MOTIVATING MIGRANTS:
A FIELD EXPERIMENT ON FINANCIAL DECISION-MAKING IN TRANSNATIONAL HOUSEHOLDS

Ganesh Seshan
Dean Yang

Motivating Migrants: A Field Experiment on Financial Decision-Making in Transnational
Households
Ganesh Seshan and Dean Yang
NBER Working Paper No. 19805
January 2014
JEL No. C93,F24,O12,O16

ABSTRACT

We randomly assigned male migrant workers in Qatar invitations to a motivational workshop aimed
at improving financial habits and encouraging joint decision-making with spouses back home in
India."13-17 months later, we surveyed migrants and wives to estimate intent-to-treat impacts in
their transnational"households. Wives of treated migrants changed their financial practices, and
became more likely to"seek out financial education themselves. Treated migrants and their wives
became more likely to make joint decisions on money matters. Treatment effects on financial
outcomes show potential heterogeneity, with those with lower prior savings saving differentially
more than those with higher prior savings.

Ganesh Seshan
Georgetown SFS-Qatar
3300 Whitehaven ST NW
Suite 2100
Washington DC 20007
gks7@georgetown.edu

Dean Yang
University of Michigan
Gerald R. Ford School of Public Policy
and Department of Economics
735 S. State Street, Room 3316
Ann Arbor, MI 48109
and NBER
deanyang@umich.edu

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 2012, migrant remittances sent to developing countries amounted to US$401 billion.[2]

A number of governments and international financial institutions are exploring policies to facilitate remittance flows and to enhance their impacts on the economic development of migrants' home countries.[3] However, there is currently limited empirical evidence on the impact of many types of policies related to migrants and remittances. Promoting savings accumulation in transnational households is a common objective, as it is often found in observational studies 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).[4] 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.[5]

We shed light on the impact of a simple intervention that is commonly carried out among migrant workers in destination countries. In a population of male migrant Indian workers in Qatar, we randomly assigned invitations to a motivational workshop aimed at improving their

---

[2] Data are from the World Development Indicators 2012.

[3] 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.

[4] Clemens and Tiongson (2013) find in a natural experimental context that international migration of a household member does not raise savings levels in migrant source households in the Philippines. Ashraf et al (2013) find in a randomized study that improving monitoring and control by migrants leads to higher savings in the home country.

[5] 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.

1

financial habits (with a particular focus on savings), and at fostering joint decision-making with their wives back home in India. Our randomized methodology allows us to credibly estimate the causal impact of the treatment. Outcome variables come from a survey of migrants and wives that we implemented 13-17 months post-treatment. We estimate impacts on financial practices, savings goals, joint decision-making over financial matters, and financial outcomes (savings and remittances) in these transnational households.

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. We also explore heterogeneity in treatment effects vis-a-vis key baseline (pre-treatment) migrant characteristics: 1) savings, 2) years of working abroad, 3) annual income, and 4) whether the migrant is the sole decision-maker on money matters in the household.

This paper is related to the growing body of work examining the relationship between financial education and financial decision-making. Financial education has been shown to be associated with the quality of financial decision-making, in both observational and randomized experimental studies, in developed-country contexts.[6] Randomized studies of the impact of financial education 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 are typically more muted.[7]

Two recent randomized studies of financial education interventions among migrant populations are complementary with ours. Gibson, McKenzie, and Zia (2012) randomly assigned financial education 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 assigned financial education 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.

---

[6] 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).

[7] 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 education training on micro-entrepreneurs, while studies of impacts on individuals include Carpena, Cole, Shapiro, and Zia (2011) and Cole, Sampson, and Zia (2011) and a review article by the World Bank (2009).

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. Our paper is distinguished from these previous studies in two key ways. First, the intervention we study is aimed at motivating migrants to change specific behaviors (e.g., savings, joint decision-making), rather than at systematically imparting financial knowledge. Second, we survey both migrants and their spouses remaining behind in the home country; we therefore can examine behaviors of both parties as well as outcomes (such as total savings) for the transnational household as whole.

2. Background, Sample, and Description of Intervention

A. Background on international migration to Qatar

The State of Qatar has a sizeable migrant population, particularly from South and East Asia (Kapiszewski 2006). Approximately 90 percent of the population in the country age 15 or older was foreign born in 2010, making it the nation with the highest share of immigrants in the world.[8]

Migration to Qatar and to neighboring countries is typically temporary, with work contracts stipulating the duration of stay (Shah 2008). These contracts are usually for two years and some may extend to five years, renewable at the discretion of the employer. 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 annually.[9]

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, India received remittances, and remittances were estimated to make up 31 percent of the state's net GDP (Rajan and Zachariah 2011).

---

[8] 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*.

[9] The Qatari Riyal (QR) is pegged to the US dollar. One US dollar is equivalent to QR 3.65.

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. The sample restriction to married couples reflects our interest in decision-making within transnational households.

A baseline survey took place between August and November 2010 with migrant interviews taking place in person, while interviews with his wife were conducted over the phone. 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 strategies workshop held at the end of November 2010. Out of the sample of 232 male migrants, 157 were assigned to the treatment group.[10] 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. A total of 202 follow-up surveys were completed and we then dropped two cases where the migrant reported having divorced his wife prior to the follow-up survey.[11] In both survey rounds, detailed data were collected from the migrant and his wife on demographics, financial behaviors, savings goals, savings and remittances. Savings and remittances reported separately by migrants and wives in the follow-up survey are of course not identical; we reconcile differences by simply taking the average of the migrant and wife reports of these variables. See Appendix 4 and 5 for more details about the sample design and variable definitions, respectively.

