Asset Transfers and Anti-Poverty Programs: Experimental Evidence from Tanzania*

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July 15, 2023

Abstract

We use a set of randomized experiments to examine the impact of a group business development program implemented by the Tanzanian government, along with a set of complementary training and cash transfer interventions targeted to vulnerable households in rural areas. In contrast with much of the recent literature, we find little effect of the business development program. While most enterprises remain operative three years after formation, even our highest estimates of effective wage rates suggest returns roughly equivalent to the opportunity cost of time for these households. Trainings on business skills and group transparency did not improve outcomes, although they appear to have exerted a redistributive effect from group elites to rank and file members. Unconditional and unanticipated lump-sum cash transfers to randomly selected members of these groups induce *all* members to invest more in the enterprise, with seemingly little to no return on these marginal investments. Our results emphasize the importance of profitability as the key motivation for asset transfer-based social protection programs.

Keywords: Business development, training, cash transfers, social protection

JEL Codes: I38, O15, J24, L26,

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1. INTRODUCTION

Social protection programs are increasingly designed to drive sustainable pathways out of poverty by investing targeted transfers in income-generating activities run by poor households (Ravallion 2003). The design of such programs varies widely – from unconditional cash transfers (UCTs) to highly tailored and hands-on interventions that launch people into specific lines of business. In this paper, we evaluate a government program in Tanzania (the Tanzania Social Action Fund, or TASAF) which provided substantial business startup funding to marginalized individuals, similar to the Northern Uganda Social Action Funds (NUSAF) Youth Opportunities Program (YOP) program studied by Blattman, Fiala, and Martinez (2014).[1] Two key differences from that program are that first, the program was targeted to vulnerable individuals (such as the elderly, widowed, or disabled, who were significantly older than the typical NUSAF beneficiary), and second, the groups were encouraged to propose group-based enterprises – possibly to take advantage of economies of scale in veterinary and extension support for the primarily animal husbandry and agriculture-based activities, as well as marketing and transport to trading centers.

We conducted a randomized evaluation of the Vulnerable Groups component of TASAF, through which groups of ~15 individuals proposed a joint business plan and were provided with a large grant of working capital (~$6,000) to execute the plan.[2] Most of the enterprises involved the

[1] Blattman, Fiala, and Martinez (2014) evaluated a government program in Uganda, designed to help poor and unemployed young adults to become self-employed artisans of a skilled trade, called Northern Uganda Social Action Funds (NUSAF) Youth Opportunities Program (YOP). Potential beneficiaries were invited to form groups and submit grant proposals to receive vocational training and funding for business start-up. The authors of the study reported impressive short-term gains in business assets, work hours, and earnings, which were followed by catch-up by the control group in the longer run (Blattman, Fiala, and Martinez 2014 & 2020). A similar increase in earnings in the short run followed by convergence a few years later is observed in an entrepreneurship program in Ethiopia that provided a cash grant and business training to young people (Blattman and Dercon 2018a & 2018b).

[2] This part of the experiment uses a pipeline (or delayed-treatment control group) design among successful applications in 100 rural communities in five districts of Tanzania as a part of the second phase of TASAF, taking advantage of the fact that the program did not have the capacity to fund and supervise all projects at once. A randomly drawn 50% of clusters were assigned to start their projects with a 12-month delay and form the control group for the group-enterprise intervention.

rearing of livestock such as cows, goats, pigs, and poultry. To assess whether some additional support to these new enterprises – to be run by individuals who did not necessarily have entrepreneurial skills – could be effective in improving business survival and profits, we randomly assigned two additional interventions to this government program. The first is a multi-day business skills and group trust-building training, which followed the ILO's *Start Your Business* and *Improve Your Business* training modules. The training was assigned at the group level (32 of 59 of the Early treatment group assigned to training) and conducted around the time of receipt of the grant. The second is an individually randomized lump-sum UCT, randomly varied between $50 and $350.[3]

We find that none of the interventions we study, and indeed no combination of them, had a strong effect on the earnings or consumption of beneficiaries even in the short term. The TASAF groups were formed, investments made, and business activities diligently operated just as intended. The groups themselves as well as the assets they held proved remarkably durable, at least for the 36-month follow-up period of our study, and group members not only devoted substantial time but put their own financial resources into the operation of these groups. The lack of impact across the three overlaid interventions appears to have a single root cause: these group-operated businesses were simply not very profitable, at least not for the vulnerable population TASAF targeted and/or

[3] This combination of an asset transfer, entrepreneurial training, and individual income support relates our study to another type of asset transfer program aiming to build sustainable income for the poor, namely the *Graduation* program – although the same key differences in the target population and the unit of intervention remain (ultra-poor individuals in *Graduation* rather than vulnerable groups in TASAF). This multi-faceted intervention, also known as Targeting the Ultra-Poor (*TUP*) and pioneered by BRAC, includes the transfer of assets (usually livestock), training and coaching, consumption support, access to financial services, and female empowerment. *TUP* has been shown to have consistently significant (if quantitatively modest) effects in Bangladesh (Bandiera et al. 2017) and in a six-country study (Banerjee et al. 2015), as well as continuing to confer benefits even 10 years after program implementation (Banerjee et al. 2021) in one case, namely India. An offshoot of these programs has produced an effort to understand which components of the bundle are necessary for generating large benefits (Sedlmayr, Shah, and Sulaiman 2020) or what other components might be added or incorporated into the next generation of these *productive inclusion* or *adaptive social protection* programs, such as cognitive behavioral therapy (Barker et al. 2021; Bossuroy et al. 2022). Asking "whether a mere grant of productive assets would generate similar impacts," a subset of the authors of the six-country study cited above find that "it does not" – at least not in one of the original study sites in Ghana (Banerjee et al. 2022). In Appendix B, we provide a more detailed comparison to related social protection programs.

not without more intensive support. When we calculate an effective wage on the time invested in these businesses it is close to the opportunity cost of time, and indeed lower than the food-for-work wage of $1.35 paid by the other major TASAF social protection program at the time. The trainings altered the organization of the groups, empowering rank and file (non-leadership) members and leading to some pull-back of time and contributions by group elites but did not improve business outcomes overall. Most remarkably, the completely private and individual cash transfers were largely invested into the group enterprises, which in turn induced substantial additional individual investment by group members who did not receive any cash. Beneficiaries found themselves in the same boat as the overall program; piling investment into an entrepreneurial activity that yielded disappointing returns.

We can delve into the magnitudes of these effects using detailed data that we collected from the group-based enterprises on reported inputs, assets, and earnings at six, 12, and 36 months after baseline. Beginning with average disbursements of $5,867, groups retained about $5,000 in assets at the 6-month follow-up and by 12 months had built the value back up almost to the original value before beginning a long-run decapitalization. In groups where no one received a UCT, the total business assets declined to $2,660 or just about 40% of the mean value of the grants from TASAF at 36 months, while groups in which at least one member received a UCT retained, on average, $5,000 in assets.[4] The average net earnings of beneficiaries from the group business was $3.35 per month ($3.80 in *no UCT* and $2.80 in *any UCT*). Even assuming no depreciation of group assets and that all decrease in stock value was consumed, the increase in consumption in the *no UCT* arm cannot be larger than $1.50 per person per month when the flow of asset sales is added to net monthly earnings. The corresponding figure in the groups receiving UCTs is $0.60,

[4] All figures in this paper are in real 2008 US$, the time of the baseline, with subsequent survey amounts adjusted using a district-specific CPI.

smaller because of reduced consumption from liquidation of group assets. These numbers correspond with the evidence from the household data, an insignificant average increase in consumption of $1.36 per person per month over a baseline mean of $17.8. Hence the combination of preserved (not consumed) group asset values and low profits limited the scope for increases in household income.

