Long-term Effects of the Targeting the Ultra Poor Program

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Abstract

This paper studies the long-run effects of a "big-push" program providing a large asset transfer to the poorest Indian households. In a randomized controlled trial that follows these households over 10 years, we find positive effects on consumption (1 SD), food security (0.1 SD), income (0.3 SD), and health (0.2 SD). These effects grow for the first seven years following the transfer and persist until year 10, consistent with the alleviation of a poverty trap. One main channel for persistence is that treated households take better advantage of opportunities to diversify into lucrative wage employment, especially through migration.

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1 Introduction

Development economics has long posited that the poor may be poor for no good reason other than the fact that they started poor (for some early work see, Leibenstein [1958], Dasgupta and Ray [1986], Banerjee and Newman [1993], Galor and Zeira [1993]). This is the idea of a poverty trap which has the implication that a one-time capital grant that makes very poor households significantly less poor ("big push") might set off a virtuous cycle that takes them out of poverty. Forty three countries now embrace some version of this idea and make large transfers to over 3.1 million of their poorest households[1]. This paper asks and answers two basic questions pertaining to the efficacy of big push approaches.

First, do big push programs actually have long-run impacts on poverty? We answer this question through a 10-year-long randomized evaluation of the Targeting the Ultra Poor (TUP) program in West Bengal, India. Pioneered by BRAC in Bangladesh, the intervention employs a multi-faceted approach, offering poor households an asset transfer, consumption support, and training in the hopes of unlocking a poverty trap. Observing households over time is key to establishing the existence (or the lack thereof) of a poverty *trap*, because it tells us whether households would have escaped poverty on their own over many years via regular earnings and savings, or be aided by larger, macroeconomic tides that "raise all boats". Control group households provide this counterfactual in our setting.

While short and medium-run evaluations across a number of contexts find large and positive treatment effects of the TUP program on poor households' economic wellbeing, including on measures of net worth, income, consumption, and health (Banerjee et al. [2015], Bandiera et al. [2017], Bedoya et al. [2019], Balboni et al. [2020]), evidence of long-term impact remains scarce. We complement this existing work with evidence from a 10-year evaluation.

Our results show that the TUP program's positive effects on measures of economic wellbeing (consumption, wealth, health, income) among treated households at first grow until 7 years following the asset transfer, and remain persistently higher than the control group even 10 years later. To give a sense of magnitudes, their per capita consumption is 1 standard deviation higher than the control group at both year 7 & 10, and income is 0.3 standard deviations higher. This temporal pattern of growing effects followed by persistence is consistent with the alleviation of a poverty trap and the graduation of treated households towards a higher steady state.

Second, what are the actual channels through which the effect of a one-time shock persists? This is the subject of much theoretical work (see for example, Dasgupta and Ray [1986], Banerjee and Newman [1993], Galor and Zeira [1993], Banerjee [2000] among others). These papers emphasize the idea that poor households are unable to reach the threshold level of investment at which productivity rises steeply, either because they cannot raise or save enough capital or because they are unwilling to absorb the accompanying increase in risk. The capital grant pushes them over that threshold, and as a result their income goes up sharply allowing them to sustain the new higher level of investment. A more recent literature emphasizes psychological factors; becoming wealthier makes households more optimistic about the future and therefore more willing to save and/or put in effort (Banerjee and Mullainathan [2010], Genicot and Ray [2017]) or more able to focus and take good decisions (Mullainathan and Shafir [2013]).

These models conceptualize the effect of the "big push" as a one-time shift to a different mode of production. Our data, on the other hand, suggests a more complex dynamic response: initially (i.e at 18 months) these TUP beneficiaries are mainly richer because they have the asset that was transferred (mainly livestock). At 3 years they have diversified into new businesses in addition to the livestock and have significantly more

[1]Partnership for Economic Inclusion "State of the Sector" report, 2018.

earnings from non-farm micro-enterprises than the control group. This divergence gets even more amplified by year 7, when the non-farm micro-enterprise earnings in treatment is nearly twice that in control. However we also see the emergence of a third major source of divergence and that is wage income. There is no treatment effect on wage earnings at 18 months or 3 years, but by year 7 the gap between treatment and control is the same order of magnitude as the effect on non-farm micro-enterprises and twice the impact on livestock earnings. This seems to be almost entirely driven by a difference in the earnings of migrants from the family between treatment and control households.

By year ten, we see another shift. The treatment effect on non-farm micro-enterprises attenuates relative to year 7, but the effect on wage earnings is still large and the effect on remittances are even larger than in year 7. In other words, the household is increasingly specialized in labor earnings.

