PRELIMINARY FINDINGS: A BRIEF TWO YEAR IMPACT REPORT

PROBLEM STATEMENT:

One of the major challenges faced by governments in low-income countries is how to reduce poverty in a sustainable way. Recent evidence suggests that the "Targeting the Ultrapoor" (TUP) program pioneered by BRAC in Bangladesh has proven very effective and portable across diverse low-income settings [Banerjee et al. 2015, Bandiera et al. 2016]. As a consequence, interest in the program has been growing and up to 30 governments had been piloting variants of TUP by the end of 2015 (CGAP 2015).

The TUP program consists of a large asset transfer (typically livestock) combined with long-lasting training that include an intensive classroom training for two weeks followed by weekly visits for two years. While successful, the TUP program is not tailored to individual circumstances: all beneficiaries are given the same menu of assets and skills to start the same small businesses.

The key open question is whether beneficiaries could do better with an equivalent cash transfer. The answer should be positive as cash allows them to choose the activity with the highest return, but it might be negative if cash is more subject to claims from relatives or more vulnerable to self-control issues as it is more liquid than assets. The answer determines the expected cost of reducing extreme poverty: the administrative cost of TUP is sizeable so that a program that transfers the cash equivalent of the asset-skill transfer would cost a fraction of the TUP program per household.

The Evaluation of the Asset Transfer Program attempts to answer this question by using a large-scale randomized control trial to compare the classic TUP design to a modified design where beneficiaries have the choice of cash instead of an asset-skills bundle.

INTRODUCTION:

The Asset Transfer Program is a regional poverty alleviation development intervention, which helps improve income of ultra and vulnerable poor households through increased ownership of livestock and non-livestock assets. The Program also compares the outcomes of this intervention with unconditional cash transfers of equivalent value and is being implemented in four of the poor districts of Southern Punjab namely; Bahawalpur, Muzaffargarh, Lodhran and Bahawalnagar.

The exercise aims to provide evidence on the causal impacts of the Pakistan Poverty Alleviation Fund (PPAF) program on various outcomes for targeted households, by measuring them rigorously with a Randomized Control Trial (RCT). These outcomes include the household's engagement in different sectors, their productivity and earnings from the sectors, and the overall wellbeing of households as measured in terms of their total income, consumption and self-reported life satisfaction. This particular report provides an overview of the activities carried out during the first phase of intervention.
Although this project is primarily an evaluation study, the basic structure of the program is similar to the regular PPAF Asset Transfer Program. The project divides the total sample into two treatment arms: the first treatment arm is a replica of regular asset transfer programs where an in-kind asset combined with complementary trainings is provided to beneficiaries, whereas in the second treatment arm, beneficiaries also have a choice of choosing equivalent amount of cash instead of asset and trainings.

The intervention was completed in mid-2014, and 1,832 Ultra Poor and Vulnerable Poor households received one of the two treatments. In order to track beneficiary households as well as measure the short-term impact of the program, two follow up tracker surveys were conducted after 4 and 8 months of the transfers. Longer and more in-depth midline surveys were conducted sequentially after the first and second year of the intervention.

The objective of this report is to highlight **preliminary findings** of the two year impact of the Program of the asset transfers and to document the impact of the intervention on different variables of interest for the treated households.

PROJECT DESIGN:

The exercise was based on a household sample chosen from 103 randomly selected *mouzzas*[1] in the four districts Bahawalpur, Bahawalnagar, Lodhran and Muzaffargarh. From the sample of 103 *mouzzas*, selected households in 58 *mouzzas* received either asset or cash transfers, while households in the remaining 45 *mouzzas* did not receive anything.

The first 58 set of *mouzzas* will be referred to as the **Treatment Group** and the remaining 45 will be called the **Control Group**. The Treatment Group was further subdivided in two groups: Treatment 1 and Treatment 2.

In the first treatment arm, eligible households were presented a menu of asset from which they could choose any combination up to the value of PKR 50,000. The asset list was based on thorough market research conducted at the village and union council level. A sample asset list is shown in Figure 3 below. In addition to this, beneficiary households were offered at least two trainings; the first dealt with the management of business enterprise (Enterprise Development Training), whereas second one is an asset specific training that mostly deals with the technical knowledge of an asset (Asset Management Training/Technical Training).

The only difference between the two treatment arms is that the asset list in the second treatment includes one more item; an equivalent amount of unconditional cash transfer (PKR 50,000). Furthermore, those households that select cash do not receive any training instead they receive an additional amount of unconditional cash (PKR 12,000).