Several features of TASAF may have been problematic in terms of return on investment. NUSAF YOP selected youth at the beginning of their working careers, invested mostly in training for skilled trades, allowed more scope for individuals to own enterprises, and avoided low-skilled sectors such as livestock that make up the majority of TASAF investment.[5] In contrast, TASAF targeted older individuals with little education and low literacy rates, put investments into low-skilled sectors without barriers to entry, and encouraged group-based enterprises.[6] The beneficiaries of TASAF are poorer and have far lower baseline enterprise investment even than the average eligible individual in their villages, although they are better connected politically. Targeting such individuals, however well-justified on equity grounds, may not have been conducive to the goal of creating profitable enterprises – at least not without the intensive training and coaching provided in *Graduation* programs.[7]

Group investments may have also imposed collective-action frictions on the operation of the enterprises: business training that was overlaid on top of the group-based grants for business start-up appears to have done little to improve business processes or outcomes, perhaps because

[5] In a more individualized context, Argent, Augsburg, and Rasul (2014) evaluate Rwanda's *Girinka One Cow* Policy, find that a short and inexpensive livestock management training caused large and long-lasting economic benefits up to six years after the asset transfer on milk production and yields, household earnings, and assets.

[6] The average age of beneficiaries in NUSAF YOP was 25, two thirds of whom were male, and 75% of whom had primary school education. The corresponding figures in TASAF were 55, 40%, and 5%. NUSAF beneficiaries were also more likely to reside in large towns or urban areas.

[7] Haushofer et al. (2022), who find that cash transfers targeted based on deprivation (rather than, say, potential in the form of high expected conditional average treatment effects) may not be attractive for increasing social welfare – even when the social planner cares about redistribution.

of the relatively short duration of our trainings (2-3 days, as compared training over the course of 1-2 years in Karlan and Valdivia 2011).[8] It is possible that more intensive training and/or training that targeted technical aspects of specific business activities, such as the livestock management, or dairy production, might have been a more effective in creating profitable microenterprises.[9]

A voluminous literature documents the ability of cash transfers to build up business assets (see, e.g., Gertler et al. 2012, de Mel et al. 2012, among others). We have one stratum of eligible individuals who did not participate in TASAF groups and were provided with UCTs; in this group we effectively replicate the broader literature by finding modest increases in business assets and income. Our transfers were smaller than the literature evaluating GiveDirectly and our outcome measurement is relatively long after treatment (24 months) and so our impacts are muted relative to Haushofer & Shapiro (2016) and McIntosh & Zeitlin (2022), but the general profile of impacts is similar.[10] Where we find completely divergent results is in the UCT response for individuals who participate in TASAF groups, among whom little of the value of the cash transfers seems to have gone into household-level consumption or investment, instead being invested in the group enterprise. Indeed, for every $100 transferred collectively to the members of a group we find $400 additional in total stock of business assets, a finding that can be explained by the strong effect of cash transfers on the contributions to group enterprises *even for individuals who did not themselves receive any cash transfer* (as well as lower decapitalization of these groups over time). The group

[8] A study using the same ILO *Start Your Business* materials in Sri Lanka found some impacts on business starts but none on profits, sales, or capital stock (de Mel et al. 2014).

[9] Active labor market programs in low- and middle-income countries is a critical area of inquiry given the dominant role of informality and self-employment as highlighted by Bandiera et al. (2022), and the literature on these programs has yielded inconsistent results with low overall returns (Alaref et al. 2020; Bertrand et al. 2021) and few big wins (McKenzie 2021), albeit for different target populations.

[10] While several studies looking at conditional cash transfers (CCTs) have uncovered meaningful long-term effects (Barham et al. 2013, Araujo and Macours 2021), most analyses of UCT programs find benefits that dissipate quite rapidly (Brudevold et al. 2017; Hicks et al. 2017, Haushofer and Shapiro 2018, Baird et al. 2019). Stoeffler et al. (2020) find that cash transfers combined with enhanced savings mechanisms can generate asset accumulation among the very poor, similar to our findings on total stock of assets in groups with UCT recipients in our study.

ethos appears to have been strong enough to limit the decapitalization of the group enterprises, while also reinforcing the ultimate centrality of the low returns to the group business investment.

2. Motivation and Study Setting

2.1 Study Setting

Tanzania, the setting for this study, had a population of 42 million at the time the study began in 2008. Approximately 44% of the land area is agricultural land with 68% of total employment in agriculture. The GDP per capita in 2008 was $1,899 (PPP, constant 2017 international $). The annual GDP growth rate averaged around 6% for the period 2000-2020, with a high of 7.9% in 2011 (WDI 2021). Small and medium enterprises account for 50% of Tanzania's GDP and generate up to 40% of total employment, however most of these firms have remained largely informal. The study took place from 2008-2012 in five districts in Tanzania: Moshi, Kwimba, Lushoto, Makete, and Nzega. While the selection was purposive, they represent a range of the conditions in Tanzania, from relatively richer and more connected Moshi and Lushoto, to the more remote rural districts of Kwimba, Makete, and Nzega. Compared with the average poverty headcount in Tanzania, estimates suggest that poverty rates are lower than average in Lushoto and Moshi, roughly average in Nzega, and slightly higher than average in Kwimba and Makete (Baird, McIntosh, and Özler 2013).

2.2 TASAF's Vulnerable Groups Program

Tanzania's Social Action Fund (TASAF) was initiated in 2000 by the Government of Tanzania as one of its core poverty reduction strategies. TASAF II (2005-2013) was a USD 120 million social funds program – fairly typical of such large programs in Sub-Saharan Africa. It aimed to address the shortage of social services and income poverty in rural and urban areas as well as enhance capacity of beneficiaries. The program's financing targeted three main groups:

service poor communities (improvement of social services and infrastructure), food insecure households (public works programs where beneficiaries receive cash for work) and vulnerable groups (VGs).

The beneficiaries of VG projects are 'vulnerable' households, i.e., those containing elderly individuals, people with disabilities, widows, orphans, and those affected by HIV/AIDS, who form small groups and develop proposals to receive grants for income-generating activities. The executive structure of the group consists of a Chairperson, Treasurer, and Secretary, whom we term the group elite; the executive roles are determined by the group members at the inception of the project.[11] Appendix Table A1 provides summary statistics for the rank and file, group leaders, and eligible non-beneficiaries in study villages, showing the progressive overall economic targeting of TASAF and the superior socioeconomic status of the group leaders.[12] In addition, the survey team also identified the 'prime mover' in each group, defined as being the individual who is primarily responsible for driving the application and business activity, and while this individual need not be one of the formal executives of the group we nonetheless include him or her among the group elites in our data analysis.