These multiple shifts are not *per se* inconsistent with the theory since the idea of the production technology in these models is sufficiently abstract to accomodate doing different things at different points of time. However it does provide a quite different perspective on what is going on. The first transition, from livestock to non-farm micro-enterprises may not be particularly surprising, since the households were not given much choice on what assets they can get from the program and they can use the earnings from the livestock to fund a move towards what they see as a better opportunity. The shift towards more labor earnings demands more of an explanation since in many models (e.g. Banerjee and Newman [1993]) the labor market is seen as the alternative that can be accessed even by those who have no capital. However migration often requires an upfront investment (Bryan et al. [2014]) and it is possible that treatment households are better placed to pay for that.

This last observation has another important implication: while it is of course true that a macro shock that creates new opportunities for everyone can eliminate a poverty trap and therefore make a TUP-like intervention unecessary, it is also possible that the intervention made it easier to take advantage of new opportunities. This kind of macro shift seems to have transpired in our setting; in the control group wage earnings go up by a factor of 3 between the first endline (at 18 months) and the last (at 10 years), probably because of a combination of growth in India and a demographic shift, coming from the fact that the children of the women who were selected for the study are now old enough to enter the labor market. However the treatment group is better able to take advantage of these new opportunities–for one, compared to the control group, members of treated families are less likely to migrate to the nearest big city, Kolkata, as against to urban centers further away[2], and they migrate for longer.

As already noted, this could be because they have more access to capital and migrating (especially migrating far) is expensive. Or it could be that they are better informed or more confident as a result of the headstart they receive (Banerjee et al. [2020] makes the case that the TUP intervention in Ghana raises labor supply through such psychological mechanisms). Whatever the explanation, the important insight is that an intervention like TUP might empower beneficiaries to take better advantage of whatever new opportunities arise over time and for that reason, positive macroeconomic shifts may be complementary to a big push intervention rather than a substitute.

This paper is most closely related to a small number of recent papers studying whether a one-time positive shock has long term impact on the lives of the poor. The closest is perhaps Blattman et al. [2020] who find that a big push intervention in Uganda has a large impact 4 years after the intervention which disappears by year 9, as the control group catches up with the treated group due to opportunities for wage employment. Bandiera et al. [2017] study TUP in Bangladesh and find a positive impact 7 years after the intervention, using

[2]Delhi is the most common urban destination for out-of-state migrants from Bengal Economic Survey [2018].

a combination of experimental and non-experimental methods to deal with the fact that the control group was treated in year 4. Balboni et al. [2020] studies the same program and argues, based on a combination of theory, descriptive data, and the experimental results from years 1 to 4, that the intervention liberates some of the beneficiaries from a poverty trap.

2 Experimental Design and Data

The NGO Bandhan ran the TUP program in West Bengal starting in 2007. The poorest households were identified in two steps. First, residents across 120 village hamlets ranked households into five wealth quintiles. Among households ranked in the bottom quintile Bandhan then verified eligibility per seven criteria: (i) presence of an able-bodied female member (to manage the asset), (ii) no credit access, (iii) landholding below 0.2 acres, (iv) no ownership of productive assets, (v) no able-bodied male member, (vi) presence of school-aged children who are working instead of attending school, and (vii) primary source of income being informal labor or begging. Households had to meet the first two and at least three of the remaining five criteria in order to be eligible for the TUP intervention. In total, nine hundred ninety one (991) households were deemed eligible. Roughly half of these (525) were randomly assigned to receive the intervention, with stratification at the hamlet level.

Households in the treatment group chose a productive asset from a menu of options (2 cows, 4 goats, 1 cow and 2 goats, etc). In addition to the asset they received weekly consumption support for 30-40 weeks[3], access to savings, and weekly visits from Bandhan staff over a span of 18 months. These visits were designed to deliver training on generating income from the chosen asset, life skills coaching, and health information. Bandhan had no contact with beneficiary households starting 18 months after the asset transfer[4].

To collect information on baseline household characteristics the research team administered a survey prior to the distribution of assets in 2007-2008, recording household demographics, consumption, food security, asset ownership, income, income sources, financial inclusion, adult time use, and physical and mental wellbeing. Online Appendix Table 1 confirms balance between treated and control households on baseline characteristics. Treated households had on average 3.9 members, including 1.6 children under 14 years old. They had monthly per capita consumption of $35 (2007 USD PPP) and owned less than 0.1 acres of land. The median TUP recipient was a female aged 44 years old in 2007.

We track economic and health outcomes for treated and control households through four subsequent survey waves administered at 18 months, 3 years, 7 years, and 10 years following the transfer of productive assets. These surveys capture the same information as described above. Importantly, to study if constraints are alleviated inter-generationally, we track economic outcomes (income sources, migration, remittances) for all household members and not just the TUP recipient. All program activities had ceased by the first endline survey. Of 991 original households, 83% are tracked across all four survey waves. Online Appendix Table 2 shows that attrition is not systematically different between treated and control households.

