Failure vs. Displacement:

Why an innovative anti-poverty program showed no net impact*

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Abstract

We present results from a randomized trial of an innovative anti-poverty program in rural India designed to move "ultra-poor" households from dependence on traditional safety nets to self-sufficiency. The program deploys resources intensively in a short block of time, providing beneficiaries with an asset transfer and 18 months of stipend, skills training, basic healthcare and saving promotion. We find no statistically significant evidence of net impact on average consumption, income or asset accumulation one year after the intervention ended. The program did not fail in the most direct sense: as intended, the program sharply increased income from livestock. But "success" and "failure" also depend on interactions with other interventions and markets. Here, gains from livestock income were fully offset by lower earnings from agricultural labor.

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1 Introduction

We present results from a randomized trial of an innovative anti-poverty program in rural India designed to move "ultra-poor" households to self-sufficiency, away from lives dependent on traditional safety nets. The program deploys resources intensively in a short block of time rather than being stretched over years. Beneficiaries receive an asset transfer and stipend with 18 months of skills training, basic healthcare and saving promotion. A year after the intervention ended, there were no statistically significant impacts on overall household income, consumption, or asset accumulation.

The question is why. The two most plausible explanations are program failure (a failure to effectively turn program inputs into outcomes) or the displacement of other programs. The latter possibility, created by the success of the program at the expense of participation in other opportunities, is often in the background of evaluations of microfinance, health, schooling, and similar interventions in which participating in one program (or clinic or school) can reduce participation in another. Das et al (2011), for example, document how households re-optimize their educational spending to offset anticipated grants for schooling, such that unanticipated increases in school funding lead to significant improvements in students' test scores while anticipated increases do not.

In the present case, the anti-poverty intervention directly created income gains by promoting livelihoods in the livestock sector, but the gains were offset by lower earnings due to foregone wages from agricultural labor. On average, treatment households increased monthly per capita income from livestock by 53 Rupees more than control households, but the latter increased monthly per capita income from agricultural wage labor by 52 Rupees more than treatment households.

The two scenarios – failure vs. displacement -- lead to different conclusions about what the program achieved and what it might contribute elsewhere. Even as efforts proceed to make evaluations more central in development policy, it's unclear what should be considered a "proven impact." Here, the ultra-poor program failed to make a mark, but a similarly-implemented program might generate a large net impact in settings where agricultural markets are less compelling or less available. The converse is true as well: evidence of strong impact is also conditional on the nature of complementarity and substitution.

The role of substitution can be seen by considering two different interventions, T and x, that affect income y such that $y = \beta_0 + \beta_1 T + \beta_2 x + \beta_3 (T \cdot x) + \varepsilon$ where $E(\varepsilon|T, x) = 0$. In our context, think of T as eligibility for the ultra-poor program and x as access to the agricultural labor market. In our case, even though access to T is limited to the treatment group, everyone in the treatment or control group has access to x. Because everybody has access to x, the concern is re-optimization, not contamination. The two opportunities may interact positively ($\beta_3 > 0$) if re-optimization brings out ways that they reinforce each other, or negatively ($\beta_3 < 0$) if there is substitution.

If researchers ignore re-optimization, it is assumed that $\beta_3 = 0$. In that case, finding that $\Delta = 0$ would lead the researcher to infer that $\beta_1 = 0$. But that might be mistaken. If instead there is strong substitution between programs ($\beta_3 < 0$), the program could turn out to deliver impacts for those who take it up. With $x = 1$ everywhere, families in treatment areas opt to split their energies between the two available options T and x, while families in control areas fully participate in their single option x. The treatment-control difference is thus $\Delta = E(y|T, x) - E(y|T = 0, x) = \beta_1 T + \beta_3 (T \cdot x)$, which is smaller than $\beta_1 T$ when $\beta_3 < 0$. Where there is full displacement, β_3 could be large enough in absolute value to explain the finding that $\Delta = 0$. At the same time, the result could be consistent with there being a potential positive impact when the alternative intervention is not available ($x = 0$ everywhere) in which case the impact would be $\Delta = E(y|T, x = 0) - E(y|T = 0, x = 0) = \beta_1 T$. The logic for $\beta_3 < 0$ in our case hinges on the hypothesis that if a person engages in the ultra-poor program, she lacks the time, energy or freedom to simultaneously participate fully in agricultural labor.

To be clear, it is true that families in the treatment group would have been in roughly the same place had the ultra-poor program not existed (assuming they re-optimized and took greater advantage of other labor opportunities). But it is simultaneously true that the ultra-poor program had a positive impact on those it served. The distinction from the finding that $\beta_1 = 0$ (i.e., program failure) matters when extrapolating from the result that $\Delta = 0$ and for understanding what was actually estimated.

The possibilities for substitution between programs and opportunities are growing in India. India's recent economic growth has brought overlapping programs rolled out by banks, NGOs and the government. Of particular note is the ambitious National Rural Employment Guarantee Scheme (NREGS), which swept through our study region, guaranteeing (on paper) 100 days of employment per year per household. By the baseline, 34% of all households in our sample (across treatment and control groups) participated in NREGS; by the baseline, 81% had. Over 90% at the baseline had received goods from the Public Distribution System and the "Below Poverty Line" public scheme. The main mechanism of displacement in our sample works indirectly through the NREGS to the extent that it lifted incomes and pushed up agricultural wages. Reductions in agricultural labor drive the substitution we see.

Based on the results, we conclude that enterprise development at extreme levels of poverty is difficult to achieve, even if it is supported by a significant asset transfer and training. The results show that households struggled to maintain an enterprise even in the short run, despite stipends which covered enterprise related expenses. Households optimize their sources of income, so that the economic lives of the treatment households, in the long run, look similar to that of the control households. The evidence suggests that the program did not fail in the usual sense, even though it failed to make a net impact.

The next section gives background on the project and data. Section 3 describes the experimental design. Section 4 describes the empirical approach, and Section 5 gives results. Beyond the main finding, we show that the program led to short-term improvements in household's health outcomes as treatment households miss fewer days of labor due to poor health but these effects wear off in the long run. Over the long run, although we do not observe an improvement in direct health outcomes, the program does lead to significant reduction in health expenditure as well as reduced borrowing related to health. This result is perhaps due to

the change in the occupation structure and time use, where households now spend less time doing agricultural labor and spend more time tending to animals which is less strenuous. The program also provided one household in each treatment village with basic health care knowledge, which might have helped treatment group households reduce health care expenditures by better managing mild symptoms and more quickly treating graver illnesses.

The program includes a mandatory savings component and the results indicate that treatment households are more likely to save as well as report higher savings balance after 18 months of intervention. Treatment households report a savings balance one and half times that of control households immediately at the end of the intervention. But while this effect is strong in the short run, it wears off a year later, after SKS stopped enforcing the weekly saving rule and the accumulated savings become available to treatment households in the local post office.

The basic idea of the program is to establish a microenterprise with a regular cash flow such that households can move out of extreme poverty. In the first 18 months of the program, SKS provided cash support to meet enterprise-related expenses. At the end of the project, we found that while the support lasted, the households held on to their enterprise. A year later, however, more than half the treatment households had sold the enterprise asset. Outstanding loan amounts also decreased, likely partially due to the sales of assets. Testing for heterogeneous results across different subsamples, we find evidence suggesting that poorer households were worse off due to this program. Ultra-poor households in the treatment group that did not start with any land, housing or livestock experienced a significant reduction in income over the long run.

2 Background and Context

The Targeting the Ultra Poor (TUP) program aimed to establish microenterprises with regular cash flows which would enable ultra-poor households to eventually gain access microfinance and grow out of poverty. This program was conducted by SKS and implemented across 242 villages of Medak in the state of Andhra Pradesh, one of the poorest districts in India. The program we evaluate has now been introduced in the state of Orissa.

The program targets the poorest households who have few assets and are chronically food insecure. It combines support for immediate needs with longer term investments in training, financial services, and business development. The aim is that within two years ultra-poor households are equipped to help themselves "graduate" out of extreme poverty. The approach is thus sometimes called a "graduation program" rather than an "ultra-poor program".

The evaluation is the first fully complete study from a set of coordinated pilots of similar interventions in Haiti, India, Pakistan, Honduras, Peru, Ethiopia, Yemen and Ghana.[5] Relative to those programs, the SKS program provides a less generous stipend. Funds to defray the costs of livestock rearing are transferred, but, unlike other program designs, no consumption support is provided. The present evaluation is thus also valuable as a study of a more "skeletal" variant of the basic idea.

[5] Information on all sites is available at http://graduation.cgap.org/.

The replications were inspired by the success in Bangladesh of BRAC's "Challenging the Frontiers of Poverty Reduction - Targeting the Ultra Poor" (CFPR-TUP), which reaches about 300,000 households in Bangladesh. BRAC estimates that over 75 percent of the ultra-poor beneficiaries in Bangladesh are currently food secure and managing sustainable economic activities. The program there has been studied extensively using non-experimental techniques (Matin and Hulme, 2003; Mallick, 2009; Ahmed et. al., 2009; Das and Misha, 2010). Most studies find positive impacts of the program on consumption and asset accumulation of poor households.

The idea gained ground through concern that ultra-poor households remain outside most programs aimed at poverty reduction. Even within the context of microfinance, it has been noted that poorer households do not gain significantly from access to credit (Morduch 1999). Many government schemes that target "below the poverty line" (BPL) households have failed to do so due to mistargeting (NSSO report 2004-05, Dreze and Khera 2010 and Jalan and Murgai 2007). Banerjee et. al. (2007) find that the poorest are not any more likely to be reached by government programs than their better off neighbors.

2.1 SKS's Ultra Poor Program

The program as implemented by SKS is an 18-month program aimed at extremely poor households. It comprises an assistance package with three main components: 1) special investment for employment and enterprise development; 2) essential health-care and 3) social development. The economic package for enterprise development involves a one-time asset transfer, enterprise related training, cash stipend for large enterprise-related expenses and collection of minimum mandatory savings. It starts with selection of an income-generating activity which is chosen from a menu of local activities such as buffalo rearing, goat rearing, chicken shop and horticulture nursery. Non-farm activities, such as tea shops and telephone booths, are also available. Once the household has selected an activity, it undergoes training sessions where one ultra-poor member, usually the woman head of household, is taught skills pertaining to the specific enterprise she has chosen. After the training is completed, the specific asset is procured and transferred to the household. A mandatory minimum weekly savings is required of all households, once the asset begins to generate cash flow.