The program brings together groups of disadvantaged individuals around a single vulnerability category (roughly a third are widow/widower groups, a third elderly, and the remaining are orphan or disabled groups) and asks them to draft a business plan for a small collective enterprise.[13] These groups vary in terms of business activities, size, and leadership structure. Our sample of 119 groups consists of 28 cattle-keeping groups, another 53 keeping either goats, pigs, or chickens, 11

[11] See Deserranno, Stryjan, and Sulaiman (2019) for evidence from Uganda as to the ways in which the leader selection rules can drive the characteristics of those chosen to lead savings and loan groups, as well as the outcomes of these groups.
[12] Baird, McIntosh, and Özler (2013) show that the actual beneficiaries of TASAF are poorer and more food insecure than the average eligible member of their villages but are more educated as well as politically connected and engaged.
[13] Groups containing HIV-affected households benefitted from the program but were left out of the randomized experiment.

investing in milling machines, 8 in tailoring, 8 in bee keeping, and the remainder in assorted agricultural activities such as vegetable production or tree nurseries. The median group has 15 members, with the smallest 6 and the largest 33. After a small amount of training provided by the government on procurement and handling bank accounts, the successful groups are disbursed substantial productive inputs for the project, with most groups receiving between $5,000 and $10,000, and the average group $6,650. Funds were disbursed from TASAF to an account owned by the group but jointly supervised by the Treasurer and TASAF, and receipts for purchases of equipment and services were audited regularly. While our study sample is admittedly a closely monitored environment, within this group it appears that money was transferred and invested in accordance with the initial group business plans.

3. STUDY DESIGN

3.1. The TASAF Pipeline Experiment

Within the five study districts, groups of vulnerable individuals went through the sensitization, application, and approval process required by TASAF and described in more detail in Baird, McIntosh and Özler (2013). TASAF VG screening follows a Community Driven Development rubric, with multiple stages of local participation including vetting eligibility status, a collective participatory ranking exercise to help select projects with strong local support, and a technical analysis by a district-level TASAF official who screens each preliminary business proposal vis à vis local skills and market conditions. TASAF then identified 100 villages that were close to the approval stage within these districts, and all VG projects within these villages (119 groups) were recruited into the study. We conducted a listing exercise in these 100 villages to classify households as eligible or ineligible according to the VG criteria, and to identify key individuals.

This pipeline of 119 active groups was randomized at the village level in to two tranches. The Early group was to be treated right after baseline (59 groups receive TASAF early treatment), and the Late group to be delayed for a year (60 groups receive TASAF late treatment), with the 12-month midline survey conducted immediately before the Late group was treated. This randomization was blocked by district and group type (livestock groups versus non-livestock groups), and Moshi and Lushoto districts began implementation 10 months prior to the other three districts, so all survey exercises were delayed in the same way to keep the time from treatment to survey consistent across the whole study. Figure A1 shows the timing of the surveys and the interventions.

3.2. The Training Experiment

Human and managerial capital is a critical input to the generation of entrepreneurial returns (Ibarrarán et al. 2019, Bruhn et al. 2010), and in the context of group investments training also has the capacity to alter the participation of disempowered members (Blattman et al. 2016). To investigate this issue, the early treatment group was then further randomized to two groups; one of which was to receive some form of training (32 groups) and the other would not receive any training (27 groups). These activities were conducted by an NGO specialized in training activities for rural citizens in Tanzania (Triodos Facet). The training had two primary components. The first of these was a Trust Building training given to all trained groups; it was based on ILO's *Grassroot Management Training* and *Guidelines for Group Actions.* This component emphasized group cohesion, as well as how to manage intra-group conflict and to create transparent guidelines for business management.[14] A second training was based on ILO's *Start Your Business* and *Improve*

[14] Appendix Figure A2 provides a cartoon used in the training that is exemplary of this component's emphasis on transparency and rules-based financial management. As explained above, VG members were brought together by their circumstances, i.e., by their specific vulnerability or eligibility criterion. As such, they did not necessarily know each other or work together before the project. Furthermore, rural villages in Tanzania can cover large spaces and be

Your Business program, a three-day training given to 17 of the trained groups used a standard ILO business skills curriculum, emphasizing bookkeeping, quality management, and market development.[15] Attendance of the training activities among all group members was 85% and reported satisfaction with both trainings at the time of completion was very high.

3.3. The Cash Transfer Experiment

Roughly eight months after the Late TASAF treatment had begun in Moshi and Lushoto, and effectively contemporaneous with the disbursement of the Late TASAF funds in the remaining districts, we implemented a cash transfer experiment at the household level in study villages. Figure 1 shows a CONSORT-style diagram of the research design for our study. Eligible households in the study sample (who are comprised of TASAF member households as well as those who satisfy the TASAF vulnerability criteria but are not TASAF members, who we refer to as eligible non-beneficiaries or ENBs) were randomized to a UCT control (36% of the eligible sample in treatment villages), or to transfer amounts ranging in intervals of fifty dollars from $50 to $350, each transfer cell assigned with a probability of 9% and the average transfer being $200. This randomization was blocked by district and the village-level TASAF Early treatment experiment. These transfers were delivered by a special team that travelled to the residence of each household to administer them. This UCT intervention represents a particularly clean example of a completely unframed, private, and unanticipated cash transfer. Because we were interested to see how households would freely choose to allocate the transfer across consumption, household investment, and investment in the group enterprise, we provided no framing for the reasons of the transfer, saying only that it was being provided to them on a lottery basis because of their

comprised of a number of hamlets that are far away from each other. Hence, building some cohesion in these groups were seen as potentially useful for the success of the group.

[15] Appendix Figure A3 shows the curriculum for this two-day component, illustrating the emphasis on marketing, business management, and the formation of a formalized business development plan.

participation in the overall study, and that they were free to use the money as they wished. The transfer was lump sum, made in cash, and in person to the survey respondent.

The cross-randomization of the UCT transfer against the pre-existing TASAF research structure creates several subgroups on whom we can focus. First, at the household level, we can examine the standalone benefits of cash transfers by looking at the Eligible Non-Beneficiary group, who never received any of the other interventions in the study and therefore provide a standard UCT experiment with a follow-up 16-24 months after intervention, depending on the district. We can examine the effect of cash transfers within the TASAF group members by comparing members who do and do not get transfers on a randomized basis. Finally, because we have entire TASAF groups in which no individuals were assigned to receive UCTs, we generated substantial heterogeneity in the cumulative amount of money transferred to group members (ranging from 0 for almost half of groups to a maximum of $1,300) and so we can use this variation to study outcomes for the groups, looking both at the group-level totals as well as at the behavior of other individuals in these groups who were not themselves treated with UCTs.

Because of this design, at midline we have a simple experimental analysis where we can compare the trained and untrained TASAF groups to the control. By endline all of the TASAF members are treated, and in the endline we can examine the persistent effects of the training, as well as the experimental analysis of the UCT (crosscut over ENB and TASAF training status).