[3]The exact duration was 30 weeks for households receiving goats and 40 weeks for households receiving cows. The allowance of Rs.90/week ($7.6 in 2007 USD PPP) was meant to aid subsistence.

[4]Unless they became microfinance clients, which was rare.

3 Results

3.1 Long-term effects of the TUP program

3.1.1 Empirical Strategy

First, we consider how the TUP intervention affects households' economic wellbeing over time. Our results estimate TUP's causal effects on five economic indices capturing household wealth, per capita consumption, food security, financial inclusion, and income and revenues at the time of each of the four survey waves. These indices are constructed using the same methodology as in Banerjee et al. [2015], which studied the TUP's impact 3 years post the delivery of assets. Here we extend the timeframe to span 10 years post the asset transfer.

All indices are created by first constructing z-scores (i.e. subtracting the baseline mean and dividing by the baseline standard deviation) for each variable and then averaging over all variables that comprise the index. Results are reported in units of baseline standard deviations. One exception is the income and revenue index, for which we do not have baseline information about some sub-components; it is therefore standardized to the control mean and results are reported in units of control group standard deviation. The variables used in the construction of each index are described in detail in the following section.

Since the program was randomly assigned, the following regression specification can estimate causal average treatment effects.

$$Y_{iht} = \alpha_1 + \beta_1 Treat_i + \kappa_1 Y_{ihbaseline} + \gamma_{1h} + \epsilon_{iht} \tag{1}$$

Y_{iht} is the outcome of interest for household i residing in hamlet h during survey wave t. The coefficient β_1 on an indicator for treatment $Treat_i$ provides the average treatment effect of the program on studied outcomes. Since treatment was stratified by hamlet, all specifications include hamlet fixed-effects (γ_{1h}). The specification controls for the baseline value of the outcome ($Y_{ihbaseline}$) and reports heteroskedasticity-robust standard errors.

Next, we turn to the program's effects on individual-level outcomes, including an index of physical health, mental health, and productive time use of adult members. The physical and mental health indices are constructed in a manner analogous to that for household level variables; productive time is measured in minutes. The following regression specification estimates the ATE:

$$Y_{piht} = \alpha_2 + \beta_2 Treat_i + \kappa_2 Y_{pihbaseline} + \gamma_{2h} + \epsilon_{piht} \tag{2}$$

β_2 is the coefficient of interest. All variables are as above. p indexes a person in household i. Standard errors are clustered by household.

3.1.2 Results: growing positive effects until year 7, persistence between years 7 and 10

Household outcomes

Table 1 reports the TUP program's effects on households' economic wellbeing. The program had large, positive, and growing effects on wealth, income, consumption, and food security over the first seven years following the asset transfer. The effects on consumption, income, and food security persist even ten years later.

The asset index in Column 1 is constructed using principal component analysis aggregating ownership of livestock, other productive assets (e.g. bicycle or sewing machine), and durable household items (e.g. TV, refrigerator). Treated households have 0.2 SD higher asset ownership than the control group at 18 months ($p < 0.05$), and 0.4 SD higher asset ownership at 3 years ($p < 0.01$). This effect grows to 0.8 SD by 7 years ($p < 0.01$). Columns 2-3 disaggregate these effects into those on livestock/other productive assets and household durables, finding a similar pattern of growing effects over the first 7 years of the program.

Treatment effects on assets at year 10 continue to be positive (0.35 SD), but smaller than in year 7. This is largely attributable to treated households diversifying out of livestock and non-farm micro-enterprises and into labor income. We document the magnitude and importance of these changes in the following section.

Per capita consumption in Column 4 is constructed using a detailed consumption module asking about households' food, non-food and durable purchases. It rises among treated households for the first 7 years following asset transfer, being 0.3 SD higher than the control group at 18 months and 3 years ($p < 0.01$) and 1.1 SD higher at 7 years. It remains persistently higher by 1 SD at 10 years ($p < 0.01$).

The food security index in Column 5 aggregates whether everyone in the household gets enough food every day, whether it is not the case that any adult skipped a meal in the last year, that no household member went without food for a day, no children skipped meals, and everyone in the household regularly ate 2 meals a day. Treated households are 0.2 SD more food secure than the control group by 18 months and 0.25 SD by year 3 ($p < 0.01$). This effect grows to 0.4 SD by year 7 and remains at 0.13 SD by year 10 ($p < 0.05$). Table 3 disaggregates treatment effects on consumption and food security into individual components, finding similar patterns of growth and persistence by year 7 and 10 respectively.

To assess the program's impact on income and revenues, the index in Column 6 aggregates measures of income from livestock ownership, micro-enterprise, and other self and wage employment activities of household members. Treated households earn 0.1 SD more than the control group by 18 months and 0.2 SD by year 3 ($p < 0.05$). This effect grows to 0.3 SD by year 7 and persists at the same level until year 10 ($p < 0.01$).