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 11.8 years. 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).[12]

---

[10] 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.

[11] 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.

[12] 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.

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 stocks and other forms of savings.[13] The migrant was also asked to report on savings held jointly with his wife, which averaged INR 10,587 (US$208). 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). Average years of schooling were slightly higher for wives, at 11.7 years compared to 10.2 years for husbands. On average, wives reported INR 206,322 (US$4,061) in financial savings.[14] 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. Orthogonality tests for control versus treatment group are examined in Panel A for all 18 baseline variables and a variable measuring duration between the baseline and follow-up survey, and in Panel B for the indicator variables used in examination of heterogeneous treatment effects. With some exceptions, baseline variables for the treatment group are well balanced in all samples (see p-values in column 6 of Table 1). The exceptions are that the migrants in the treated group are more likely to be older, have worked abroad longer and have older wives. Attrition from the baseline to follow-up survey was 13.8%, and is uncorrelated with treatment status (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 1 (excluding the variable for months between baseline and follow-up, which is missing for attrited observations). Separately, we also regressed an indicator variable for migrants who were surveyed by phone for the follow-up survey and found it to be uncorrelated with treatment status (Appendix Table 1, column 2).

C. The Intervention

In contrast to programs typically studied in financial education research more generally, the intervention we study here is quite short in duration, at just a few hours in a single session. The

---

[13] 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.

[14] 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.

intervention should therefore be thought of more accurately as a motivational workshop aimed at altering the financial habits of participants, rather than an extended course intended to improve financial literacy or knowledge.[15]

The workshop was conducted in late November 2010, after the baseline surveys were completed. It was held 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.[16] KVS had been offering motivational sessions on improving financial habits 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 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 substantial audience participation. For example, the speaker at one point asked audience members to stand and take a pledge to lead a healthier lifestyle, and in particular to stop smoking. The entire workshop lasted approximately five hours (3 hours for the workshop itself and 2 hours for the subsequent dinner). For further details, see Online Appendix 2.

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. 41.0 percent of the migrants in the treatment group (55 out

---

[15] The education session on remittances studied in Gibson et al (2012) was similarly brief, lasting for just two hours. The program studied by Doi et al (2012) was more extensive, lasting for 18 hours over two days for migrants and eight hours over two days for migrant family members.

[16] 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).

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.

3.   Empirical Results

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

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

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.[17] 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 1. We report robust (Huber-White) standard errors in all cases.

We examine a large number of outcomes in the follow-up survey, which raise the likelihood of finding statistically significant effects due to chance. To deal with concerns about improper inference in multiple hypothesis testing, we follow Katz, Kling, Liebman and Katz (2007) and Karlan and Zinman (2010) to produce summary indices for domains of related outcomes and test for treatment effects using these indices. For example, we create an index of financial practices for the migrant that averages together 11 measures covering planning of financial goals and budgeting. Indices are constructed by first rescaling each component outcome so that higher values correspond to more beneficial outcomes. Next, z-scores are calculated for each component outcome by subtracting its control group mean and dividing by the control group standard deviation. The summary index is an equally weighted average of z-scores of its components. The treatment effect for the index would show where the mean of the treatment

---

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

7

group lies in the distribution of the control group in terms of standard deviation units.

We also examine heterogeneous treatment effects with respect to a number of baseline characteristics of interest. The motivational workshop's strong emphasis on savings suggests examining impacts on migrants with low (at or below median) baseline savings. Median migrant savings at baseline was INR 50,601 (roughly US$1,000). The workshop also encouraged migrants to involve their families in financial decision-making. A migrant who was the sole decision-maker on how money is spent or saved prior to the workshop (which is true for 36 percent of the migrants at baseline) may have higher responsiveness to the workshop advice.

In addition, recent migrants may be more amenable to the workshop recommendations compared to those who have spent an extended period of time working abroad with more ingrained financial habits. We therefore test for heterogeneity in treatment effects for migrants with low (at or below median) years of working overseas. The median years spent in employment overseas was 8.4 years. We also examine whether treatment effects are heterogeneous for migrants with high (above median) baseline income as they are in a better position to accumulate savings relative to low income migrants. Median migrant annual income at baseline was INR 313,746 (roughly US$6,275).

In all results tables to follow, we present average intent-to-treat effects in Panel A, and examine heterogeneous effects in Panels B and C. Panel B provides the simplest analysis of treatment effect heterogeneity, by showing whether treatment effects are different across subsamples of the data. Subsamples are defined by each value of these four baseline indicator variables (a total of eight regressions for each dependent variable). Below each pair of estimated treatment effects associated with a particular baseline variable (e.g., migrant savings), we report the p-value of the F-test of the equality of the treatment effect across corresponding subsamples.

In Panel C, we examine treatment effect heterogeneity simultaneously across all four baseline indicator variables (in one regression per dependent variable). We interact the treatment indicator with indicators for low migrant savings, low years of overseas work, high migrant income, and an indicator that the migrant reports being the sole decision-maker on money matters. A coefficient on an interaction term in Panel C is interpreted as the extent to which the treatment effect is different when the baseline indicator variable is equal to one, controlling for heterogeneity in treatment effects vis-à-vis the other baseline indicator variables. The analysis in Panel C therefore deals (partially) with omitted-variable concerns that might cloud interpretation

of Panel B's results.[18]

A. Take-up

We first establish that the treatment affected the financial education activities of study participants. In the first three columns of Table 2, 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 attendance of the KVS 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 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. In Panels B and C, we find no indication that the treatment effect on workshop attendance exhibits heterogeneity with respect to baseline characteristics.