3.4 Data Collection and Outcomes

The listing exercise at the village level partitioned all households into those who would be eligible (containing an individual meeting one of the VG criteria) versus ineligible (everyone else). We also identified and surveyed key village-level elites (the Village Executive Officer and Chairperson as well as the individual who was the 'prime mover' of the TASAF application,

whether they were a group member or not). Within TASAF groups we classify households as belonging to Group Leaders (or GLs, comprised of the group's Chairperson, Treasurer, or Secretary), or the Rank & File (or RF, if the household contains any other group member). For all 119 study groups, we sampled all three GLs into the study, and we also randomly sampled three members from the remaining RF. As shown in Baird, McIntosh and Özler (2013), GLs tended to be substantially wealthier and better educated than RF. Finally, in each village, we sampled three 'eligible non-beneficiaries' (ENB), who met the technical qualifications for inclusion in a TASAF VG group but were not beneficiaries.

Within this sample, we conducted a number of surveys.[16] First, we conducted a comprehensive three-wave household survey. The survey included data on consumption, income and revenue, savings and borrowing, revenue, food security, productive assets, livestock, housing quality, food security, health, and education. We also tracked the progress of the groups, using a detailed enterprise survey, which included the ability to track the contributions and profit-taking of individuals within the groups. For the enterprise survey we have an additional 'rapid resurvey,' conducted roughly six months after disbursement of TASAF funds to the Early treatment group, intended to capture outcomes immediately after disbursement.[17]

As this study began in 2008 with data collection ending in 2012, it pre-dated the standard use of trial registration and pre-analysis plans. Thus, we use two seminal papers in the literature – Banerjee et al. (2015) and Haushofer and Shapiro (2016) – to guide our grouping and selection of primary and secondary outcomes. Our primary outcomes include consumption (food, non-food,

[16] All survey instruments and enumerator manuals can be found here.
[17] An important issue in survey design, given the capture of assets at both the group and household level, is avoiding double-counting the same assets. In an attempt to avoid this, we carefully distinguished group assets as those considered to be owned collective by the group, and in the household survey we asked separate questions about individually-owned assets versus group owned assets (typically livestock) that might be on household land or supported with household labor and expenditure, but were not owned by the household.

and total, measured as real USD monthly per capita adult equivalents – adjusted for differences in price levels across districts and over time), housing quality, livestock, and productive assets. For housing quality, we use an indicator for whether the household has an improved roof as its own outcome (following the results in Haushofer and Shapiro 2016). For livestock, we measure the total value of all livestock (both including and excluding group owned livestock), and examine the numbers of dairy cows, dairy goats, pigs, and all poultry. Productive assets include two outcomes of interest: the total value of durable productive assets and the total value of businesses. Secondary outcomes include food security, health, education, income and revenue, and savings and borrowing.[18]

3.5. Attrition and Balance.

We began the experimental component of the study with 1,017 eligible households having responded to the baseline survey. In Table A2 we examine whether subsequent attrition from the study was driven by any of the treatments. We see that attrition from the study was 5.5% at 12 months and 14.2% at 36 months from baseline. While it was substantially lower among group leaders than the rank and file, it was not correlated with being treated by TASAF, receiving training or the UCT, or getting both TASAF and the UCT (the UCT variable here, as in the impact regressions, is in units of hundreds of dollars received by a household).

The study appears well-balanced; Table A3 shows balance using the household data, including all TASAF members, and incorporating dummies for Early TASAF treatment and Training, as well as the UCT and UCT*Training interactions as above. Across all primary outcomes we find

[18] Food security is measured by looking at the average number of meals eaten in a day by an individual in the household. Health includes three measures: the proportion of household members who were sick or injured in the past week, whether the respondent's self-reported health was good or average, and in index of disability for those over 15. Education looks at the proportion of school-aged children in school at the time of the survey and school expenditures. Income and revenue, all in the past year, includes agricultural revenue, livestock revenue, livestock expenditures, livestock profit and enterprise income. Finally, savings and borrowing looks at total savings and total borrowing.

only 1 out of 40 comparisons significant at the 5% level, slightly less than what we would expect by random chance. Because the TASAF groups do not exist at baseline we do not test for balance on the group data.

4. Observational evolution of the TASAF groups over time.

A starting point in understanding what the TASAF investment did is a simple descriptive analysis of the evolution of enterprise outcomes. In 92% of cases the TASAF program created the group enterprises from nothing, and so business outcomes such as business assets and profits are typically zero prior to treatment (meaning the baseline for the Early group, and the baseline, the rapid resurvey (RR) at six months, and the midline at one year for the Late group).[19] Using our three post treatment surveys we can construct four different durations since treatment: 6 months (RR), 12 months (R2), and 36 months (R3) for the Early treatment group, and 24 months (R3) for the Late-treatment group. To avoid conflating the effects of the UCT with the normal operating of the TASAF groups, which are only relevant for R3 outcomes and presented later in this section, we only include the groups that received no UCTs.

Table 1 provides basic summary statistics of group outcomes (first six columns) and individual contributions to/earnings from groups (remaining columns) across the four rounds of the survey. It illustrates the way the pipeline design worked, with no activity in any group at baseline, the Early groups in full swing by the 6- month RR, and then despite some initial stirrings of activity in the Late groups during RR and R2, no sizeable business activity in them until R3. In general, as we would expect based on a simple duration-from-treatment model, the Late group at R3 has outcomes that are intermediate between the R2 and R3 outcomes for the Early group.

[19] Six of the 60 groups in the delayed treatment arm had positive total stock values at the time of R2 data collection with average stock values much smaller (USD 653) than the groups in the TASAF early treatment arm (USD 5,633).

The average disbursement to groups was $5,867. Within the first six months of disbursements, groups spend nearly half of total available funds on set-up costs and working capital, ending up with combined assets plus working capital at about 83% of the grant. Figure 2 shows how this number then evolves over time: group value climbs quickly between 6 and 12 months, peaks at about 96% of the originally disbursed value 12 months subsequent to disbursement. This increase comes from some of the investments paying off (e.g., piglets are born; pigs fatten). At the 36-month follow-up, the total value of the stock of assets at the enterprise level in Early treatment groups that received no UCT has fallen to $2,660, or 45% of the disbursed amount. Hence, in the absence depreciation or profit in the group enterprise, we would expect just over half of the disbursed money to have shown up in household balance sheets within three years simply through consumption of the principal.

What then is the evolution of returns to group members? To examine this, we use questions asked of each group member about individual investment and profit-taking. During the enterprise survey, we ask every individual in the group to report time inputs in managing the group activity and the value of cash and kind investments in the group, as well the income taken out of the group by individuals. By calculating the difference between income and investment at the individual level we have a net income per individual in the group, and by then dividing this by the average time input we can directly calculate an effective wage rate. Note that because we cannot distinguish between realized profit and consumption of business principal, this wage rate is inclusive of the pace at which overall group value is being drawn down. Wage changes over time in the UCT control are plotted in Figure 3 (note that these are simple group averages relative to time of disbursement, not causal impacts relative to a counterfactual), with a quadratic time trend superimposed. We see negative effective wages at six months (reflecting that individual

investments into the enterprises still exceed profit taking). By 12 months the wage is effectively zero; by 24 months it has grown to $.50 per day (using data from the Late treatment group), and by 36 months to almost exactly $1 per day, significantly different from zero.