RESULTS & OUTCOMES:

Our relevant sample is the **3,375 ultra or vulnerable poor households** that were covered in the trackers as well as the baseline or the two midline surveys (so the "tracked" poor). This includes all treated households from treatment villages, and a sample of poor households from control villages.

In order to assess the impact of the two treatments, we have compared the post-treatment average of key household indicators in each treatment group with the control group, while controlling for the pre-treatment level of the respective indicator, except where pre-treatment (baseline) data was unavailable. All estimates also control for a vector of other household characteristics such as household size, share of dependents, education of the head of household, etc., as well as strata fixed effects - stratum are defined on the basis of geographic location and village size, and divide the sample of 103 villages into four groups.

It is important to note that these are preliminary results and a more in-depth analysis is still underway.

A. ASSET RETENTION

The design of the project involved unconditional asset transfers. This means that it was not incumbent on beneficiaries to retain the asset they were given for a particular period of time, and they had the option of selling it if they wanted to. Some transferred assets were also lost or stolen, so not all assets were still owned by the households when they were surveyed for the trackers or the end-line.

[1] M*ouzzas* are revenue villages comprising entire *mouzzas* instead of specific blocks within these.

Figure 1 below shows the percentage of assets retained at the time of Tracker 1, Tracker 2 and two Midline surveys. We can see that for most asset types, except for crop farming assets, the rate of retention fell between subsequent surveys, but that the bulk of households have still retained productive livestock assets, which were the most popular choice among those who received as asset.

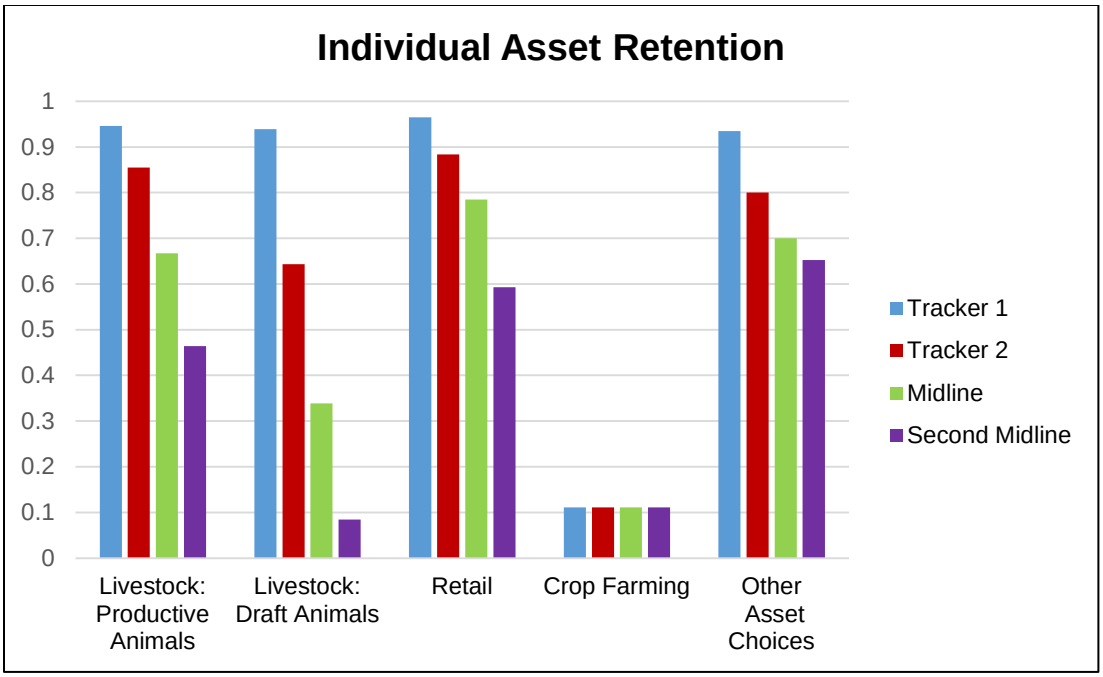

Figure 1: Asset Retention Rate

B. EFFECTS ON INCOME

This section discusses the impact of the treatment on household earnings from different kinds of employment activities, namely wage employment, self-employment in livestock related businesses, and self-employment in other businesses[2].