It is of interest to examine whether the treatment also 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. In column 2 of the same table, we examine the impact of treatment on an indicator for having ever listened to the KVS radio show (reported in the follow-up survey). The estimate in Panel A indicates that the treatment led to a 14.6 percentage point increase in the likelihood of listening to the KVS radio show (statistically significantly different from zero at the 10% level), a substantial effect compared to the 40.9 percent radio show listening rate in the control group.

There does appear to be heterogeneity in the treatment effect on KVS radio-show listening. In Panel B, the treatment effect is large, positive, and statistically significantly different from zero for migrants with low savings and high years abroad, but smaller and not statistically significantly different from zero for migrants in the corresponding other subsample (i.e. high

---

[18] An example of an omitted-variable concern in this context would be that a higher treatment effect for the low-savings subsample simply reflects the fact that the low-savings subsample also has migrants who have been abroad for fewer years (so that "low years abroad" is the more relevant dimension of treatment effect heterogeneity.)

savings and low years abroad). In each case, the treatment effects are found to be different across corresponding subsamples at conventional significance levels. The pattern is confirmed in Panel C, where all dimensions of heterogeneity are examined in one regression: the coefficients on the interaction terms with low savings and low years abroad are, respectively, positive and negative, and are both statistically significantly different from zero at the 5% level. These patterns, in particular the heterogeneity with respect to low savings, may be relevant for explaining the heterogeneity in treatment effects that we find for financial outcomes (in Table 3 below).

It is also possible that migrants could have encouraged their wives in India to engage in financial education activities. We examine in column 3 the treatment effect on wives' attendance of any financial education workshop in India (an indicator variable, reported by wives in the follow-up survey). In Panel A, 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. We find no evidence of heterogeneity across baseline characteristics in the treatment effect on wife's attendance of any financial education workshop (Panels B and C, column 3).

B. Financial practices and savings goals

Given that the treatment did affect financial education activities (workshop participation and radio show listenership), we turn to whether the treatment also affected the self-reported financial practices and savings goals of study participants. In Panel A, we do find that the treatment affected self-reported financial practices of the migrants' wives (column 5), but not of the migrants (column 4). The overall treatment effect on the financial practices index for the wife is positive, large (0.2 standard deviation units) and significant at the 1% level. The treatment effect on the wife's financial practices does not exhibit substantial heterogeneity across baseline characteristics (Panels B and C, column 5).[19]

---

[19] The estimated treatment effects for the component outcomes of the financial practices indices are presented in Appendix Table 2 (for migrants' responses) and Appendix Table 3 (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. In addition, we 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 and encouraged family members to stick to a budget. There are no substantial impacts of note on migrant financial practices. For wives, on the other hand, the treatment has a positive effect (that is statistically significant at the 5%

In contrast to changes in financial practices, we found no statistically significant treatment effect on the savings goals index of either migrants or wives (column 6 and column 7, respectively). The savings goals index combines questions asked separately of the migrant and wife on saving habits, hypothetical interest in a commitment saving account in India, satisfaction with level of savings and the purpose of savings.[20,21] There is some indication of treatment effect heterogeneity for these outcomes in Panels B and C. In Panel B, the treatment effect for the wife's savings goal index is negative and statistically significant at conventional levels for migrants with low savings and low income and not statistically different from zero in the corresponding pairs. The treatment effect on the migrant's saving goals index for the subsample of migrants who are sole deciders at baseline is positive and significant at the 5% level and not statistically significant for those who were not sole decision-makers. An F-test rejects the equality of the treatment effects across these subsample pairs. The pattern is mostly confirmed in Panel C. The coefficient on the Treatment * low years abroad interaction term is negative and significant at the 5% level in the regression for the wife's saving goals index, while the coefficient on Treatment * migrant sole decider is positive and significant at the 5% level in the regression for the migrant's saving goals index.

B. Joint decision-making

The workshop advocated that migrants involve their families in financial decisions. In the control group, joint financial decision-making in these transnational households is far from universal: 27.3% of control group migrants say that they and their wives jointly decide on money matters and 19.7% of control group wives say they and their migrant husbands both decide on money matters.

Treated migrants are 13.2 percentage points more likely to make decisions on money together with wives (this coefficient is significant at the 10% level in column 8, Panel A of Table 2). Wives concur with husband reports that they are now more likely to make joint money matters

---

level or greater) on the likelihood that wives report making a budget plan (column 1), save on a regular basis (column 5), list anticipated expenses in advance (column 8), and encourage family in Kerala to follow a budget (column 9).

[20] The hypothetical question to the migrant and his wife is 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 purpose for savings cover the following goals: buy land, buy or build a home, buy vehicle, pay for children's expenses, marriage expenses, emergencies, retirement and to start or expand a business.

[21] The impact of the workshop offer on component outcomes of the saving goals indices are presented in Appendix Table 4 (for migrants' responses) and Appendix Table 5 (for wives').

decisions with their husbands (column 9, coefficient statistically significant at the 10% level.)
The treatment effect on wife's report of joint decision-making is larger in the low-savings than
the high-savings subsample (Panel B, difference significant at the 10% level); the corresponding
interaction term is positive (but only marginally statistically significant) in Panel C.