How does the total value taken out of group enterprises compare to the draw-down in group value? The difference between these two quantities, in principle, reveals the extent to which the realized income gains are driven by profits or consumption of principal. As an (admittedly imperfect) way of doing this, we can take the observed values for the Early treatment group from Table 1, linearly interpolate the stock values, contributions, and earnings across months. The difference between these latter values, multiplied times 14.5 (the average group size) gives the net contribution to the group in a month (where a negative number implies net withdrawals). We can then aggregate the stock asset value we would expect to see in each period according to net contributions in the prior month and compare this aggregated value to the observed (interpolated) stock. The difference between the two should arise from profit (if positive) or depreciation (if negative). The results of this simulation are presented in Figure A4, which illustrates that at their maximum around R2 the TASAF groups had generated $678 in real profit, but that from there group values deteriorated faster than would be expected given profit-taking, implying depreciation. The average monthly profit net of contributions in the six-month accumulation phase was 1.92% per month (as a percentage of the original grant), and the average depreciation in the 24-month period between R2 and R3 was -1.74% per month.

There are reasons for some optimism in these results: the group enterprises funded by TASAF are durable, they appreciate in total value over their first year, and pay effective wages that grow monotonically over time. However, even at their highest observed value the effective wage rate yielded by participation in the groups is just $1 per day, lower than TASAF's own Food

for Work daily wage of $1.35 per day.[20] Hence at no point in the study did the average return to labor in the VG program equal what was paid in the standard workfare program. All of this suggests that when we turn to the household analysis, we may expect to see very modest causal effects of the TASAF VG program on outcomes like household consumption unless the opportunity cost of time in beneficiary households was extremely low.

5. MIDLINE ANALYSIS.

5.1 Household impacts of TASAF and training experiments.

We now use the midline comparison between untrained TASAF groups, trained TASAF groups, and control to estimate the experimental impact of the program at the household level. We can run the standard cross-sectional ANCOVA regression in the midline:

$$(1)\ Y_{iv} = \beta_0 + \gamma_1 T_v + \gamma_2 Train_v + \beta_1 X_{iv} + \beta_2 Y_{iv0} + \epsilon_{iv}$$

In this regression Y_{iv} is the outcome for household *i* in village *v,* T_v is a dummy for the Early treatment group without treatment, the variable $Train_v$ is a dummy for groups that receive *both TASAF and training* (meaning that both dummies are compared to the control), X_{iv} includes block randomization strata fixed effects a dummy for whether the household contains a group leader, and Y_{iv0} is the baseline outcome. Regressions are weighted to be representative of all group members, and standard errors are clustered at the village level, the unit of treatment assignment. In the core tables we also provide p-values on the F-tests of the similarity of the treatment effects coefficients (does the training add significant value over TASAF alone) and on the joint significance of the two treatment terms (which maximizes sample size and power in the test of TASAF bundled with training).

[20] See the TASAF Assessment Handbook at this link.

Our first household analysis focuses on the ownership of livestock, given that most of the TASAF groups invest in some form of animal husbandry. This provides a clear way to begin parsing what we can learn from the pipeline design of the study. In the first row of Table A4 we see the midline experimental treatment-control difference, revealing the number of cows significantly increasing (a coefficient of .2 representing a quadrupling from the baseline control mean of .05), as well as an increase of almost .5 in the number of pigs owned. As we would expect these increases are similar in trained and untrained groups. Interestingly, the livestock displaying strong serial autocorrelation (goats and poultry) are not those driven by TASAF, suggesting that the program is inducing movement into new forms of animal husbandry. Given our efforts not to double-count, these should be taken as impacts above and beyond the shift in strictly group values reported in the previous section, i.e., these are animals that are reported by group members owned by them as opposed to being a 'group cow' or a 'group pig.'

Having illustrated these mechanical effects of treatment, we then move to examine the deeper household impacts of TASAF. Given the results of the prior section, we may expect that despite the presence of additional assets, the returns being generated by the assets are disappointing. Indeed, Table 2 shows very muted household impacts of TASAF funding on primary outcomes at midline. TASAF alone appears to have led to a modest increase in non-food consumption and an increase in expenditures on livestock, but these changes are relatively small in absolute terms (this translates into a less than 8 percent increase in overall consumption relative to the control, and while livestock expenditures have doubled at midline, livestock revenues are actually somewhat lower than the control). Agricultural income from sales of crops is no higher, and household-level enterprise profits and assets are not improved. Hence, this picture suggests that the flow of income from TASAF group enterprises is being invested in livestock assets but

has neither translated into flow consumption benefits nor helped the household to increase other sources of income. The groups receiving training do not show superior outcomes on any of our primary measures, a theme to which we return later.

Does this general lack of significance arise from a lack of power? For highly skewed outcomes, the answer appears to be 'yes.' For livestock profit, for example, the standard error on the impact estimate (62.4) is almost as large as the control group mean (71.3) and so we would barely be able to detect a tripling of the outcome. Livestock revenue, and to a lesser extent enterprise assets, are similarly underpowered. For other outcomes, our insignificant estimates are much better powered. Our core consumption aggregate, for example, has an impact standard error of 1.29, meaning that we would have been able to detect a change of 2.6 dollars. This quantity is equivalent to moving from the median to the 59th percentile of endline consumption among the vulnerable, and hence supports a reasonably precisely estimated zero.

Analysis of a set of secondary outcomes in Table A5 arrives at a similarly pessimistic conclusion. This analysis has the same structure as the previous one except that we do not have baseline observation of these outcomes and so it is a simple midline cross-section rather than an ANCOVA. We examine outcomes related to food security, durable consumption, savings, borrowing, schooling of children, and health, and find no impacts significant at the 95% level for either treatment, even when we use the F-test to look for joint significance of the two treatments. We can also focus our analysis on the wellbeing of the specific vulnerable individual whose presence was the basis of the household's eligibility for TASAF. A core purpose of programs with elaborate targeting criteria that attempt to draw in vulnerable individuals is the desire to improve the health and consumption of these individuals specifically. To examine whether household-level impacts could be muting a stronger impact on the actual vulnerable group member, we exploit an

individual-level survey module to report on the health and the consumption of the actual VG group member at the time of the round 2 survey, before the late-treated group was treated. These results, in Table A6, examine illness, hospitalization, morbidity, self-reported health, and individual food insecurity for the targeted individual. The results provide no evidence that the VG group members who had benefited from 12 months of TASAF treatment enjoyed better health or superior individual-level consumption.

5.2. Digging into the impacts of training.

The simplest way to analyze the training experiment at the group level is to use only the Early-treated TASAF groups, within which the training experiment was performed, and compare the trained groups with the untrained at RR, midline, and endline to examine the additional effect of training using an interaction between the training dummy and round dummies. Table A7 shows that at R2 trained groups are more likely to be keeping written records of group accounts, but these effects fade by R3, and do not carry over to other practices. Columns (5) – (7) of Table A7 examine the key entrepreneurial outcomes at the group level (sales over the past month, stock value of group assets, and 6-month profits).[21] We find no impacts of training either at midline or endline, although the point estimates are large and imprecise due to the small sample size of groups and large variation in these outcomes.