Finally, we explore the program's effect on an index of financial inclusion by aggregating monthly loans and savings in Column 7. While the point estimates are positive and economically meaningful in size (0.12 SD), they are statistically indistinguishable from zero.

Individual outcomes

We next turn to the TUP program's effects on adult household members' physical health, mental health, and productive work. We find a pattern of growing effects until year 7 followed by persistence until year 10, similar to household level outcomes. Table 2 reports results.

The physical health index in Column 1 combines measures of individuals' perceived health, whether the individual missed a day of work in the past month due to poor health, and an activities of daily living score. Physical health of treated household members is 0.06 SD higher by 18 months ($p < 0.05$); this effect grows to 0.13 SD by year 7 and 0.2 SD by year 10 ($p < 0.01$).

The mental health index in Column 2 aggregates measures of life satisfaction, feelings of sadness, and periods of worry. It improves by 0.1 SD for treated households by 18 months, growing to 0.25 SD by year 7 and remaining at this level until year 10 ($p < 0.01$).

The stress index in Column 3 aggregates lack of nervousness, restlessness, and hopelessness in the past month. It improves by 0.08 SD at 18 months, growing to 0.2 SD by year 7, and remaining at this level until year 10 ($p < 0.01$).

Adults in treated households also spend more time on productive activities (Column 4): on average 60 more minutes by 18 months, 21 more minutes by year 3, 34 more minutes by year 7, and 30 more minutes by year 10 ($p < 0.01$).

We find no effect on political involvement (Column 5).

Summary

In sum, the TUP program has large and positive effects on a battery of measures of household and adult economic wellbeing and health over the long-run, even 10 years after the asset is transferred. These positive effects at first grow over time until about 7 years following the start of the program and then remain stable between years 7 and 10. Such growth followed by long-run persistence would be consistent with the alleviation of a poverty trap: households receiving the asset transfer and accompanying consumption and savings support are able to sustain and grow investment, earnings, consumption, and health over time. They eventually reach what appears to be a better steady state. These results are consistent with the insight in Balboni et al. [2020] that there would be persistence when a TUP-like program alleviates a poverty trap, but different from the finding in Blattman et al. [2020], who evaluate a different cash-transfer-only program and find that gains among treated individuals are wiped by the progress in the control group.

3.2 Channels of persistence

3.2.1 Diversification in household activities

To explore the forces underlying TUP households' transition to what appears to be a better equilibrium, we document changes in the composition of their economic activities and income. This approach is motivated by a generation of poverty trap models that conceptualize the effect of the "big push" as a one-time shift to a different mode of production (e.g. Dasgupta and Ray [1986], Banerjee and Newman [1993]).

Table 4 decomposes treatment effects on household income into those attributable to revenue from livestock, micro-enterprise and self-employment, and wages. Income is reported in 2013 USD corrected for purchasing power parity. Three clear and distinct patterns emerge regarding the relative importance of each source over time.

First, TUP households are initially able to leverage transferred livestock to earn higher income than the control group. Monthly livestock revenue among the treated is \$10 and \$8 higher than control at 18 months and 3 years following the transfer (Column 1). This pattern continues through to year 7, when they earn \$27 more livestock revenue than control ($p < 0.01$). The finding of higher livestock income even 7 years following the asset transfer is consistent with Bandiera et al. [2017], who find something similar in Bangladesh. However, the difference in livestock earnings between treated and control groups falls to \$17 by year 10 and the main source of earnings gains shifts away from livestock.

Second, treatment households relative to control households show increased diversification into non-farm micro-enterprises. Net earnings from these enterprises are constructed by subtracting costs from revenues in a

detailed survey module on household business operations. Column 2 shows that by year 3 treated households earn $11 more from non-farm micro-enterprises than their counterparts in control ($p < 0.01$). This effect is amplified by year 7, with treated households having $56 greater business earnings than the control group ($p < 0.01$). Treated households' businesses earnings are twice the size of the control group at this time and the treatment effect size is twice that on livestock revenue, highlighting the importance of diversification in sustaining greater earnings for TUP households over time. However, this effect declines by year 10, paving way for a new occupational shift into wage income.

Columns 3 and 4 report on an alternate but related measure–self-employment earnings, which is the total of individual members' earnings from various economic activities reported in the household roster. Column 3 sums over all possible self-employment activities, while Column 4 excludes earnings from household-operated livestock and business operations (other forms of self-employment include fishing, horticulture, etc.) Observed patterns are broadly consistent with the above-described trend, i.e. that the impact on self-employment earnings are initially low (at 18 months), grow to $108 (including livestock, business) and $21 (excluding livestock, agri business etc.) by year 7 ($p < 0.01$), and then fall marginally between years 7 and 10.

