a control group that was not invited. The financial literacy workshop strongly encouraged migrants to save to

ensure long-term financial security once the migrant eventually returned to the home country. As such, savings is the most important outcome variable, but we also examine a variety of other related outcomes. 41% migrants in the treatment group attended the financial literacy workshop. In both the treatment and control group, baseline (pre-treatment) and follow-up surveys were implemented of both the migrant in Qatar and his wife in India, which collected data on a range of financial practices, decisions, and outcomes for both respondents.

Because the decision to attend the workshop is endogenous, and because the treatment also led migrants to engage in other types of financial education (such as listening to a financial education radio show), we focus on intention-to-treat (ITT) effects that compare the entire treatment group with the entire control group. The financial literacy workshop focused strongly on savings, so we estimate all treatment effects separately for subsamples with low and high (below and above median) baseline migrant savings.

While we cannot provide complete answers to the three questions we raised at the outset, we make progress on answering them. We find, first of all, that the treatment leads to many changes in financial practices, savings goals, and financial outcomes of migrants. Impacts on migrant financial practices and savings goals are relatively uniform across the sample, while impacts on financial outcomes are heterogeneous with respect to baseline savings. In the low-baseline-savings subsample, the treatment has large positive effects on migrant savings and on their remittances to their wives (reported in the follow-up survey). Treatment effects in our incentivized budget allocation and savings exercise (from the artefactual field experiment) mirror this result.[5] We cannot say whether the treatment moves migrants closer to optimality, but the results do cast doubt on the quality of their previous decision-making (at least as perceived by the migrants themselves) if a very short and simple intervention could have had such large effects.

Figures 1 and 2 provide graphical views of key treatment effects on migrant savings and remittances via examination of cumulative distribution functions (CDFs) of these outcomes in the treatment and control groups. In the low-baseline-savings subsample, the CDF for the

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[5] This incentivized decision involved asking respondents (following the follow-up survey) to make committed allocations of potential winnings in a lottery (implemented by the investigators) to a variety of expenditure categories or savings. The treatment leads migrants with low baseline savings to allocate substantially more funds to a commitment savings account (to be used for a purpose defined by the migrant). Migrants with high baseline savings, by contrast, respond to the treatment by allocating less to committed savings. Wives' lottery allocations do not respond to treatment in the full sample or either subsample.

treatment group first-order stochastically dominates the CDF for the control group, for both savings (Figure 1A) and remittances (Figure 2A). This is not the case in the high-baseline-savings subsample (Figures 1B and 2B).

A second set of results relates to joint financial decision-making between migrants and their wives. We document that attempts at joint decision-making are common (although not universal), and that the treatment increases the likelihood of such joint decision-making. The treatment leads migrants to become more likely to discuss and plan financial goals with their wives, and to increases in the propensity of migrants and wives to make such joint financial decisions. Additional evidence consistent with (attempts at) joint financial decision-making is that wives of treated migrants report statistically significantly different financial practices and savings goals overall (compared to control-group wives), which suggests that treated migrants communicated the workshop material to their wives.

Finally, we find evidence of substantial intra-household information asymmetries. The treatment effect on wives' savings is very different when this outcome is reported by migrants versus reported by the wives themselves. For migrants with low baseline savings, the treatment effect on their report of their wives' savings is very large (roughly four times the increase in the migrants' own savings), but this treatment effect is much smaller and statistically insignificant if one examines the wives' report of their own savings.[6] Patterns in the results suggest that this most likely reflects treatment-induced updating by migrants of their information on wives' savings (which, in the absence of treatment, they may have had a tendency to underestimate), but it may also in part reflect non-cooperative behavior on the part of wives (migrants asking wives to save more, and wives saying they agree but failing to implement as asked).[7]

Information asymmetries of this sort may limit the ability of migrant-targeted financial literacy and other interventions to affect the decision-making of migrants' families in the home country. More generally, it reveals an obstacle migrants face when seeking to influence or

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[6] These two treatment effects on wives' savings – one based on migrants' reports and the other on wives' reports – are statistically significantly different from one another. Detailed analysis of differences in migrants' and wives' reports of specific savings mechanisms reveals that this difference is fully accounted for by migrants who – in response to treatment – report their wives have substantially higher savings in the form of gold in response to treatment, while wives' reports show no corresponding increase.

[7] The difference between the treatment effect on migrants' versus wives' reports of wives' savings is unlikely to reflect general underreporting of financial outcomes by wives. There are no analogous migrant vs. wife differences in reporting of savings in the control group. Also telling is the fact that the treatment does not lead to differences in cross-reports for outcomes that are well-observed by the migrant (his own savings and the remittances he sends to his wife).

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change financial decision-making by family members back home. Indeed, we do not find evidence that treating migrants affected wives' savings and other financial outcomes, and there is no large or statistically significant effect of the treatment on wives' decisions in the incentivized budget allocation and savings exercise. Wives apparently did not change their savings and other decisions (even if their husbands had wanted them to) in response to treatment.

The rest of the paper is organized as follows. Section 2 situates this paper at the intersection of two related literatures. Section 3 provides background information on international migration to Qatar, a description of the sample, and details about the intervention. Section 4 presents the empirical results, and section 5 provides discussion and additional analyses. Section 6 concludes.

2. **Connection to Related Literatures**

This paper is related to two distinct areas of economic research: the literature on intra-household decision-making, and the literature on the relationship between financial literacy and financial decision-making. Our paper is unusual in that it sits at the intersection of these two literatures. We implemented a financial literacy intervention targeting a particular household member, and first examined the intervention's impact on that individual's own financial goals and behaviors. We then used surveys of both these individuals and their spouses to examine how individuals exposed to the intervention attempted to influence the financial decision-making of their spouses, and whether they were successful at doing so. We thus reveal asymmetric information within households and some of its potential implications.

The literature documenting intra-household informational asymmetries and their consequences is large and continues to grow.[8] Research in the transnational household context is of particular relevance. Ashraf, Aycinena, Martinez, and Yang (2012) find that a randomized intervention helping Salvadoran migrants control and monitor savings in remittance-receiving households led to higher savings in El Salvador. Chin, Karkoviata, and Wilcox (2011) find that randomly assigned improved access to bank accounts among Mexican immigrants in Texas led

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[8] Recent work on intra-household preference differences and asymmetric information (and their consequences for household financial decisions) includes Ashraf (2009), Schaner (2011), Kinnan (2011), and Hertzberg (2011). Theoretical research on and empirical work supporting non-unitary models of household decision-making include Manser and Brown (1980), McElroy and Horney (1981), Lundberg and Pollak (1993), Browning and Chiappori (1998), Duflo (2003), Rangel (2006), and Martinez (forthcoming); see also the review in Strauss and Thomas (1995). Udry (1996), Dercon and Krishnan (2000), Goldstein, de Janvry, and Sadoulet (2005), Dubois and Ligon (2005), and others find evidence of productive inefficiencies in intra-household allocation in a variety of contexts that may in part be due to asymmetric information problems.

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to increased savings and lower remittances, which they interpret as due to an increased ability of migrants to control their own resources in the US (without US accounts, migrants' savings were more likely to have been managed by families back home). Ambler (2012) shows in an artefactual field experiment that Salvadoran migrants in the US share higher fractions of a cash windfall with their families in El Salvador if the families are told of the choice presented to the migrant, compared to when families are not aware of the windfall (this is suggestive that asymmetric information problems also run in the opposite direction: migrant behavior is affected by remittance recipients' not having full information on the migrant's financial situation).[9]

This paper is also related to the growing body of work examining the relationship between financial literacy and financial decision-making. Financial literacy has been shown to be associated with the quality of financial decision-making, in both observational and randomized experimental studies, in developed-country contexts.[10] Randomized studies of the impact of financial literacy interventions have been carried out in developing country populations, several of which find impacts on business practices of micro-entrepreneurs, while impacts on household and individual decision-making have been more muted.[11]

Two papers studying randomized financial literacy interventions among migrant populations are complementary with ours. Gibson, McKenzie, and Zia (2012) randomly assign financial literacy training targeted at improving migrant remittance decision-making, and find limited impacts. They do not examine impacts on households in the home country. Doi, McKenzie, and Zia (2012) randomly assign financial literacy training immediately prior to Indonesian migrants' departure for overseas. Doi et al. (2012) distinguishes between the impacts of training migrants alone, family members alone, or migrants and family members together. Impacts examined are on the home-country family alone, not the migrants. They find that training of migrants and family members is most effective and has positive impacts on financial practices and on savings, while training of migrants alone does not affect families back home. The key distinguishing

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[9] In analyses of observational data, Chen (2006) and De Laat (2008) find empirical patterns consistent with migrant monitoring of spouses in origin areas, among internal migrants in Kenya and China respectively.

[10] See, among others, Bernheim, Garrett, and Maki (2001), Bernheim and Garrett (2003), Bertrand and Morse (2010), Cole, Paulson, and Shastry (2012), Duflo and Saez (2003), Lusardi (2004), Lusardi and Mitchell (2007a, 2007b), Lusardi and Tufano (2009), Stango and Zinman (2009), and van Rooij, Lusardi, and Alessie (2007).

[11] Drexler, Fischer, and Schoar (2011), Berge, Bjorvatn, and Tungodden (2010), Bjorvatn and Tungodden (2009), Field, Jayachandran, and Pande (2010), and Karlan and Valdivia (2011) examine impacts of financial literacy training on micro-entrepreneurs, while studies of impacts on individuals include Carpena, Cole, Shapiro, and Zia (2011) and Cole, Sampson, and Zia (2011).

features of our paper vis-à-vis Gibson et al (2012) and Doi et al (2012) are that we simultaneously examine follow-up data from both the migrant and the spouse remaining in the home country. In addition, our parallel examination of impacts on decisions in an artefactual field experiment rather than solely relying on self-reported outcomes distinguishes us from these papers and the financial literacy literature more broadly.

3. Background, Sample, and Description of Intervention

A. Background on international migration to Qatar

The State of Qatar presents a valuable opportunity to study the temporary migration phenomenon given the sizeable migrant population, particularly from South and East Asia (Kapiszewski 2006). Approximately 90 percent of the population in the country age 15 or older, were foreign born in 2010, making it the nation with the highest share of immigrants in the world.[12] Remittances that migrants in Qatar send to their countries of origin (estimated at US$8.43 billion in 2011) is often the sole means of supporting their families.[13] Migration into Qatar and other oil and gas producing countries of the Arabian Gulf took off in the 1970s with rising oil prices that subsequently fueled a large construction boom. This required a large pool of unskilled and semi-skilled labor, which the national labor force was unable to provide (Shah 2008). The share of skilled and professional migrant workers has increased since the 1970s but the foreign labor force is still dominated by a large share of workers in the construction sector.

Migration to Qatar and to neighboring countries is typically temporary, with work contracts stipulating the duration of stay (Shah 2008). At the end of the work contract, migrants are expected to return to their home countries. These contracts are typically for one to two years and some may extend to five years, renewable at the discretion of the employer. A migrant's work permit or visa is sponsored by his employer, which effectively ties him to his sponsor. Only workers earning incomes above a minimum level are allowed to bring their dependents with them; in Qatar, the figure was QR 8,000 a month in 2010, the equivalent of US$26,300

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[12] The fraction of foreign born was computed from Qatar's 2010 census, undertaken by the Qatar Statistical Authority. Qatar's total population in April 2010 was 1.7 million. The country ranked at the top of immigration countries in 2010 (measured by the population share of immigrants) based on data published in the *Migration and Remittances Factbook 2011*.

[13] Remittance figure obtained from Qatar Central Bank' Quarterly Statistical Bulletin, March 2012.

annually.[14] Labor markets are tightly regulated in Qatar, and migrants are not permitted to change employers unless permitted by their current job sponsor.

Migration from Kerala, India to the Gulf states also accelerated with the oil price boom in the 1970s. Keralites made up more than half of Indian migrants to the Gulf in the 1990s (Prakesh 1998). Results from the population-representative 2011 Kerala Migration Survey indicated that 17.1 percent of households in Kerala received remittances, and remittances were estimated to make up 31 percent of the state's net GDP (Rajan and Zachariah 2011).

B. Sample, Baseline Survey, and Follow-up Survey

The sample consists of married, male migrants working in Doha, Qatar whose wives remained in Kerala, India. Restricting the sample to married couples was done to understand to extent to which transnational households shared information and managed their financial affairs jointly.

The baseline survey, which took place between August and November 2010, was implemented by a survey firm hired for the purpose. Recruitment focused on migrants residing in Doha's Industrial Area, where most resided in labor camps. Survey staff members, who were themselves migrants from Kerala, knocked on residential doors and approached migrants in public spaces of residential areas to find subjects to invite to participate in the study. After obtaining consent to participate in the study, migrants were asked to provide contact information and time and days suitable for a future baseline interview with him and his wife in India that would take place simultaneously. Migrant interviews took place in person, while interviews with his wife were conducted over the phone.[15] A total of 232 couples were interviewed at baseline.

After the baseline surveys were completed, the survey firm was provided with a list of randomly selected migrant subjects to contact and invite to attend a financial literary workshop held at the end of November 2010. Out of the sample of 232 male migrants, 157 were assigned to

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[14] Shah (2008) further states that family dependents are sponsored by the worker and in the case of expatriate children, the sons can stay in the country until they reach 21 and daughters until they get married. The Qatari Riyal (QR) is pegged to the US dollar. One US dollar is equivalent to QR 3.65.
[15] For a separate study on survey methodology, couples were randomly assigned to two groups that differed in how they were interviewed at baseline. Half of couples were assigned to a "public" survey, where husband and wife were interviewed together (with the husband in person and the wife on the phone), with each being able to hear the other's responses. The remaining couples were assigned to a "private" survey, where husbands and wives were interviewed separately and could not hear one another's responses. In all regressions of this paper, we control for assignment to the "public" baseline survey. This control variable has no material impact on the estimates.

the treatment group.[16] The migrant subjects were encouraged to attend the workshop and told it was exclusively organized for them in appreciation of their participation in the baseline survey. Apart from the dinner provided, there was no other compensation for attendance. See Appendix 1 for the invitation script.

Follow-up surveys occurred over a year after the baseline surveys, between December 2011 and April 2012. The same survey firm was hired to complete the follow-up survey with separate interviews conducted with the migrant and his wife. Survey staff first made an attempt to contact the migrant for a face-to-face interview. If it was not feasible to meet the migrant, the interview would be done by phone. If the migrant could not be interviewed, then no interview was carried out with the wife. Once a migrant was successfully interviewed, a separate interview was then conducted with the wife over the phone. All attempted interviews with wives were successfully completed. 202 follow-up surveys were completed. We then dropped two cases where the migrant reported having divorced his wife prior to the follow-up survey.[17,18] In both survey rounds, detailed data were collected from the migrant and his wife on demographics, financial behaviors, savings goals, financial outcomes, remittances, and the incentivized budget allocation and savings exercise (described in Section 4.C below). See Appendix 4 for variable definitions.