What about the possibility that the trainings altered the functioning of groups, specifically the division of spoils between group leaders (GLs) and Rank-and-File members (RF)? Table A8 presents the effects of the program on individual outcomes. In the absence of training, GLs were much more involved in the groups than RF, putting in more labor and inputs and particularly in

[21] All but two of the groups in the early treatment arm are operating an income generating activity at RR– with average total business stocks in the untrained groups valued at approximately $5,564, mean sales during the past month just over $40, and net losses in their first six months of $67.

the endline receiving more not just in terms of overall income but being paid a higher effective wage as well. At midline, we already see some discouraging effect of the training on this differential effort, with trained GLs putting in significantly less labor than untrained GLs (and no more than their RF group members), although they continue to earn more income. By the endline this divestiture is clearer, with negative interacted coefficients on all metrics of involvement by the GLs, and their behavior in trained groups never being different from RF although GLs in untrained groups are significantly more engaged across every measure.[22] The training intervention seems to have led to a more equitable distribution of the group profits between its members, i.e., reducing within-group inequality, without reducing the modest total net earnings of the enterprises. However, this equality was achieved in large part by a reduction in effort by the comparatively higher skilled group elites.

6. IMPACTS OF CASH TRANSFERS.

For the cash transfer study, we first randomly selected half of the villages to be included in the UCT experiment, blocked by TASAF treatment status (Early, Late, and ENB), and then individually randomized UCT treatment within selected clusters. Hence, we can consider the impact of standalone transfers among the ENBs as well as the impact of transfers on top of TASAF grants for the beneficiary households. Transfers were made shortly after the midline survey, so the Early TASAF treatment group had received funding over a year earlier, while the Late TASAF treatment group received their VG grant just several months before the UCT. The endline survey captures outcomes roughly two years after the transfers were made. To analyze UCT impacts we

[22] At the 36-month follow-up, a typical GL in an untrained group spends 55 hours per month working on the group enterprise and has net earnings of USD 6.91, compared with 33 hours and USD 4.31 for the average untrained RF member. These differences are statistically significant at the 95% level of confidence. However, if the groups have received training, these differences shrink substantially (even disappear) and become statistically indistinguishable: trained GLs and RF members work 32 vs. 30 hours and earn USD 5.82 vs. USD 5.55 per month, respectively.

include the size of the transfer to a household as the treatment variable – in units of hundreds of US dollars (randomized between $50 and $350, with the mean and median transfer amount among UCT recipients equal to roughly $200) and set to zero for households who received no transfer.

Table 3 analyzes impacts of the cash transfers in the ENB stratum, which, given the absence of any other interventions in that population, studies an intervention much like the large cash transfer literature, such as the numerous studies on GiveDirectly transfers in Kenya (Haushofer and Shapiro 2016, Egger et al 2019) and Rwanda (McIntosh and Zeitlin 2022), albeit with substantially smaller transfer amounts. Perhaps given the relatively small size of our transfers and the 24-month follow-up duration, we do not find any appreciable effects on consumption or livestock value. We do detect a large but noisy increase enterprise assets and income, significant at 90%, indicating an increase of $29 per $100 of UCT, or an average treated impact of $58 over a control-group mean of $78.

Given the complex research design among TASAF beneficiaries by R3 and the concerns raised by Muralidharan et al. (2019) over the pooling of arms in factorial designs, we present the R3 UCT impacts in two distinct ways. In Panel A of Table 4, we follow the same structure as the prior table, pooling all UCT treatment and estimating a single ANCOVA regression for TASAF beneficiaries. In Panel B, we show every cell of the research design separately to avoid conflating the impacts of Early TASAF treatment, training, UCT, and their interactions. Each cell is defined as a standalone treatment variable (so that all impacts are measured relative to the control group) and p-values from F-tests are provided at the bottom of the table for the joint effect of the three UCT arms and the two training arms. Interestingly, however, we see quite a different pattern of impact on business investment, with the UCTs actually leading to a significant *decrease* in agricultural income, and rather than a significant improvement in enterprise income we see a

negative effect on both income and assets with t-statistics above 1. Hence, something distinct seems to be occurring with the TASAF beneficiaries; they are failing to translate individual-level cash transfers into improvements in household enterprise outcomes.[23] Table A8 (using an R3 ANCOVA regression model with an interaction term to test the difference between TASAF members and the ENBs) shows that the UCT-receiving TASAF members are achieving less enterprise income at the household level than are the ENBs who get UCTs.

The obvious explanation for this divergent pattern is that the TASAF group members have a unique non-household vehicle for investing cash transfers, namely the group business. We have two distinct ways of approaching this question. The first is individual; we can bring the data collected in the group survey about individual contributions to and receipts from the group together with the treatment status from the UCT experiment to ask whether those who received cash behave differently in the groups. The results of this analysis, presented in Table 5, show that indeed recipients of UCTs engage more strongly with their groups. We see a 10% increase over the UCT control group mean across the board per $100 transferred, which is only statistically significant for labor inputs. In each case these treatment effects at the average transfer represent increases of about 20% over the no-UCT mean. Hence, those receiving the UCT are putting more effort towards the group activity and yet not receiving sufficiently more from this investment for it to show up in either earnings or consumption.

Our second means to address the relationship between the UCT and TASAF is at the group level. The total amount of cash transferred to the members of a group is effectively randomized, and so we can examine how this variation translates into changes in group outcomes. The UCT represents a substantial positive liquidity shock and arrives in a lump-sum cash form ideal for

[23] Appendix Table A9 shows that there are also no significant impacts on secondary outcomes from the UCT for TASAF beneficiaries.

investing, and so a natural question is the extent to which cumulative UCT receipts are translated into observable investments in the TASAF group activity. Despite the very private way in which the transfers were made, the decision to invest in group businesses could arise either as an individual investment decision or could be driven by social pressures from the group (at the end of this section, we present suggestive evidence that such a mechanism may have been present). In making investment decisions, UCT recipients would face a private version of the same welfare issue that motivates this paper: with liquid capital in hand, does making investments in group asset generate higher net present value than the alternatives, or than simply consuming the money over time?

Table 6 shows that there was a strong tendency for TASAF members to invest transfers in the group enterprises. Indeed, for every $100 received collectively by group members we find that the total value of the stock in group businesses at endline is $402 higher (over a base of $2,284). This somewhat remarkable finding indicates that the UCT provides a log-rolling opportunity through which money received by some group members effectively generates a multiplier of 4 on the stock value that groups succeed in maintaining in the joint enterprises two years later. Despite the 25% increase in total stocks arising from the UCT, however, there is no concomitant improvement either in the flow of sales or the profitability of the groups as a result of the cash transfers. The finding that TASAF members invested heavily in group projects and saw very little return on this investment, at least within the window of our study, squares the distinction between the impacts of UCTs on TASAF members versus the ENBs. The substantial accumulated assets may lead to future welfare benefits for group members but could not be used to drive household enterprise outcomes within the window of the study.