Results

Figure 2 below shows OLS regression results for different occupational choices for household head and spouse respectively. We can observe that earnings in US dollars very for:

i. **Earnings from casual wage employment**
   Even though we observed a shift out of wage employment, the change in earnings for both household head and spouse is not statistically significant.

ii. **Earnings from other wage employment**
   Earnings increase by almost 2.4 US dollars for both treatment arms whereas for spouses the earnings decrease minutely by 0.03 and 0.02 US dollars for treatment 1 and treatment 2 respectively.

iii. **Earnings from livestock related businesses**

a) Earnings from livestock related businesses increase significantly for household heads; by 5.2 and 4.8 US dollars for treatment 1 and treatment 2 respectively. This increase was not

[2] Casual Labour includes daily wage workers, Other Wage Labour includes salaried employees, apprentices, etc. Self-Employment in Livestock includes animal producers, mixed crop and animal producers, subsistence livestock and mixed crop and livestock farmers, livestock farm labourers and mixed crop and livestock farm labourers whereas all other types of self-employment are included in Other Self-Employment. All employment engagement statistics represent all jobs reported within an employment category by the household head and spouse.

detected after the first midline survey indicating that revenues from businesses take some time to materialize. The increase in spouses' earnings are not statistically significant.

iv. **Earnings from other self-employment**
   a) For other self-employment for household head increase in earnings is even greater than that for livestock businesses. Earnings increase by 19.2 and 15.0 US dollars for treatment 1 and 2 respectively.
   b) Spouses showed an increase for both treatment groups, though the increase was very slight, 0.12 and 0.09 US dollars in treatment 1 and 2 respectively.

v. **Total monthly earnings** increased for household heads by 35.5 and 26.6 US dollars for treatment 1 and 2 respectively. The increase in monthly earnings for spouses was not statistically significant.

At the aggregate household level, earnings from male household head and/or spouse for each month increased by 35.0 and 25.9 US dollars for treatment 1 and 2 respectively.

Overall, there was no difference in the treatment effect on those who received cash versus those who received an asset.