Baseline summary statistics are presented in Table 1. The sample is limited to the 200 couples that completed the follow-up survey. The mean time the migrant spent working overseas was nearly 12 years. His average annual income in Qatar was the equivalent of 313,746 Indian rupees (INR) or US$6,175 and mean annual remittances sent home was INR 133,967 (US$2,637).[19] Average personal financial savings of the migrant held in Qatar and India was the equivalent of INR 121,687 (US$2,395). Financial savings is the sum of cash in hand, bank and postal account balance, chitty fund (ROSCA), life insurance and pension plan contributions, gold holdings valued at the monthly retail price per gram at the time of the interview, market value of

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[16] Originally, each subject was assigned with 50% probability to the treatment. Initial indications were that many subjects would not be able to attend the workshop due to schedule conflicts. Because we had promised the workshop speaker a certain number of attendees, some of the remaining subjects were also randomly assigned to treatment, each with 1/3 probability. Each study participant therefore had a 2/3 probability of being in the treatment group.

[17] Unlike in the baseline survey, in the follow-up we did not implement an analogous "public" vs. "private" survey design. All interviews were "private", with migrants and wives being unaware of the others' responses.

[18] One got divorced during March 2011 and was in the control group and the other migrant divorced in November 2011 and was in the treatment group.

[19] When converting from Indian rupees to US dollars, we use an average of the daily US-Indian rupees exchange rate from Jan 1st to April 18th, 2012, when US$1 = 50.81 INR.

stocks and other forms of savings.[20] The migrant was also asked to report on savings held joint with his wife, which averaged INR 10,587 (US$208). Average land owned by the migrant was 39.51 cents or 0.395 acres.[21] About 37 percent of the migrants stated that they were saving regularly. In India, the household's annual income (excluding members overseas) averaged INR 5,556 (USD 109). Most of the migrant's wives were homemakers with only 13 percent employed. Average years of schooling were slightly higher for the wife, at 11.7 years compared to 10.2 years for her husband. On average, wives reported INR 206,322 (US$4,061) in financial savings.[22] Mean joint savings held with the migrant as reported by the wife was INR 6,910 (US$136). 47 percent of wives reported that they saved regularly. We proceed to confirm whether randomization achieved the goal of balance in terms of pre-treatment variables. In Table 2, we examine 18 baseline variables and a variable measuring duration between the baseline and follow-up survey, estimating a regression of each variable on the treatment indicator. We look at the full sample treatment effect estimates in Panel A as well as for subsamples with low (below median) and high (above median) migrant (own plus joint) savings at baseline (Panels B and C, respectively). With some exceptions, baseline variables for the treatment group are well balanced in all samples. The exceptions in the full sample are that the migrants in the treated group are more likely to be older (column 1), have worked abroad longer (column 3) and have older wives (column 10). The subsample of migrants with low baseline savings (Panel B) also finds older migrants and wives in the treatment group. For the subsample of migrants with higher baseline savings than the median (Panel C), all the outcomes are individually balanced vis-à-vis the control group. We do not reject the null that the full set of treatment coefficients are jointly equal to zero in the full sample and in both subsamples, at conventional levels of statistical significance (p-values reported for each of Panels A, B, and C). Attrition from the baseline to follow-up survey was 13.8%, and is uncorrelated with treatment status in the full sample and both subsamples (Appendix Table 1, column 1). We regressed a dummy variable for not being included in the final (N=200) sample on the treatment indicator and a full set of baseline controls examined in Table 2 (excluding the variable for months between baseline and follow-up, which is missing for attrited observations). Separately, we also regressed an indicator variable for

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[20] Most Indian households with life insurance or pension plans are with Life Insurance Corporation (LIC) of India, the largest provider of such policies in India.

[21] Cent is a common measure of land size in India. One cent is equal to 1/100 acres.

[22] Wives held relatively more of their savings in the form of gold, averaging 88.7 grams that was valued at INR 177,400 in December 2010.

migrants who were surveyed by phone for the follow-up survey and found it to be uncorrelated with treatment status in the full sample and both subsamples (Appendix Table 1, column 2).

C. Description of Intervention

The intervention studied was a financial education workshop. The workshop was conducted after the baseline surveys were completed in late November 2010 on a Friday evening by Mr. K.V. Shamsudheen (henceforth KVS). KVS is originally from Kerala and heads the Pravasi Bandhu Welfare Trust, a UAE-based entity registered in Kerala, India.[23] KVS had been offering financial education workshops in the UAE for over a decade, targeting migrants from Kerala. As of late 2010, he was starting to offer similar workshops in Qatar, typically at the request of a Kerala migrant association. KVS also has a weekly Malayalam radio program advising callers on financial matters, which is broadcast from Dubai, UAE and accessible in Qatar. We invited KVS to run the workshop in Qatar to which our treatment group was invited. The workshop was held for our study participants only.

The workshop's central theme was the importance of setting in place a plan for savings accumulation that would allow migrants and their families to maintain higher living standards after the migrants returned home to Kerala. In support of that objective, the workshop covered subsidiary topics such as creating and following a budget for both migrant and the household in India, making financial planning a consultative family exercise, setting aside money from remittances to save regularly, and the pros and cons of various investment options. The speaker also exhorted the audience to use time wisely, have a positive attitude towards work and life, establish good work ethics and lead a healthy life. The workshop was conducted in an interactive manner with the speaker periodically asking the audience questions and in some cases, having them take a pledge to lead a healthier lifestyle.[24] The entire workshop lasted approximately five hours (3 hours for the workshop itself and 2 hours for the subsequent dinner). More details about the workshop contents can be found in Appendix 2.

Responses in the follow-up survey by workshop attendees provide another window into the most salient workshop contents. When asked which aspects of their financial lives were positively affected by the workshop, "having regular savings" was the most popular first choice

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[23] This is an expatriate community organization established to educate and support non-resident Indians (NRIs) working abroad, particularly in the Arabian Gulf region (website: http://www.pravasibandhu.com).

[24] For example, he asked those in the audience who smoked to pledge an end to smoking and to save the money spent on cigarettes.

(33% of respondents), followed by "spending wisely and avoiding excessive expenditures" (31%) and "managing debt" (17%) (see Appendix 3 and Appendix Figure 1 for more details).

The workshop was held on a weekend night (Friday) to maximize take-up, in a conference room at a hotel chosen so that it was accessible by public transportation in a commercial area popular with South Asian migrants. Based on the project's administrative records, 41.0 percent of the migrants in the treatment group (55 out of 134) attended the workshop. In addition, 3.0 percent of the control group (2 out of 66) showed up to the workshop (presumably because of some informational spillover from treated individuals) and were allowed to attend.

4. Empirical Results

The treatment (the invitation to the financial literacy workshop) was randomly assigned, allowing us to estimate the causal impacts with the following simple equation:

$$y_{it} = \alpha + \beta Treatment_i + \boldsymbol{\delta}'(\boldsymbol{X_{it-1}}) + \epsilon_{ti}, \tag{1}$$

where i indexes a migrant household, y_{it} is the post-treatment outcome of interest, $Treatment_i$ is an indicator for being invited to the workshop and X_{it-1} is a vector of baseline (pre-treatment) characteristics of the migrant and his wife in Kerala. The coefficient of interest is β which represents the intent to treat (ITT) effect of the workshop invitation (rather than attendance). The ITT estimate is of greatest interest in most contexts, where financial education is voluntary and cannot be required for the migrant population.[25] The inclusion of X_{it-1} controls for a range of baseline variables related to the migrant's and his household's pre-treatment characteristics that might by chance be correlated with treatment in spite of randomization, and also helps improve precision of the estimated treatment coefficient. The baseline control variables are those examined in Table 2. We report robust (Huber-White) standard errors in all cases.

In all results tables to follow, we present results separately for the full sample (in Panel A of each table) and for subsamples split by low (at or below median) migrant baseline savings (Panel B) and high (above median) migrant baseline savings (Panel C). Median migrant savings at baseline was 50,601 Indian rupees (roughly US$1,000).

We examine a large number of outcomes in the follow-up survey, and so we report tests for the joint significance of the treatment coefficient across regressions for outcomes grouped by

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[25] Our ITT estimates would likely represent lower bounds of the treatment effects of a mandatory financial education program for migrant workers.

category, to deal with concerns about improper inference in multiple hypothesis testing.

A. Take-up

We first establish that the treatment affected the financial education activities of study participants. In Table 3 we report results of regressions in the form of equation 1, where the dependent variables are financial education activities engaged in by migrants in Qatar and their wives in India. We first examine self-reported migrant propensity to attend the KVS financial education workshop held by our study in November 2010. In column 1, the dependent variable is an indicator for the migrant attending the KVS workshop, as reported by the migrant in the follow-up survey. The full sample treatment effect estimate in Panel A indicates that the treatment led to a large increase in the likelihood of attending the KVS session, amounting to 44.6 percentage points. This is a nearly 15-fold increase over self-reported attendance in the control group (3.0 percent). This treatment effect on self-reported on KVS workshop attendance is very similar to results from our administrative records on attendance at the November 2011 session. The treatment effect is similar for migrants below and above median baseline savings (Panels B and C). The treatment effects in column 1 are statistically significantly different from zero at the 1% level for the full sample and both subsamples.

Our treatment may also have affected other types of financial education. For example, attendance at the KVS seminar may have encouraged participants to listen to KVS's radio show, which could have reinforced the workshop messages. In addition, migrants who were invited to but could not attend the KVS workshop could have listened to the radio show instead. We therefore examine in column 2 of the table the impact of treatment on an indicator for having ever listened to the KVS radio show (reported in the follow-up survey). In the full sample, the treatment leads to a 14.6 percentage point increase in the likelihood of listening to the KVS radio show, a substantial effect compared to the 40.9 percent radio show listening rate reported in the control group. This effect is statistically significantly different from zero at the 10% level.

Examination of this effect in the low- and high-baseline-savings subsamples (Panels B and C) reveals that the effect is driven entirely by a near-doubling of KVS radio show listenership in the low-savings subsample: an increase of 28.9 percentage points off a base of 35.1 percent (statistically significantly different from zero at the 1% level). By contrast, the treatment effect on listenership in the high-savings subsample is very small in magnitude and not statistically significantly different from zero.

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It is also possible that migrants could have encouraged their wives in India to engage in financial education activities. We examine in column 4 the treatment effect on wives' attendance of any financial education workshop in India (an indicator variable, reported by wives in the follow-up survey). There is a modest impact on this outcome: in the full sample, the treatment effect is positive and significantly different from zero at the 10% level, indicating a 4.4 percentage point increase off a low base of 1.5% in the control group. This effect is not significantly different from zero in the low- and high-baseline-savings subsamples, however.

Joint significance tests (reported in the bottom row of each panel's results) indicate that the treatment coefficients are jointly significant across the set of regressions for financial education activities, in the full and in the low-baseline-savings and high-baseline-savings subsamples. The joint significance level is 1% in each case.

B. Financial practices and savings goals

Given that the treatment did affect financial education activities (workshop participation and radio show listenership), a first question of interest is whether the treatment also affected the self-reported financial practices and savings goals of study participants. In sum, we do find that the treatment affected self-reported financial practices and savings goals of both migrants and their wives, in the full sample and in both subsamples (although perhaps only weakly for wives in the high-baseline-savings subsample).

Estimated treatment effects on financial practices are presented in Tables 4 (for migrants' responses) and 5 (for wives'). The set of variables is the same in both tables, except for the very first variable in the migrant table ("Discussed and planned financial goals with family in Kerala") which was only asked of the migrant. We asked a series of questions during the follow-up survey to the migrant, and separately to his spouse in India, related to management of their financial affairs. These cover topics such as whether the migrant discussed and planned financial goals with the family in India and if either the migrant or household in India worked on a budget plan as to how much to spend and save. We also asked couples to state how frequently they reviewed financial goals, made sure that expenses do not exceed what was budgeted, spent less on one or more items if more was spent elsewhere, anticipated the size of future expenses, set aside money to be saved regularly, and encouraged family members to stick to a budget. We also asked which members of the household decide on money matters.

In the status quo, joint financial decision-making in these transnational households is common, but not universal. In the control group, 48.5% of migrants say they discussed and planned financial goals with their family in Kerala; the figure is 40.5% and 58.6% in the low- and high-baseline-savings subsamples (Table 4, column 1). 27.3% of migrants in the full sample say that they and their wives jointly decide on money matters (figures are similar in the subsamples). 19.7% of wives say they and their migrant husbands both decide on money matters.

The results in Table 4 indicate that the treatment led migrants (in the full sample and in each subsample) to report changes to their financial practices: the F-test of the joint significance of the treatment coefficient across all regressions of Table 4 is significant at conventional levels in each panel of the table (at the 1% level for the full and high-baseline savings samples, and at the 10% level for the low-baseline-savings sample). An individual result that stands out is that treated migrants are less likely to say that their wife alone decides on household money matters, and are more likely to make decisions on money together with wife (these coefficients are significant at 1% and 10% levels respectively in the full sample results in Panel A, cols. 13 and 14).

Wives also change their reported financial practices in response to treatment. The F-test of the joint significance of the treatment coefficient across all regressions of Table 5 is significant at the 5% level for the full sample (Panel A) and in the low-baseline-savings subsample (Panel B). Wives concur with husband reports in the previous table, in the full sample and in the low-baseline-savings subsample, that they are now more likely to make joint money matters decisions with their husbands (col. 13). Wives also report being more likely to save regularly (col. 5) and to encourage their families in Kerala to follow a budget (col. 9) in the full and low-baseline-savings samples. For the high-baseline-savings subsample, on the other hand, there only weak evidence of a change in wives' financial practices: the F-test for joint significance of the treatment coefficients is only marginally significant (p-value 0.127).

Reflecting the changes in financial practices, respondents also report changes in their savings goals in response to treatment. Treatment effect estimates are presented in Appendix Tables 2 and 3 (for migrants' and wives' responses, respectively). For migrants, the F-test of the joint significance of the treatment coefficient across all regressions of Appendix Table 2 is significant at the 1% level for the full sample and for both subsamples. In the follow-up survey, we asked a hypothetical question to the migrant and his wife on whether they would be interested in a commitment saving account in India that would help them save up for a particular purpose, where

withdrawal is conditional on reaching a target amount or date. The full sample results (col. 3) indicate that migrants were 10.9 percentage points more likely to express interest in commitment savings (over and above 12.1% interest in the control group). Migrants also expressed less interest in saving for retirement (perhaps because focus has shifted to savings for the migrant's post-migration return to India) in the full and low-baseline-savings samples.

Wives also report changed goals in response to treatment. In full sample and for the low-savings subsample (col. 1), wives are more likely to report saving regularly (this is a slightly different question from the one asked in the section on financial practices examined in Tables 4 and 5). Wives are more likely to be saving for a business (col. 9), and (like migrants) are less likely to report saving for retirement (col. 8) in the full and high-baseline-savings samples. The F-test of the joint significance of the treatment coefficient across regressions of Appendix Table 3 is significant at the 5% level for the full sample and for the low-savings subsample.