C. Savings

We now turn to effects of the treatment on financial outcomes reported in the follow-up
survey. First, we examine impacts on total transnational household savings (in Indian rupees) in
column 1 of Table 3. [22] Because outliers might have outsize influence on the results on financial
outcomes expressed in rupees, we also examine treatment effects on the inverse hyperbolic sine
transformation (IHST) of total household savings (column 2). [23]

In Panel A, the treatment effect on total household savings is positive but not statistically
significantly different from zero in either the rupees or IHST specification.

In Panel B, where we examine treatment effects in subsamples of the data, evidence for
treatment effect heterogeneity is strongest in the subsample split by baseline savings. Treatment
coefficients in columns 1 and 2 are positive in the low-savings subsample, and negative for the
high savings subsample. In both rupee and IHST specifications, equality of the treatment effects
across the low- and high-savings subsamples is rejected at the 5% level. (By itself, the treatment
effect in the low savings subsample is statistically significant at the 5% level in the rupees
specification.) There is also suggestive evidence of treatment effect heterogeneity vis-à-vis
baseline income: treatment effects are positive (negative) in the high-(low-)income subsample,
and an F-test rejects equality of the treatment effects across those subsamples in the IHST
specification.

Panel C examines heterogeneity in treatment effects with respect to all four baseline
characteristics simultaneously. These results provide less clarity as to which baseline
characteristics may be driving treatment effect heterogeneity. Coefficients on the interaction
terms are all positive in sign but are mostly not statistically significantly different from zero. The
exception is the Treatment * low savings interaction term in column 1, which is positive and

---

[22] Total household savings reported by the migrant is the sum of the migrant's own savings, joint savings and the
migrant's estimate of his wife's savings. Total household savings reported by the wife is the sum of wife's own
savings, joint savings and the wife's estimate of the migrant's savings. We examine the average of the migrant and
wife reports of total household savings.
[23] The inverse hyperbolic sine transformation of y_i is $\log(y_i+(y_i^2+1)^{1/2})$. Interpretation is analogous to that of a
logarithmic dependent variable, without suffering the problem of being undefined at zero (Burbidge et al. 1988).

statistically significant at the 10% level. The fact that the heterogeneity in treatment effects vis-à-vis baseline savings (seen Panel B) becomes less apparent when other dimensions of heterogeneity are controlled for (in Panel C) suggests that other baseline variables (correlated with savings) may be more fundamental sources of treatment effect heterogeneity.

D. Remittances

Impacts of the treatment on remittances sent by migrants to wives in India are also of key interest.[24] Results are presented in column 3 of Table 3 for annual remittances sent in rupees, and in column 4 for the inverse hyperbolic sine transformation of this variable. In Panel A, the coefficient on treatment is negative in each regression, but both are small in magnitude and neither one is statistically significantly different from zero.

Panel B's results reveal heterogeneity in the treatment effect on remittances. As in the savings regressions, treatment effect heterogeneity vis-à-vis baseline savings is apparent. Treatment effects are positive in the low-savings subsample, and negative in the high-savings subsample. Three out of the four estimated treatment effects in these subsamples (across columns 3 and 4) are individually significant at the 5% level, and the fourth (remittances in rupees, in the high-savings subsample) is nearly so. In both columns, we reject equality of treatment effects across the low- and high-savings subsamples at the 1% level.

There is also tentative evidence of heterogeneity with respect to baseline income and migrant sole-decider status. Treatment effects are positive in the high-income and migrant-sole-decider subsamples, and negative in their respective counterparts. For each of these subsample splits, treatment effects are different across subsamples in at least one of the specifications at conventional levels of statistical significance.

In Panel C, where we examine all these sources of treatment effect heterogeneity simultaneously, the same patterns identified in Panel B stand out as well. Across both the rupees and IHST specifications of remittances, both low savings and migrant-sole-decider status are associated (at conventional significance levels) with more positive treatment effects. High income is also associated with more positive treatment effects, and statistically significantly so in the IHST specification.[25,26]

---

[24] As in the analysis of household savings, we examine here the average of the migrant and wife reports of remittances sent by migrants to wives.

[25] The negative and statistically significant main effect of treatment in Panel C is also intriguing, indicating that the treatment reduces remittances for observations that have zero values of all the interacted baseline indicators (in other

4. Conclusion

We randomly assigned invitations to a motivational workshop on improving financial habits to migrant Indian workers in Qatar, and fielded surveys of both migrants and their wives remaining behind in India to measure changes in financial decision-making in these transnational households. We find that the treatment affects self-reported financial practices of the migrants' wives (but not the migrants) and leads migrants to be more likely to make joint financial decisions with their wives. The workshop was offered only to the migrant, so these results provide evidence of cross-national impacts of a financial education program offered to just one member of a transnational household.

While there are no apparent average treatment effects on financial outcomes (savings and remittances), we do find evidence of treatment effect heterogeneity vis-a-vis key baseline characteristics. For example, low savings, high incomes, and migrant sole decision-making power over household money matters are all associated with higher treatment effects on remittances sent by migrants to wives.

Treatment effects may have been negative in nontrivial subsamples of the data. In particular, treatment coefficients are negative in the savings and remittances regressions for the high-savings and low-income subsamples. In the remittance regressions, three out of the four negative coefficients in these subsamples are statistically significantly different from zero at conventional levels (and the fourth is marginally statistically significant). We advance no theory as to why treatment effects might be positive or negative in particular subgroups. While the negative coefficients were unexpected, we simply note that, as a conceptual matter, individuals could respond to an intervention such as the one we implemented by modifying their financial decision-making in either direction. Behavioral responses to informational or motivational interventions may in general depend on prior circumstances, attitudes, or information sets, so that the same intervention could lead to very different (and even directionally opposing) responses within a heterogeneous subject population. In our study context, high-savings individuals could have concluded from the intervention that their savings and remittances exceeded optimum levels, perhaps due to the informational content of the session or via interpersonal comparisons with

---

words, observations with high savings, high years abroad, low income, and migrants who are not sole deciders). However, we do not highlight this result since there are only 12 observations with this combination of characteristics.