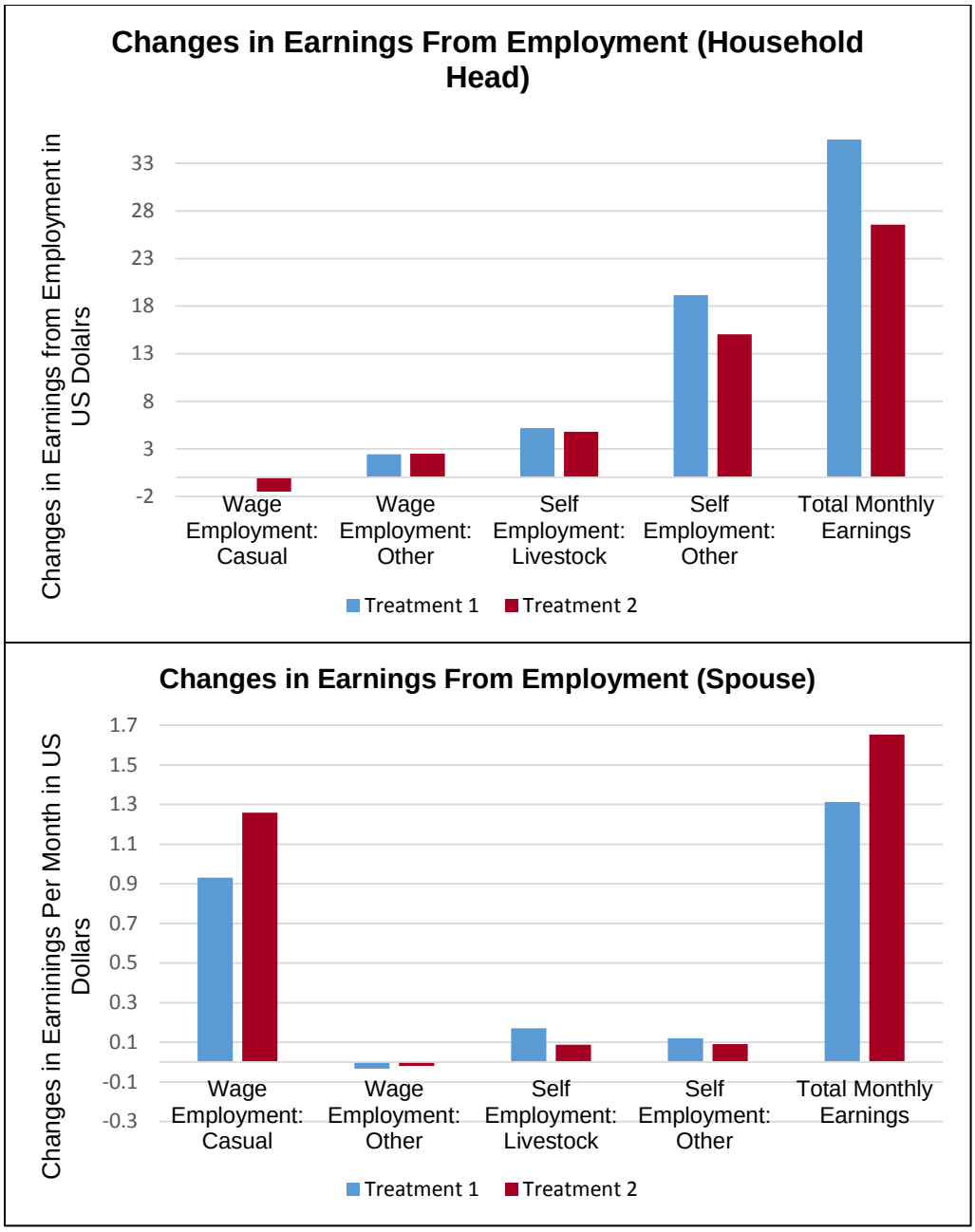

Figure 2: Changes in Earnings

C. OCCUPATIONAL RESPONSES TO TREATMENT

A likely and expected result of the Program is to observe an occupational shift from wage employment to self-employment since the assets transferred could easily be used to run a small business. Similarly, the cash injection could provide households the capital investment they need to start a small business of their own. We should expect our findings for occupational choice to correspond to our findings for income of the household head and spouse, especially over the longer run.

Results:

Figure 3 below shows OLS regression results for different occupational choices for the household head and spouse respectively. From these we can observe the following:

i. **Engagement in casual wage employment**
   a) For the household head, a decrease was observed over time for both treatment arms. In Treatment 1 households, it fell by 10.8% and for Treatment 2 Households, it fell by 10.5%. As a result, hours worked in casual wage labour also fell by 24% on average for treatment 1 household heads and by 5% for treatment 2 households.
   b) For the spouse, slight decreases in both treatment groups were not statistically significant.

ii. **Engagement in other wage employment**
   a) For the household head and spouse, a slight, statistically insignificant increase was observed over time for both treatment arms. The slight decrease in number of hours spent in other wage employment was also statistically insignificant for both treatment arms.

iii. **Self-employment in livestock**
   a) For the household head, employment increased for both treatment arms, and by as much as 23.4% for Treatment 1 households as compared to 15.2% for Treatment 2 households. Number of hours worked per month increased by 70% and 61% in treatment 1 and 2 respectively.
   b) For the spouse, employment increased for both treatment arms, and by as much as 22.2% for Treatment 1 households as compared to 15.7% for Treatment 2 households. Number of hours worked per month increased by 59% and 41% in treatment 1 and 2 respectively.

This is consistent with our expectations, since the asset transfer removed a significant barrier to entry for low income households who had basic business agency to set up their livestock businesses. Some households who received cash also used it to enter livestock related businesses.

iv. **Other Self Employment**
   a) For the household head, we also see an almost 10% increase in other kinds of self-employment among Treatment 1 households, probably for households who chose a non-livestock asset at the time of the transfer (such as retail or crop farming related assets). This was matched by an increase in hours spent in other self-employment by 46% and 31% in treatment 1 and treatment 2 respectively. This increase in time spent on other forms of self-employment was not detected fourteen months after the intervention when the first midline survey was conducted. However, a year after that survey, a significant increase was observed for both treatment arms but more so for the asset-skill arm.
   b) For the spouse, similar increases were observed for engagement and other self-employment but at a lower magnitude, at 2.1% and 1.6% for both treatment groups respectively. Number of hours worked per month increased substantially, by more than a hundred percent, in both treatment arms.

These results indicate that the shift from wage employment to self-employment is more pronounced for households in the asset-skill arm compared to the cash arm. This finding implies that asset-skill bundles are more likely to encourage entrepreneurial behaviour compared to cash.