C. Allocations of expenditures and savings in project lottery

While it is informative that respondents do appear to change their stated practices and plans in response to the financial education invitation treatment, it is important to also examine real financial decisions and outcomes. Before examining impacts on self-reported savings and other financial outcomes, we first examine treatment effects on incentivized household budget allocation and savings decisions that we presented to respondents.

Subjects made these decisions in an artefactual field experiment that we implemented during the follow-up survey. Our objective here was to measure the extent to which the treatment might have led respondents (migrants and wives separately) to change their preferences over the consumption and savings patterns of the households back in India. A concern we had was that simply asking migrants and wives to report their preferences over consumption and savings in their Indian households might not yield useful answers. Their answers might have been automatic, conditioned by what respondents thought was the "right" answer. Or respondents might not have thought carefully (as opposed to a situation where actual money was at stake).

To give respondents an incentive to make careful, considered decisions, we told survey respondents that their household in India was being entered into a lottery as part of the study. Respondents were told that one household in the study would win a prize of INR 20,000 (US$394). Each migrant was told that if their ticket was drawn, their household in India would receive the INR 20,000 prize, but the migrant had to specify now in what form the prize would

be delivered. The migrant was given a list of expenditure items, and was asked to divide the money across one or more of these items. Expenditure items included home and land investments, business expenses, education expenses, and medical expenses. Included in the list was a "committed savings" option, for which respondents were told that a special savings account would be opened in Kerala where funds could only be withdrawn once a target amount was reached that would then be used to purchase an item specified by the migrant; saved funds could not just be withdrawn in cash.[26] The migrant could not say that some or all of the winnings would be given over in cash. Respondents were told that if the migrant's Indian household was selected in the lottery, a project representative would personally visit the household to ensure that the money was spent exactly how the migrant specified.

Wives in India were told of an identical lottery, and were similarly asked how they would allocate funds for themselves across the same expenditure categories. They were similarly told that a project representative would enforce that expenditure allocation should the household win the lottery. Wives were not told how the migrant had responded to the same question (and survey staff did not have that information when conducting the surveys of wives).

This set-up gave both migrants and wives incentives to answer thoughtfully and truthfully as to how they would prefer the funds to be used, because real money would be allocated if the household won the raffle. We are interested in whether the treatment leads to changes in how migrants and wives choose to allocate these potential winnings to consumption categories or committed savings. Since this is a real financial decision with potentially real consequences, it stands out from all the other outcomes in the paper, which are exclusively unincentivized self-reports. That the results will be consistent with treatment effects on self-reported savings is therefore important and helps bolster the credibility of the other results in the paper.[27]

Table 6 presents treatment effects on respondents' allocations in the lottery to different categories (in INR).[28] We first discuss migrant responses (in columns 1-7). In the full sample, all coefficients are small in magnitude and not statistically significantly different from zero, either

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[26] See Appendix 5 for the lottery script and answer forms used (for migrants and wives separately).

[27] The two raffles (one among the sample of migrants and one among the sample of wives) were held on June 12, 2012. One migrant and one wife were drawn at random to win the prize, with the migrant's allocation implemented for the migrant lottery and the wife's allocation implemented for the wife lottery. The implemented migrant allocation was savings for future educational tuition, while the wife's allocation was a donation to the poor (recorded in the "other" category).

[28] More categories were included as options for respondents, but some categories received no allocations (e.g., utilities payments, marriage expenses), and so no regression analysis is possible for those categories.

individually or in joint tests across all outcomes. As it turns out, however, this reflects opposite migrant responses in the low- and high-baseline-savings subsamples.

In the low-baseline-savings subsample (Panel B), the treatment leads to an increase in allocations to committed savings and a decrease to home and land investments (significant at the 5% and 10% levels, respectively). Both effects are large relative to the control group means; for example, the treatment leads to 5,139 rupees higher allocation to committed savings, on top of an allocation of 5,676 rupees in the control group. The F-test of for the joint significance of the Panel B coefficients for migrants (columns 1-7) rejects the null of no effect at the 5% level.

By contrast, in the high-baseline-savings subsample (Panel C), the treatment leads to a decrease in allocations to committed savings (significant at the 10% level). The coefficient in the home and land investments regression is positive and similar in magnitude (but not significant at conventional levels). The F-test of the joint significance of the Panel C coefficients for migrants (columns 1-7) rejects the null of no effect at the 10% level (p-value 0.0998).

For wives, on the other hand, the treatment does not appear to have affected lottery allocations. All coefficients in each sample are small in magnitude and not statistically significantly different from zero, either individually or in joint tests across all outcomes.

These impacts on lottery allocations presage the savings results to come, which will find that the treatment leads to increases in migrant savings in the low-baseline-savings subsample, little (or if anything a negative) impact on migrant savings in the high-baseline-savings subsample, and little impact on wives' savings in any sample.

D. Savings

We now examine effects of the treatment on real financial outcomes of migrants and wives, reported in the follow-up survey. First, we focus on impacts on savings in Table 7. Impacts on migrant savings are in columns 1-4, and on wives' savings in columns 5-8. In the full sample, migrant and wives' savings show no statistically significant response to treatment. Coefficients in Panel A for migrants are not statistically significantly different from zero, either individually or in joint tests across outcomes.

As in the lottery results, this mean effect masks substantial heterogeneity in treatment effects across subsamples. In the low-baseline-savings subsample, the treatment leads to an increase in migrants' own savings (significant at the 10% level), an increase in joint savings (which is not statistically significant at conventional levels), an increase in the migrant's estimate of his wife's

savings (significant at the 5% level), and an increase in total savings, which is the sum of the previous three types of savings (significant at the 1% level). These effects are large in magnitude. The increase in migrants' own savings (col. 1) amounts to 72.4% of the control group mean, and the increase in total savings (col. 4) amounts to 52.4% of the control group mean. The joint test of the significance of the Panel B coefficients for migrants rejects the null of no effect at the 5% level.

As it turns out, these large impacts on wives' savings reported by migrants in the low-baseline-savings subsample are not reflected in wives' own reports. The treatment coefficient in the regression for wife's own savings in col. 5 of Panel B (21,113) is not statistically significant and is only about a fifth the size of the coefficient in the regression for the migrant's report of his wife's savings (col. 3 of Panel B). An F-test indicates that these two coefficients are statistically significantly different from one another at the 5% level (p-value 0.037). The treatment appears to lead low-baseline-savings migrants to differentially overestimate the amounts their wives are saving, relative to the control group.

In the low-baseline-savings subsample, treatment effects on wives' reports of their husband's savings (Panel B, col. 7) do appear in line with effects in on the husband reports (Panel B, col. 1), and these coefficients are not statistically significantly different from one another at conventional levels (p-value of F-test: 0.643).

In the high-baseline-savings subsample, point estimates in the migrant and wives' savings regressions are either small in magnitude or actually negative. But none of the coefficients are statistically significantly different from zero at conventional levels, either individually or jointly.

In Section 5 below, we conduct additional analyses to aid in interpretation of the discrepancy between the treatment effects on migrants' and wives' reports of wives' savings.

E. Remittances

We now turn to impacts of the treatment on remittances sent by the migrant to his wife in India. Results are presented in Table 8. Migrant reports of remittances sent are in columns 1-5, and wives' reports of remittances sent by the migrant are in columns 6-10.

For the full sample of migrants and wives, there is little evidence of treatment impacts on remittances. Most coefficients in Panel A are small in magnitude, and none are statistically significantly different from zero at conventional levels, either individually or in joint tests across

outcomes. But again, as in the lottery and savings results discussed above, the mean treatment effects in the full sample mask opposite responses in the subsamples.

In the low-baseline-savings subsample, migrants report increases in remittances sent to their wives (col. 1, significant at the 10% level). The impact on remittances is large in magnitude: in column 1, the treatment effect amounts to an increase equal to 13.8% of the control group mean. Strikingly, and in contrast to the savings regressions discussed above, the coefficient estimate in column 1, Panel B is very similar to that in the regression for the wife's report of remittances received from the migrant (col. 6, Panel B, significant at the 10% level). An F-test cannot reject the null of equality of the two coefficients (p-value 0.884).

For other aspects of remittances (in-kind transfers, frequency), no treatment effects are statistically significantly different from zero in the low-baseline-savings subsample, but an F-test indicates that the set of treatment coefficients in the migrant regressions (cols. 1-5) are jointly significantly different from zero at the 10% level. A corresponding F-test for joint significance of the treatment coefficients in the regressions for wives' reports (cols. 6-10) has a p-value of 0.163.

In the high-baseline-savings subsample (Panel C), point estimates in the regressions for both the migrants' and wives' report of remittances are actually large and negative, although not significant at conventional levels. The set of treatment coefficients for the migrant outcomes in Panel C is jointly significantly different from zero at the 10% level.

F. Other financial decisions (expenditures and credit)

The last set of financial outcomes we examine are expenditures and loans reported by the migrants and wives. Results are in Appendix Table 4 for migrants (columns 1-3) and wives (columns 4-6). There is no large or statistically significant impact on expenditures or on loans, reported by either migrants or wives. None of the sets of coefficient estimates are jointly statistically significantly different from zero in any sample.

5. Discussion and Additional Analyses

A key result from Table 7 was that treatment effects in the low-baseline-savings subsample on migrant's reports of wives' savings in India (col. 3, Panel B) differ so dramatically from wives' reports of the same outcome (col. 5, Panel B). In this section we conduct additional analyses to help interpret this result.

First, we turn to a more detailed examination of these reporting differences in wives' savings. In particular, we ask in what specific form of savings these reporting differences arise. We construct variables for a respondent's report of his or her spouse's savings minus the spouse's report of those same savings, separately for different types of savings. These difference variables would be used as dependent variables in regressions analogous to equation 1.

Results for this exercise are in Appendix Table 5. Dependent variables in columns 1-6 are migrant reports of wife's savings minus wife's reports of same, while columns 7-12 are for wife's reports of migrant savings minus migrant reports of same. One result stands out: in the low-baseline-savings subsample (Panel B), the treatment leads to a substantially larger gap between migrant and wife reports of wives' gold savings (the coefficient in column 5, Panel B is large, positive, and statistically significantly different from zero at the 1% level).[29] This difference alone can account for the difference in the treatment effects on wives' savings observed in Table 7 (col. 3 vs. col. 5 of Panel B in that table). No other results are large or significantly different from zero for migrant reports of wives' savings in columns 1-6.

How should this treatment-induced effect on migrant overstatement of wives' gold holdings (column 5, Panel B) be interpreted? A first possibility is that the treatment leads to general over-reporting of savings by migrants, perhaps due to experimenter demand effects. But this explanation would also predict overstatement by migrants of other types of savings, which we do not find. In fact, 4 out of the remaining 5 coefficients in the migrant reports regressions of Panel B, Appendix Table 2 are actually negative in sign.

Another possibility is that the treatment somehow leads to under-statement by wives of their own savings. The evidence is also against this interpretation. It is telling is that there is no treatment-induced understatement by *wives* of *migrant* savings, as discussed in Section 3.D. (coefficients in columns 1 and 7 of Table 7, Panel B are not statistically significantly different from one another). In addition, the pattern described in the previous paragraph (no treatment effects for types of savings other than gold in Panel B, columns 1-6) also helps rule out that treatment-induced general *under*-reporting by wives of their own savings is the culprit.

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[29] This is a large effect, amounting to a difference of nearly US$2,000. We have confirmed that this result is not driven by a small number of outliers. Additional analyses (available from the authors on request) reveal that the effect also shows up in this subsample if dummy (rather than continuous) variables for migrants and wives having large differences in reporting of wives' gold savings are used as dependent variables. For example, in the low-baseline-savings subsample, the treatment leads to a higher likelihood (significant at the 1% level) that this difference is above the 90th percentile, and a lower likelihood (significant at the 5% level) that this difference is below the 10th percentile of the distribution of the gold reporting difference variable.

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A likely explanation of the gold difference result (reflective of the more general migrant-wife difference in reported wives' savings) is that the treatment leads migrants in this subsample to seek better information on their wives' savings, which systematically leads to upward updating. The status quo (in the control group) appears to be that migrant knowledge about their wives' gold holdings savings is biased downwards vis-à-vis wives' reports: the mean migrant-wife difference in reports of wife gold holdings in the control group is -52,511 INR (Appendix Table 5, Panel B, column 5). The effect of the treatment may be to induce migrants to seek better information about wives' savings, gold holdings in particular. This then shows up as a positive treatment effect on the difference between migrant and wife reports of wives' gold holdings.

A potentially complementary explanation is non-cooperative behavior by wives, but we do not find evidence consistent with this story. This story would be that treatment may have led low-baseline-savings migrants to suggest to their wives that they save more. Gold is the main form of wives' savings at baseline, so it is reasonable that the suggestion would have been to accumulate gold. Wives may then simply have not acceded to this migrant request, while reporting to migrants that they were indeed saving more.[30] This explanation would be supported if we also found that the treatment led migrants to report more gold *accumulation* by wives. But we find no evidence of this: the treatment effect on migrants' reports in the follow-up survey of gold purchases by wives since the baseline survey is small in magnitude, actually negative in sign, and not statistically significantly different from zero.[31] While we cannot conclusively rule out non-cooperative behavior by wives, the fact that the treatment-induced increase in the migrant-wife gold reporting gap exists for gold *stocks* and not gold *accumulation* appears more consistent with the "treatment-induced upward updating" hypothesis advanced above.

Other patterns in the data are also consistent with "treatment-induced upward updating" hypothesis. The increase in annual remittances sent in response to treatment (in the low-baseline-savings subsample) is substantially smaller than the migrant-reported increase in their wives' savings roughly 17 months after treatment, and so could not have funded the migrant-reported

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[30] Indeed, there is no treatment effect on wives' savings behavior in the incentivized budget allocation exercise (see Table 6 and discussion in Section 4.C above), indicating that the treatment did not lead to increased interest in savings among wives.

[31] In the low-baseline-savings subsample, the treatment coefficient in a regression (in the form of equation 1) where the dependent variable is migrant's report of wife's gold accumulation since the baseline is INR -1,327 (standard error 1,875). Wives also do not report more savings accumulation in response to treatment: the corresponding coefficient in a regression where the dependent variable is wife's report of her own gold accumulation is INR 210 (standard error 2,070) in the same subsample.

increase in gold. There is also no treatment effect on wives' consumption or borrowing (Appendix Table 4), and migrants do not change their *reports* of their wives' consumption in response to treatment (results available from authors on request).