The second component of the program is the provision of essential primary health-care support. This is a combination of preventive training and techniques, and on-the-spot coverage. The health program is divided into the following: a) monthly visits by a field health assistant to each member, documenting the health status of the family and providing care or referrals as needed; b) health screening and information awareness camp hosted with support from government doctors and health focused NGOs; c) monthly information session conducted by the health assistant on topics such as contraception, pre- and post-natal care, sanitation, immunization, tuberculosis and anemia; and d) one or two program member in each selected village is trained by a doctor on basic health services. This member is equipped with basic medicines (available free of cost from government) and a knowledge of when to recommend a case to a doctor or hospital, and serves as the touch-point for other members. The third component of the program is social development. This involves measures aimed at building

social safety nets such as a solidarity group and a rice bank. Group solidarity is encouraged through weekly meetings where members discuss common concerns and solutions. A rice bank is created by members depositing a handful of rice every day which can be drawn upon by member households at no interest. After 18 months, SKS stops conducting the weekly meetings, collecting the minimum required savings from members and organizing health camps in the treatment villages. The asset becomes a complete responsibility of the household with no stipend or advisory support from SKS.

This program is targeted at ultra-poor households which are specifically defined along five dimensions: housing condition, land ownership, asset ownership, access to microfinance and presence of a male working member in the household. Access to microfinance and the presence of a male working member automatically excluded a household from participating in the program. For the remaining three dimensions, an individual score was allotted to each household. For example, a score for the housing condition was based on the size of house, condition of the house, material of the roof, material of the walls, whether electricity and water is available and if yes, whether it was shared with other households. Eligibility for participation in the UPP required an aggregate score of less than equal to 7.

The total number of individuals that are included in the study is 3,491 across 1,064 households. The average household size in our sample is 3.27 members – significantly smaller than the average Indian household which is 4.5 as reported by National Sample Survey Organization (NSSO Report Number 531, 2010).

The objective of this study is to assess the impact of this intervention on social and economic outcomes, including income, consumption, assets, school attendance of children, health and food security.

2.2 Data

We collected detailed household-level data from 1,064 households across 207 villages from three waves of surveying between 2007 and 2010. The area of study is Medak district of Andhra Pradesh, which is the one of the poorest regions of India and therefore a natural catchment area for a program aimed at extreme poverty. SKS identified 1,200 eligible ultra-poor households across 207 villages for the program after detailed PRAs and village surveys. The baseline survey was conducted over 3 months from August to October of 2007 for a total sample of 1,064 households across 242 villages. Following the baseline survey, we randomly assigned 114 villages to the treatment group. The assignment was stratified by village population, number of ultra-poor households as a proportion to total village population, distance from nearest metallic road, and distance from nearest mandal headquarter.[6] The 114 treatment villages included 576 households (54 percent of total sample) who were offered the treatment. Of the total these 433 households participated in the program and 143 households declined to participate due to various reasons. In all analyses, these 143 households are counted as part of the treatment group (intention to treat estimates).

Detailed information was collected on socio-demographic characteristics of the households, which included religion, caste, family type, size of household, age, marital status,

[6] A mandal is an administrative unit lower than the district but including several villages.

disability, education, occupation, and migration details. Information was also collected on the household's living conditions, including characteristics of the house, source of drinking water, sanitation and source of fuel. Participation in government schemes such as the National Rural Employment Guarantee Scheme, pension scheme, housing scheme, credit programs and subsidized basic goods public distribution system. The baseline survey also included measures of asset ownership, use of time, women's social status and mobility, and political awareness and access. Detailed information was also collected on physical health, hygiene habits and mental health conditions of household members. In addition, we have details of household monthly consumption expenditure, income and other financial transactions of the household. We also collected details on social standing of the household within the community and future aspirations of the household members.

The baseline survey was conducted for all the 1,064 selected households in 2007. After the baseline survey was completed, we randomly selected 114 villages as treatment group to receive the intervention and 128 villages became the comparison group. The intervention process started with each selected ultra-poor member within a treatment village being given a menu of enterprise to choose from. These comprised of livestock, mostly buffaloes and the undergoing training for a chosen enterprise. Once the training was completed, SKS procured the asset and transferred it to the household. Weekly meetings started simultaneously.

A midline survey was conducted for the entire sample in 2009, immediately at the end of SKS's presence in the villages and about 18 months after treatment households received their asset. Since the enterprise training and subsequent asset transfer took four months to implement, the midline survey was done almost 2 years after the baseline survey. After completing 18 months of TUP intervention, SKS quit these villages and all forms of support such as weekly meetings and enterprise stipends stopped completely.

Finally, an endline survey was conducted for the entire sample of households 12 months after the midline, or 3 years after the baseline. Midline and endline surveys were conducted with the same questionnaire as the baseline, with the addition of a section asking respondents about details of their participation in the National Rural Employment Generating scheme.

3 Experimental Design

The impact assessment of the program is done through a randomized controlled experiment, where the level of randomization is the village. As Bloom (2005) highlights, when analyzing individual data from programs randomized at a group (village) level, it is important to take into account that the error term may not be independent across individuals. Outcomes of interest such as income and consumption maybe correlated. Since the treatment status across individuals within a group is also identical, it is difficult to tease out the impact of the program from the correlated outcomes. Bloom (2005) shows that the design effect increases with both the intra-village correlation and the number of member households per village. This effect can be potentially very large even for small increase in intra-village correlation. Bloom shows that for a given sample size, an increase in the number of individuals sampled per cluster increases the precision much less than increasing the number of clusters being randomized. Intuitively this

means that the larger the level of randomization, the larger the total sample size needed to achieve a given power.

For this impact study, we chose village-level randomization though it required a larger sample size. The main reason was the fear of resentment towards the implementing organization, here SKS, if individual-level randomization was carried out. In addition, it was easier for the research team to ensure that villages were treated according to the initial random assignment than to monitor individual households. Another potential benefit of randomizing at the village level is that the spillovers from treatment to control households can be minimized.

4 Empirical Strategy

The difference in the means of the treatment and control groups is the OLS coefficient of β in the following reduced-form regression

$$Y_{ij} = \alpha + \beta T_i + v_j + \varepsilon_{ij} \quad (1)$$

where i indicates household and j indicates village. *Y* is the outcome of interest (consumption, income, etc.). *T* is an indicator variable that equals 1 for household i if it belongs to a treatment village and β is the impact of the treatment. v_j and ε_{ij} are the unexplained variance at the village and the household level. In theory, since the treatment was random across villages, ε_{ij} is uncorrelated with T. The coefficient of interest β is the intention to treat estimate which measures the expected change in the outcome for a household that was offered the treatment. This is different from the impact of actually participating in the program ("treatment on the treated" estimates) because of partial compliance. That is, not every household that was offered the treatment participated in the program. The intention to treat (ITT) estimate is the parameter of interest when we want to capture the cost effectiveness of the program.

While randomizing participants into the treatment and control groups produces similar groups in expectation, this outcome is not guaranteed in practice and was not achieved in our evaluation. The unit of randomization was the village, but household-level data show some statistically significant differences between households in treatment and control villages. We adapt our regression specification to include variables controlling for the characteristics according to which treatment and control households differ at baseline:

$$Y_{ij} = \alpha + \beta T_i + \gamma X_{ij} + v_j + \varepsilon_{ij} \quad (2)$$

where X_{ij} is a set of five control variables as described in section 5.2 below and all other quantities are as in equation (1).

The specification in (2) also allows the assessment of interactions with other markets and interventions. By defining *Y* as participation in competing programs or as income from alternative sources, we can quantify how the availability of the ultra-poor program affected other economic activities.

5 Results

We focus in this section on a limited set of outcomes, described in Tables 1 through 9. The impact of the program on additional outcomes is reported in Appendix Tables, but most of these outcomes are not discussed in this section.

5.1 Attrition

We have 7.2 percent attrition in the short run, that is in the 18-month period between the baseline and the midline surveys. The attrition is 5 percent in the long run, between the baseline and endline survey, which are separated by 3 years. To test whether this attrition is unbalanced and therefore biases our results, we compare the baseline means of the various household characteristics between households that we successfully followed in subsequent surveys and those that we could not. Table 1 shows the average values of several household characteristics between attriters and non-attriters. The households that we were not able to follow up in the endline survey are older and more literate. There are no significant differences in the family size, general economic well-being measured as income and expenditure or in terms of occupation structure.

Insert Table 1: Attrition

The results would suffer a bias if the attrition is systematically different between the treatment and the control households. To test for this, we regress an indicator variable which equals one if the household was an attritor and 0 otherwise on a treatment indicator which equals one if the household was part of the treatment group. We find that being in the treatment group doesn't significantly predict attrition in the short run or in the long run (results not shown).

5.2 Summary Statistics

Table 2 and Appendix Table 1 show the average baseline values of characteristics of the treatment and control groups. An important assumption in using the above empirical strategy to assess the impact of the program is that the randomization was appropriate. This requires that the assignment of households into treatment and control groups was random and not correlated with the household characteristics. Prior to the treatment, the groups were similar on most demographic, consumption, income, health, occupation and housing characteristics. But despite randomized assignment, treatment group households appear better off than control group households along some dimensions, potentially creating a bias in favor of finding significant program effects. In Appendix Table 1 we consider 38 variables, and find five dimensions for which treatment and control households differ significantly at baseline. These include the percentage of households that report holding some form of savings (51 percent of control households and nearly 60 percent of treatment households), participate in the National Rural Employment Guarantee scheme (31 percent of control group households and 37.5 percent of

treatment households), have outstanding loans (74 percent of treatment households against 68.6 percent of control households), have outstanding loans from self-help groups (58 percent of treatment households but only 47 percent of control households), and own animals (13 percent of treatment household own one or more pieces of livestock or poultry, versus 7 percent control households).

Insert Table 2: Summary Statistics

Insert Appendix Table 1: Randomization

Table 2 reveals the differences between treatment and control group households at the endline. The statistically significant differences point to effects of the program. Some of the key outcomes are that while the program doesn't affect household income, it does change the composition of income. Treatment households have a greater share of income coming from livestock and less income from agriculture labor, though their total income is not significantly different from control households. The consumption expenditure on non-food items has reduced significantly for the treatment households and a further disaggregation reveals that this decline is mostly due to significant reduction in medical expenses. Finally, treatment households are more likely to sell livestock in the long run and payoff significant amount of outstanding loan as compared to control households. We will explore each of these results in greater detail in the following sections.