How is it possible for the cumulative group transfer to have driven such large increases in the stock value of enterprises? The answer is that the receipt of the UCT by some group members led to a strong increase in the contribution of *other* group members, whether or not they themselves received money. We can show this in two related ways. First, Panel A of Table 7 uses the same structure as Table 6 but analyzes only those individuals who do not themselves receive a UCT. This simple experimental spillover analysis shows that there are significant increases in financial and labor inputs to the groups occurring even for those who receive no cash directly, and again no improvement in profits or wage. In Panel B, we use all group members and include the cumulative transfer to everyone *else* in the group as well as the individual UCT in the analysis of individual contributions to the group (now clustering at the village level). This structure, with both quantities randomized but correlated because of the village-level assignment step in the UCT experiment, allows us to separately identify the impact of transfers to others from receiving money oneself. The rest-of-group cumulative cash transfer has a significant impact on the financial and labor contributions by individual group members to the group. Remarkably, once we have controlled for the cumulative group transfer the additional effect of own cash transfer amount becomes insignificant, suggesting that the collective peer effect is entirely responsible for the contributions. The implication is that the individual-level impact shown in Table 5 arises entirely from the intersection of the contribution spillover effect and the fact that own and other UCT treatments status is mechanically correlated due to the village-level component of the UCT design (the correlation is .3775). Neither own nor other contributions improve profits, earnings, or effective wages at the 95% significance level.[24]

[24] Table A11, which examines a set of social capital outcomes among vulnerable households in the endline, provides some suggestive evidence for the possibility of social pressure from other group members. In this table the TASAF dummy is observational and recreates the results from Baird, McIntosh, and Özler (2013), showing TASAF members to be substantially more politically engaged than the eligible non-beneficiaries. The randomized UCT treatment never

This set of findings amplifies a major theme of this study. These group enterprises display a remarkable collective ethos, with group members working together over the course of years and sacrificing at the individual level to build a joint enterprise. The notable durability of the TASAF enterprises and the breadth of investment by GLs and RF alike attest to this dedication. This collective ethos is so strong that improving the wealth of some group members effectively exerts a tax on other group members in an effort to prevent the drawing-down of group value otherwise observed. While the UCTs allow groups to protect collective asset investment from being decapitalized, this is achieved by piling individual resources into enterprises in which the rate of return may ultimately be too low to justify the cost.

7. CONCLUSION

Tanzania is distinctive for its socialist roots, combining the broader African traditions of redistribution and risk-sharing (Jakiela and Ozier 2015) with the *Ujamaa* philosophy of its first president Julius Nyerere and the *Chama Cha Mapinduzi* party that has ruled the country since independence. While the economy has liberalized since reforms began in the 1990s, the results of this study serve as a parable for the uneasy ways in which the growth-based capitalist mindset might relate to this underlying collectivist tradition.

For a group-based model to function at all, members must be able to overcome the tragedy of the commons, invest assets that could be coopted for individual purposes in a collective endeavor, and remain involved with that endeavor over a long enough timeframe to give success a chance. All these hurdles were cleared under TASAF VG projects. We developed our 'rapid resurvey' check-in six months after the groups had been treated, fearing that most of the assets

has any effect on trust or political participation among non-beneficiaries, but only amongst individuals participating in TASAF, the receipt of a UCT leads to a substantial decline in trust in other village members – a drop of more than 6pp off a mean of 74%.

might have been already privatized and liquidated by that time. Instead, we found every single treatment group operating robustly at that point, with enterprise asset values that had increased by 5% on average six months later, and with more than half of the original asset value in the groups three years later. While labor contributions had tapered off by about a third between RR and endline, financial contributions and profit-taking both increased over that interval. Only six of the 59 Early treatment groups report zero stock value three years later. So as collective entities, the VG projects had been durable.

As capitalist entities, however, they have been less successful: ultimately the justification for this type of economic inclusion program relies on these groups to become profit-making businesses. Precisely because members were so reluctant to draw down stocks quickly to consume them, we did not see the types of short-term consumption gains that are typical in the cash transfer literature. Because they were also unable to translate the investment into high entrepreneurial returns to their labor, effective wages realized from the substantial devotion to these group businesses appears not to have been superior to the returns from counterfactual labor returns, generating scant benefits relative to the control. While a training intervention was successful in generating a more egalitarian pattern of contributions to and profit-taking from the group, this did not result in improved overall group performance. In the most pyrrhic evidence we present, not only those receiving UCTs but other members of their groups who do not receive transfers all pile individual liquidity into this group investment achieving these same low returns.

The policy conclusion emphasizes the extent to which the logic of any entrepreneurial asset transfer program is in fact predicated on the returns to investment. If livestock groups are unable to turn an economic profit (generating durable returns to labor in excess of the prevailing wage), then they are effectively cash transfers ‘on the hoof,’ providing a medium-term consumption

support program that will dissipate as the original investment is consumed away. While a welfare case can still be made for such a program, the relevant questions would then center around the risk and smoothing properties of transfers provided in this manner (which pushes labor and livestock mortality risk on to the beneficiary but gives them more control over the pace of spend-down) relative to a more predictable flow of payments as from a typical cash transfer program.

To have implemented multiple components of the successful TUP model and not been successful in reducing poverty, the conclusions of this study are mostly sobering. First, while group structures may make sense for training and launching new businesses, it is not clear that they are an effective way to create strong dynamic profit motives. Second, generic short-term training on business practices is likely to be less effective (if also less expensive) than a more long-term, focused, vocational form of training that builds marketable skills in specific areas. Finally, the returns to cash transfers are driven entirely by the way in which they are invested. When other components of an intervention have been successful in succeeding profitable business opportunities, cash is likely to achieve high returns, and where such opportunities are lacking, it will not.

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TABLES AND FIGURES.

Table 1: Descriptive Statistics on Group Activity for Early and Late Treatment Groups

	Group-Level Outcomes:						**Individual-Level Group Interaction:**					
Round:	Sales 1 month		Total Stock		Profit 6 months		Labor Inputs (Hours/Wk)		Financial Inputs ($/Mo)		Earnings Taken ($/Mo)	
	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early
Baseline (R1)	0	0	0	0	0	0	0	0	0	0	0	0
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Rapid Resurvey	0.1	29.6	19.0	5089.2	-96.1	0.6	0.8	14.4	0.1	3.2	0.0	1.3
	(1.1)	(85.2)	(75.1)	(2444.9)	(418.2)	(3.5)	(3.7)	(15.6)	(0.3)	(5.4)	(0)	(3.7)
Midline (R2)	2.4	80.8	65.3	5658.4	74.2	-7.4	0.1	11.6	0.0	4.7	0.0	5.9
	(18.6)	(142.1)	(326.0)	(3090.5)	(1055.5)	(294.4)	(0.7)	(14.4)	(0.1)	(12.0)	(0.3)	(13.9)
Endline (R3)	77.0	74.7	3403.7	2659.7	86.9	439.0	10.3	9.0	1.4	1.1	2.7	6.5
	(117.3)	(159.0)	(2517.5)	(2376.0)	(333.6)	(948.5)	(12.9)	(11.3)	(3.2)	(2.9)	(5.5)	(11.8)
N	60	59	60	59	60	59	372	358	372	358	372	358

Notes: Table gives the mean and SD (in parentheses) of outcomes at the group level (first six columns) and at the individual group-member level (remaining columns) across each of the four rounds of the group survey. The "Early" group was treated immediately after the baseline survey (R1), and the "Late" group immediately after the midline (R2). Values for R3 use only the TASAF groups that did not receive UCTs to avoid conflating the effect of cash transfers with TASAF. All currency values are in constant 2008 USD.