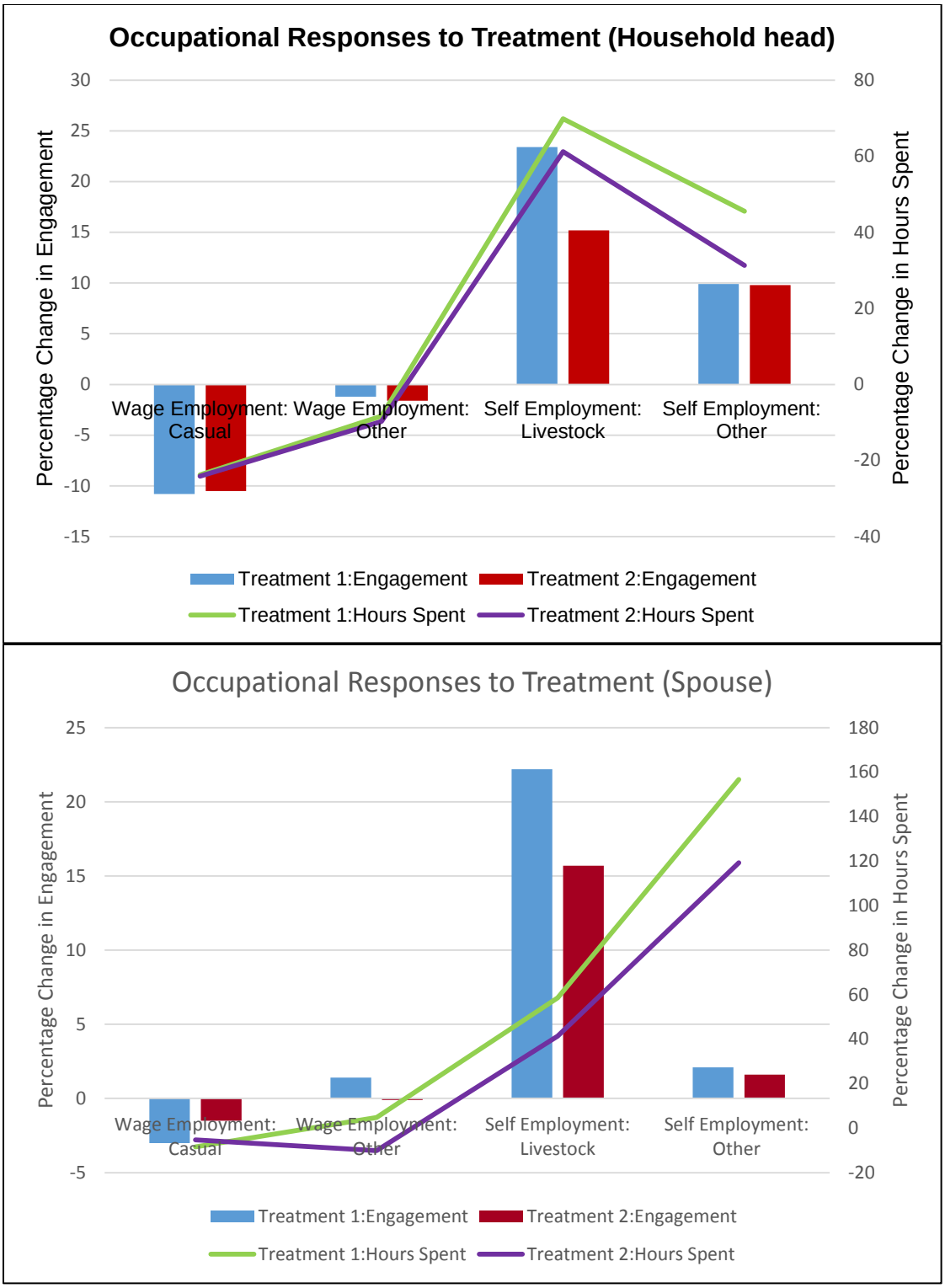

Figure 3: Occupational Responses to Treatment

Figure 4 below shows the aggregate effect of employment by reporting unemployment rates and total hours per month spent in employment for each treatment group and separately for both spouse and household head. The results show that for the household head, the unemployment rate has fallen by 1.4% for both treatment arms but this difference is not statistically significant. In terms of working hours spent in employment there is a 13% and 7% increase in treatment 1 and 2 respectively.

For the spouse, unemployment rates have fallen more steeply for treatment 1 (13%) compared to 10.6% in treatment 2. Simultaneously, hours worked per month have increased by 20% and 14% for treatment 1 and 2 respectively.