Whatever the exact explanation, the evidence does point to the existence of an asymmetric information problem (migrants having poor information on wives' savings). It is interesting to note that there do not appear to be asymmetric information problems for outcomes for which migrants presumably have good information. As mentioned previously, the treatment effect on wives' reports of migrant savings is not statistically significantly different from the treatment effect on migrant reports of their own savings. The other telling case is migrants' and wives' reports of remittances sent by the migrant to the wife, where treatment effects are also similar and statistically indistinguishable from one another (Table 8, Panel B, columns 1 and 7).[32]

6. Conclusion

We randomly assigned financial education to migrant Indian workers in Qatar, and fielded surveys of both migrants and their wives remaining behind in India in order to shed light on key aspects of financial decision-making in transnational households. We find substantial average effects on stated financial practices and savings goals for both migrants and their wives, revealing an increased propensity for migrants to seek to make joint financial decisions with their wives. Effects on actual financial outcomes are mostly concentrated in the subsample of migrants with low savings at baseline. The treatment leads low-baseline-savings migrants to increase their own savings and remittances sent home to their wives, and also to do more saving in an incentivized budget allocation exercise (which helps confirm an increased interest in savings, above and beyond data from self-reports).

The fact that a short, simple financial education invitation had identifiable and (in many cases) large effects on financial behaviors and outcomes is one of the key findings of this study. While we cannot tell whether the intervention improved the overall well-being of migrants or their families back home, we do identify a subgroup (migrants with initially low savings) who

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[32] When it comes to migrant-wife differences in reports of migrants' savings, a different category of savings stands out, this time in the high-baseline-savings subsample. Wives substantially underestimate migrants' savings in life insurance and pension plans (the coefficient in column 10 of Appendix Table 5, Panel C is large, negative, and statistically significantly different from zero at the 5% level). This result might also reflect asymmetric information, if wives are not fully informed of migrants' savings in these relatively sophisticated instruments that migrants may have accessed only once they arrived in Qatar.

saw increases in two outcomes of significant interest to economists and policy-makers: savings and remittances. That migrants were induced by a relatively minimal intervention to change important economic behaviors suggests that this population could not have had very strong priors that their previous behaviors were optimal. From a practical standpoint, our results suggest that financial literacy interventions have real potential to change migrant financial behaviors. These findings should be an impetus for further exploration of the impacts of financial literacy interventions in different populations and contexts.

Future work might profitably explore what factors lead to suboptimal financial decision-making in transnational households. One likely culprit is simply low levels of education among migrants, which is associated with low-quality financial decision-making (Cole, Paulson, and Shastry 2012). While there is great diversity in the skill levels of international migrants from the developing world, most such migrants are working in low-skilled jobs and have low levels of education. A second key factor is that transnational households may often have limited experience with handling their post-migration levels of income. If household financial decision-making has a strong learning-by-doing component, and if optimal financial decisions differ by income level, then households that recently experienced a large increase in income (e.g., via migration of a household member) may make lower-quality financial decisions. A third key factor is the physical separation between migrants and family members remaining in the home country. Such separation is likely to be a barrier to joint decision-making, notwithstanding recent improvements in telecommunications and declines in telecom costs (Seshan 2012).

An unusual feature of our study is that for key financial outcomes, we have independent cross-reports: migrants and wives were surveyed separately but reported on overlapping variables. This innovation allows us to reveal asymmetric information within the transnational household. In the low-baseline-savings subsample, the treatment leads to a large increase in the wives' savings as reported by migrants, but not in wives' savings as reported by the wives themselves. This may reflect that the treatment leads migrants in this subsample to seek better information on their wives' savings (which they were previously underestimating). If so, the financial literacy treatment appears to have led to a reduction in the asymmetric information problem. This is an encouraging finding, suggesting that migrants, if sufficiently motivated, can find ways to access information on financial behaviors of their family back home.

A key lesson of this research is that financial education interventions – and many interventions targeted at transnational households more generally – must confront the challenge of asymmetric information in the household. It should be valuable to study the impacts of ameliorating such problems, for example via joint accounts for physically separate spouses so that both spouses (and particularly the migrant) can monitor savings in the home country. The evidence of asymmetric information problems in transnational households, in the area of savings in particular, is consistent with Ashraf, Aycinena, Martinez, and Yang (2012), who find that offering Salvadoran migrants improved abilities to control and monitor savings of their origin household leads to higher savings in those households in El Salvador. A tantalizing prospect is that the savings impacts of our intervention among Indian migrants in Qatar could have been higher if migrants had been better able to control or monitor their wives' savings. Future research should explore the joint impact of financial literacy interventions and provision of mechanisms to facilitate migrant control over the savings of remittance recipients.

Another important conclusion from our research is that financial literacy interventions can have quite heterogeneous effects in different subpopulations.[33] Indeed, in our study, for key outcomes (e.g., savings) it appeared that the treatment actually had opposite effects in the low- and high-baseline-savings subsamples. One implication of treatment effect heterogeneity in this context could be that offering different, targeted financial literacy interventions to different populations may lead to better outcomes on average than a single undifferentiated offering. Future work could explore more fundamental dimensions (such as present bias or low financial knowledge) that could be the fundamental source of the treatment effect heterogeneity that we found, and estimate impacts of interventions that are better targeted towards the needs of particular subpopulations.

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[33] This finding is reminiscent of the substantial treatment effect heterogeneity (across religion and caste) found by Field, Jayachandran, and Pande (2010) in a financial literacy intervention among Indian women.

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Figure 1: Cumulative distribution functions, migrant own savings

A. Low-baseline-savings sample   B. High-baseline-savings sample
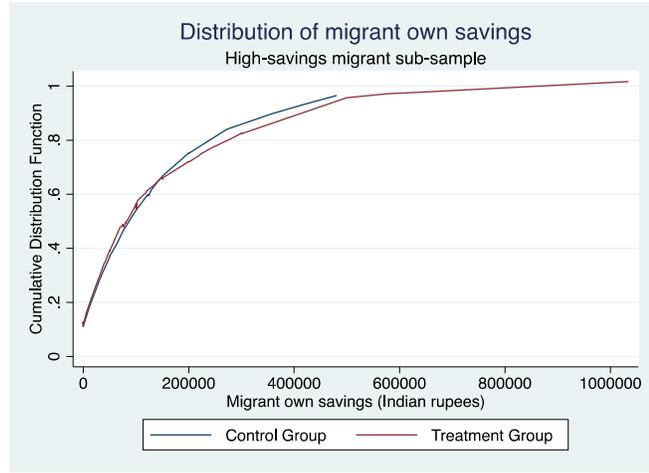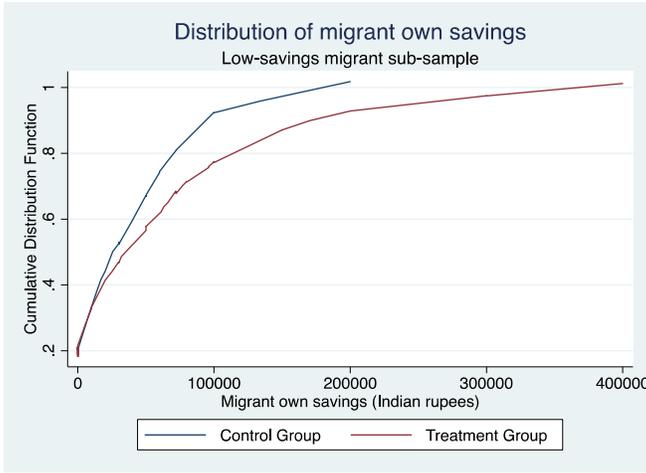
Notes: Distributions shown are for migrants' report of own savings in follow-up survey. Distributions smoothed using a *lowess* estimator.

Figure 2: Cumulative distribution functions, migrant remittances sent

A. Low-baseline-savings sample   B. High-baseline-savings sample
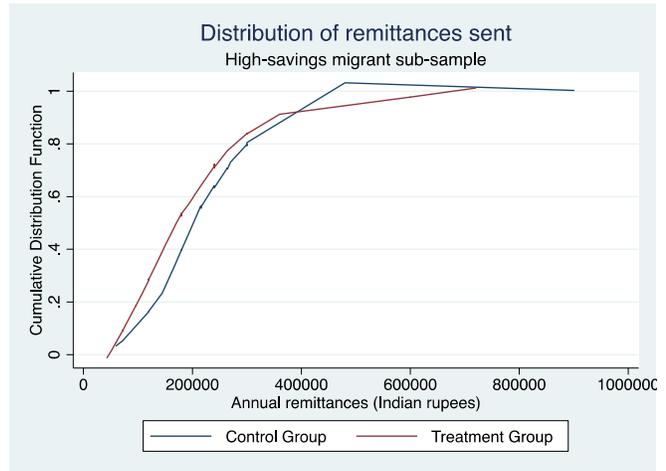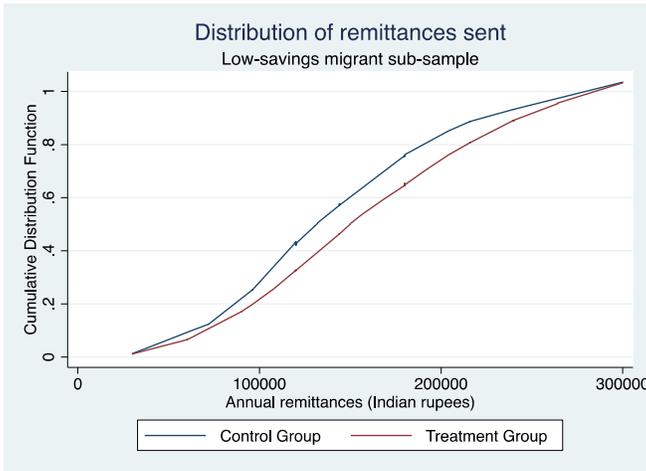
Notes: Distributions shown are for migrants' report in follow-up survey of remittances sent to wife. Distributions smoothed using a *lowess* estimator.

Table 1: Baseline Summary Statistics

Variable	Mean	Std. Dev.	Min.	10th pct.	Median	90th pct.	Max.	Num. Obs.
Invited to financial education seminar (treatment indicator)	0.67	0.47	0	0	1	1	1	200
Migrant age	40.31	7.68	26.00	31.00	40.00	52.50	58.00	200
Migrant years of education	10.22	2.06	4	8	10	12	17	200
Migrant years abroad	11.75	9.70	1.19	2.03	8.41	26.90	39.48	200
Migrant annual income	313,746	138,548	106,629	197,379	272,397	457,871	1,066,294	200
Migrant landholdings in India	39.51	70.95	0.00	5.00	15.50	100.00	650.00	200
Migrant annual remittances	133,967	85,022	18,889	58,106	117,727	216,127	599,242	200
Migrant own savings	121,687	175,641	0	0	50,000	362,799	800,256	200
Migrant joint savings with wife	10,587	64,720	0	0	0	0	675,000	200
Migrant saves regularly (indicator)	0.37	0.48	0	0	0	1	1	200
Wife age	33.08	7.59	19.00	24.00	32.00	43.50	56.00	200
Wife years of education	11.65	2.65	2	9	12	15	17	200
Wife household size in Kerala	4.65	1.84	2	3	4	7	13	200
Wife employed in Kerala	0.13	0.34	0	0	0	1	1	200
Wife's household's annual income in Kerala	5,556	22,841	0	0	0	0	180,000	200
Wife's own savings	206,322	199,071	0	16,100	153,496	466,750	1,202,512	200
Wife's joint savings with migrant	6,910	58,660	0	0	0	0	625,000	200
Wife saves regularly (indicator)	0.47	0.50	0	0	0	1	1	200
Migrant and wife interviewed together at baseline	0.53	0.50	0	0	1	1	1	200
Months between baseline and follow-up surveys	16.94	1.19	14.33	15.75	16.70	18.78	19.90	200

Notes: All variables are from 2010 baseline survey of migrant a his wife. Migrants were all located in Qatar (surveyed by phone). Wives located in in Kerala, India (surveyed by phone). Variables denominated in money terms are in Indian rupees.

Table 2: Balance of baseline variables with respect to treatment

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
Dependent variable:	Migrant age	Migrant years of education	Migrant years abroad	Migrant annual income	Migrant landholdings in India	Migrant annual remittances	Migrant own savings	Migrant joint savings with wife	Migrant saves regularly (indic.)	Wife age	Wife years of education	Wife hh size in Kerala	Wife employed in Kerala	Wife's hh's annual income in Kerala	Wife's own savings	Wife's joint savings with migrant	Wife saves regularly (indic.)	Migrant and wife surveyed together at baseline	Months between baseline and follow-up surveys

Panel A: Full Sample

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
Treatment	2.189	-0.463	2.724	13,114	-4.463	1,807	30,716	-5,003	0.055	1.815	0.043	0.020	-0.055	-2,427	14,874	-4,341	-0.022	-0.114	0.036
	(1.105)**	(0.329)	(1.391)*	(21,086)	(10.633)	(13,095)	(25,810)	(11,342)	(0.072)	(1.070)*	(0.381)	(0.253)	(0.054)	(3,563)	(27,812)	(10,296)	(0.075)	(0.074)	(0.178)
R-squared	0.02	0.01	0.02	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00
Mean dep.var., cont. group	38.848	10.530	9.923	304,959	42.500	132,757	101,108	13,939	0.333	31.864	11.621	4.636	0.167	7,182	196,357	9,818	0.485	0.606	16.913

P-value of F-test: joint signif. of this Panel's Treatment coeffs.: 0.522

Panel B: Migrants with low savings at baseline

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
Treatment	4.642	-0.341	2.960	1,822	-14.349	10,290	181	714	-0.015	4.269	0.097	-0.055	-0.002	387	-12,032	-216	0.039	-0.152	-0.025
	(1.507)***	(0.468)	(1.935)	(20,403)	(14.005)	(14,859)	(3,731)	(493)	(0.081)	(1.442)***	(0.542)	(0.361)	(0.057)	(6,079)	(34,868)	(215)	(0.103)	(0.100)	(0.247)
R-squared	0.08	0.01	0.02	0.00	0.01	0.00	0.00	0.01	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.00
Mean dep.var., cont. group	37.676	10.135	9.830	280,680	47.000	109,528	14,057	0.000	0.189	30.811	11.189	4.865	0.081	8,108	180,118	216	0.405	0.676	16.677

P-value of F-test: joint signif. of this Panel's Treatment coeffs.: 0.203

Panel C: Migrants with high savings at baseline

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
Treatment	-0.443	-0.725	2.479	13,700	6.058	-14,746	23,988	-15,492	0.060	-0.770	-0.172	0.176	-0.135	-4,563	32,438	-11,731	-0.107	-0.052	-0.002
	(1.597)	(0.446)	(2.075)	(38,054)	(15.280)	(21,860)	(44,373)	(24,854)	(0.111)	(1.590)	(0.525)	(0.352)	(0.094)	(3,494)	(44,255)	(22,737)	(0.110)	(0.111)	(0.242)
R-squared	0.00	0.03	0.01	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.03	0.03	0.00	0.00	0.01	0.00	0.00
Mean dep.var., cont. group	40.345	11.034	10.041	335,936	36.759	162,394	212,172	31,724	0.517	33.207	12.172	4.345	0.276	6,000	217,076	22,069	0.586	0.517	17.215

P-value of F-test: joint signif. of this Panel's Treatment coeffs.: 0.583

* significant at 10%; ** significant at 5%; *** significant at 1%

Notes: Each treatment coefficient estimated in a separate OLS regression with robust standard errors. Numbers of observations in Panels A, B, and C are 200, 100, and 100, respectively. All dependent variables reported in baseline survey. All money figures are in Indian rupees. Landholdings expressed in cents (1 cent = 1/100 acre = 40.5 sq. m.).