[26] We also examine impacts on expenditures and loans. Results are in Appendix Table 6. There is no large or statistically significant impact on either expenditures or loans, reported by either migrants or wives.

other workshop participants. Reducing subsequent savings and remittances would then be a natural response.[27]

Future work in this vein could seek to shed light on the underlying reasons behind the patterns of treatment effect heterogeneity that we found. Post-treatment surveys could probe rationales for changes made in key financial behaviors, whether positive or negative. Future studies could also explore more fundamental dimensions (such as present bias or low financial knowledge) that could be the underlying sources of treatment effect heterogeneity. A better understanding of treatment effect heterogeneity could lead in the future to differentiated financial education interventions targeted to specific populations, which could have higher impacts than a single undifferentiated offering.

---

[27] Osman (2013) finds that a labor market informational intervention has opposite effects on entry into entrepreneurship for more- vs. less-risk-averse individuals.

References

Acosta, P., P. Fajnzylber, and J. H. Lopez, "Remittances and Household Behavior: Evidence from Latin America," in P. Fajnzylber and J. H. Lopez, eds., *Remittances and Development: Lessons from Latin America*, World Bank, 2008.

Adams, R. H., "The Economic Uses and Impacts of Remittances in Rural Egypt," *Economic Development and Cultural Change*, Vol. 39, No. 4, 1991.

Ashraf, N., D. Aycinena, C. Martinez A., and D. Yang, "Savings in Transnational Households: A Field Experiment among Migrants from El Salvador," mimeo, U. Michigan, 2013.

Berge, Lars Ivar Oppedal, Kjetil Bjorvatn, and Bertil Tungodden, "Human and Financial Capital for Microenterprise Development: Evidence from a Field and Lab Experiment," CMI Working Paper WP 2011:1, 2011.

Bernheim, B. D., and D. Garrett, "The Effects of Financial Education in the Workplace: Evidence from a Survey of Households," *Journal of Public Economics*, 87, 2003, 1487-519.

Bernheim, B. Douglas, Daniel M. Garrett, and Dean M. Maki, "Education and Saving: The Long-Term Effects of High School Financial Curriculum Mandates," *Journal of Public Economics*, 80(3), 2001, 435-65.

Bertrand, Marianne and Adair Morse, "Information Disclosure, Cognitive Biases, and Payday Borrowing," *Journal of Finance*, Vol. 66(6), 2011, 1865-93.

Bjorvatn, Kjetil and Bertil Tungodden, "Teaching Business in Tanzania: Evaluating Participation and Performance," CMI Working Paper WP 2009:9, 2009.

Burbidge, John B., Lonnie Magee, and A Leslie Robb (1988). "Alternative Transformations to Handle Extreme Values of the Dependent Variable," *Journal of the American Statistical Association*, 83(401), 123-27.

Carpena, F., S. Cole, J. Shapiro, and B. Zia, "The ABCs of Financial Literacy – Experimental Evidence on Attitudes, Behavior and Cognitive Biases," mimeo, World Bank, 2011.

Clemens, Michael, "Economics and Emigration: Trillion Dollar Bills on the Sidewalk?" *Journal of Economic Perspectives*, Vol. 25, No. 3, Summer 2011, 83-106.

Clemens, Michael A., Claudio E. Montenegro, and Lant Pritchett, "The Place Premium: Wage Differences for Identical Workers Across the U.S. Border," Center for Global Development Working Paper 148, 2009.

Clemens, Michael and Erwin Tiongson, "Split Decisions: Family Finance When a Policy Discontinuity Allocates Overseas Work," working paper, CGD and World Bank, 2012.

Cole, S., T. Sampson, and B. Zia, "Prices or knowledge? What drives demand for financial services in emerging markets?" *The Journal of Finance*, Vol. 66(6), pp. 1933-1967, 2011.

Cole, Shawn, Anna Paulson, and Gauri Kartini Shastry, "Smart Money: The Effect of Education on Financial Behavior," mimeo, 2012.

Cox-Edwards, A. and Ureta, M. "International migration, remittances, and schooling: evidence from El Salvador," *Journal of Development Economics*, 72, 2003, pp. 429-461.

Drexler, A., G. Fischer, and A. Schoar, "Keeping it Simple: Financial Literacy and Rules of Thumb," mimeo, LSE and MIT, 2011.

Duflo, Esther, and Emmanuel Saez, "The Role of Information and Social Interactions in Retirement Plan Decisions: Evidence from a Randomized Experiment,""*Quarterly Journal of Economics*, 118(3), 2003, 815-842.

Dustmann, C., and O. Kirchkamp, "The optimal migration duration and activity choice after re-migration," *Journal of Development Economics*, 67, 2002, pp. 351-372.

Field, Erica, Seema Jayachandran, and Rohini Pande, "Do Traditional Institutions Constrain Female Entrepreneurship? A Field Experiment on Business Training in India," *American Economic Review Papers and Proceedings*, Vol. 100, No. 2, May 2010, 125-129.