At the aggregate household level, there has been a steeper decline in unemployment in treatment 1 (5.5) compared to treatment 2 (4.6%). The percentage change for number of hours spent in employment is higher for treatment 1 (18%) than treatment 2 (12%). This difference between treatment 1 and treatment 2 is statistically significant indicating that the asset-skill bundle has increased time-investment in employment more than the cash arm.

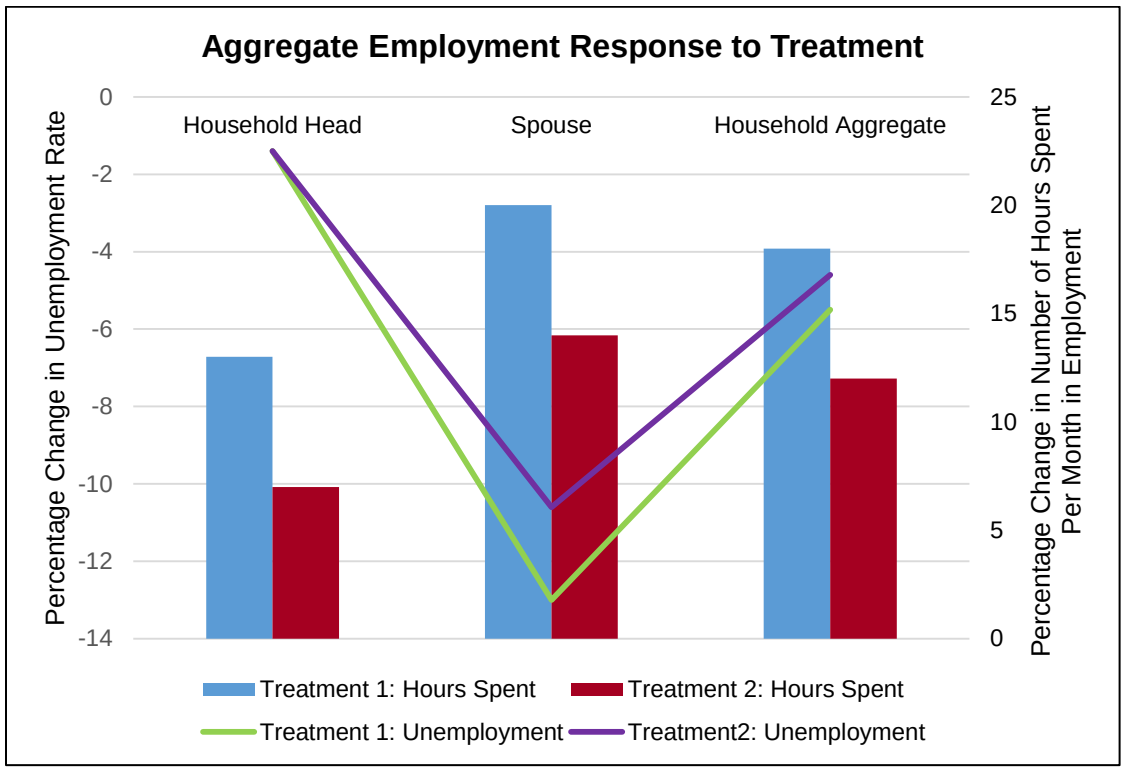

Figure 4: Aggregate Employment Responses to Treatment

Collectively these results show that not only has there been a shift away from wage labour and towards self-employment, the overall employment levels have also increased and in the long run, these will positively affect the earnings of the households.

At the aggregate household level, unemployment has decreased by 5.5% and 4.6% for treatment 1 and treatment 2 respectively. This is accompanied by an increase in number of hours spent in employment per month, more substantially for treatment 1 (59 hours) compared to treatment 2 (39 hours). The employment effect of spouses is larger as their initial participation in the work force was much lower compared to the household heads and the intervention has resulted in a massive increase in their working hours per month.

D. CONSUMPTION, SAVINGS AND INVESTMENT RESPONSES TO TREATMENT

This section analyses the three household expenditures of consumption, savings and investment together with net non-earned income to reach conclusions about any incremental effect from our treatments.