5.3 Income

One of the basic changes that we observe due to the program is in the income of ultra-poor households. Figure 1 shows that total monthly income per capita increased from the baseline to the endline, but similarly so for treatment and control households. In Figure 2, we show income per capita from different sources. The first thing that we note is that this population is very heavily dependent on agricultural labor as a primary source of income. In all groups and in baseline and endline waves, households earn more income from agriculture labor than from all other sources together. The baseline data also reveal that there are no obvious differences between the treatment and control households. At endline, however, treatment households increased their income from livestock to a level higher than control households, but did not increase their agricultural labor income as much as the control group. Income from other sources increased sharply from baseline to endline, but not differently so for treatment and control households.

Insert Figure 1 and Figure 2

In Table 3, we report regression results using the specification described in equation (2), which confirm the findings shown in Figure 1.[7] All households surveyed experienced a large and

[7] We also tested a seemingly unrelated regression specification to analyze the different sources of income. Results are qualitatively similar and are not reported here.

statistically significant increase in total income per capita, both in the short run and in the long run. Over the 3 years between baseline and endline surveys, average household income per capita increased by 74 percent. The ultra-poor program itself failed to raise households' income per capita beyond what happened to households in the control group, but induced a significant change in the sources of income. Not surprisingly, in the short run treatment households witnessed a 200 percent increase in livestock income. More surprisingly, though, they also reported a 47 percent decline in income from agricultural labor. Given that agriculture labor income comprised more than half of total income into these households, a 47 percent decline in agriculture labor income meant that total income is unaffected despite a massive increase in livestock income. In the long run too these effects persisted. Livestock income rose by more than 100 percent from the baseline value and agricultural income fell by 36 percent. But given that livestock income comprised a very small fraction of total income, this program had no effect on total income of ultra-poor households.

Insert Table 3: Income

5.4 Use of Time

Changes in adults' use of time were consistent with the changes in occupation structure and income reported by households. Not surprisingly, treatment households spent a lot more time tending to animals than control households, and reported spending less time doing agriculture labor. Over the long run, treatment members were doing almost one hour less of agricultural labor while control households increased the time they devote to this activity. Simultaneously, treatment households spent 13 more minutes than control households, on average, tending to animals.

Insert Table 4: Time use of adults

5.5 Use of government safety nets

Various government safety nets were unequally used by surveyed households at the time of the baseline survey. Table 5 shows that government programs distributing subsidized foods and basic necessity goods were used by more than 90 percent of all households at baseline, but fewer than 5 percent of households reported in the baseline survey seeking or receiving assets, vocational training or subsidized loans from the government.

Table 5 confirms the expansion of the National Rural Employment Guarantee Scheme, with the percentage of all households participating jumping from 34 to 85 between baseline and endline surveys. There is no direct evidence, however, of a substitution of the ultra-poor program with the government employment guarantee scheme. Ultra-poor households were not statistically significantly less likely to participate in the program.

Insert Table 5: Use of government safety nets

5.6 Consumption

Household consumption is a credible measure of poverty as it is more accurately assessed than income. The Tendulkar Committee Report (2009) of the Government of India estimated the poverty line based on the monthly per capita consumption expenditure of a household in India. The report estimates the poverty line for rural India at Rupees 448. The average monthly per capita consumption expenditure of the sample was Rs.540 in the baseline. Figure 2 shows the density of monthly per capita income and consumption for treatment and control households for total consumption. Figure 3 details consumption into food and non-food consumption. As the graphs indicate, over time the control households improved their levels of total, food and particularly non-food consumption expenditure slightly more than the treatment group households.

In Table 6 we report whether the differences in consumption expenditure between treatment and control households are statistically significant. These are results from estimating equation (2) where we take each measure of monthly consumption expenditure as the dependent variable. The results show that the program actually led to a significant long term decline in non-food expenditure of households. A further disaggregation shows that this is mostly due to a significant and persistent decline in medical expenditure of treatment households. Over the short run, that is from baseline to midline surveys, there was a decline in monthly expenditure on durable goods, clothing, home maintenance, tobacco and alcohol for the treatment households. These changes were, however, not statistically significant over the long run.

Insert Table 6: Consumption

Appendix Table 2 reports whether the program had any significant impact on food security. The results indicate that the overall population witnessed improvements in food security. This is measured in different ways including whether household members cut or skip meals on a given day, whether adults do not eat for an entire day and whether all members in the household had enough food every day for the entire year. Quite consistent with the results for consumption, we note that there are no significant improvements in food security due to this program. Over the short run, there was significant reduction in incidence of children cutting or skipping meals because of the intervention, but this improvement was not persistent over the long run.

Insert Appendix Table 2: Food Security

5.7 Health Outcomes

Earlier results revealed that over the long run, the program lead to a significant reduction in health expenditures. Appendix Table 4 also shows a significant decline in borrowing for health purposes. We report in Table 7 the impact of the program on self-reported health outcomes of the ultra-poor members. The program lead to significant improvement in the short run but had no lasting impact on the health of ultra-poor adult members. In the short run, treatment households lost one less day of work due to poor health and visited doctors or hospitals less than control

households. Over the short run, we also find that treatment households were less likely to visit a doctor or hospital than control households, but this effect did not persist over the long run. This result can partially be attributed to the training of a local basic health respondent in the village as part of the program.

Insert Table 7: Physical health

5.8 Financial Details - Savings and Loans

The basic motivation for the program is to help an ultra-poor household establish a microenterprise with a regular income flow, with the ultimate objective to "graduate" them into microfinance. In this section, we explore the impact of this program on the financial lives of the poor households.

Table 8 reports that the effect of the program is strong in the short run, as treatment households are more likely to pay off existing loans and to save than control households. Treatment households reported savings balances 1.5 times higher than those of control households, on average, immediately at the end of the program. This effect is most likely due to the design of the intervention which required treatment households to save every week such that at the end of 18 months they had accumulated at least Rs.800 to "graduate." These effects did not persist over the long run, however. In the long run all households, treatment and control, reduced their borrowing and were more likely to save than they were in the baseline, but not differently so for treatment and control households.

Insert Table 8: Loans and Savings

Appendix Table 3 looks at the effect of the program on access to credit. It shows that, over the long run, all households in this region are moving away from informal sources of credit such as moneylenders, shopkeepers, relatives and friends, and increasingly accessing formal sources such as self-help groups (SHG), microfinance institutions and cooperative societies. This shift can perhaps be attributed to the vigorous expansion of state-run SHG credit program in Andhra Pradesh at the time of the program. Households who participated in the program were 15 percentage points more likely to have reduced borrowings from moneylenders, as compared to control households, a large effect which represents one-third of the baseline percentage of households borrowing from moneylenders. The program, however, does not seem to have significantly improved poor households' access to formal credit.

Insert Appendix Table 3: Sources of Credit

5.9 Asset accumulation

In Table 9, we explore whether asset accumulation is impacted by the program. We consider different types of assets such as land, livestock, jewelry, household equipment and agricultural assets. The long run effects on asset accumulation indicates that households owned more livestock, which is not surprising given that livestock was the most common asset transferred to

ultra-poor households in the program. There are no other significant changes to the asset ownership structure of ultra-poor households due to the program.

Insert Table 9: Assets

5.10 Heterogeneity in impacts

In this section, we assess the heterogeneous impacts of the program on the ultra-poor population. We divide the sample into subsamples of households based on land ownership, house ownership and livestock ownership at baseline. Appendix Table 6 shows the results for per capita monthly income and how it is affected differently for the subsample of ultra-poor households. The results indicate that more poor households as depicted by those without livestock, land or house tended to do worse in the program. The average income of households in these subsamples changed in similar ways while the short run enterprise support from SKS lasted, but poorer households witnessed a significant decline in income over the long run.

Insert Appendix Table 6: Heterogeneous Income Effects

6 Conclusion

This study is an impact evaluation through a randomized controlled trial of an asset transfer program aimed at ultra-poor households in rural India. The program targets very poor households who have few assets and are chronically food insecure. The hope of the program is that conditions can be permanently shifted by providing resources intensively (including training, an asset transfer, and other support) rather than simply providing an ongoing safety net.

The results are surprising: we find that there are no significant long term effects of this program on overall consumption, income and asset accumulation of ultra-poor households. We ask whether the result may be a consequence of substitution with other economic activities. We find, for example, notable changes in the composition of income as households spend more time tending to livestock and reduce their participation in agricultural labor.

The program includes a mandatory weekly savings component. It is not surprising, therefore, to see that treatment households were more likely to save as well as to report higher savings balance after 18 months of intervention. Treatment households reported savings balance one and half times that of control households. But while this effect was strong in the short run, it wore off in the long run when SKS stopped enforcing the mandatory savings rule and transferred savings balances into the local post office account of each household.

The basic idea of the program is to establish a microenterprise with a regular cash flow such that households can move out of poverty. In the first 18 months of the program, SKS provided significant support in the form of stipend to meet enterprise related expenses. The short run results show that while the support lasted, the households held on to their enterprise. Over the long run, however, more than half the treatment households sold the enterprise asset and repaid outstanding loans.

Enterprise development at extreme levels of poverty is difficult to achieve, even if it is supported by a significant asset transfer and training. The results show that households struggled to maintain an enterprise even in the short run, despite stipends which covered enterprise related expenses. On the positive side, the program led to both short-term and long-term improvements in health variables. The balance of the evidence suggests that while the program opened possibilities for families, it failed to meet its promise.

Taken as a whole, the study shows the need to interpret evaluations in the context of the economic opportunities faced by families. Because of substitution, even well-designed and well-implemented interventions can yield no net effect.