Kapiszewski, A. , "Arab Versus Asian Migrant Workers in the GCC Countries", U.N. Expert Group Meeting on International Migration and Development in the Arab Region, 2006.

Karlan, D., and M. Valdivia, "Teaching entrepreneurship: Impact of business training on microfinance clients and institutions," *Review of Economics and Statistics*, 93(2), 2011, 510-27.

Karlan, D. and Jonathan Zinman, "Expanding credit access: Using randomized supply decisions to estimate the impacts", Review of Financial Studies 23(1), 2010, 433-464.

Kling, J., Liebman, J. and L. Katz, "Experimental Analysis of Neighborhood Effects", Econometrica, Vol. 75, No. 1, January 2007, 83-119.

Lusardi, Annamaria, "Savings and the Effectiveness of Financial Education," *Pension Design and Structure: New Lessons from Behavioral Finance*, ed. Olivia Mitchell and Stephen Utkus, 157-184. Oxford: Oxford University Press, 2004.

Lusardi, A. and O. Mitchell, "Baby Boomer Retirement Security: The Roles of Planning, Financial Literacy, and Housing Wealth," *J. of Monetary Economics*, 54(1), 2007a, 205-24.

Lusardi, A., and O. Mitchell, "Financial Literacy and Retirement Preparedness: Evidence and Implications for Financial Education," *Business Economics*, 42(1), 2007b, 35-44.

Lusardi, Annamaria, and Peter Tufano, "Debt Literacy, Financial Experiences, and Overindebtedness," Working Paper, Dartmouth College, 2009.

Massey, D. and E. Parrado, "International migration and business formation in Mexico," *Social Science Quarterly*, 79(1), 1998, pp. 1-19.

Mesnard, A., "Temporary migration and capital market imperfections," *Oxford Economic Papers*, 56, 2004, pp. 242-262.

Osman, Adam, "Occupational Choice under Credit and Information Constraints," working paper, Yale University, 2013.

Pew Hispanic Center, Billions in Motion: Latino Immigrants, Remittances, and Banking. Washington, DC: Pew Hispanic Center and Multilateral Investment Fund, 2002.

Rajan, S. and Zachariah, K.C (2011), "Inflexion in Kerala's Gulf Connection: Report on Kerala Migration Survey 2011", mimeo.

Shah, Nasra, "Recent Immigration Policies in the Oil-Rich Gulf: How Effective are they likely to be?" ILO Asian Regional Programme on Governance of Labor Migration, WP No. 3, 2008

Stango, Victor, and Jonathan Zinman, "Exponential Growth Bias and Household Finance," *The Journal of Finance*, 64(6), 2009, pp. 2807-2849.

Stark, Oded, Christian Helmenstein, and Yury Yegorov, "Migrants' Savings, Purchasing Power Parity, and the Optimal Duration of Migration," *International Tax and Public Finance*, 4, 1997, pp. 307-324.

Taylor, J.E., Rozelle, S. and de Brauw, A., "Migration and incomes in source communities: a new economics of migration perspective from China," *Economic Development and Cultural Change*, 52, 2003, pp. 75-101.

Terry, Donald F. and Steven R. Wilson, eds., *Beyond Small Change: Making Migrant Remittances Count*. Washington, DC: Inter-American Development Bank, 2005.

van Rooij, Maarten, Annamaria Lusardi, and R.J.M. (Rob) Alessie, "Financial Literacy and Stock Market Participation," MRRC Working Paper No. 2007-162, 2007.

Woodruff, Christopher and Rene Zenteno, "Migrant Networks and Microenterprises in Mexico," *Journal of Development Economics*, 82(2), 2007, pp. 509-528.

World Bank, *Global Economic Prospects 2006: Economic Implications of Remittances and Migration*. Washington, DC, 2006.

World Bank, *Close to Home: The Development Impact of Remittances in Latin America*. Washington, DC, 2007.

World Bank, "The Case for Financial Literacy in Developing Countries," 2009.

Yang, Dean, "Why Do Migrants Return to Poor Countries? Evidence from Philippine Migrants' Responses to Exchange Rate Shocks," *Review of Economics and Statistics*, 88(4), 2006, 715-35.

Yang, Dean, "International Migration, Remittances, and Household Investment: Evidence from Philippine Migrants' Exchange Rate Shocks," *Economic Journal,* 118, 2008, 591-630.

Yang, Dean, "Migrant Remittances," *Journal of Economic Perspectives*, Vol. 25, No. 3, Summer 2011, pp. 129-152.