Third, the other main source of income diversification is wage employment. Columns 5-7 track treatment effects over time. Wages comprise the sum of household members' earnings from agricultural labor, casual labor, and salaried employment. They sum over individual members' locally earned monthly wages, and x times the remittances they send back as migrant workers. We ask the total annual remittance sent back and divide by twelve to get the monthly value. We vary x to reflect different ssumptions about the share of a migrant's earnings that are remitted back to a household: 100% remitted (x=1) (Column 5) or 30% remitted (x=10/3) (Column 6). As an alternative we assume that they make the average amount they say they make in a typical month (Column 7), ignoring the fact that this combines months where they are in the village and months when they are not.

A consistent pattern emerges, robust across assumptions. Monthly wage income of treated households (including remittances) is at first no higher than that of the control group at 18 months or 3 years. By year 7, however, it grows to between $76-89 ($p < 0.01$), which is the same order of magnitude as non-farm micro-enterprise income. The magnitude of these gains remains high also in year 10. Column 8 shows that about a third of the effect over the long-run (year 10) is driven by remittances sent back by migrant workers from treated households. The finding of diversifying into higher-paying wage employment is distinct from Bandiera et al. [2017], who find in Bangladesh that the TUP program enables households to transition away from low-wage casual employment to higher earning livestock activities. Similarly, Crépon et al. [2015] find that microcredit spurs substitution away from casual wage employment and into self-employment. One possible explanation is that wage employment, especially among migrants, in our context is higher paying than self-employment while casual wage employment in Bangladesh or Morocco is not. Indeed, the average migrant has twelve times the earnings of a non-migrant earning household member typically engaged in self-employment activities.

Taken together, earnings patterns reflect a changing composition of economic activities for the treated group. The program at first enables them to increase their incomes through the transferred assets. Over the long-run treated households are able to translate these early gains into greater income from more lucrative opportunities for micro-business and, especially, wage employment.

3.2.2 Migration

As we saw, accounting for migration is important for the magnitude of treatment effects; absent this, the program's effect on wage income is underestimated by 30-50% (Columns 5-8, Table 4). Similarly, not accounting for migration underestimates treatment effects on per capita consumption by 10% (Columns 1-2, Table 3). Column 1 of table 3 estimates the treatment effect on consumption excluding migrant members, while Column 2 assumes migrants consume the household average. The 10% contribution of migrant workers to the treatment effect on consumption is thus likely an underestimate since migrants are traveling away from the village and probably consume more than the household members left behind.

Given its important, we explore treatment effects on the nature of migration and migrant characteristics in Table 5. Columns 1 and 2 show that the TUP does not have a statistically significant effect on the share of households with migrants and the number of migrant workers. However, those who do migrate from treated households migrate for 25 days longer on average by year 10, which is 20% higher than the control group average (Column 3). They are also less likely to migrate to Kolkata (14% points, Column 4) but no less likely to migrate to an urban area (Column 5), suggesting they travel farther away. While Kolkata is the largest city in West Bengal, Delhi is the most prominent destination for out-of-state migrants and among the two biggest economic powerhouses of India (along with Mumbai) (Economic Survey [2018]).

Migrating for longer and going to urban centers farther away than Kolkata translates into higher earnings for these migrant workers, as already indicated by higher remittances in Table 4 (Column 8).

Finally, we explore whether these earnings differences might be explained by the productivity of migrant workers or by what they do at their destinations. The evidence suggests that these differences in productivity are not driven by what migrants do as coded in our data: treated household migrants are no more likely to be working in business activites or formal work (Column 7). However even if they do the same thing, they do it in different locations as we saw, and this means that the average earnings of those who migrate in treatment households is higher than that of those in control households–they earn on average $96 more in a typical month in year 7, and $51 in year 10 (Column 6).

3.2.3 Treatment effects against the backdrop of macroeconomic changes

The 10 years of the study correspond with rapid growth in wages, income, and consumption in the studied context. This is best seen through the large improvements among control group households over this time period: by year 10 these households consume about twice as much as their baseline selves, and have higher food security, with 70% reporting having enough food for every household member compared with 10% at baseline (Table 3). They also earn about 4 times as much at year 10 as their historical selves at 18 months following asset transfer. It appears that this is driven predominently by opportunities for migration and wage employment arising naturally over the course of the study. The former rises from 40 to 120 days on average (Table 5), and the latter by 3.7 times between month 18 and year 10 (Columns 3-6, 8 Table 4).

Even so, treated households maintain higher income (and, consequently, consumption and health) compared with the control group even 10 years after the TUP program. Young members of these households appear to be better able to take advantage of available opportunities. This is in contrast to Blattman et al. [2020], who find in the context of a cash transfer program for youth in Uganda that the comparison group is completely able to catch up with the treated group due to earnings opportunities generated outside the intervention. In contrast, our findings suggest that the multi-faceted TUP program might be a complement to macroeconomic changes inducing poverty alleviation rather than a substitute.