Table 3: Impacts on financial literacy training and related outcomes

	(1)	(2)	(3)
Dependent variable:	Attended KVS financial education workshop (indicator)	Listened to KVS radio show (indicator)	Attended some financial education workshop (indicator)
Reported by:	Migrant	Migrant	Wife
Panel A: Full Sample			
Treatment	0.446	0.146	0.044
	(0.050)***	(0.078)*	(0.024)*
R-squared	0.29	0.11	0.18
Mean dep.var. in control group	0.030	0.409	0.015
P-value of F-test: joint signif. of this Panel's Treatment coeffs.:			0.000
Panel B: Migrants with low savings at baseline			
Treatment	0.394	0.289	0.017
	(0.081)***	(0.099)***	-0.018
R-squared	0.35	0.27	0.13
Mean dep.var. in control group	0.027	0.351	0.000
P-value of F-test: joint signif. of this Panel's Treatment coeffs.:			0.000
Panel C: Migrants with high savings at baseline			
Treatment	0.492	0.02	0.031
	(0.081)***	-0.133	-0.046
R-squared	0.36	0.18	0.31
Mean dep.var. in control group	0.034	0.483	0.034
P-value of F-test: joint signif. of this Panel's Treatment coeffs.:			0.000

* significant at 10%; ** significant at 5%; *** significant at 1%

Notes: Each treatment coefficient estimated in a separate OLS regression with robust standard errors. Numbers of observations in Panels A, B, and C are 200, 100, and 100, respectively. Each regression includes full set of control variables included in Table 2. All dependent variables are self-reported in the follow-up survey.

Table 4: Impacts on financial practices of migrant

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Dependent variable:	Discussed and planned financial goals with family in Kerala	Made a budget plan	Always or very often…									Only migrant decides on money matters	Only wife decides on money matters	Migrant and wife both decide on money matters
			…review financial goals	…keep record of expenses	…make sure that expenses do not exceed income	…save on a regular basis	…spend less if spend more elsewhere	…make sure that expenses do not exceed budget	…list anticipated expenses in advance	…encourage family in Kerala to follow budget	…remind family of planned spending or savings			
Panel A: Full Sample														
Treatment	0.118	0.028	0.013	-0.11	0.045	0.057	0.109	0.063	0.006	-0.028	-0.005	0.052	-0.23	0.132
	(0.075)	(0.031)	(0.057)	(0.071)	(0.056)	(0.073)	(0.071)	(0.056)	(0.078)	(0.070)	(0.053)	(0.070)	(0.065)***	(0.069)*
R-squared	0.14	0.18	0.26	0.13	0.17	0.13	0.17	0.26	0.11	0.15	0.26	0.12	0.21	0.16
Mean dep.var. in control grou	0.485	0.045	0.182	0.394	0.818	0.591	0.258	0.167	0.364	0.288	0.167	0.258	0.333	0.273
											P-value of F-test: joint signif. of this Panel's Treatment coeffs.:			0.004
Panel B: Migrants with low savings at baseline														
Treatment	0.196	-0.037	0.052	-0.094	0.016	0.115	0.099	0.083	-0.067	0.04	-0.015	0.024	-0.181	0.129
	(0.112)*	(0.056)	(0.081)	(0.110)	(0.081)	(0.115)	(0.098)	(0.085)	(0.116)	(0.099)	(0.074)	(0.102)	(0.097)*	(0.114)
R-squared	0.24	0.16	0.27	0.14	0.12	0.24	0.20	0.14	0.16	0.18	0.20	0.24	0.31	0.29
Mean dep.var. in control grou	0.405	0.054	0.108	0.378	0.838	0.459	0.189	0.108	0.297	0.189	0.108	0.270	0.297	0.270
											P-value of F-test: joint signif. of this Panel's Treatment coeffs.:			0.092
Panel C: Migrants with high savings at baseline														
Treatment	0.101	0.076	-0.03	-0.101	0.109	-0.029	0.147	0.101	0.031	-0.074	0.024	0.106	-0.27	0.115
	(0.105)	(0.045)*	(0.094)	(0.111)	(0.086)	(0.100)	(0.106)	(0.081)	(0.133)	(0.106)	(0.086)	(0.109)	(0.096)***	(0.103)
R-squared	0.24	0.27	0.39	0.23	0.38	0.16	0.30	0.43	0.14	0.29	0.34	0.17	0.33	0.15
Mean dep.var. in control grou	0.586	0.034	0.276	0.414	0.793	0.759	0.345	0.241	0.448	0.414	0.241	0.241	0.379	0.276
											P-value of F-test: joint signif. of this Panel's Treatment coeffs.:			0.000

* significant at 10%; ** significant at 5%; *** significant at 1%

Notes: Each treatment coefficient estimated in a separate OLS regression with robust standard errors. Numbers of observations in Panels A, B, and C are 200, 100, and 100, respectively. Each regression includes full set of control variables included in Table 2. All dependent variables reported in follow-up survey.

Table 5: Impacts on financial practices of wife

Dependent variable:	(1) Made a budget plan	(2) …review financial goals	(3) …keep record of expenses	(4) …make sure that expenses do not exceed	(5) …save on a regular basis	(6) …spend less if spend more elsewhere	(7) …make sure that expenses do not exceed	(8) …list anticipated expenses in advance	(9) …encourage family in Kerala to follow budget	(10) …remind family of planned spending or savings	(11) Only migrant decides on money matters	(12) Only wife decides on money matters	(13) Migrant and wife both decide on money matters
					Always or very often…								
Panel A: Full Sample													
Treatment	0.119	0.003	0.004	0.025	0.197	0.068	0.091	0.176	0.159	0	-0.078	-0.016	0.109
	(0.049)**	(0.058)	(0.073)	(0.050)	(0.073)***	(0.064)	(0.059)	(0.075)**	(0.062)**	(0.062)	(0.069)	(0.069)	(0.065)*
R-squared	0.20	0.24	0.06	0.13	0.17	0.19	0.12	0.11	0.19	0.08	0.19	0.09	0.22
Mean dep.var. in control group	0.121	0.197	0.697	0.864	0.500	0.242	0.152	0.348	0.182	0.197	0.348	0.258	0.197
											P-value of F-test: joint signif. of this Panel's Treatment coeffs.:		0.022
Panel B: Migrants with low savings at baseline													
Treatment	0.086	0.023	-0.087	0.015	0.278	0.13	0.116	0.111	0.171	-0.04	-0.23	0.058	0.188
	(0.056)	(0.088)	(0.104)	(0.088)	(0.114)**	(0.090)	(0.086)	(0.116)	(0.071)**	(0.102)	(0.101)**	(0.084)	(0.095)*
R-squared	0.15	0.33	0.22	0.19	0.26	0.27	0.12	0.17	0.24	0.15	0.36	0.33	0.37
Mean dep.var. in control group	0.054	0.162	0.703	0.811	0.378	0.135	0.081	0.324	0.054	0.189	0.378	0.270	0.135
											P-value of F-test: joint signif. of this Panel's Treatment coeffs.:		0.021
Panel C: Migrants with high savings at baseline													
Treatment	0.148	-0.045	0.053	0.025	0.165	-0.004	0.091	0.236	0.089	0.068	0	0.001	-0.04
	(0.090)	(0.085)	(0.110)	(0.060)	(0.104)	(0.108)	(0.102)	(0.110)**	(0.110)	(0.091)	(0.104)	(0.108)	(0.107)
R-squared	0.27	0.34	0.14	0.17	0.25	0.23	0.15	0.21	0.24	0.10	0.24	0.14	0.25
Mean dep.var. in control group	0.207	0.241	0.690	0.931	0.655	0.379	0.241	0.379	0.345	0.207	0.310	0.241	0.276
											P-value of F-test: joint signif. of this Panel's Treatment coeffs.:		0.127

* significant at 10%; ** significant at 5%; *** significant at 1%

Notes: Each treatment coefficient estimated in a separate OLS regression with robust standard errors. Numbers of observations in Panels A, B, and C are 200, 100, and 100, respectively. Each regression includes full set of control variables included in Table 2. All dependent variables reported in follow-up survey. All dependent variables in table are indicator variables.

Table 6: Impacts on committed allocations of potential winnings in lottery

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
<u>Dependent variable:</u>	Home and land investment	Medical expenses	Education expenses	Business expenses	Committed savings	Long-term invest.	Other	Home and land investment	Medical expenses	Education expenses	Business expenses	Committed savings	Long-term invest.	Other
<u>Respondent:</u>	Migrant	Migrant	Migrant	Migrant	Migrant	Migrant	Migrant	Wife	Wife	Wife	Wife	Wife	Wife	Wife
Panel A: Full Sample														
Treatment	-949	441	-363	-75	953	295	-359	564	152	-1233	431	367	85	-484
	(1542)	(286)	(549)	(323)	(1554)	(641)	(669)	(1427)	(512)	(834)	(511)	(1499)	(428)	(485)
R-squared	0.16	0.08	0.16	0.21	0.07	0.12	0.23	0.18	0.05	0.16	0.11	0.12	0.11	0.25
Mean dep.var., cont. group	8636	0	909	606	8030	909	909	6667	303	2121	606	9394	303	606

P-value of F-test: joint signif. of Panel A Treatment coeffs. (cols 1-7): 0.617   *P-value of F-test: joint signif. of Panel A Treatment coeffs. (cols 8-14):* 0.594

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Panel B: Migrants with low savings at baseline														
Treatment	-4025	288	404	-102	5139	-504	-1350	-939	785	-105	469	1083	-293	-1297
	(2,318)*	(328)	(602)	(286)	(2,106)**	(1117)	(1112)	(2091)	(595)	(1438)	(788)	(2166)	(831)	(935)
R-squared	0.25	0.12	0.10	0.54	0.17	0.15	0.37	0.31	0.13	0.15	0.19	0.24	0.18	0.36
Mean dep.var., cont. group	11081	0	541	541	5676	1081	1081	7568	0	1622	541	8649	541	1081

P-value of F-test: joint signif. of Panel B Treatment coeffs. (cols 1-7): 0.035   *P-value of F-test: joint signif. of Panel A Treatment coeffs. (cols 8-14):* 0.410

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Panel C: Migrants with high savings at baseline														
Treatment	3005	570	-330	-177	-4554	1504	-19	1285	-724	-1807	253	2	672	337
	(2358)	(515)	(713)	(678)	(2,339)*	(916)	(813)	(2402)	(917)	(1211)	(728)	(2483)	(492)	(485)
R-squared	0.24	0.15	0.39	0.21	0.22	0.28	0.32	0.24	0.20	0.32	0.19	0.21	0.41	0.36
Mean dep.var., cont. group	5517	0	1379	690	11034	690	690	5517	690	2759	690	10345	0	0

P-value of F-test: joint signif. of Panel C Treatment coeffs. (cols 1-7): 0.100   *P-value of F-test: joint signif. of Panel A Treatment coeffs. (cols 8-14):* 0.468

* significant at 10%; ** significant at 5%; *** significant at 1%

Notes: Each treatment coefficient estimated in a separate OLS regression with robust standard errors. Numbers of observations in Panels A, B, and C are 200, 100, and 100, respectively. Each regression includes full set of control variables included in Table 2. All dependent variables reported in follow-up survey. Each dependent variable is an allocation (in Indian rupees) of possible respondent winnings in a lottery. Lottery is among study respondents and was implemented by the research project. Respondents asked to allocate 20,000 rupees across several categories, and in case of winning the lottery the research project would enforce th allocation (would provide the winnings in kind according to allocation). "Cash" was not an allowable allocation. For "committed savings" option, respondents were told that a special savings account would be opened in Kerala where funds could only be withdrawn once a target amount was reached that would then be used to purchase a specified item (saved funds could not just be withdrawn in cash). Respondent had to specify item(s) to be purchased if choosing "other" category.

Table 7: Impacts on savings

	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)
Dependent variable:	Own savings	Joint savings with spouse	Report of spouse's own savings	Total household savings (sum of savings in cols. 1-3)		Own savings	Joint savings with spouse	Report of spouse's own savings	Total household savings (sum of savings in cols. 5-7)
Respondent:	Migrant	Migrant	Migrant	Migrant		Wife	Wife	Wife	Wife
Panel A: Full Sample									
Treatment	-9,418	11,962	41,716	44,259		15,474	12,858	-25,871	2,462
	(19,192)	(14,103)	(32,168)	(43,795)		(32,385)	(10,339)	(23,596)	(44,784)
R-squared	0.36	0.12	0.30	0.38		0.33	0.21	0.27	0.36
Mean dep.var., cont. group	92,903	16,106	302,282	411,291		344,558	11,427	51,482	407,467
			P-value of F-test: joint signif. of Treatment coeffs. (cols. 1-4):	0.309				*P-value of F-test: joint signif. of Treatment coeffs. (cols. 5-8):*	0.337
Panel B: Migrants with low savings at baseline									
Treatment	25,886	23,225	96,179	145,290		21,113	6,658	18,495	46,266
	(13,897)*	(24,767)	(45,295)**	(52,833)***		(36,731)	(8,467)	(19,211)	(43,142)
R-squared	0.34	0.31	0.44	0.48		0.47	0.51	0.18	0.49
Mean dep.var., cont. group	35,742	6,502	234,793	277,037		294,282	8,216	9,476	311,974
			P-value of F-test: joint signif. of Treatment coeffs. (cols. 1-4):	0.020				*P-value of F-test: joint signif. of Treatment coeffs. (cols. 5-8):*	0.497
Panel C: Migrants with high savings at baseline									
Treatment	-36,276	5,435	-34,462	-65,303		-16,513	16,401	-73,733	-73,845
	(36,901)	(16,555)	(51,017)	(66,068)		(57,183)	(19,665)	(45,865)	(85,764)
R-squared	0.39	0.17	0.39	0.47		0.31	0.24	0.39	0.38
Mean dep.var., cont. group	165,833	28,359	388,389	582,580		408,703	15,524	105,076	529,303
			P-value of F-test: joint signif. of Treatment coeffs. (cols. 1-4):	0.586				*P-value of F-test: joint signif. of Treatment coeffs. (cols. 5-8):*	0.178

* significant at 10%; ** significant at 5%; *** significant at 1%

Notes: Each treatment coefficient estimated in a separate OLS regression with robust standard errors. Numbers of observations in Panels A, B, and C are 200, 100, and 100, respectively. Each regression includes full set of control variables included in Table 2. All dependent variables reported in follow-up survey. All savings figures are in Indian rupees. Savings include liquid savings (cash plus savings in banks and chitty funds) plus value of financial assets (gold, stocks, life insurance and pension plan, and other), whether in Qatar or India. Savings of different kinds and locations were reported separately in survey, converted to Indian rupees, and totaled.