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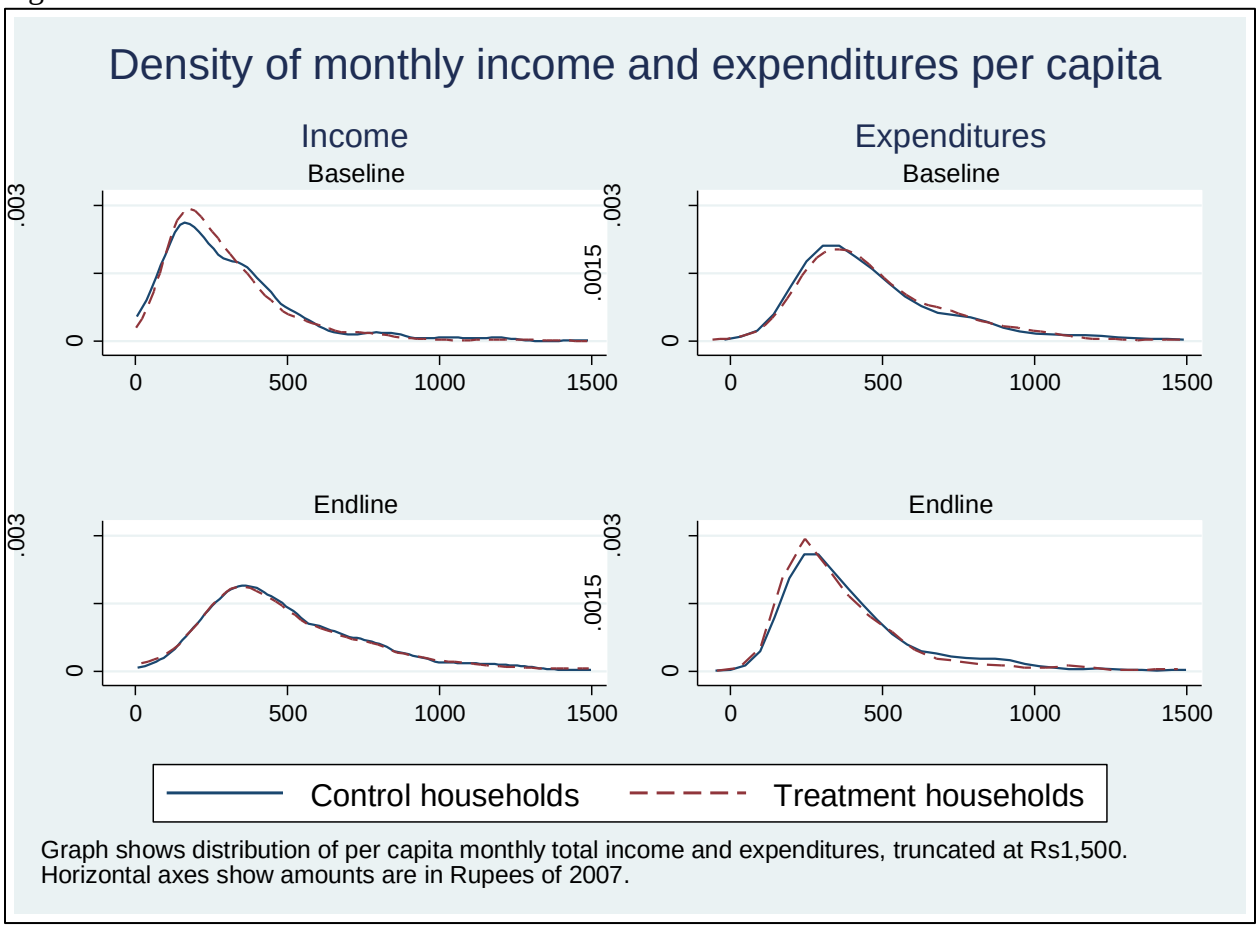
Figure 1



Graph shows distribution of per capita monthly total income and expenditures, truncated at Rs1,500. Horizontal axes show amounts are in Rupees of 2007.

Figure 2

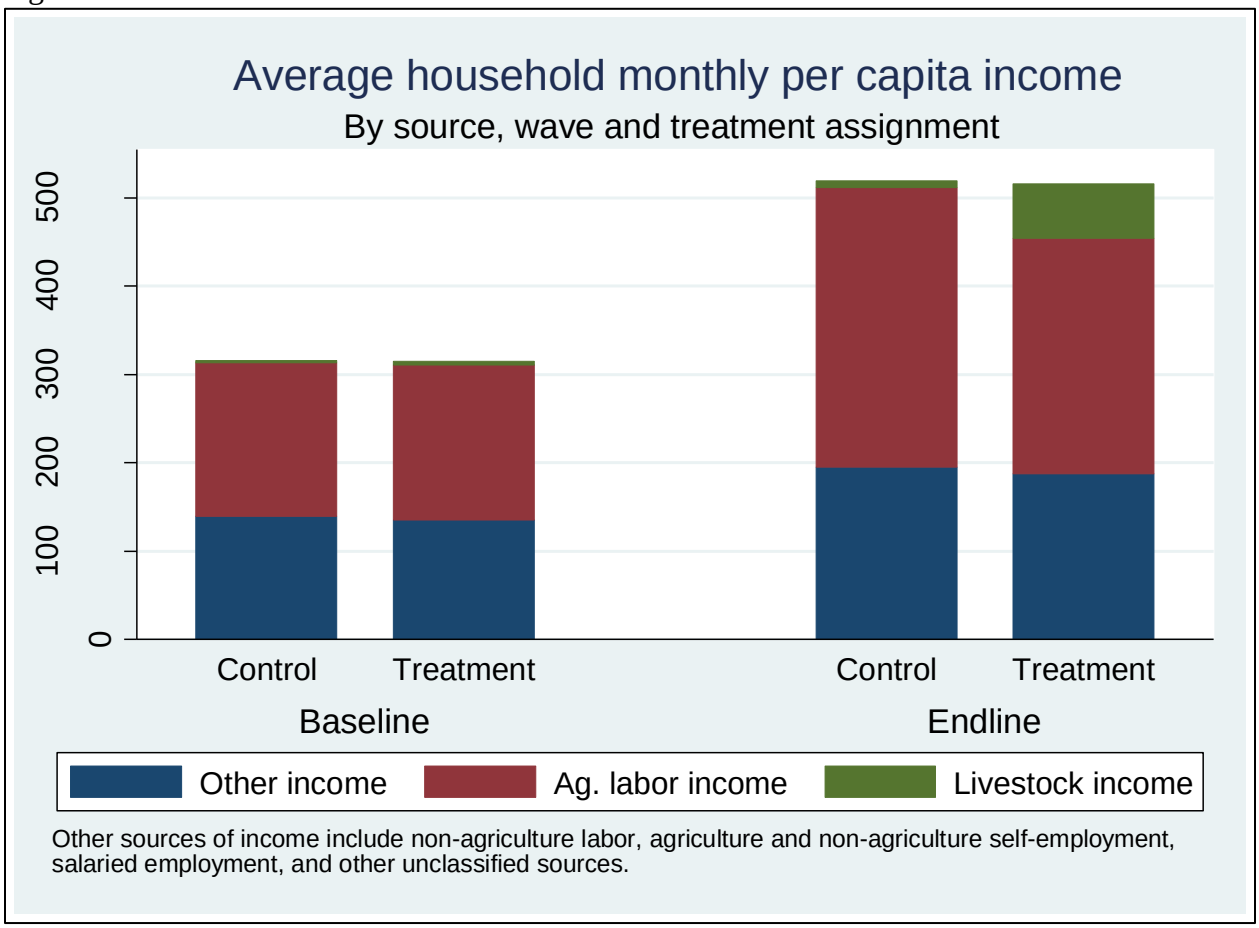
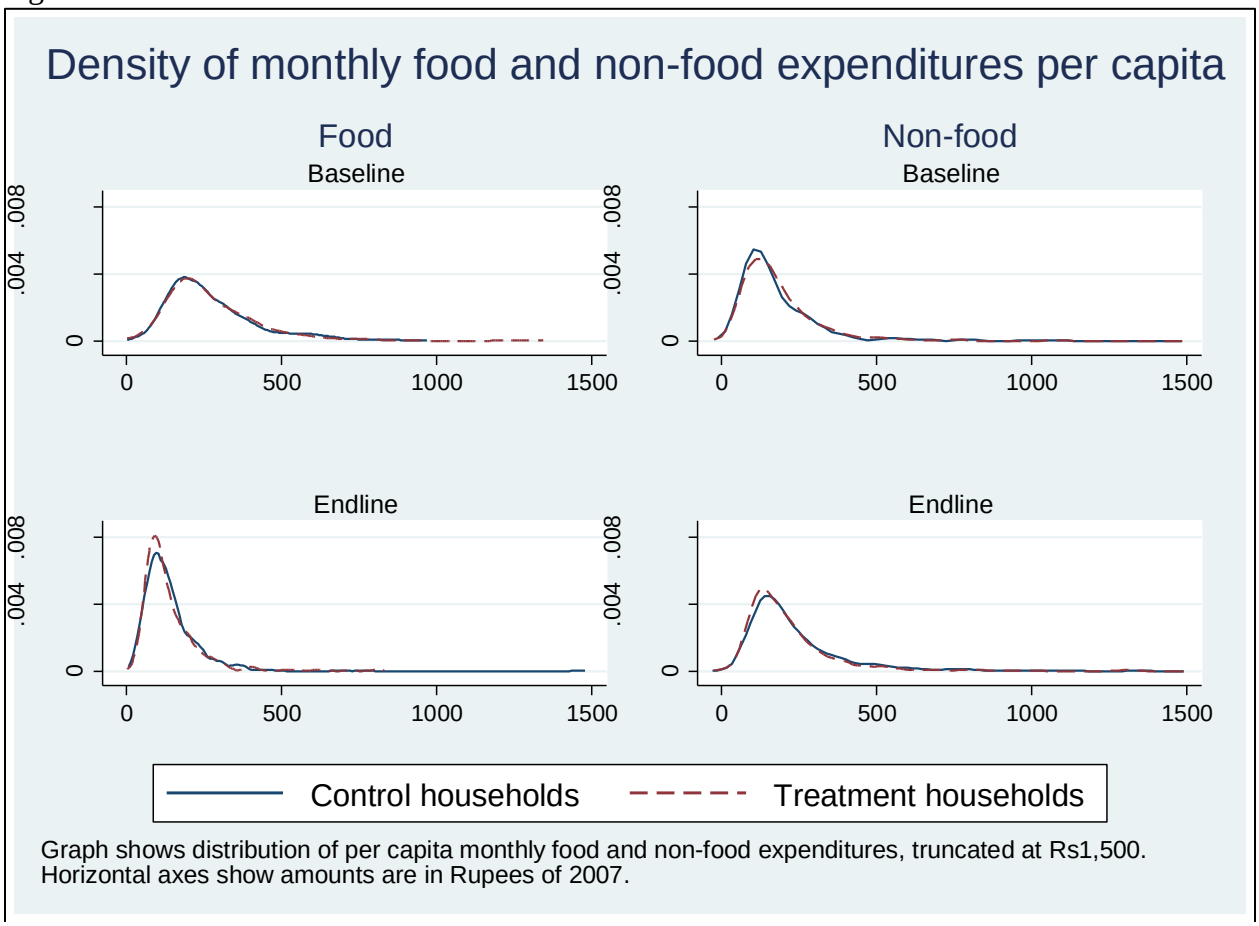

Average household monthly per capita income
By source, wave and treatment assignment
0
100
200
300
400
500
Control
Treatment
Control
Treatment
Baseline
Endline
Other income
Ag. labor income
Livestock income
Other sources of income include non-agriculture labor, agriculture and non-agriculture self-employment, salaried employment, and other unclassified sources.