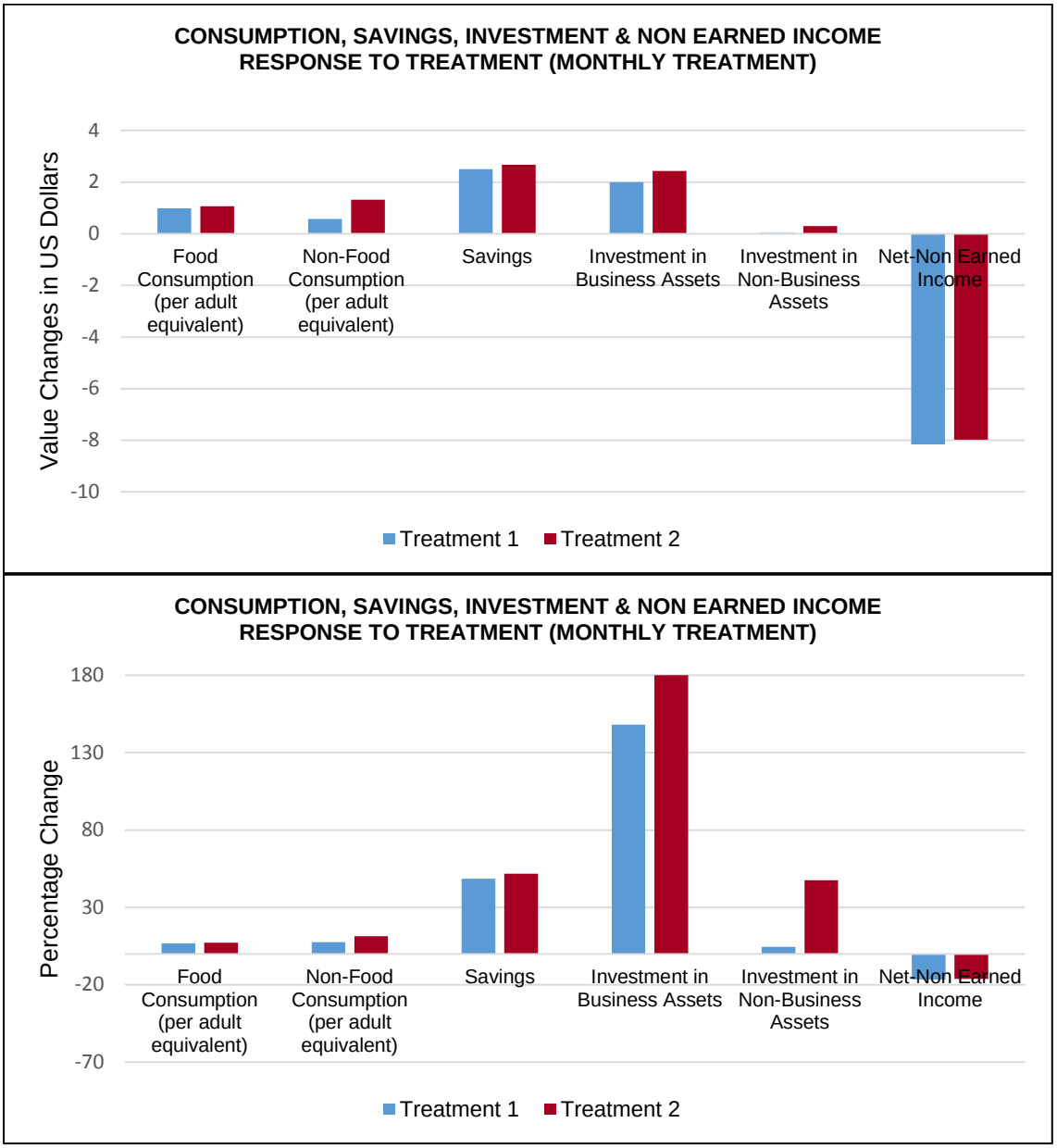

Figure 5: Consumption, Savings, Investment and Non-Earned Income Responses to Treatment

CONSUMPTION

Consumption is an important indicator of well-being, and an increase in consumption is therefore an outcome that any poverty alleviation program is very interested in. Long term changes in consumption however, often tend to be "sticky", in that it takes some time for sustained increases to materialize since they are dependent on many other factors and behaviours changing (such as employment, etc.).

For the purpose of this analysis, we look at food and non-food consumption per adult-equivalent living in a household (as opposed to a simple per capita average)[3].

Figure 5 summarizes the results for treatment effects on the two types of consumption. ***We can conclude that both food and non-food consumption increase by 6.8 and 7.2% for treatment 1 and 2 respectively.***

We can also see that non-food consumption increases by more compared to food consumption, 7.6% and 11.4% in treatment 1 and treatment 2 respectively. However, the difference between treatment arms is not statistically significant. This means that households have same consumption pattern in the short term irrespective of whether they received an asset or cash.