Table 1: Baseline Summary Statistics

	(1) Mean	(2) Std. Dev.	(3) Treatment Mean	(4) Control Mean	(5) Difference	(6) P-value	(7) Num. Obs.
Panel A: Control Variables							
Migrant age	40.32	7.68	41.04	38.85	2.19	0.058	200
Migrant years of education	10.22	2.06	10.07	10.53	-0.46	0.136	200
Migrant years abroad	11.75	9.70	12.65	9.92	2.72	0.062	200
Migrant annual income	313,746	138,548	318,073	304,959	13,114	0.530	200
Migrant landholdings in India	39.51	70.95	38.04	42.50	-4.46	0.677	200
Migrant annual remittances	133,967	85,022	134,564	132,757	1,807	0.888	200
Migrant own savings	121,687	175,642	131,823	101,108	30,716	0.246	200
Migrant joint savings with wife	10,588	64,720	8,937	13,939	-5,003	0.608	200
Migrant saves regularly (indicator)	0.37	0.48	0.39	0.33	0.05	0.454	200
Wife age	33.08	7.59	33.68	31.86	1.82	0.112	200
Wife years of education	11.65	2.65	11.66	11.62	0.04	0.914	200
Wife household size in Kerala	4.65	1.84	4.66	4.64	0.02	0.942	200
Wife employed in Kerala	0.13	0.34	0.11	0.17	-0.05	0.282	200
Wife's household's annual income in Kerala	5,556	22,841	4,755	7,182	-2,427	0.481	200
Wife's own savings	206,322	199,071	211,231	196,357	14,874	0.621	200
Wife's joint savings with migrant	6,910	58,660	5,478	9,818	-4,341	0.624	200
Wife saves regularly (indicator)	0.47	0.50	0.46	0.48	-0.02	0.769	200
Migrant and wife interviewed together at baseline	0.53	0.50	0.49	0.61	-0.11	0.132	200
Months between baseline and follow-up surveys	16.94	1.19	16.95	16.91	0.04	0.841	200
Panel B: Other Variables							
Treatment (indicator)	0.67	0.47	1.00	0.00	1.00	0.000	200
low savings (indicator)	0.50	0.50	0.47	0.56	-0.09	0.231	200
low years abroad (indicator)	0.50	0.50	0.46	0.59	-0.14	0.072	200
high income (indicator)	0.52	0.50	0.54	0.47	0.08	0.320	200
migrant sole decider (indicator)	0.36	0.48	0.34	0.38	-0.04	0.624	200

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

Table 2: Intent-to-Treat Estimates for Summary Outcome Measures

Dependent variable:	(1) Attended KVS financial education workshop (indicator)	(2) Listened to KVS radio show (indicator)	(3) Wife attended some financial education workshop (indicator)	(4) Migrant's financial practices index	(5) Wife's financial practices index	(6) Migrant's saving goals index	(7) Wife's saving goals index	(8) Migrant and wife both decide on money matters (migrant's report)	(9) Migrant and wife both decide on money matters (wife's report)
Panel A									
Treatment	0.446	0.146	0.044	0.069	0.202	0.040	-0.044	0.132	0.109
	(0.050)***	(0.078)*	(0.024)*	(0.069)	(0.076)***	(0.041)	(0.048)	(0.069)*	(0.065)*
R-squared	0.29	0.11	0.18	0.24	0.16	0.14	0.14	0.16	0.22
Mean dep.var. in control group	0.030	0.409	0.015	0.000	0.000	0.000	0.000	0.273	0.197
Panel B: Treatment Effects in Subsamples									
Low savings	0.394	0.289	0.017	0.071	0.192	-0.044	-0.040	0.129	0.188
	(0.081)***	(0.099)***	(0.018)	(0.111)	(0.115)*	(0.058)	(0.064)	(0.114)	(0.095)**
High savings	0.492	0.020	0.031	0.098	0.199	0.067	-0.030	0.115	-0.040
	(0.081)***	(0.133)	(0.046)	(0.100)	(0.116)*	(0.051)	(0.069)	(0.103)	(0.107)
P-value of F-test	*0.335*	*0.069*	*0.756*	*0.844*	*0.965*	*0.107*	*0.906*	*0.919*	*0.074*
Low years abroad	0.431	0.019	0.050	0.155	0.217	0.061	-0.118	0.101	0.130
	(0.081)***	(0.117)	(0.030)*	(0.087)*	(0.107)**	(0.057)	(0.070)*	(0.091)	(0.078)*
High years abroad	0.523	0.307	0.032	0.011	0.247	0.031	0.081	0.197	0.130
	(0.070)***	(0.109)***	(0.039)	(0.107)	(0.115)**	(0.055)	(0.078)	(0.098)**	(0.108)
P-value of F-test	*0.333*	*0.043*	*0.675*	*0.240*	*0.825*	*0.677*	*0.033*	*0.423*	*0.995*
High income	0.479	0.211	0.034	0.114	0.295	0.040	0.014	0.139	0.061
	(0.076)***	(0.114)*	(0.041)	(0.122)	(0.119)**	(0.066)	(0.081)	(0.103)	(0.099)
Low income	0.393	0.043	0.047	0.042	0.063	0.056	-0.159	0.113	0.100
	(0.085)***	(0.120)	(0.033)	(0.094)	(0.117)	(0.061)	(0.065)**	(0.107)	(0.099)
P-value of F-test	*0.392*	*0.255*	*0.794*	*0.601*	*0.118*	*0.839*	*0.064*	*0.842*	*0.752*
Migrant sole decider	0.506	0.245	0.034	-0.045	0.115	0.174	-0.030	0.059	0.032
	(0.090)***	(0.159)	(0.044)	(0.147)	(0.117)	(0.076)**	(0.105)	(0.135)	(0.131)
Migrant not sole decider	0.420	0.109	0.058	0.157	0.302	-0.014	-0.019	0.187	0.186
	(0.068)***	(0.105)	(0.031)*	(0.084)*	(0.103)***	(0.054)	(0.061)	(0.093)	(0.078)**
P-value of F-test	*0.387*	*0.410*	*0.598*	*0.166*	*0.170*	*0.020*	*0.915*	*0.368*	*0.240*
Panel C: Heterogenous Treatment Effects									
Treatment	0.51	0.062	0.039	0.047	0.207	0.06	0.053	0.215	0.093
	(0.117)***	(0.198)	(0.052)	(0.158)	(0.168)	(0.092)	(0.094)	(0.153)	(0.153)
Treatment * low savings	-0.083	0.306	0.012	-0.01	-0.009	-0.11	0.004	0.012	0.201
	(0.109)	(0.152)**	(0.046)	(0.139)	(0.158)	(0.075)	(0.085)	(0.143)	(0.136)
Treatment * low years abroad	-0.158	-0.329	0.056	0.125	-0.018	-0.011	-0.226	-0.177	0.009
	(0.101)	(0.147)**	(0.055)	(0.132)	(0.160)	(0.077)	(0.088)**	(0.138)	(0.129)
Treatment * high income	0.064	0.077	-0.033	0.012	0.169	-0.051	0.091	0.061	-0.013
	(0.113)	(0.162)	(0.053)	(0.139)	(0.167)	(0.086)	(0.089)	(0.141)	(0.127)
Treatment * migrant sole decide	0.084	0.22	-0.045	-0.154	-0.209	0.196	-0.053	-0.104	-0.237
	(0.106)	(0.153)	(0.060)	(0.148)	(0.162)	(0.082)**	(0.096)	(0.141)	(0.137)*
R-squared	0.31	0.19	0.19	0.27	0.22	0.19	0.22	0.19	0.27