Figure 3



Graph shows distribution of per capita monthly food and non-food expenditures, truncated at Rs1,500. Horizontal axes show amounts are in Rupees of 2007.

Table 1. Summary statistics for attrition and non-attrition households

	Non-attriters (1,011 hh)	Attriters (53 hh)	p-value
Individual-level data on household head			
Age (years)	46.4	51.9	0.012**
Literate (%)	4.8	11.3	0.034**
Marital status: Married (%)	18.3	18.9	0.920
Marital status: Unmarried (%)	1.0	0.0	0.467
Marital status: Divorced (%)	13.5	15.1	0.736
Marital status: Widow (%)	67.2	66.0	0.858
Household-level data			
Number of household members	3.3	3.3	0.843
Average age of household members (years)	29.4	32.9	0.056*
Own their house (%)	71.4	66.0	0.402
House material: Pucca/good (%)	1.8	1.9	0.955
House material: Kuccha/medium (%)	80.1	81.1	0.857
House material: Thatched/bad (%)	18.1	17.0	0.837
Source of drinking water: Tap (%)	50.2	60.4	0.149
Source of drinking water: Well (%)	4.7	1.9	0.345
Source of drinking water: Tube well/hand pump (%)	43.8	37.7	0.389
Source of drinking water: Tank/reservoir (%)	1.3	0.0	0.406
Source of drinking water: Other (%)	0.1	0.0	0.819
Latrine is open air (%)	98.8	96.2	0.109
Any household member migrates for work (%)	15.9	12.8	0.563
Total land owned by hh (acres)	0.42	0.34	0.583
Total monthly income per capita (Rs)	319	252	0.250
Main source of income: Farming (%)	3.1	0.0	0.196
Main source of income: Livestock (%)	0.5	0.0	0.608
Main source of income: Non-ag. enterprise (%)	4.6	9.4	0.116
Main source of income: Wage labor (%)	91.8	90.6	0.753
Total monthly expenditures per capita (Rs)	550	468	0.304
Household has outstanding loans (%)	71.4	67.9	0.585
Household saves (%)	56.0	47.2	0.209
Sought or received work from EGS (%)	34.4	30.8	0.595
Sought or received a pension (%)	64.6	66.0	0.826
Sought or received government-subsidized loans (%)	2.3	3.8	0.483
Has an Antodaya, pink or white card (%)	92.7	94.3	0.649
Receives BPL rations (%)	91.9	94.2	0.546

*** p<0.01, ** p<0.05, * p<0.1; p-values are from t-tests. The table shows the mean of the indicated variables for households who were surveyed in both baseline and endline surveys ("non-attriters") and households who were surveyed in the baseline only ("attriters"). "EGS" include all government "employment-generating schemes," the largest of which is the National Rural Employment Guarantee scheme created by the Mahatma Gandhi National Rural Employment Guarantee Act of 2005. BPL rations entitle families living below the poverty line to buying commodities at a government-subsidized price.

Table 2. Summary statistics for control and treatment households.

	Baseline		Midline		Endline		% change baseline-endline	
	Control	Treatment	Control	Treatment	Control	Treatment	Control	Treatment
Total monthly per capita income	312	313	483	521	520	516	67	65
Monthly p.c. income from livestock	2.4	3.6	7.1	55.8	7.6	62.0	221	1,644
Monthly p.c. income from ag. labor	174	176	254	199	316	267	82	51
Monthly p.c. income from non-ag. labor	60	56	80	92	105	103	75	85
Monthly p.c. income from NREGS	n/a	n/a	57	47	51	53	n/a	n/a
Total monthly per capital expenditures	555	539	860	757	498	471	-10	-12
Monthly p.c. food expenditures	275	275	256	234	142	139	-48	-49
Monthly p.c. non-food expenditures	194	192	455	419	254	226	31	18
Monthly p.c. ceremony expenditures	86	72	149	103	102	107	18	49
Household has savings (%)	51	59	71	87	60	65	18	9
Per capita savings balance	110	140	446	599	208	200	89	43
Household saves in SHG (%)	47	58	54	60	58	55	22	-4
Household has outstanding loan (%)	68	74	67	72	47	49	-32	-34
Per capita outstanding loan balance	2,479	3,041	2,813	1,892	1,447	1,531	-42	-50
Household borrows from moneylender (%)	28	31	22	14	8	9	-72	-71
Household borrows from SHG (%)	30	40	28	33	30	33	1	-16
Household sought/received gov. assets (%)	3.3	4.3	7.0	4.2	9.9	9.3	203	115
Household sought/received gov. training (%)	0	1	2	1	8	6	1,761	1,141
Household received goods from PDS (%)	93	93	94	97	98	98	5	6
Household received BPL rationing (%)	91	93	77	83	96	98	5	6
Household sought/received EGS work (%)	31	37	69	68	82	80	167	116
# days household worked in NREG	n/a	n/a	27.9	37.1	32.2	34.5	n/a	n/a
Household owns any animal(s) (%)	7	13	12	60	6	32	-22	149
Household has any child in school (%)	74	84	78	81	88	88	20	5
Number of days unable to work b/c illness	3.0	3.0	3.1	2.1	2.0	1.7	-34	-43

All data are averages, except in the last two columns. All amounts are in Rs of 2007. Savings and borrowing in/from specific institutions is not conditional on the household having savings/borrowings. The percentage change displayed in the last two columns may be different from the percentage change calculated from data displayed in the table because of rounding. PDS is the Public Distribution System. BPL rationing provides basic goods at a subsidized price to households living below the poverty line. The number of days worked in NREG is conditional on participating in NREG.

Table 3. Effect of ultra-poor program on income.

	Total	Ag. self-employment	Ag. labor	Non-ag. labor	Salaried employment	Livestock	Non-ag. self-employment	Other sources
				Midline				
Post*Treatment	-0.02	0.06	-0.40**	0.47*	0.05	2.08***	0.14	-0.05
	(0.09)	(0.15)	(0.19)	(0.28)	(0.11)	(0.18)	(0.12)	(0.20)
Post (0 if baseline, 1 if midline)	0.58***	0.22*	-0.19	-0.48**	0.19**	0.18***	0.02	2.74***
	(0.08)	(0.11)	(0.14)	(0.23)	(0.08)	(0.07)	(0.08)	(0.14)
Constant	5.25***	0.67***	4.56***	1.68***	0.01	0.06	0.42***	0.60***
	(0.06)	(0.10)	(0.12)	(0.13)	(0.06)	(0.07)	(0.09)	(0.10)
Number of observations	1,936	1,828	1,942	1,936	1,945	1,800	1,883	1,768
R-squared	0.108	0.011	0.031	0.026	0.016	0.308	0.012	0.405
Mean of dep. var. at baseline	319	15	177	59	7	4	38	38
				Endline				
Post*Treatment	-0.14	-0.05	-0.36*	0.30	-0.03	1.01***	0.03	-0.34*
	(0.09)	(0.16)	(0.19)	(0.29)	(0.09)	(0.17)	(0.10)	(0.20)
Post (0 if baseline, 1 if endline)	0.74***	-0.12	0.21	-0.08	0.10	-0.04	-0.27***	2.75***
	(0.07)	(0.12)	(0.15)	(0.21)	(0.07)	(0.03)	(0.07)	(0.14)
Constant	5.30***	0.56***	4.44***	1.85***	0.01	0.15**	0.38***	0.75***
	(0.05)	(0.08)	(0.11)	(0.14)	(0.05)	(0.07)	(0.06)	(0.09)
Number of observations	1,976	1,928	1,991	1,938	1,987	1,910	1,967	1,777
R-squared	0.152	0.012	0.016	0.010	0.012	0.129	0.025	0.382
Mean of dep. var. at baseline	318	15	178	57	7	4	37	38

*** p<0.01, ** p<0.05, * p<0.1. All regressions include village-level fixed effects. Standard errors are clustered at the village level. Variables controlling for unbalanced characteristics of the sample (baseline values of whether the household saves, participates in EGS, receives a pension, has outstanding loan(s) from self-help groups, and own an animal) are included in the regressions but not shown. The dependent variables are the log of the monthly per capita income from each source (log of 1 + amount in 2007 Rupees; 1 USD ≈ 40 Rs). The means of the dependent variables at baseline are in level form. Livestock income includes income from irregular sales of animals. Other sources of income include land sales, rental, government assistance, remittances, pensions and other unclassified sources.

Table 4. Effect of ultra-poor program on time use of adults.

	Productive time	Leisure time	Time doing chores	Agricultural labor	Tending animals	Caring for child/elderly	Tending animals, if owns animals
				Midline			
Post*Treatment	70**	9	-23	-36	59***	-8**	90**
	(27)	(6)	(18)	(26)	(8)	(4)	(37)
Post (0 if baseline, 1 if midline)	-43**	12***	46***	-91***	1	4	-26
	(20)	(4)	(14)	(19)	(3)	(3)	(34)
Constant	280***	7***	205***	248***	2	19***	48**
	(14)	(3)	(7)	(11)	(5)	(2)	(23)
Number of observations	1,954	1,954	1,954	1,932	1,946	1,945	464
R-squared	0.016	0.036	0.028	0.091	0.105	0.006	0.045
Mean of dep. var. at baseline	301	14	202	262	4	16	24
				Endline			
Post*Treatment	-27	0	10	-58**	13***	-1	7
	(23)	(4)	(11)	(24)	(4)	(3)	(23)
Post (0 if baseline, 1 if endline)	84***	-5*	-40***	50***	-4**	-2	3
	(16)	(3)	(7)	(17)	(2)	(2)	(17)
Constant	287***	11***	204***	247***	5**	18***	52*
	(10)	(2)	(6)	(12)	(2)	(2)	(30)
Number of observations	2,000	2,000	2,000	1,973	1,992	1,991	296
R-squared	0.049	0.012	0.047	0.019	0.019	0.006	0.068
Mean of dep. var. at baseline	302	13	201	264	4	16	24

*** p<0.01, ** p<0.05, * p<0.1. Village fixed-effects included. Standard errors are clustered at the village level. Variables controlling for unbalanced characteristics of the sample (baseline values of whether the household saves, participates in EGS, receives a pension, has outstanding loan(s) from self-help groups, and own an animal) are included in the regressions but not shown. Time is measured in minutes in the last 24 hours. Productive time includes working in the field, tending animals, working in business, agricultural labor, working in someone else's house, non-agricultural labor and doing other work. Leisure time includes shopping, watching TV/listening to radio and doing political activities. Time doing chores includes gathering water and fuel, cooking, cleaning home and clothes and caring for children/elderly. Animal ownership is measured in each wave.