4 Conclusion

This study finds that the Targeting the Ultra Poor big push intervention has a positive impact on the wellbeing of the poorest households over the long-run, even 10 years after asset transfer. It improves their consumption, income, and health at a growing rate for the first seven years, and appears to permanently lift them out of poverty as indicated by long-term persistence. Just as in common models of poverty traps, receiving the program enables households to diversify their sources of income. Initially higher earnings due to the asset enable investing in non-farm micro-businesses and pursuing opportunities for wage employment, both locally and in cities further away. TUP households take greater advantage of opportunities for income gains, such as migration, that arise naturally in the course of time, migrating further away, for longer, and earning more than other households.

The big push intervention thus appears to enable TUP households to escape poverty both through its direct effect and by facilitating better access to opportunities arising naturally in the economy.

The intervention cost Rs.24,000 per household in 2007, equivalent to about $2048 USD when corrected for purchasing power parity in 2014. The benefit/cost ratio of the program is 336% if consumption gains observed in year 10 are sustained over the subsequent 15 years and 1075% if they are sustained in perpetuity[5].

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[5]We use the same assumptions as in Banerjee et al. [2015], which evaluated the program at year 3 and found a benefit-cost ratio of 433% if year 3 gains persisted in perpetuity.

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Table 1: Household Indexed Variables

	Asset Index	Productive Asset Index	Household Asset Index	Per-capita Consumption	Food Security Index	Income and Revenues	Financial Inclusion Index
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
				Panel A: Endline 1			
Treatment	0.222**	0.467***	0.125	0.333***	0.184***	0.145*	-0.004
	(0.111)	(0.087)	(0.092)	(0.083)	(0.048)	(0.075)	(0.042)
Control Mean	-0.19	-0.23	-0.12	0.65	0.35	0.00	0.14
Baseline Mean	-0.00	-0.00	-0.00	0.00	-0.00		-0.00
Observations	679	681	809	849	812	814	812
				Panel B: Endline 2			
Treatment	0.389***	0.571***	0.245**	0.360***	0.251***	0.172**	0.192***
	(0.103)	(0.072)	(0.098)	(0.098)	(0.059)	(0.067)	(0.062)
Control Mean	-0.25	-0.30	-0.17	1.50	0.94	-0.00	0.30
Baseline Mean	-0.00	-0.00	-0.00	0.00	-0.00		-0.00
Observations	875	875	875	875	875	982	875
				Panel C: Endline 3			
Treatment	0.814***	0.795***	0.600***	1.117***	0.431***	0.304***	0.181
	(0.132)	(0.083)	(0.118)	(0.195)	(0.062)	(0.066)	(0.135)
Control Mean	-0.46	-0.40	-0.35	2.67	1.09	-0.00	0.67
Baseline Mean	-0.00	-0.00	-0.00	0.00	-0.00		-0.00
Observations	807	807	867	867	867	982	867
				Panel D: Endline 4			
Treatment	0.346***	0.197*	0.245**	0.993***	0.127**	0.264***	0.121
	(0.121)	(0.105)	(0.113)	(0.300)	(0.063)	(0.080)	(0.152)
Control Mean	-0.26	-0.10	-0.21	4.01	1.21	-0.00	1.08
Baseline Mean	-0.00	-0.00	-0.00	0.00	-0.00		-0.00
Observations	885	885	885	880	885	885	885

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ Robust standard errors are shown in parentheses. The construction of indices is described in detail in section 3.1. All coefficients are reported in units of baseline standard deviation. All specifications include baseline controls, and hamlet-level fixed effects.

Table 2: Adult Indexed Variables

	Physical Health Index	Mental Health Index	Stress Index	Minutes spent on productive activities in last day	Political Involvement Index
	(1)	(2)	(3)	(4)	(5)
			Panel A: Endline 1		
Treatment	0.061**	0.115***	0.082**	59.203***	0.009
	(0.028)	(0.029)	(0.041)	(10.170)	(0.034)
Control Mean	0.12	0.32	0.35	216.28	-0.05
Baseline Mean	-0.00	-0.00	0.00	169.40	0.00
Observations	1,504	1,502	1,501	1,504	1,504
			Panel B: Endline 2		
Treatment	0.027	0.012	0.007	21.120**	0.021
	(0.027)	(0.037)	(0.039)	(9.117)	(0.032)
Control Mean	0.21	0.75	0.61	226.86	0.13
Baseline Mean	-0.00	-0.00	0.00	169.40	0.00
Observations	1,757	1,757	1,757	1,756	1,759
			Panel B: Endline 3		
Treatment	0.130***	0.249***	0.166***	34.387***	0.031
	(0.031)	(0.042)	(0.038)	(9.041)	(0.027)
Control Mean	0.57	1.09	0.62	160.67	0.27
Baseline Mean	-0.00	-0.00	0.00	169.40	0.00
Observations	1,906	1,900	1,898	1,915	1,925
			Panel C: Endline 4		
Treatment	0.187***	0.203***	0.172***	30.703***	-0.023
	(0.040)	(0.044)	(0.042)	(10.905)	(0.027)
Control Mean	0.12	0.76	0.49	164.66	0.45
Baseline Mean	-0.00	-0.00	0.00	169.40	0.00
Observations	1,229	1,229	1,229	1,229	1,229