Table 8: Impacts on remittances

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dependent variable:	Remittances sent to wife (annual)	Value of in-kind transfers to wife (annual)	Sends remittances at least once a month (indicator)	Sends remittances every two months (indicator)	Sends remittances less than every two months (indicator)	Remittances received from husband (annual)	Value of in-kind transfers from husband (annual)	Receives remittances at least once a month (indicator)	Receives remittances every two months (indicator)	Receives remittances less than every two months (indicator)
Respondent:	Migrant	Migrant	Migrant	Migrant	Migrant	Wife	Wife	Wife	Wife	Wife
Panel A: Full Sample										
Treatment	-11,363	1,747	-0.01	0.01	0.00	-662	913	0.01	0.01	-0.02
	(14,473)	(1,746)	(0.048)	(0.046)	(0.017)	(10,170)	(617)	(0.054)	(0.048)	(0.025)
R-squared	0.41	0.17	0.13	0.11	0.05	0.40	0.17	0.14	0.18	0.05
Mean dep.var., cont. group	179,371	8,339	0.879	0.106	0.015	134,394	1,667	0.864	0.106	0.030
				P-value of F-test: joint signif. of Treatment coeffs. (cols. 1-6):		0.702	*value of F-test: joint signif. of Treatment coeffs. (cols. 7-12):*			0.487
Panel B: Migrants with low savings at baseline										
Treatment	19,279	-1,513	0.02	0.01	-0.03	17,588	1,183	-0.02	0.05	-0.03
	(10,803)*	(2,187)	(0.072)	(0.069)	(0.029)	(10,391)*	(987)	(0.075)	(0.076)	(0.029)
R-squared	0.39	0.22	0.21	0.19	0.16	0.42	0.21	0.40	0.39	0.16
Mean dep.var., cont. group	139,310	8,783	0.865	0.108	0.027	104,189	1,649	0.838	0.135	0.027
				P-value of F-test: joint signif. of Treatment coeffs. (cols. 1-6):		0.094	*value of F-test: joint signif. of Treatment coeffs. (cols. 7-12):*			0.163
Panel C: Migrants with high savings at baseline										
Treatment	-37,006	4,360	-0.01	-0.03	0.04	-22,456	759	0.05	-0.05	-0.01
	(25,195)	(2,666)	(0.075)	(0.072)	(0.026)	(17,759)	(863)	(0.072)	(0.061)	(0.039)
R-squared	0.52	0.31	0.19	0.20	0.08	0.49	0.32	0.15	0.20	0.13
Mean dep.var., cont. group	230,484	7,773	0.897	0.103	0.000	172,931	1,690	0.897	0.069	0.034
				P-value of F-test: joint signif. of Treatment coeffs. (cols. 1-6):		0.068	*value of F-test: joint signif. of Treatment coeffs. (cols. 7-12):*			0.445

* significant at 10%; ** significant at 5%; *** significant at 1%

Notes: Each treatment coefficient estimated in a separate OLS regression with robust standard errors. Numbers of observations in Panels A, B, and C are 200, 100, and 100, respectively. Each regression includes full set of control variables included in Table 2. All dependent variables reported in follow-up survey. Remittance figures are in Indian rupees.

ONLINE APPENDIX
(NOT FOR PUBLICATION)

for

Transnational Household Finance:
A Field Experiment on the Cross-Border Impacts of Financial Education for
Migrant Workers

By Ganesh Seshan (Georgetown University) and Dean Yang (University of Michigan)

Appendix 1: Workshop Invitation Script

The following text is the script used by the survey firm to contact subjects by phone and to invite them to attend the financial education workshop.

Thank you for participating in the Qatar Study of Kerala Families survey. As an exclusive service to you, we would like to invite you to a financial strategies workshop to help you better manage your finances and work towards your financial goals. The workshop titled "*Oru Nalla Nalekku Vendi*" will be conducted by Mr. K.V. Shamshudeen, chairman of a Dubai-based Pravashi Bandhu Welfare Trust, who for the past decade has been giving similar workshops to Malayalam expatriates in the Gulf. His workshops are well known and well-attended so this is an opportunity not to be missed.

The workshop will be held on Friday, Nov 26th at the Hotel Crystal Palace.

The program will begin at 5:30pm and dinner will be provided. We expect the workshop to last 3 hours. Please note that space for the workshop is limited and is by invitation only. We are not able to host all the participants that we interviewed previously. In the future we may hold additional workshops and inform them.

Can we count on your attendance to the workshop on Friday, Nov 26th? If yes, please make sure that you show up promptly at 5:30pm at the Hotel Crystal Palace. If not, it would help us to understand why you can't make it.

Note: While migrants were told the workshop would last for 3 hours, total time in attendance was 5 hours due to the dinner held afterwards.

Appendix 2: Contents of the Financial Education Workshop

The financial education workshop entitled "Towards a Better Tomorrow" was hosted by Mr. K.V. Shamsudheen (KVS) on Friday, November 26, 2010 in Doha, Qatar. The session was conducted in Malayalam, the local language of the people of Kerala, India. It lasted 3 hours, and was followed by a 2-hour dinner.

Major themes of the workshop were as follows:

1. Introduction
   - How migration and subsequently remittances sent home has benefited the family back home.

- Very few migrants working in the region have accumulated sufficient financial resources to maintain the same standard of living for their families when they permanently return to India.
- Examples were given where migrants were told to leave again to work abroad by their family members who did not want to compromise their comfortable living standards previously sustained by remittances.
- Lessons learnt from the workshop should be shared with friends and families.

2. Goal Planning
   - Everyone needs to set specific, achievable and realistic goals and work towards them. There should be dateline for each goal.
   - Importance of maintaining a positive outlook or attitude and having good work ethics. Each migrant is an ambassador for his country.
   - Need to also lead a healthy lifestyle – give up bad habits such as smoking[1].

3. Role of Family in Managing Remittances
   - Migrant workers in the Gulf tend to work for the benefit of their families while sacrificing their own comforts. Examples provided of lavish homes built with rooms that are unoccupied by family members back home. Associated with this was the problem of obtaining large loans and consequently facing high indebtedness.
   - Importance that the family back home not to spend excessively out of the remittance received. The family must be encouraged to save for future medical expenses, education, marriage (of daughters) and for retirement.
   - In order to change the attitude of the family, the migrant must give them a realistic picture of his real circumstances and lifestyle abroad and not sugar-coat his actual living conditions.
   - Family back home must be instructed to save a portion of the remittances sent and not treat the entire amount received as expendable.

4. Financial Planning, Budgeting and Savings
   - Migrants must plan how to use their earnings by first taking stock of their expenditures in Qatar and then critically look for ways to reduce expenses and save the difference.
   - Migrant and families must live within their means and not spend excessively.
   - Migrant must discuss with the wife back home about starting a monthly budget.
   - The budget must carefully note every expense by the household and look for ways to save money but cutting back on non-essential expenses. The same amount of remittances can be sent back prior to creating the budget but now the family must save a portion of it.
   - The migrant must also prepare and follow a budget for his expenses in Qatar.

5. Investment Strategies
   - Examine various investment options looking at the risk/reward trade-offs. These include fixed deposits, gold, real estate, stock market and life insurance.
   - Business is an option but only if it pursued with proper recording and bookkeeping.

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[1] The speaker asked who in the audience was prepared to take an oath to end smoking (and implicitly to save the difference). Some participants stood up and made a pledge.

Appendix 3: Self-Reported Impact of Financial Education Workshop on Participants

We were interested in documenting what lessons migrants who attended the financial education workshop took away from the workshop. At the follow-up survey which took place more than 12 months after the workshop, the participants were asked to choose which aspects of their financial lives were positively affected by the workshop from list read out to them by their interviewer and to rank order their choices. Appendix Figure 1 provides a graphical representation of the items selected as being the most significant influence. The top three most ranked lessons were as follows:
1. Having regular savings (ranked first by 33% of the participants)
2. Spending wisely and avoiding excessive expenditures (ranked first by 31% of the participants)
3. Managing debt (ranked first by 17% of the participants)

Appendix 4: Variable definitions

Data used in this paper came from two survey rounds. A baseline survey was conducted between August and November 2010 and a follow-up survey from December 2011 to April 2012. All figures in monetary terms are in Indian rupees (INR).

Baseline characteristics (from baseline survey)

Migrant age is respondent's age in years.

Migrant years of education is the respondent's years of completed schooling.

Migrant years abroad is the respondent's years working abroad.

Migrant's annual income is the respondent's annual income in Qatar converted to Indian rupees.

Migrant's landholding in India is the size of the respondent's land holdings in India, expressed in cents. One cent is equal to 1/100 acre or 40.5 square meters.

Migrant's annual remittances is the respondent's annual remittances sent to his household in India. Annual remittances equal frequency of remittance transactions over the previous 12 months multiplied by the average amount sent per remittance transaction. If the migrant sends remittances infrequently, we use the total amount he reports sending in the past 12 months.

Migrant own savings is the sum of cash, bank and postal account balances, chitty fund (ROSCA) balance, value of life insurance or pension plan contributions, value of gold, market value of stocks/share and other financial assets owned by the respondent in Qatar and in India. Gold value equals gold weight in grams multiplied with the monthly price of gold per gram at the time of the baseline interview.

2

Migrant joint savings with wife is the total amount of savings the respondent reports holding jointly with his wife.

Migrant saves regularly equals 1 if the respondent reports putting money aside to save on a regular basis, and 0 if not.

Wife's age is respondent's age in years.

Wife years of education is the respondent's years of completed schooling.

Wife household size in Kerala is the number of people counted as members of the respondent's household in Kerala, India at the time of the baseline survey. This excludes members who are working abroad.

Wife employed in Kerala equals 1 if the wife was working at the time of the baseline survey, and 0 if not.

Wife's household annual income in Kerala is the sum of income by people counted as members of the respondent's household in Kerala.

Wife's own savings is the sum of cash, bank and postal account balances, chitty fund (ROSCA) balance, value of life insurance or pension plan contributions, value of gold, market value of stocks/share and other financial assets owned by the respondent in India. Gold value equals gold weight in grams multiplied with the monthly price of gold per gram at the time of the baseline interview.

Wife's joint savings with migrant is the total amount of savings the respondent reports holding jointly with her migrant husband.

Wife saves regular equals 1 if the respondent reports putting money aside to save on a regular basis, and 0 if not.

Migrant and wife interviewed together at baseline equals 1 if the migrant and wife were interviewed together so that each could know each other's responses.

Months between baseline and follow-up surveys is the number of months between baseline and follow-up survey interviews with the migrant and his wife.

Variables from follow-up survey:

Attended KVS financial education workshop equals 1 if the migrant self reports in the follow-up survey as having attended K.V. Shamsudheen's financial education workshop on November 26, 2010, and 0 if not.

Listened to KVS radio show equals 1 if the migrant reports listening to K.V. Shamsudheen's radio show on money matters which is broadcasted from the United Arab Emirates, and 0 if not.

Attended some financial education workshop equals 1 if the migrant wife's reports attending a financial education workshop in India after the workshop in Qatar concluded on November 26, 2010, and 0 if not.

Financial practices reported by migrant in follow-up survey:

Discussed and plan financial goals with family in Kerala equals 1 if migrant reports discussing and planning financial goals with household in Kerala, and 0 if not.

Made a budget plan equals 1 if the migrant reports having worked on a budget plan as to how much to spend and save with his income, and 0 if not.

Always or very often...
    ...review financial goals equals 1 if the migrant reports from a 4-point scale either always or very often reviewing his financial goals, and 0 if not. The 4-point scale used is always, very often, sometimes or never.
    ...keep record of expenses equals 1 if the migrant reports either always or very often keeping a record of what he spends money on, and 0 if not.
    …make sure that expenses do not exceed income equals 1 if the migrant reports either always or very often making certain that expenses are not more than income, and 0 if not.
    ..put aside money to save on a regular basis equals 1 if the migrant reports either always or very often putting aside money to save regularly, and 0 if not.
    ..spend less if spend more elsewhere equals 1 if the migrant reports either always or very often spending less on one or more items if more has been spend on something else, and 0 if not.
    ...make sure that expenses do not exceed budget equals 1 if the migrants reports either always or very often making sure that expenses do not exceed what was budgeted for, and 0 if not.
    ..list anticipated expenses in advance equals 1 if the migrant reports either always or very often listing in advance all expense items and anticipated amount for each, and 0 if not.
    …encourage family in Kerala to follow budget equals 1 if the migrant reports either always or very often encouraging family in Kerala to stick to a budget, and 0 if not.
    …remind family of planned spending or savings equals 1 if the migrant reports either always or very often reminding family in Kerala of what was planned spending or savings as per budget, and 0 if not.

Migrant decides on money matters equals 1 if the migrant reports that he only decides on whether money will be saved or spent on something for the household in India, and 0 if not.

Wife decides on money matters equals 1 if the migrant reports that his wife only decides on whether money will be saved or spent on something for the household in Kerala, and 0 if not.

Migrant and wife both decide on money matters equals 1 if the migrant reports that only he and his wife jointly decide on whether money will be saved or spent on something for the household in Kerala, and 0 if not.

Financial practices reported by migrant's wife in follow-up survey:

Made a budget plan equals 1 if migrant's wife reports that her household having worked on a budget plan as to how much to spend and save in Kerala, and 0 if not.

Always or very often..
    ...review financial goals equals 1 if the wife reports from a 4-point scale either always or very often reviewing her financial goals, and 0 if not. The 4-point scale used is always, very often, sometimes or never.
    ...keep record of expenses equals 1 if the wife reports either always or very often keeping a record of what she spends money on, and 0 if not.
    …make sure that expenses do not exceed income equals 1 if the wife reports either always or very often making certain that expenses are not more than income, and 0 if not.
    ..put aside money to save on a regular basis equals 1 if the wife reports either always or very often putting aside money to save regularly, and 0 if not.
    ..spend less if spend more elsewhere equals 1 if the wife reports either always or very often spending less on one or more items if more has been spend on something else, and 0 if not.
    ...make sure that expenses do not exceed budget equals 1 if the wife reports either always or very often making sure that expenses do not exceed what was budgeted for, and 0 if not.
    ..list anticipated expenses in advance equals 1 if the wife reports either always or very often listing in advance all expense items and anticipated amount for each, and 0 if not.
    …encourage family in Kerala to follow budget equals 1 if the wife reports either always or very often encouraging family in Kerala to stick to a budget, and 0 if not.
    …remind family of planned spending or savings equals 1 if the wife reports either always or very often reminding family in Kerala of what was planned spending or savings as per budget, and 0 if not.

Migrant decides on money matters equals 1 if the wife reports that her migrant husband only decides on whether money will be saved or spent on something for the household in India, and 0 if not.