Table 5. Use of government safety nets.

	Household sought or received…						Received goods from PDS	Received goods from BPL rationing
	work from EGS	pension	gov. housing	gov. assets	gov. vocational training	subsidized loans		
Midline								
Post*Treatment	-0.068	-0.066	-0.094**	-0.039*	-0.014	0.035	0.021	0.048
	(0.052)	(0.047)	(0.040)	(0.022)	(0.010)	(0.036)	(0.018)	(0.055)
Post (0 if baseline, 1 if midline)	0.384***	0.236***	0.090***	0.037**	0.017**	0.160***	0.018	-0.150***
	(0.035)	(0.035)	(0.028)	(0.017)	(0.008)	(0.027)	(0.013)	(0.047)
Constant	0.106***	0.290***	0.114***	0.013	0.003	-0.003	0.875***	0.861***
	(0.018)	(0.016)	(0.017)	(0.012)	(0.005)	(0.015)	(0.014)	(0.022)
Observations	1,954	1,954	1,952	1,954	1,954	1,953	1,953	1,943
R-squared	0.418	0.365	0.015	0.011	0.006	0.100	0.025	0.053
Mean of dep. var. at baseline	0.342	0.646	0.172	0.039	0.005	0.025	0.929	0.922
Endline								
Post*Treatment	-0.080	-0.085	0.045	-0.011	-0.010	-0.010	-0.000	0.002
	(0.052)	(0.061)	(0.048)	(0.036)	(0.034)	(0.014)	(0.017)	(0.021)
Post (0 if baseline, 1 if endline)	0.510***	0.062	0.011	0.063**	0.070***	0.020*	0.054***	0.053***
	(0.035)	(0.043)	(0.033)	(0.026)	(0.025)	(0.011)	(0.013)	(0.017)
Constant	0.147***	0.292***	0.130***	0.032***	0.012	0.030***	0.878***	0.866***
	(0.019)	(0.019)	(0.018)	(0.012)	(0.009)	(0.008)	(0.013)	(0.015)
Observations	1,998	1,998	1,997	1,999	1,998	1,997	1,999	1,977
R-squared	0.456	0.261	0.008	0.020	0.044	0.006	0.038	0.036
Mean of dep. var. at baseline	0.344	0.643	0.168	0.039	0.005	0.023	0.926	0.918

*** p<0.01, ** p<0.05, * p<0.1. All regressions include village-level fixed effects. Standard errors are clustered at the village level. Regressions in which the dependent variable is a binary variable are run as linear probability models. Variables controlling for unbalanced characteristics of the sample (baseline values of whether the household saves, participates in EGS, receives a pension, has outstanding loan(s) from self-help groups, and own an animal) are included in the regressions but not shown. EGS include all government "employment-generating schemes," the largest of which is the National Rural Employment Guarantee scheme created by the Mahatma Gandhi National Rural Employment Guarantee Act of 2005.

Table 6. Effect of ultra-poor program on consumption.

	Total	Food	Non-food	Ceremony	Non-food details				
					Fuel	Tobacco & Alcohol	Medical	Educational	Other
Midline									
Post*Treatment	-0.14**	-0.03	-0.17**	-0.29	0.15	-0.59***	-0.35***	0.12	-0.20**
	(0.07)	(0.07)	(0.07)	(0.18)	(0.09)	(0.18)	(0.12)	(0.11)	(0.09)
Post (0 if baseline, 1 if midline)	0.34***	-0.19***	0.77***	0.05	0.31***	0.32**	0.15	0.29***	0.92***
	(0.04)	(0.05)	(0.05)	(0.14)	(0.07)	(0.15)	(0.09)	(0.08)	(0.06)
Constant	6.02***	5.44***	4.92***	0.63***	2.10***	1.18***	3.17***	1.00***	4.41***
	(0.04)	(0.04)	(0.04)	(0.10)	(0.05)	(0.09)	(0.07)	(0.10)	(0.05)
Number of observations	1,954	1,954	1,954	1,954	1,954	1,954	1,954	1,954	1,954
R-squared	0.048	0.033	0.221	0.005	0.064	0.012	0.013	0.029	0.185
Mean of dep. var. at baseline	553	277	194	82	13	18	55	13	176
Endline									
Post*Treatment	-0.07	0.02	-0.11*	-0.10	0.06	-0.10	-0.36***	-0.13	-0.05
	(0.06)	(0.05)	(0.06)	(0.18)	(0.09)	(0.15)	(0.12)	(0.11)	(0.09)
Post (0 if baseline, 1 if endline)	-0.18***	-0.70***	0.31***	-0.21	0.76***	-0.95***	0.07	0.27***	0.36***
	(0.04)	(0.03)	(0.04)	(0.15)	(0.07)	(0.11)	(0.09)	(0.08)	(0.06)
Constant	6.03***	5.45***	4.96***	0.57***	2.21***	1.13***	3.27***	1.00***	4.42***
	(0.03)	(0.03)	(0.04)	(0.09)	(0.05)	(0.07)	(0.07)	(0.09)	(0.05)
Number of observations	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
R-squared	0.038	0.280	0.051	0.010	0.210	0.148	0.015	0.021	0.043
Mean of dep. var. at baseline	551	276	194	81	12	19	55	13	176

*** p<0.01, ** p<0.05, * p<0.1. All regressions include village-level fixed effects. Standard errors are clustered at the village level. Variables controlling for unbalanced characteristics of the sample (baseline values of whether the household saves, participates in EGS, receives a pension, has outstanding loan(s) from self-help groups, and own an animal) are included in the regressions but not shown. The dependent variables are the log of the monthly per capita expenditures in each category (log of 1 + amount in 2007 Rupees; 1 USD ≈ 40 Rs). The means of the dependent variables at baseline are in level form. Ceremonies include traditional feasts/initiations, weddings and funerals.

Table 7. Effect of ultra-poor program on measures of physical health.

	Felt that physical health improved in last year?	Number of days unable to work because of illness	Any member went to the doctor/ hospital in last year?
	Midline		
Post*Treatment	0.038	-1.152*	-0.120**
	(0.055)	(0.595)	(0.051)
Post (0 if baseline, 1 if midline)	0.420***	0.142	0.086**
	(0.041)	(0.439)	(0.038)
Constant	0.189***	3.457***	0.522***
	(0.026)	(0.376)	(0.026)
Number of observations	1,942	1,933	1,902
R-squared	0.239	0.006	0.006
Mean of dep. var. at baseline	0.233	2.980	0.503
	Endline		
Post*Treatment	-0.009	-0.400	-0.053
	(0.061)	(0.558)	(0.065)
Post (0 if baseline, 1 if endline)	-0.055	-0.924**	-0.083*
	(0.046)	(0.396)	(0.049)
Constant	0.223***	3.281***	0.506***
	(0.022)	(0.272)	(0.029)
Number of observations	1,982	1,958	1,836
R-squared	0.012	0.020	0.018
Mean of dep. var. at baseline	0.235	3.001	0.506

*** p<0.01, ** p<0.05, * p<0.1. All regressions include village-level fixed effects. Standard errors are clustered at the village level. Regressions in which the dependent variable is a binary variable are run as linear probability models. Variables controlling for unbalanced characteristics of the sample (baseline values of whether the household saves, participates in EGS, receives a pension, has outstanding loan(s) from self-help groups, and own an animal) are included in the regressions but not shown.

Table 8. Effect of ultra-poor program on loans and savings.

	Household has outstanding loans?	Number of loans outstanding	Log (Amount of loan outstanding)	Household saves?	Log (Total savings balance)
			Midline		
Post*Treatment	-0.017	-0.01	-1.11***	0.081*	1.49***
	(0.043)	(0.08)	(0.37)	(0.045)	(0.33)
Post (0 if baseline, 1 if midline)	-0.012	-0.00	-0.07	0.194***	1.15***
	(0.033)	(0.06)	(0.27)	(0.037)	(0.27)
Constant	0.573***	0.71***	4.25***	0.205***	0.37**
	(0.025)	(0.05)	(0.22)	(0.017)	(0.14)
Number of observations	1,953	1,954	1,954	1,954	1,610
R-squared	0.085	0.086	0.087	0.420	0.295
Mean of dep. var. at baseline	0.713	1.0	2,846	0.557	122
			Endline		
Post*Treatment	-0.030	-0.09	-0.13	-0.039	-0.38
	(0.059)	(0.09)	(0.45)	(0.051)	(0.39)
Post (0 if baseline, 1 if endline)	-0.223***	-0.33***	-1.92***	0.090**	0.23
	(0.044)	(0.07)	(0.34)	(0.038)	(0.30)
Constant	0.568***	0.69***	4.23***	0.227***	0.70***
	(0.025)	(0.04)	(0.19)	(0.020)	(0.14)
Number of observations	2,000	2,018	2,018	2,018	1,667
R-squared	0.155	0.134	0.132	0.322	0.112
Mean of dep. var. at baseline	0.714	1.0	2,810	0.559	129

*** p<0.01, ** p<0.05, * p<0.1. All regressions include village-level fixed effects. Standard errors are clustered at the village level. Regressions in which the dependent variable is a binary variable are run as linear probability models. Variables controlling for unbalanced characteristics of the sample (baseline values of whether the household saves, participates in EGS, receives a pension, has outstanding loan(s) from self-help groups, and own an animal) are included in the regressions but not shown. The amounts of loan outstanding and savings balance are in log form (log of 1 + amount in 2007 Rupees; 1 USD ≈ 40 Rs). The means of these dependent variables at baseline are in level form.

Table 9. Effect of ultra-poor program on asset ownership.