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ Robust standard errors are shown in parentheses. The construction of indices is described in detail in section 3.1. All coefficients are reported in units of baseline standard deviation. All specifications include baseline controls, and hamlet-level fixed effects.

Table 3: Monthly Consumption and Food Security

	Per capita consumption, excl. migrant	Per capita consumption, hh avg. c for migrant	Per capita consumption, migrant c proportional to income	Per capita food consumption	Per capita non-food consumption	Per capita durable goods consumption	Everyone in HH gets enough food everyday	No adults skipped meals	No one in the HH went a whole day without food	No children skipped meals	Everyone in the HH regularly eats 2 meals per day
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Panel A: Endline 1											
Treatment	7.554***	8.312***	7.351***	5.362***	2.133**	-0.356	0.074***	0.078***	0.128***	0.032	0.012
	(1.837)	(2.288)	(1.914)	(1.195)	(1.082)	(0.374)	(0.025)	(0.025)	(0.030)	(0.034)	(0.019)
Control Mean	49.25	53.34	49.25	33.28	15.97	2.28	0.11	0.10	0.68	0.75	0.91
Baseline Mean	40.74			26.76	14.00	0.97	0.11	0.09	0.28	0.51	0.77
Observations	813	813	813	813	813	813	812	811	811	613	812
Panel B: Endline 2											
Treatment	7.080***	8.053***	7.042***	3.021***	4.010***	0.881**	0.141***	0.138***	0.038*	0.085***	0.026**
	(1.913)	(2.475)	(1.972)	(1.151)	(1.139)	(0.385)	(0.034)	(0.034)	(0.023)	(0.025)	(0.013)
Control Mean	61.37	66.60	61.37	37.54	23.83	1.93	0.42	0.42	0.85	0.86	0.95
Baseline Mean	40.74			26.76	14.00	0.97	0.11	0.09	0.28	0.51	0.77
Observations	875	875	875	875	875	875	875	875	875	636	875
Panel C: Endline 3											
Treatment	17.385***	21.783***	17.086***	9.778***	7.542***	2.471***	0.205***	0.239***	0.095***	0.045*	0.087***
	(3.030)	(4.027)	(3.070)	(1.731)	(1.681)	(0.507)	(0.032)	(0.032)	(0.022)	(0.026)	(0.021)
Control Mean	67.15	73.49	67.15	37.76	29.40	2.27	0.59	0.55	0.83	0.87	0.85
Baseline Mean	40.74			26.76	14.00	0.97	0.11	0.09	0.28	0.51	0.77
Observations	867	867	867	867	867	867	867	867	867	546	867
Panel D: Endline 4											
Treatment	14.037***	18.194***	13.864***	7.354***	6.700*	4.204**	0.075***	0.067**	0.029	-0.031	0.020
	(4.242)	(5.394)	(4.238)	(1.595)	(3.438)	(1.845)	(0.029)	(0.032)	(0.026)	(0.036)	(0.022)
Control Mean	79.88	87.40	79.88	39.09	40.85	5.75	0.70	0.62	0.78	0.84	0.85
Baseline Mean	40.74			26.76	14.00	0.97	0.11	0.09	0.28	0.51	0.77
Observations	880	880	880	880	880	880	885	885	884	451	885

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ Robust standard errors are shown in parentheses. Columns 1-6 report monthly consumption. Column 1 does not include migrant workers in the calculation. Column 2 assumes migrant workers consume the household average. Column 3 assumes migrant workers consume in proportion to their income relative to the avg. income of non-migrant household members. Columns 4-6 do not include migrant workers. All specifications include baseline controls, and hamlet-level fixed effects.