SAVINGS

Savings is an important measure for our intervention as initial cash transfers or early sale of transferred assets may have a positive effect on savings. On the other hand, as households try to expand livestock or other businesses, they may feed additional investment requirements from existing savings. As such, an analysis of savings completes our picture of household finances and makes it possible to track the effects of our intervention.

Figure 5 shows saving responses to both treatments for households. Savings increase by 2.5 and 2.6 US dollars for treatment 1 and treatment 2 arms which is almost a 50% increase on average compared to the control group savings. Even though these changes are statistically significant compared to the control group, there is no statistically significant difference in saving behaviour of households across the two treatment arms.

INVESTMENT

Investment is an important aspect of our analysis because the intervention seeks to divert employment away from wage labour and towards self-employment. This entrepreneurial effect will only be strengthened through effective and regular investment in business assets to sustain the effect of the initial cash or asset transfer.

In the following analysis, investments have been broken down into business and non-business assets which are essentially durable goods for household consumption such as furniture and electronic items.

Figure 5 shows that investment in business asset increases by 2.0 and 2.4 US dollars for treatment 1 and treatment 2 respectively which translate into more than a hundred percent increase in business asset investment compared to the control group.. For non-business assets, the increase in investment for treatment 1 is statistically insignificant but for treatment 2 the statistically significant increase, though only 0.29 US dollars is 48% increase.

Even though the increase in investment of business assets is not steep it is still encouraging as it shows that households are committed to switching from wage labour and towards self-employment. It is expected that in the long run, this investment will effect a positive change in the household earnings and consumption.

[3] Food consumption includes cereal grains, meat, vegetables, dairy, oils, major condiments and meals away from home or bought for visitors. Non-food consumption includes expenditure on fuel, cosmetics, toiletries, entertainment, transportation, electricity, maid salary, clothing, footwear, utensils, furniture, household textiles, legal matters, education, dowry, rituals, and others. The OECD scale has been used to calculate adult equivalence, and uses the formula 1+ (0.7*number of adults - 1) + (0.5*number of children).

NET NON-EARNED INCOME

Non-Earned income[4] is an essential variable in our analysis as it explains any changes in the household finances not captured by other measures. Income sources under this heading include cash transfers or remittances, borrowings and loan outs. These variables will capture any outflow or inflow of capital from the household finances which will assist our efforts to keep track of the transferred asset or cash and isolate its effect on the households' finances.

Figure 5 shows the effect on transfers and remittances of treatment 1 and 2. The columns report both the incidence of transfers to and from the household and the value of these transfers. The effect on value of transfers notes the change across post-treatment survey waves of trackers and the two midlines.

We can see that the 16% decrease in non-earned income, 8.16 and 7.96 US dollars in treatment 1 and treatment 2, are statistically significant. Even though, the impact of the intervention has reduced earnings from borrowing and increased lending in the treatment arms compared to the control group, there is no statistically significant effect on household financial transfers between the two treatment arms.

CONCLUSION:

Based on these preliminary findings of the four follow surveys, we have noted a significant occupational shift out of wage employment and into self-employment. In the short run, this is an encouraging result as occupational shift was the first indicator of successful implementation of the program. This means that the treated households are responding to the intervention as expected. This also shows that the transferred assets have been largely retained and the household decision making and workings now revolve around those assets.

Following this, household earnings from self-employment, particularly from livestock related businesses have grown. This result shows that as opposed to observations 4-8 months from the transfers, now the extra labor in self-employment has begun to reap benefits. A delay in income growth from self-employment was expected as household members took time to settle into their new roles and gained expertise in managing their respective transferred assets.

With the shift towards self-employment, increase in earnings was also expected over the long term for the households as they divert away from low paid wage labor. This report shows that on the aggregate household level, we also observe an increase in earnings for the two treatment arms. Given the rapid rise of earnings as observed in subsequent survey waves, we expect earnings from self-employment to improve further, and also potentially show some difference in increase between the treatment arms.

Furthermore, even though the value of consumption, savings and investment in business assets have all increased slightly, they have all picked up in both treatment groups. Overall, we do not see any difference within the treatment groups in terms of expenditures.

It is important to note that these findings are very preliminary and a divergence in outcomes between treatment groups may take more time to manifest as they depend on an overall increase in earnings. There is a need to track these poor households for a longer period of time and also explore how these household treatments have had spill-over effects at the village level.

[4] Non-earned income includes transfers, loans, borrowings and remittances. The data shown is net of all these.