Wife decides on money matters equals 1 if the wife reports that she only decides on whether money will be saved or spent on something for the household in Kerala, and 0 if not.

Migrant and wife both decide on money matters equals 1 if the wife reports that only she and her migrant husband jointly decide on whether money will be saved or spent on something for the household in Kerala, and 0 if not.

Savings goals reported by migrant from follow-up survey:

Saves regularly equals 1 if the migrant reports putting money aside to save on a regular basis, and 0 if not.

Satisfied with level of savings equals 1 if the migrant reports being either very satisfied or satisfied with his own savings and those held jointly with his wife, and 0 if not. The 5-point scale used is very satisfied, satisfied, not very satisfied, not satisfied at all, and no plan for savings.

Purpose of savings is...
    ...to buy land equals 1 if the migrant reports planning to buy land with his own savings or savings held jointly with his wife, and 0 if not.
    ...to buy or build a home equals 1 if the migrant reports planning to buy or build a home with his own savings or savings held jointly with his wife, and 0 if not.
    ...to buy vehicle equals 1 if the migrant reports planning to buy a vehicle with his own savings or savings held jointly with his wife, and 0 if not.
    ...to pay for children's education equals 1 if the migrant reports planning to pay for his children's education with his own savings or savings held jointly with his wife, and 0 if not.
    ...to pay for marriage expenses equals 1 if the migrant reports planning to pay for his children's marriage expenses (including dowry) with his own savings or savings held jointly with his wife, and 0 if not.
    ...to pay medical expenses equals 1 if the migrant reports planning to pay for medical expenses with his own savings or savings held jointly with his wife, and 0 if not.
    ...for emergencies equals 1 if the migrant reports planning to meet emergency expenses with his own savings or savings held jointly with his wife, and 0 if not.
    ...for emergencies equals 1 if the migrant reports planning to meet emergency expenses with his own savings or savings held jointly with his wife, and 0 if not.
    ...for retirement equals 1 if the migrant reports planning for retirement with his own savings or savings held jointly with his wife, and 0 if not.
    ...to start or expand a business equals 1 if the migrant reports planning to start or expand a business with his own savings or savings held jointly with his wife, and 0 if not.

Savings goals reported by migrant's wife from follow-up survey:

Saves regularly equals 1 if the migrant's wife reports putting money aside to save on a regular basis, and 0 if not.

Satisfied with level of savings equals 1 if the wife reports being either very satisfied or satisfied with her own savings and those held jointly with her migrant husband, and 0 if not. The 5-point scale used is very satisfied, satisfied, not very satisfied, not satisfied at all, and no plan for savings.

Purpose of savings is...
    ...to buy land equals 1 if the wife reports planning to buy land with her own savings or savings held jointly with her husband, and 0 if not.
    ...to buy or build a home equals 1 if the wife reports planning to buy or build a home with her own savings or savings held jointly with her husband, and 0 if not.
    ...to buy vehicle equals 1 if the wife reports planning to buy a vehicle with her own savings or savings held jointly with her husband, and 0 if not.
    ...to pay for children's education equals 1 if the wife reports planning to pay for her children's education with her own savings or savings held jointly with her husband, and 0 if not.

...to pay for marriage expenses equals 1 if the wife reports planning to pay for her children's marriage expenses (including dowry) with her own savings or savings held jointly with her husband, and 0 if not.

...to pay medical expenses equals 1 if the wife reports planning to pay for medical expenses with her own savings or savings held jointly with her husband, and 0 if not.

…for emergencies equals 1 if the wife reports planning to meet emergency expenses with her own savings or savings held jointly with her husband, and 0 if not.

...for emergencies equals 1 if the wife reports planning to meet emergency expenses with her own savings or savings held jointly with her husband, and 0 if not.

...for retirement equals 1 if the wife reports planning for retirement with her own savings or savings held jointly with her husband, and 0 if not.

...to start or expand a business equals 1 if the wife reports planning to start or expand a business with her own savings or savings held jointly with her husband, and 0 if not.

Committed allocation of potential winnings in a lottery for 20,000 rupees from follow-up survey: (also see Appendix 5 for exact script and data collection form for incentivized budget allocation and savings excerise)

Home and land investment is the sum of the amount allocated of potential lottery winnings by the migrant (and separately by his wife) to mortgage payment on a home or land, down payment on a home or land and construction of a home.

Medical expenses is the amount allocated of potential lottery winnings by the migrant (and separately by his wife) to medical expenses.

Education expenses is the amount allocated of potential lottery winnings by the migrant (and separately by his wife) to children's education expenses.

Business expenses is the amount allocated of potential lottery winnings by the migrant (and separately by his wife) to children's education expenses.

Committed savings is the amount allocated of potential lottery winnings by the migrant (and separately by his wife) to savings. Savings is the total amount summed across lottery allocation to save for buying a home, buying land, buying a vehicle, purchasing gold/jewelry, future education expenses, future marriage expenses and retirement.

Long-term investment is the amount allocated of potential lottery winnings by the migrant (and separately by his wife) to long-term investments such as time (fixed) deposits for more than one year, mutual funds or stock/shares.

Other is the amount allocated of potential lottery winnings by the migrant (and separately by his wife) to other specified purposes.

Savings variables from follow-up survey:

Own savings is the sum of cash, bank and postal account balances, chitty fund (ROSCA) balance, value of life insurance or pension plan contributions, value of gold, market value of stocks/share and other financial assets reported by the migrant (wife) as his (her) own. Gold value equals gold weight in grams multiplied with the monthly price of gold per gram at the time of the follow-up interview.

Jointly savings with spouse is the sum of cash, bank and postal account balances, chitty fund (ROSCA) balance, value of life insurance or pension plan contributions, value of gold, market value of stocks/share and other financial assets reported by the migrant (wife) as being held jointly with his wife (her husband). Gold value equals gold weight in grams multiplied with the monthly price of gold per gram at the time of the follow-up interview.

Report of spouse's own savings with spouse is the sum of cash, bank and postal account balances, chitty fund (ROSCA) balance, value of life insurance or pension plan contributions, value of gold, market value of stocks/share and other financial assets reported by the migrant (wife) as being owned by his wife (her husband). Gold value equals gold weight in grams multiplied with the monthly price of gold per gram at the time of the follow-up interview.

Total household savings is the sum of own savings, joint savings with spouse and spouse's own savings reported by the migrant (wife).

Difference between respondent's own and spouse's report of spouse's own savings in...

   Cash is the migrant's (wife's) report of wife's (migrant's) own cash savings less the wife's (migrant's) report of her (his) own cash savings.
   Bank accounts is the migrant's (wife's) report of wife's (migrant's) own savings in bank and postal accounts less the wife's (migrant's) report of her (his) own savings in bank and postal accounts.
   Chitty funds is the migrant's (wife's) report of wife's (migrant's) own chitty funds balance less the wife's (migrant's) report of her (his) own chitty funds balance.
   Life insurance and pension plans is the migrant's (wife's) report of wife's (migrant's) life insurance and pension plan balance less the wife's (migrant's) report of her (his) own life insurance and pension plan balance.
   Gold is the migrant's (wife's) report of wife's (migrant's) own gold holdings less the wife's (migrant's) report of her (his) own gold holdings. Gold is valued using the reported weight in grams multiplied by the price per gram at the time of the follow-up interview.
   Other financial assets is the migrant's (wife's) report of wife's (migrant's) own other financial assets less the wife's (migrant's) report of her (his) own other financial assets.

Remittance variables from follow-up survey:

Remittances sent to wife (annual) is the migrant's annual remittances sent to his wife in Kerala, India. Annual remittances equal frequency of remittance transactions over the previous 12 months multiplied by the average amount sent per remittance transaction. If the migrant sends

remittances infrequently, we use the total amount he reports sending over the 12 months prior to the follow-up survey.

Value of in-kind transfers to wife (annual) is the value of non-cash items the migrant reports sending to the wife in Kerala, India over the 12 months prior to the follow-up survey.

Send remittances at least once a month equals 1 if the migrant sends remittances to household in India at least one a month over the 12 months prior to the follow-up survey.

Send remittances every two months equals 1 if the migrant sends remittances to household in India once every two month over the 12 months prior to the follow-up survey.

Send remittances less than every two months equals 1 if the migrant sends remittances to household in India less than once every two months over the 12 months prior to the follow-up survey.

Remittances received by wife (annual) is the wife's report of annual remittances received from her migrant husband. Annual remittances equal frequency of remittance transactions over the previous 12 months multiplied by the average amount received per remittance transaction. If the wife receives remittances infrequently, we use the total amount she reports receiving over the 12 months prior to the follow-up survey.

Value of in-kind transfers from husband (annual) is the value of non-cash items the wife reports receiving from her migrant husband over the 12 months prior to the follow-up survey.

Receives remittances at least once a month equals 1 if the wife receives remittances from husband at least one a month over the 12 months prior to the follow-up survey.

Receives remittances every two months equals 1 if the wife receives remittances from husband once every two month over the 12 months prior to the follow-up survey.

Receives remittances less than every two months equals 1 if the wife receives remittances from husband less than once every two months over the 12 months prior to the follow-up survey.

Other variables from follow-up survey:

Own expenses in Qatar is the migrant's annual expenses in Qatar. Annual expenses equals monthly expense reported by the migrant multiplied by 12.

Number of new loans taken out (in Qatar or India) is migrant's report on the number of new loans obtained by the migrant or household members in India after the financial education workshop date on November 26th, 2010.

Total owed on loan outstanding (in Qatar or India) is the migrant's report of the total amount owed on new loans obtained by the migrant or his household members after the financial education workshop date on November 26th, 2010.

Household expenses in India is the household's annual expenses in Kerala, India. Annual expenses equals monthly expense reported by the wife multiplied by 12.

Number of new loans taken out (in India) is the wife's report on the number of new loans obtained by the migrant or household members in India after the financial education workshop date on November 26th, 2010.

Total owed on loan outstanding (India) is the wife's report of the total amount owed on new loans obtained by the migrant or his household members after the financial education workshop date on November 26th, 2010.

Appendix 5: Script and answer form for incentivized budget allocation and savings exercise

A.   Migrant script and answer form

We will be selecting a participant from this study **by random** to provide **20,000 rupees for his/her family in Kerala**. The selection will be made once we have completed interviewing all participants from whom a winner will be selected.

We need you to tell us how would you like **your family in Kerala** to receive this 20,000 rupees, since we are not going to give the money in cash, but in the way you tell us. It could be **anything that you want** us to give to them (**not what you think your family would want**). What you tell us will not affect the probability of wining for your family, since the winner will be selected randomly.

Tell us what you really want us **to give to your family in Kerala.** Think well, and tell us all what you really want, since if you win, **that is exactly what we are going to give them**. It could be any type of expense or type of savings/investments. It could be several things, but the total amount must add up to 20,000 rupees.

The important thing is that **this is what you want** for you family in Kerala.

ITEMS	RUPEES
1. Food	☐ 1 _____
2. Clothes	☐ 2 _____
3. Rent payment	☐ 3 _____
4. Down payment on a house/land	☐ 4 _____
5. Current mortgage on a house/land	☐ 5 _____
6. Construction of a house (including repairs)	☐ 6 _____
7. Medical expenditure and medicines	☐ 7 _____
8. Education expenses (tuition, books, etc).	☐ 8 _____
9. Utilities payment (electricity, water, etc.)	☐ 9 _____
10. Phone (house, cell phone, calling cards)	☐ 10 _____
11. Agricultural inputs	☐ 11 _____
12. Business expenses	☐ 12 _____
13. Savings[2]: (*must state purpose*)	
13a. To buy a house	☐ 13a _____
13b. To buy land	☐ 13b _____
13c. To buy a vehicle	☐ 13c _____
13d. Gold/Jewelry	☐ 13d _____
13e. Future education expenses	☐ 13e _____
13f. Future marriage/dowry expenses	☐ 13f _____
13g. Others, specify: _____	☐ 13g _____
14. Long-term investments (e.g. time deposit for 1 year+, mutual funds, stocks/shares).	☐ 14 _____
15. Large goods for the household (durables)	☐ 15 _____
16. Car or other vehicle	☐ 16 _____
17. Emigration expenditures	☐ 17 _____
18. Insurance (life, health, etc)	☐ 18 _____

---

[2] A special savings account will be opened in Kerala where the money can only be withdrawn once a target amount has been reached that is then used to purchase the item specified. Funds cannot just be withdrawn in cash.

19. Marriage (Dowry) expenses	☐ 19 _____
20. Others, specify:_____	☐ 20 _____
_____	
TOTAL	_____
RUPEES	

Verify that the total adds up to 20,000 rupees.

B.   Wife script and answer form

We will be selecting a participant from this study by random to provide **20,000 rupees for his/her family in Kerala**. The selection will be made once we have completed interviewing all participants from whom a winner will be selected.

We need you to tell us how would you like **your household in Kerala** to receive this 20,000 rupees, since we are not going to give the money in cash, but in the way you tell us. It could be **anything that you want** us to give to your family (**not what you think your spouse in Qatar or other household members would want**). What you tell us will not affect the probability of wining for your family, since the winner will be selected randomly.

Tell us what you really want us **to give to your household in Kerala.** Think well, and tell us all what you really want, since if you win, **that is exactly what we are going to give your household**. It could be any type of expense or type of savings/investments. It could be several things, but the total amount must add up to 20,000 rupees.

The important thing is that **this is what you want** for your family in Kerala.

ITEMS	RUPEES
1. Food	☐ 1 _____
2. Clothes	☐ 2 _____
3. Rent payment	☐ 3 _____
4. Down payment on a house/land	☐ 4 _____
5. Current mortgage on a house/land	☐ 5 _____
6. Construction of a house (including repairs)	☐ 6 _____
7. Medical expenditure and medicines	☐ 7 _____
8. Education expenses (tuition, books, etc).	☐ 8 _____
9. Utilities payment (electricity, water, etc.)	☐ 9 _____
10. Phone (house, cell phone, calling cards)	☐ 10 _____
11. Agricultural inputs	☐ 11 _____
12. Business expenses	☐ 12 _____
13. Savings[3]: (*must state purpose*)	
13a. To buy a house	☐ 13a _____
13b. To buy land	☐ 13b _____
13c. To buy a vehicle	☐ 13c _____
13d. Gold/Jewelry	☐ 13d _____
13e. Future education expenses	☐ 13e _____
13f. Future marriage/dowry expenses	☐ 13f _____

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[3] A special savings account will be opened in Kerala where the money can only be withdrawn once a target amount has been reached that is then used to purchase the item specified. Funds cannot just be withdrawn in cash.

13g. Others, specify: _____   ☐ 13g _____

14. Long-term investments (e.g. time deposit for 1 year+,   ☐ 14 _____
    mutual funds, stocks/shares).
15. Large goods for the household (durables)   ☐ 15 _____
16. Car or other vehicle   ☐ 16 _____
17. Emigration expenditures   ☐ 17 _____
18. Insurance   (life, health, etc)   ☐ 18 _____
19. Marriage (Dowry) expenses   ☐ 19 _____
20. Others, specify:_____   ☐ 20 _____
        _____

    TOTAL   _____
RUPEES

Verify that the total adds up to 20,000 rupees.