Table 4: Monthly income and revenue

	Livestock revenue	Nonfarm microenterprise income	Self-employment	Self-employment excl. livestock, business	Wages: migrants remit 100% of wage	Wages: migrants remit 30% of wage	Wages: impute typical migrant earnings	Remittances	Self-Reported Economic Status (1-10)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
					Panel A: Endline 1				
Treatment	10.258***	2.644	18.553***	2.148	3.902	3.902	5.083	0.000	0.204***
	(2.342)	(3.234)	(5.788)	(2.091)	(6.685)	(6.685)	(8.485)	(.)	(0.071)
Control Mean	3.33	25.23	46.09	6.52	96.06	96.06	106.45	0.00	2.77
Baseline Mean	0.00	21.88	16.30	1.90				.	1.97
Observations	814	814	814	814	814	814	814	814	811
					Panel B: Endline 2				
Treatment	7.683***	11.618**	30.824***	1.612	6.695	8.484	4.628	3.696	0.297***
	(2.652)	(5.408)	(6.855)	(1.406)	(11.685)	(13.250)	(13.674)	(2.369)	(0.080)
Control Mean	7.99	37.81	60.50	4.10	201.07	211.41	217.89	12.88	3.36
Baseline Mean	0.00	21.88	16.30	1.90				.	1.97
Observations	875	875	875	875	875	875	875	875	875
					Panel C: Endline 3				
Treatment	27.262***	55.734***	108.278***	21.809***	76.998***	84.212***	89.024***	8.871	1.575***
	(5.158)	(10.794)	(15.125)	(3.299)	(22.261)	(24.867)	(25.730)	(6.455)	(0.141)
Control Mean	9.70	61.91	103.15	6.35	279.81	297.96	301.31	34.87	4.73
Baseline Mean	0.00	21.88	16.30	1.90				.	1.97
Observations	869	799	869	869	869	869	869	869	867
					Panel D: Endline 4				
Treatment	16.710*	-15.320	93.138***	11.096***	38.832	48.397	52.671*	19.443**	0.642***
	(8.756)	(20.330)	(20.584)	(3.836)	(24.880)	(31.360)	(30.402)	(7.590)	(0.129)
Control Mean	17.80	14.26	146.72	10.78	331.42	357.59	361.08	37.56	4.03
Baseline Mean	0.00	21.88	16.30	1.90				.	1.97
Observations	885	845	885	885	885	885	885	885	885

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ Robust standard errors are shown in parentheses. All values are in 2013 USD PPP. Column 1 reports revenue from the sale of livestock or livestock products in an avg. month. Column 2 reports net business income (revenues minus costs) as reported in the module asking about details of household micro-enterprise activities in the last month. Column 3-7 sum over income earned by each individual member from various activities in a typical month, as reported in the household roster. Column 3 reports self-employment income from a typical month. Column 4 is analogous to Column 3, excluding income earned by individual household members from livestock-rearing or household enterprise. Wages comprise the sum of household members' earnings from agricultural labor, casual labor, and salaried employment. We sum over locally earned wage income as reported in the household roster, and x times the remittances sent back as a migrant worker. We vary x to reflect different assumptions about the share of a migrant's earnings that are remitted back to a household: 100% remitted (Column 5), 30% remitted (Column 6), or earning as much as they would in the village over a typical month (Column 7). Column 8 reports the monthly avg. of remittances sent back by migrant members of a household. We do not collect data on remittances at the 18 month survey. Column 9 reports a measure of economic satisfaction on a scale of 1-10. All specifications include baseline controls, and hamlet-level fixed effects.

Table 5: Migration

	Migration	No. of migrants	Duration	Migrates to Kolkata	Migrates to urban area	Earnings of migrant worker, typical month	Business
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
				Endline 1			
Treatment	-0.024	-0.010	10.060	0.005	0.002	27.568	0.047
	(0.033)	(0.040)	(6.721)	(0.064)	(0.054)	(35.935)	(0.045)
Control Mean	0.39	0.44	40.22	0.33	0.84	213.46	0.10
Observations	851	851	299	299	299	299	299
				Endline 2			
Treatment	0.029	0.032	14.776	-0.095	-0.039	30.574	0.032
	(0.032)	(0.041)	(15.332)	(0.069)	(0.059)	(29.920)	(0.042)
Control Mean	0.31	0.36	121.78	0.37	0.84	232.23	0.15
Observations	840	840	256	256	256	256	256
				Endline 3			
Treatment	0.047	0.048	-11.330	0.066	0.009	96.145***	0.017
	(0.034)	(0.047)	(12.448)	(0.059)	(0.047)	(34.578)	(0.037)
Control Mean	0.41	0.52	121.73	0.33	0.79	369.14	0.11
Observations	850	850	333	333	333	333	333
				Endline 4			
Treatment	0.015	0.022	25.167**	-0.138**	0.033	51.238	-0.029
	(0.032)	(0.046)	(12.743)	(0.059)	(0.053)	(31.215)	(0.042)
Control Mean	0.43	0.56	128.74	0.33	0.82	408.04	0.14
Observations	861	861	308	309	309	309	309

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ Robust standard errors are shown in parentheses. Columns 3-7 restrict the sample to households with a migrant worker and average outcomes over migrant workers in the household. Column 6 is reported in 2013 USD PPP. All specifications include baseline controls, and hamlet-level fixed effects.