	Household owns its house?	Acres of land owned	Assets index	Agricultural assets index	Household owns livestock?	Household owns poultry?	Household owns plough?
				Midline			
Post*Treatment	0.040	0.041	0.184	0.544***	0.492***	0.002	-0.005
	(0.037)	(0.086)	(0.130)	(0.106)	(0.037)	(0.021)	(0.010)
Post (0 if baseline, 1 if midline)	0.119***	0.178***	-0.153	-0.300***	0.031*	0.013	0.009
	(0.027)	(0.066)	(0.096)	(0.058)	(0.016)	(0.012)	(0.005)
Constant	0.645***	0.403***	-0.413***	-0.174***	0.019	0.008	0.015**
	(0.024)	(0.053)	(0.086)	(0.061)	(0.015)	(0.013)	(0.007)
Number of observations	1,948	1,910	1,945	1,953	1,954	1,954	1,954
R-squared	0.043	0.023	0.042	0.166	0.355	0.114	0.032
Mean of dep. var. at baseline	0.710	0.416	0.022	0.015	0.067	0.050	0.013
				Endline			
Post*Treatment	-0.003	-0.172*	-0.059	0.210	0.242***	-0.002	-0.007
	(0.032)	(0.101)	(0.125)	(0.134)	(0.040)	(0.018)	(0.009)
Post (0 if baseline, 1 if endline)	0.139***	0.108	0.028	-0.131	-0.015	-0.015	-0.002
	(0.023)	(0.090)	(0.086)	(0.089)	(0.014)	(0.010)	(0.007)
Constant	0.653***	0.388***	-0.372***	-0.112**	0.037**	0.028***	0.009**
	(0.026)	(0.044)	(0.078)	(0.049)	(0.014)	(0.008)	(0.004)
Number of observations	1,995	1,956	1,989	1,977	1,992	1,978	1,994
R-squared	0.040	0.015	0.053	0.145	0.179	0.142	0.040
Mean of dep. var. at baseline	0.711	0.414	-0.007	0.016	0.069	0.050	0.013

*** p<0.01, ** p<0.05, * p<0.1. All regressions include village-level fixed effects. Standard errors are clustered at the village level. Regressions in which the dependent variable is a binary variable are run as linear probability models. Variables controlling for unbalanced characteristics of the sample (baseline values of whether the household saves, participates in EGS, receives a pension, has outstanding loan(s) from self-help groups, and own an animal) are included in the regressions but not shown. The assets index is the principal components index of household durable goods owned by the household (e.g. television, table, jewelry). The agricultural assets index is the principal components index of household agricultural durable goods and animals owned by the household (e.g. plough, tractor, pump, livestock).

Appendix Tables

Appendix Table 1: Summary statistics for control and treatment households.

	Panel A - Baseline				
	Control group	N	Treatment group	N	p-value
Individual-level data on ultra-poor participant					
Age (years)	37.6	446	38.6	507	0.159
Literate (%)	4.3	446	4.7	508	0.731
Marital status: Married (%)	7.8	446	9.6	508	0.329
Marital status: Unmarried (%)	1.3	446	3.1	508	0.064*
Marital status: Divorced (%)	25.6	446	20.1	508	0.044**
Marital status: Widow (%)	65.2	446	67.1	508	0.541
Household-level data					
Number of hh members	3.2	465	3.3	546	0.142
Average age of household members (years)	28.7	465	30.1	546	0.097*
Own their house (%)	72.6	463	70.4	544	0.449
House material: Pucca/good (%)	2.4	465	1.3	546	0.195
House material: Kuccha/medium (%)	78.9	465	81.1	546	0.381
House material: Thatched/bad (%)	18.7	465	17.6	546	0.643
Source of drinking water: Tap (%)	51.8	465	48.8	545	0.339
Source of drinking water: Well (%)	4.1	465	5.1	545	0.430
Source of drinking water: Tube well/hand pump (%)	43.4	465	44.0	545	0.849
Source of drinking water: Tank/reservoir (%)	0.4	465	2.0	545	0.026**
Source of drinking water: Other (%)	0.2	465	0.0	545	0.279
Latrine is open air (%)	98.7	462	98.9	544	0.776
Any household member migrates for work (%)	17.1	438	14.9	504	0.349
Total land owned by household (acres)	0.39	455	0.44	530	0.459
Total monthly income per capita (Rs)	326	465	311	546	0.565
Main source of income: Farming (%)	2.6	465	3.5	546	0.409
Main source of income: Livestock (%)	0.6	465	0.4	546	0.529
Main source of income: Non-ag. enterprise (%)	4.7	465	4.6	546	0.909
Main source of income: Wage labor (%)	92.0	465	91.6	546	0.787
Total monthly expenditures per capita (Rs)	561	465	541	546	0.575
Household has outstanding loans (%)	68.6	465	73.8	546	0.068*
Household saves (%)	51.0	465	60.3	546	0.003***
Sought or received work from EGS (%)	30.8	465	37.4	545	0.026**
Sought or received a pension (%)	60.4	465	68.1	545	0.011**
Sought or received government-subsidized loans (%)	2.8	465	1.8	546	0.306
Has an Antodaya, pink or white card (%)	92.5	464	92.9	546	0.808
Receives BPL rations (%)	91.0	456	92.6	544	0.345
Household owns one or more animal(s) (%)	7.3	463	13.0	540	0.004***
Experienced an event (shock) in last 12 months (%)	31.8	465	34.2	546	0.416

Panel B - Endline	Control group	N	Treatment group	N	p-value
Individual-level data on ultra-poor participant					
Age (years)	43.0	428	42.7	479	0.671
Literate (%)	5.4	429	11.1	476	0.002***
Marital status: Married (%)	13.5	429			
Marital status: Unmarried (%)	1.2	429	2.5	479	0.137
Marital status: Divorced (%)	10.7	429	12.1	479	0.513
Marital status: Widow (%)	74.6	429	74.5	479	0.983
Household-level data					
Number of hh members	3.0	465	3.0	546	0.913
Average age of household members (years)	33.2	465	33.7	546	0.514
Own their house (%)	86.4	464	83.5	546	0.200
House material: Pucca/good (%)	1.5	463	2.9	546	0.133
House material: Kuccha/medium (%)	32.8	463	33.7	546	0.770
House material: Thatched/bad (%)	65.7	463	63.4	546	0.450
Source of drinking water: Tap (%)	58.2	459	56.4	543	0.563
Source of drinking water: Well (%)	2.2	459	2.6	543	0.681
Source of drinking water: Tube well/hand pump (%)	34.4	459	35.5	543	0.711
Source of drinking water: Tank/reservoir (%)	5.2	459	5.5	543	0.836
Source of drinking water: Other (%)	0.0	459	0.0	543	-
Latrine is open air (%)	99.3	448	99.1	535	0.646
Any household member migrates for work (%)	12.7	465	9.5	546	0.109
Total land owned by household (acres)	0.50	452	0.38	538	0.075*
Total monthly income per capita (Rs)	519	465	511	546	0.705
Main source of income: Farming (%)	1.7	465	2.2	546	0.587
Main source of income: Livestock (%)	0.6	465	6.4	546	<0.001***
Main source of income: Non-ag. enterprise (%)	0.6	465	2.4	546	0.028**
Main source of income: Wage labor (%)	97.0	465	89.0	546	<0.001***
Total monthly expenditures per capita (Rs)	501	465	473	546	0.577
Household has outstanding loans (%)	46.5	465	48.7	546	0.473
Household saves (%)	60.0	465	65.2	546	0.088*
Sought or received work from EGS (%)	81.9	464	80.7	545	0.638
Sought or received a pension (%)	66.6	464	65.3	545	0.671
Sought or received government-subsidized loans (%)	4.8	463	2.8	545	0.093*
Has an Antodaya, pink or white card (%)	97.8	465	98.2	546	0.717
Receives BPL rations (%)	96.3	459	98.0	540	0.112
Household owns one or more animal(s) (%)	5.3	455	32.4	534	<0.001***
Experienced an event (shock) in last 12 months (%)	12.3	465	11.0	546	0.530

*** p<0.01, ** p<0.05, * p<0.1. The table shows the mean of the indicated variables for households assigned to participate in the program ("treatment") and households assigned not to participate ("control"). p-values are obtained from t-tests. "EGS" include all government "employment-generating schemes," the largest of which is the National Rural Employment Guarantee scheme created by the Mahatma Gandhi National Rural Employment Guarantee Act of 2005. BPL rations entitle families living below the poverty line to buying commodities at a government-subsidized price.

Appendix Table 2. Effect of ultra-poor program on food security.

	Adults cut size or skip meals?	Adults do not eat for whole day?	Children under 16 cut size or skip meal?	All household members have enough food every day, all year?	Everyone in household eats two meals per day?
			Midline		
Post*Treatment	-0.072	-0.044	-0.042*	0.041	-0.005
	(0.049)	(0.037)	(0.025)	(0.045)	(0.025)
Post (0 if baseline, 1 if midline)	-0.205***	-0.052*	0.040*	0.124***	0.002
	(0.039)	(0.029)	(0.021)	(0.036)	(0.020)
Constant	0.382***	0.174***	0.038***	0.730***	0.934***
	(0.022)	(0.019)	(0.014)	(0.020)	(0.014)
Number of observations	1,951	1,945	1,612	1,941	1,938
R-squared	0.106	0.019	0.005	0.044	0.004
Mean of dep. var. at baseline	0.351	0.169	0.043	0.723	0.934
			Endline		
Post*Treatment	-0.039	-0.056	-0.050	-0.032	-0.014
	(0.051)	(0.044)	(0.039)	(0.045)	(0.026)
Post (0 if baseline, 1 if endline)	-0.187***	-0.023	0.120***	0.191***	0.020
	(0.040)	(0.033)	(0.030)	(0.031)	(0.020)
Constant	0.357***	0.174***	0.033	0.719***	0.928***
	(0.023)	(0.017)	(0.022)	(0.018)	(0.014)
Number of observations	1,572	1,553	1,067	1,964	1,980
R-squared	0.072	0.014	0.039	0.063	0.004
Mean of dep. var. at baseline	0.354	0.172	0.042	0.719	0.931

*** p<0.01, ** p<0.05, * p<0.1. All regressions include village-level fixed effects. Standard errors are clustered at the village level. All regressions are run as linear probability models. Variables controlling for unbalanced characteristics of the sample (baseline values of whether the household saves, participates in EGS, receives a pension, has outstanding loan(s) from self-help groups, and own an animal) are included in the regressions but not shown. Sample sizes are low in the baseline/endline analysis because of many missing values.

Appendix Table 3. Effect of ultra-poor program on sources of loans.