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

Notes: Each regression includes full set of control variables included in Table 1 with robust standard errors. Number of observations in Panel A and C are 200 each. For Panel B, separate regressions are estimated for each subsample to obtain the respective treatment effect. Each p-value reported is for F-test of the equality of the two subsample treatment coefficients directly above. For Panel C, the regression includes additional indicator variables for low savers (at or below median migrant's savings at baseline), low years abroad (at or below median years worked abroad), low income (at or below median migrant's annual income at baseline) and migrant being sole decision-maker on money matters in household, and interaction of the treatment term with those indicators. All dependent variables reported are from the follow-up survey. Summary indices are created by adding related outcomes measures together after standardizing (using control means and standard deviations) and taking their unweighted average. The component outcome measures for financial practice index of the migrant and wife respectively, are listed in Appendix Table 2 and 3. The component outcome measures for the saving goals index of the migrant and wife, respectively can be found in Appendix Table 4 and 5.

Table 3: Intent-to-Treat Estimates for Financial Outcomes

	(1)	(2)	(3)	(4)
Dependent variable:	Total household savings	IHST of total household savings	Annual remittances sent by migrant to wife	IHST of annual remittances sent by migrant to wife

Panel A

Treatment	23,360	0.026	-6,012	-0.025
	(36,486)	(0.096)	(10,564)	(0.057)
R-squared	0.43	0.36	0.46	0.44
Mean dep.var. in control group	409,379	13.41	156,883	12.54

Panel B: Treatment Effects in Subsamples

Low savings	95,778	0.181	18,434	0.161
	(44,031)**	(0.134)	(8,401)**	(0.068)**
High savings	-69,574	-0.169	-29,731	-0.204
	(60,135)	(0.111)	(18,451)	(0.094)**
P-value of F-test	0.013	0.024	0.008	0.000
Low years abroad	45,177	0.081	712	0.004
	(52,693)	(0.119)	(12,376)	(0.075)
High years abroad	4,475	0.048	-5,734	0.017
	(65,148)	(0.177)	(19,821)	(0.098)
P-value of F-test	0.586	0.863	0.757	0.906
High income	58,534	0.161	1,999	0.076
	(58,015)	(0.137)	(17,756)	(0.081)
Low income	-25,924	-0.182	-19,587	-0.146
	(46,769)	(0.155)	(9,626)**	(0.080)*
P-value of F-test	0.204	0.062	0.232	0.029
Migrant sole decider	38,479	0.164	14,698	0.098
	(84,808)	(0.209)	(18,437)	(0.106)
Migrant not sole decider	34,751	0.002	-19,484	-0.080
	(47,417)	(0.133)	(14,451)	(0.077)
P-value of F-test	0.964	0.450	0.094	0.118

Panel C: Heterogenous Treatment Effects

Treatment	-144,516	-0.376	-51,715	-0.365
	(91,532)	(0.215)*	(21,150)**	(0.120)***
Treatment * low savings	143,943	0.267	36,471	0.310
	(76,135)*	(0.174)	(19,216)*	(0.111)***
Treatment * low years abroad	63,616	0.102	3,475	-0.014
	(75,243)	(0.190)	(18,100)	(0.100)
Treatment * high income	96,433	0.285	18,956	0.203
	(70,256)	(0.175)	(17,483)	(0.103)**
Treatment * migrant sole decider	34,727	0.155	42,571	0.232
	(83,156)	(0.216)	(18,387)**	(0.111)**
R-squared	0.45	0.40	0.51	0.51

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

Notes: Each regression includes full set of control variables included in Table 1 with robust standard errors. Number of observations in Panel A and C are 200 each. For Panel B, separate regressions are estimated for each subsample to obtain the respective treatment effect. Each p-value reported is for F-test of the equality of the two subsample treatment coefficients directly above. For Panel C, the regression includes additional indicator variables for low savers (at or below median migrant's savings at baseline), low years abroad (at or below median years worked abroad), low income (at or below median migrant's annual income at baseline) and migrant being sole decision-maker on money matters in household, and interaction of the treatment term with those indicators. All dependent variables reported are from the follow-up survey. 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. Total household savings is the sum of own savings, joint savings with spouse and spouse's own savings averaged across migrant's and wife's reports. Annual remittances is the average of migrant's and wife's reports. All savings and remittance figures are expressed in Indian rupees and its inverse hyperbolic sine transformation (IHST).

22