Appendix Figure 1: Self-reported impact of KVS workshop on migrant participants
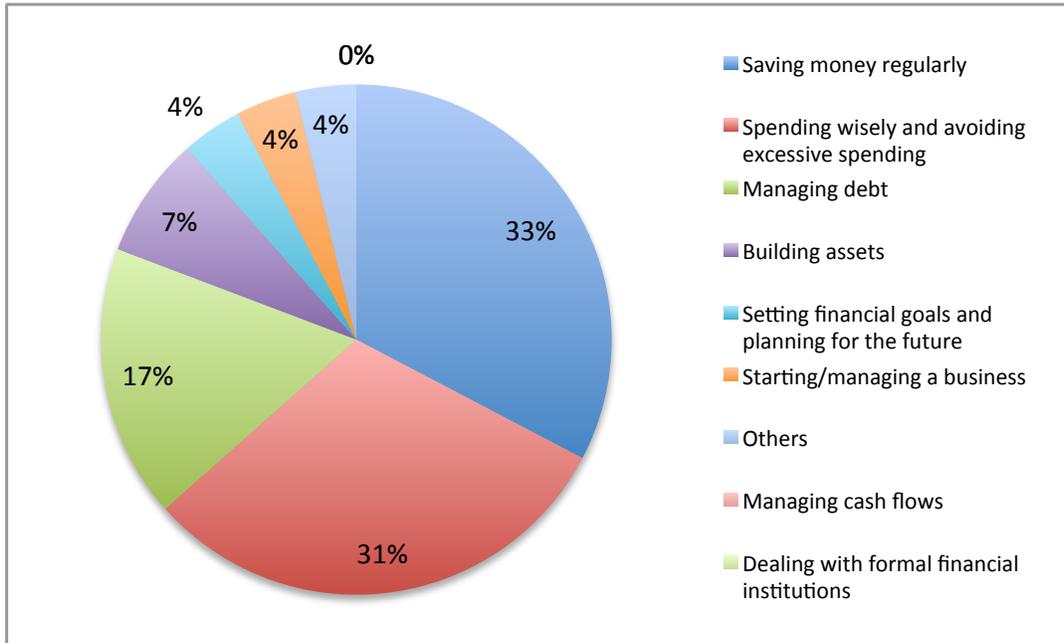
Note: Shares are based on items ranked as the most important lesson gained from the financial education workshop and are calculated from the follow-up survey.

Appendix Table 1: Impact of treatment on attrition from follow-up and on whether migrant interviewed by phone

	(1)	(2)
Dependent variable:	Attrition: migrant not included in follow-up survey (indicator)	Phone interview with migrant at follow-up survey (indicator)
Panel A: Full Sample		
Treatment	0.016	-0.042
	(0.047)	(0.051)
R-squared	0.09	0.56
Mean dep.var., cont. group	0.120	0.606
No. of observations	232	200
Panel B: Migrants with low savings at baseline		
Treatment	-0.021	-0.080
	(0.072)	(0.071)
R-squared	0.10	0.62
Mean dep.var., cont. group	0.119	0.541
No. of observations	114	100
Panel C: Migrants with high savings at baseline		
Treatment	0.083	-0.025
	(0.072)	(0.073)
R-squared	0.16	0.61
Mean dep.var., cont. group	0.121	0.690
No. of observations	118	100

* significant at 10%; ** significant at 5%; *** significant at 1%
Notes: Each treatment coefficient estimated in a separate OLS regression with robust standard errors. Each regression includes full set of control variables included in Table 2, except for attrition (column 1) which excludes duration between survey rounds. Attrition is mostly due to unsuccessful re-contact at follow-up, but also includes two observations dropped because migrant and wife were divorced by time of follow-up.

Appendix Table 2: Impacts on savings goals of migrant

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
				Purpose of savings is …								
Dependent variable:	Saves regularly	Satisfied with level of savings	Interested in commitment savings	…to buy land	…to buy or build a home	…to buy a vehicle	…to pay for children's education	…to pay marriage expenses	…to pay medical expenses	…for emergencies	…for retirement	…to start or expand a business

Panel A: Full Sample

Treatment	-0.02	-0.015	0.109	0.021	0.021	0.009	-0.05	0.042	0.027	-0.016	-0.118	0.061
	(0.070)	(0.056)	(0.054)**	(0.015)	(0.068)	(0.008)	(0.075)	(0.047)	(0.016)	(0.016)	(0.044)***	(0.045)
R-squared	0.19	0.16	0.16	0.07	0.18	0.46	0.09	0.26	0.05	0.08	0.29	0.21
Mean dep.var., cont. group	0.682	0.864	0.121	0.000	0.348	0.000	0.636	0.106	0.000	0.015	0.121	0.091

P-value of F-test: joint signif. of this Panel's Treatment coeffs.: 0.008

Panel B: Migrants with low savings at baseline

Treatment	0.055	-0.051	0.073	0.046	0.03	n.a.	0.02	0.025	0.028	-0.037	-0.187	-0.003
	(0.116)	(0.096)	(0.075)	(0.034)	(0.103)		(0.122)	(0.072)	(0.023)	(0.035)	(0.062)***	(0.069)
R-squared	0.31	0.27	0.23	0.14	0.34		0.15	0.41	0.16	0.19	0.46	0.35
Mean dep.var., cont. group	0.486	0.838	0.135	0.000	0.351	0.000	0.622	0.081	0.000	0.027	0.135	0.108

P-value of F-test: joint signif. of this Panel's Treatment coeffs.: 0.005

Panel C: Migrants with high savings at baseline

Treatment	-0.18	-0.003	0.141	n.a.	0.027	0.009	-0.135	0.065	0.006	n.a.	-0.072	0.086
	(0.086)**	(0.065)	(0.090)		(0.099)	(0.012)	(0.115)	(0.073)	(0.012)		(0.056)	(0.068)
R-squared	0.18	0.17	0.26		0.29	0.67	0.23	0.30	0.14		0.37	0.23
Mean dep.var., cont. group	0.931	0.897	0.103	0.000	0.345	0.000	0.655	0.138	0.000	0.000	0.103	0.069

P-value of F-test: joint signif. of this Panel's Treatment coeffs.: 0.007

* significant at 10%; ** significant at 5%; *** significant at 1%

Notes: Each treatment coefficient estimated in a separate OLS regression with robust standard errors. Numbers of observations in Panels A, B, and C are 200, 100, and 100, respectively. Each regression includes full set of control variables included in Table 2. All dependent variables reported in follow-up survey. All dependent variables in table are indicator variables. "n.a." indicates regression could not be run because no respondents in the subsample indicated that savings goal.

Appendix Table 3: Impacts on savings goals of wife

Dependent variable:	(1) Saves regularly	(2) Satisfied with level of savings	(3) Interested in commitment savings	(4) ...to buy land	(5) ...to buy or build a home	(6) ...to pay for children's education	(7) ...to pay marriage expenses	(8) ...for retirement	(9) ...to start or expand a business
				Purpose of savings is …					
Panel A: Full Sample									
Treatment	0.125	-0.054	-0.045	-0.002	0.002	-0.009	-0.039	-0.084	0.085
	(0.071)*	(0.052)	(0.051)	(0.020)	(0.068)	(0.076)	(0.051)	(0.038)**	(0.034)**
R-squared	0.17	0.10	0.08	0.13	0.21	0.08	0.28	0.21	0.16
Mean dep.var., cont. group	0.591	0.924	0.152	0.015	0.364	0.591	0.167	0.076	0.030
P-value of F-test: joint signif. of this Panel's Treatment coeffs.:									0.012
Panel B: Migrants with low savings at baseline									
Treatment	0.218	-0.096	-0.004	0.014	0.086	-0.044	-0.099	-0.03	0.066
	(0.113)*	(0.088)	(0.061)	(0.017)	(0.101)	(0.113)	(0.080)	(0.033)	(0.054)
R-squared	0.29	0.16	0.27	0.09	0.29	0.19	0.35	0.20	0.21
Mean dep.var., cont. group	0.432	0.892	0.135	0.000	0.405	0.568	0.162	0.027	0.027
P-value of F-test: joint signif. of this Panel's Treatment coeffs.:									0.028
Panel C: Migrants with high savings at baseline									
Treatment	0.044	-0.01	-0.058	-0.009	-0.026	-0.034	0.018	-0.123	0.097
	(0.102)	(0.052)	(0.082)	(0.024)	(0.103)	(0.118)	(0.066)	(0.068)*	(0.053)*
R-squared	0.27	0.23	0.17	0.29	0.30	0.21	0.44	0.34	0.22
Mean dep.var., cont. group	0.793	0.966	0.172	0.034	0.310	0.621	0.172	0.138	0.034
P-value of F-test: joint signif. of this Panel's Treatment coeffs.:									0.170

* significant at 10%; ** significant at 5%; *** significant at 1%

Notes: Each treatment coefficient estimated in a separate OLS regression with robust standard errors. Numbers of observations in Panels A, B, and C are 200, 100, and 100, respectively. Each regression includes full set of control variables included in Table 2. All dependent variables reported in follow-up survey. All dependent variables in table are indicator variables.

Appendix Table 4: Impacts on other other financial outcomes (expenditures and loans)

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable:	Own expenses in Qatar (annual)	Number of new loans taken out (in Qatar or India)	Total owed on loans outstanding (in Qatar and India)	Household expenses in India (annual)	Number of new loans taken out (in India)	Total owed on loans outstanding (in India)
Respondent:	Migrant	Migrant	Migrant	Wife	Wife	Wife
Panel A: Full Sample						
Treatment	-5,077	0.024	-21,893	-53	0.008	-17,782
	(7,430)	(0.057)	(31,695)	(7,448)	(0.063)	(31,307)
R-squared	0.23	0.04	0.13	0.28	0.08	0.13
Mean dep.var., cont. group	116,622	0.136	67,348	124,293	0.212	75,606
				P-value of F-test: joint signif. of Treatment coeffs. (cols. 1-6):		0.653
Panel B: Migrants with low savings at baseline						
Treatment	1,234	0.034	12,043	-1,786	(0.047)	1,686
	(9,678)	(0.075)	(18,152)	(10,123)	(0.096)	(20,094)
R-squared	0.33	0.28	0.41	0.42	0.20	0.26
Mean dep.var., cont. group	112,355	0.108	30,945.950	117,101	0.243	45,541
				P-value of F-test: joint signif. of Treatment coeffs. (cols. 1-6):		0.868
Panel C: Migrants with high savings at baseline						
Treatment	-10,029	0.006	-38,676	4,720	0.040	-22,347
	(12,324)	(0.094)	(65,512)	(13,153)	(0.096)	(64,145)
R-squared	0.30	0.13	0.20	0.38	0.17	0.23
Mean dep.var., cont. group	122,066	0.172	113,793	133,469	0.172	113,966
				P-value of F-test: joint signif. of Treatment coeffs. (cols. 1-6):		0.511

* significant at 10%; ** significant at 5%; *** significant at 1%

Notes: Each treatment coefficient estimated in a separate OLS regression with robust standard errors. Numbers of observations in Panels A, B, and C are 200, 100, and 100, respectively. Each regression includes full set of control variables included in Table 2. All dependent variables reported in follow-up survey. Variables in money terms are in Indian rupees.

Appendix Table 5: Impact of treatment on differences between migrant and wife in reporting of other's savings

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Dependent variable: Own minus spouse's report of spouse's own savings in…	Cash	Bank accounts	Chitty funds	Life insurance and pension plans	Gold	Other financial assets	Cash	Bank accounts	Chitty funds	Life insurance and pension plans	Gold	Stocks	Other financial assets
Respondent:	Migrant	Migrant	Migrant	Migrant	Migrant	Migrant	Wife	Wife	Wife	Wife	Wife	Wife	Wife
Panel A: Full Sample													
Treatment	-160	-7,223	-4,833	-2,731	40,525	638	7,167	-2,581	-3,589	-29,382	13,549	-504	1,894
	(113)	(7,891)	(11,008)	(6,234)	(28,069)	(530)	(8,567)	(7,861)	(22,992)	(12,649)**	(9,768)	(2,241)	(2,960)
R-squared	151.52	0.09	0.11	0.05	0.11	0.19	0.18	0.17	0.13	0.09	0.27	0.15	0.16
Mean dep.var., cont. group	152	636	-14,091	-912	-27,183	-878	-9,470	2,773	-9,648	-6,972	-16,589	-1,515	0
				P-value of F-test: joint signif. of Treatment coeffs. (cols. 1-6):		0.138			*P-value of F-test: joint signif. of Treatment coeffs. (cols. 7-13):*				0.283
Panel B: Migrants with low savings at baseline													
Treatment	-14	318	-20,695	-3,197	98,939	-289	9,835	-8,432	-3,025	-3,462	n.a.	-1,325	-190
	(59)	(8,132)	(17,541)	(6,738)	(37,364)***	(273)	(11,255)	(8,646)	(5,411)	(11,068)		(1,577)	(1,349)
R-squared	0.20	0.17	0.18	0.14	0.32	0.25	0.18	0.29	0.19	0.22		0.11	0.11
Mean dep.var., cont. group	0	-3,746	-2,784	-611	-52,511	162	-676	-1,351	-6,882	-17,357	0	0	0
				P-value of F-test: joint signif. of Treatment coeffs. (cols. 1-6):		0.038			*P-value of F-test: joint signif. of Treatment coeffs. (cols. 7-13):*				0.652
Panel C: Migrants with high savings at baseline													
Treatment	-223	-3,462	13,396	-4,182	-25,023	1,545	4,992	267	-8,557	-59,127	24,642	2,733	840
	(192)	(9,423)	(9,111)	(9,137)	(48,532)	(986)	(13,133)	(17,114)	(39,845)	(26,109)**	(17,618)	(4,997)	(5,977)
R-squared	0.38	0.16	0.27	0.15	0.18	0.30	0.34	0.28	0.25	0.17	0.37	0.25	0.24
Mean dep.var., cont. group	345	6,228	-28,517	-1,297	5,131	-2,204	-20,690	8,034	-13,177	6,279	-37,754	-3,448	0
				P-value of F-test: joint signif. of Treatment coeffs. (cols. 1-6):		0.273			*P-value of F-test: joint signif. of Treatment coeffs. (cols. 7-13):*				0.060

* significant at 10%; ** significant at 5%; *** significant at 1%

Notes: Each treatment coefficient estimated in a separate OLS regression with robust standard errors. Numbers of observations in Panels A, B, and C are 200, 100, and 100, respectively. Each regression includes full set of control variables included in Table 2. All dependent variables reported in follow-up survey. Each dependent variable is the respondent's report of his/her own savings in a particular category, minus the spouse's report of her/his spouse's own savings in that category. Savings denominated in Indian rupees.