	Family	Com. bank	Grameen	SHG	Money-lender	Friend	Neighbor	Shop-keeper	Co-operative	MFI	Other
Midline											
Post*Treatment	0.035	-0.015	0.003	-0.060	-0.145**	0.013	-0.078*	-0.008	0.059	0.009	0.278***
	(0.031)	(0.031)	(0.022)	(0.068)	(0.060)	(0.013)	(0.042)	(0.011)	(0.041)	(0.007)	(0.043)
Post (0 if baseline, 1 if midline)	-0.082***	0.043*	-0.037**	0.006	-0.100**	-0.020**	-0.003	-0.010*	0.053	-0.001	0.044**
	(0.025)	(0.022)	(0.018)	(0.054)	(0.044)	(0.009)	(0.036)	(0.006)	(0.032)	(0.005)	(0.020)
Constant	0.155***	0.045***	0.073***	0.170***	0.534***	0.019***	0.152***	0.023***	-0.006	0.004	0.002
	(0.017)	(0.016)	(0.014)	(0.029)	(0.031)	(0.007)	(0.020)	(0.007)	(0.015)	(0.006)	(0.018)
Number of observations	1,381	1,381	1,381	1,381	1,381	1,381	1,381	1,381	1,381	1,381	1,381
R-squared	0.038	0.012	0.010	0.153	0.064	0.007	0.014	0.012	0.057	0.004	0.188
Mean of dep. var. at baseline	0.113	0.030	0.061	0.493	0.425	0.020	0.124	0.014	0.009	0.003	0.016
Endline											
Post*Treatment	0.035	-0.014	0.007	-0.065	-0.148**	0.013	-0.078*	-0.008	0.054	0.009	0.283***
	(0.031)	(0.032)	(0.022)	(0.065)	(0.060)	(0.013)	(0.042)	(0.011)	(0.041)	(0.007)	(0.043)
Post (0 if baseline, 1 if endline)	-0.084***	0.042*	-0.038**	0.036	-0.108**	-0.021**	-0.008	-0.011*	0.052	-0.001	0.043**
	(0.026)	(0.022)	(0.018)	(0.051)	(0.044)	(0.009)	(0.036)	(0.006)	(0.032)	(0.005)	(0.020)
Constant	0.158***	0.039**	0.066***	0.179***	0.538***	0.018**	0.155***	0.023***	-0.003	0.002	-0.001
	(0.017)	(0.016)	(0.014)	(0.029)	(0.032)	(0.008)	(0.020)	(0.007)	(0.015)	(0.006)	(0.018)
Number of observations	1,370	1,370	1,370	1,370	1,370	1,370	1,370	1,370	1,370	1,370	1,370
R-squared	0.043	0.025	0.014	0.300	0.076	0.013	0.018	0.015	0.056	0.010	0.192
Mean of dep. var. at baseline	0.113	0.030	0.059	0.491	0.428	0.020	0.123	0.014	0.009	0.003	0.016

*** p<0.01, ** p<0.05, * p<0.1. All regressions include village-level fixed effects. Standard errors are clustered at the village level. All regressions are run as linear probability models. Variables controlling for unbalanced characteristics of the sample (baseline values of whether the household saves, participates in EGS, receives a pension, has outstanding loan(s) from self-help groups, and own an animal) are included in the regressions but not shown. The dependent variables are binary variables set to 1 if any household member has one or more outstanding loans from that source, conditional on having one or more outstanding loans.

Appendix Table 4. Effect of ultra-poor program on loan amounts by usage.

	Business	Education	Health	Emergency	Wedding	Repay other loan	House expenditures	Ceremony
				Midline				
Post*Treatment	0.21	-0.12	-0.56**	-0.50**	-0.05	0.14***	-0.72**	0.07
	(0.13)	(0.10)	(0.26)	(0.23)	(0.24)	(0.05)	(0.29)	(0.18)
Post (0 if baseline, 1 if midline)	0.16**	0.21***	0.07	1.40***	-0.40**	-0.13***	0.42*	-0.90***
	(0.08)	(0.08)	(0.17)	(0.18)	(0.18)	(0.04)	(0.21)	(0.13)
Constant	-0.04	0.02	0.88***	-0.04	1.08***	0.01	0.98***	0.76***
	(0.06)	(0.05)	(0.15)	(0.14)	(0.14)	(0.02)	(0.18)	(0.09)
Number of observations	1,866	1,858	1,703	1,924	1,890	1,924	1,781	1,805
R-squared	0.023	0.010	0.023	0.088	0.015	0.015	0.018	0.102
Mean of dep. var. at baseline	16	10	421	37	936	13	621	188
				Endline				
Post*Treatment	0.11	-0.02	-0.57**	-0.18	0.31	0.14	0.07	0.03
	(0.07)	(0.09)	(0.28)	(0.14)	(0.21)	(0.13)	(0.30)	(0.18)
Post (0 if baseline, 1 if endline)	0.02	0.16**	-0.32	0.38***	-0.79***	0.08	-0.27	-0.77***
	(0.05)	(0.07)	(0.20)	(0.11)	(0.15)	(0.10)	(0.21)	(0.13)
Constant	0.05	0.05	0.99***	0.07	1.14***	-0.05	0.90***	0.65***
	(0.04)	(0.05)	(0.14)	(0.08)	(0.13)	(0.05)	(0.16)	(0.09)
Number of observations	1,971	1,909	1,767	1,937	1,918	1,947	1,831	1,840
R-squared	0.006	0.007	0.031	0.019	0.027	0.017	0.028	0.079
Mean of dep. var. at baseline	15	11	415	36	926	13	630	182

*** p<0.01, ** p<0.05, * p<0.1. All regressions include village-level fixed effects. Standard errors are clustered at the village level. Variables controlling for unbalanced characteristics of the sample (baseline values of whether the household saves, participates in EGS, receives a pension, has outstanding loan(s) from self-help groups, and own an animal) are included in the regressions but not shown. The amounts of loan outstanding by purpose are divided by the number of household members (per capita) and in log form (log of 1 + amount in 2007 Rupees; 1 USD ≈ 40 Rs). The means of these dependent variables at baseline are per capita and in level form.

Appendix Table 5. Effect of ultra-poor program on time use of children.

	Time spent … in the last 24 hours (in minutes)				Any child attends school?	Average number of days at school in last week
	working	in leisure	doing chores	studying		
			Midline			
Post*Treatment	0.1	1.2	-24.7**	-17.8	-0.062	-0.1
	(17.1)	(11.0)	(11.5)	(25.2)	(0.056)	(0.3)
Post (0 if baseline, 1 if midline)	-7.6	41.3***	18.0**	29.3	0.050	-1.3***
	(14.2)	(8.2)	(8.7)	(18.2)	(0.042)	(0.3)
Constant	57.9***	27.9***	54.9***	291.7***	0.755***	5.4***
	(11.4)	(6.1)	(7.3)	(17.1)	(0.036)	(0.2)
Number of observations	854	854	855	849	851	702
R-squared	0.006	0.100	0.012	0.008	0.009	0.143
Mean of dep. var. at baseline	56	28	58	296	0.788	5.6
			Endline			
Post*Treatment	15.0	19.5***	1.0	-15.6	-0.113**	-0.1
	(16.0)	(7.4)	(9.7)	(24.9)	(0.049)	(0.2)
Post (0 if baseline, 1 if endline)	-21.4*	-16.7***	-16.0**	53.3***	0.147***	0.2
	(12.2)	(5.9)	(7.1)	(20.4)	(0.037)	(0.1)
Constant	62.3***	35.1***	57.3***	292.5***	0.767***	5.6***
	(11.0)	(4.4)	(6.2)	(14.9)	(0.031)	(0.1)
Number of observations	820	820	820	817	817	680
R-squared	0.010	0.020	0.017	0.026	0.032	0.016
Mean of dep. var. at baseline	55	29	59	304	0.801	5.6

*** p<0.01, ** p<0.05, * p<0.1. Village fixed-effects included. Standard errors clustered at the village level. Regressions in which the dependent variable is a binary variable are run as linear probability models. Variables controlling for unbalanced characteristics of the sample (baseline values of whether the household saves, participates in EGS, receives a pension, has outstanding loan(s) from self-help groups, and own an animal) are included in the regressions but not shown. The sample includes households who have children between the ages of 8 and 14. The activity "studying" includes being at school and studying outside of school. The number of days spent at school in the last week is the average for all children in the household.

Appendix Table 6. Effect of ultra-poor program on monthly total per capita income by subgroups.

	Midline		Endline	
Owned animals at baseline?	**No animals**	**Owned animals**	**No animals**	**Owned animals**
Post*Treatment	-0.03	0.21	-0.15	0.19
	(0.09)	(0.26)	(0.09)	(0.23)
Post (0 if baseline; 1 if midline or endline)	0.60***	0.25	0.78***	0.28
	(0.08)	(0.23)	(0.07)	(0.20)
Constant	5.24***	5.48***	5.27***	5.32***
	(0.06)	(0.24)	(0.05)	(0.23)
Number of observations	1,742	194	1,772	204
R-squared	0.109	0.199	0.162	0.142
Mean of dep. var. at baseline	314	359	313	358
Owned land at baseline?	**No land**	**Owned land**	**No land**	**Owned land**
Post*Treatment	-0.11	0.09	-0.21*	-0.08
	(0.12)	(0.11)	(0.12)	(0.10)
Post (0 if baseline; 1 if midline or endline)	0.70***	0.36***	0.84***	0.59***
	(0.10)	(0.08)	(0.09)	(0.07)
Constant	5.14***	5.51***	5.18***	5.59***
	(0.08)	(0.08)	(0.07)	(0.08)
Number of observations	1,192	695	1,217	713
R-squared	0.131	0.105	0.168	0.176
Mean of dep. var. at baseline	313	324	311	323
Owned house at baseline?	**No house**	**Owned house**	**No house**	**Owned house**
Post*Treatment	0.0003	-0.02	-0.32**	-0.06
	(0.1664)	(0.10)	(0.16)	(0.11)
Post (0 if baseline; 1 if midline or endline)	0.60***	0.57***	0.85***	0.70***
	(0.13)	(0.09)	(0.12)	(0.09)
Constant	5.17***	5.29***	5.16***	5.34***
	(0.12)	(0.08)	(0.12)	(0.07)
Number of observations	560	1,368	571	1,397
R-squared	0.134	0.113	0.185	0.163
Mean of dep. var. at baseline	315	319	313	318

*** p<0.01, ** p<0.05, * p<0.1. All regressions include village-level fixed effects. Standard errors are clustered at the village level. Variables controlling for unbalanced characteristics of the sample (baseline values of whether the household saves, participates in EGS, receives a pension, has outstanding loan(s) from self-help groups, and own an animal) are included in the regressions but not shown. The dependent variable is the log of the total monthly per capita income (log of 1 + amount in 2007 Rupees; 1 USD ≈ 40 Rs). The means of the dependent variable at baseline are in level form.