Table 2: Midline Analysis of Primary Outcomes at the Household Level

	Per-capita Consumption	Per-capita Food Consumption	Per-capita Non-Food Consumption	Improved Roof	Livestock Cost	Livestock Revenue	Livestock Profit	Agricultural Income	Enterprise Income	Enterprise Assets
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
TASAF treatment	1.36	-0.36	1.72**	0.036	17.0**	-6.20	-18.8	-6.58	-4.16	6.26
	(1.29)	(0.67)	(0.85)	(0.033)	(8.57)	(66.7)	(62.4)	(12.5)	(27.2)	(22.8)
TASAF + training	-0.51	-0.50	-0.21	0.037	11.9	29.2	22.9	10.6	-11.7	-23.5
	(0.86)	(0.65)	(0.39)	(0.037)	(7.90)	(64.4)	(62.2)	(13.2)	(25.5)	(14.9)
Baseline outcome	0.51***	0.31***	0.53***	0.68***	0.43***	0.018	0.0042	0.30***	0.72***	0.66***
	(0.054)	(0.051)	(0.085)	(0.053)	(0.12)	(0.032)	(0.035)	(0.067)	(0.086)	(0.045)
Midline Control group mean	17.8	12.2	5.52	0.74	17.7	91.4	71.3	72.4	131.8	82.9
P-value: TASAF = TASAF + training	0.13	0.84	0.022	0.98	0.63	0.66	0.58	0.27	0.78	0.16
P-value: TASAF, TASAF + training joint signif.	0.642	0.453	0.146	0.185	0.0235	0.827	0.968	0.846	0.724	0.594
Observations	631	631	631	631	630	631	630	631	630	631
R-squared	0.32	0.23	0.25	0.65	0.16	0.033	0.039	0.25	0.58	0.55

Notes: *** p<0.01, ** p<0.05, * p<0.1. Table estimated for the full household sample of TASAF group members at midline, comparing the group experimentally offered TASAF and those offered TASAF + training to the control group. The regression is a cross-sectional ANCOVA including block randomization fixed effects The first F-test at the bottom of the table gives the p-value on the F-statistic for the difference between the treatment coefficients, and so tests the additional impact of the training. The second F-test is the p-value on the significance of the sum of the two treatment dummies. Standard errors clustered at the village level (unit of random assignment). Consumption numbers are monthly adult equivalents, and all monetary figures are in constant 2008 USD, and survey weights are used to make the analysis representative of all TASAF group members in study villages. All outcomes Winsorized at 1% and 99%. Standard errors clustered at the village level (unit of random assignment).

Table 3: Cash Transfer Impacts on the Eligible Non-Beneficiaries

	Primary Outcomes:									
	Per-capita Consumption	Per-capita Food Consumption	Per-capita Non-Food Consumption	Improved Roof	Livestock Cost	Livestock Revenue	Livestock Profit	Agricultural Income	Enterprise Income	Enterprise Assets
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
UCT Effect in R3 (100 USD)	0.52	0.26	0.37	0.015	0.79	-12.0	-10.7	-4.40	29.3*	20.3
	(0.58)	(0.39)	(0.29)	(0.016)	(2.13)	(19.7)	(18.5)	(8.08)	(15.8)	(17.2)
Baseline Outcome	0.38***	0.17***	0.71***	0.62***	0.38***	0.0096	-0.0091	0.32***	0.79***	0.0080***
	(0.050)	(0.049)	(0.078)	(0.058)	(0.069)	(0.019)	(0.018)	(0.11)	(0.062)	(0.000048)
Endline Control group mean	18.7	12.9	5.71	0.74	26.1	116.4	89.9	102.5	77.5	42.4
Observations	245	245	245	245	245	245	245	245	245	245
R-squared	0.26	0.083	0.34	0.47	0.37	0.00099	0.00090	0.17	0.40	0.24

Notes: *** p<0.01, ** p<0.05, * p<0.1. Table estimated using endline (R3) data, with an ANCOVA controlling for baseline outcomes. The UCT variable is measured in hundreds of US dollars received by the household. Survey weights are used to make the analysis representative of all ENBs in study villages. Consumption numbers are monthly adult equivalents, and all monetary figures are in constant 2008 USD. All outcomes Winsorized at 1% and 99%. Standard errors clustered at the village level (unit of assignment).

Table 4: Cash Transfer Impacts on TASAF Group Members

Panel A.	**Pooled UCT Effect, TASAF Members**									
	Per-capita Consumption	Per-capita Food Consumption	Per-capita Non-Food Consumption	Improved Roof	Livestock Cost	Livestock Revenue	Livestock Profit	Agricultural Income	Enterprise Income	Enterprise Assets
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
UCT Effect in R3 (100 USD)	0.42	0.15	0.20	0.013	2.14	22.3	21.1	-12.7**	-7.50	-5.59
	(0.51)	(0.27)	(0.29)	(0.013)	(1.91)	(17.6)	(17.3)	(5.11)	(7.06)	(4.99)
Baseline outcome ANCOVA	0.56***	0.33***	0.57***	0.43***	0.18**	-0.026**	-0.030**	0.30***	0.65***	0.65***
	(0.061)	(0.057)	(0.10)	(0.070)	(0.074)	(0.013)	(0.015)	(0.079)	(0.061)	(0.034)
Endline Control group mean	20.5	13.8	6.63	0.78	25.7	75.9	49.0	105.4	118.9	77.9
Observations	645	645	645	640	645	645	645	640	642	644
R-squared	0.25	0.16	0.20	0.49	0.23	0.078	0.056	0.21	0.52	0.53
Panel B.	**Each treatment cell individually, TASAF Members**									
Late TASAF & UCT	0.64	0.116	0.467	0.00	4.536	37.90	34.28	-19.07***	-10.34	-8.91
	(0.6)	(0.3)	(0.330)	(0.012)	(2.739)	(28.4)	(27.4)	(5.358)	(8.640)	(6.872)
Early TASAF only	-0.857	-1.610*	1.115	0.0151	12.22	117.8	102.7	-5.107	-9.529	-24.21
	(1.4)	(0.9)	(1.013)	(0.042)	(10.240)	(92.0)	(88.1)	(16.980)	(37.090)	(22.850)
Early & UCT	1.194	0.561	0.716	0.0762***	6.577**	11.11	5.759	6.201	-6.889	-15.21*
	(1.3)	(0.6)	(0.695)	(0.025)	(2.669)	(14.2)	(14.8)	(14.470)	(14.800)	(9.126)
Early & Training	1.434	0.658	0.727	0.0723	17.89***	-7.643	-22.73	0.151	-17.38	-39.72**
	(1.6)	(0.9)	(0.868)	(0.049)	(6.277)	(32.3)	(33.3)	(16.690)	(25.850)	(17.200)
Early & Training & UCT	-0.828	-0.434	-0.605**	0.0369	2.584	16.94	15.36	-16.11*	-12.12	-12.99
	(0.6)	(0.5)	(0.278)	(0.029)	(2.953)	(24.1)	(26.3)	(8.689)	(12.950)	(8.384)
Baseline outcome ANCOVA	0.546***	0.331***	0.560***	0.433***	0.178**	-0.0232**	-0.0262**	0.293***	0.652***	0.647***
	(0.1)	(0.1)	(0.100)	(0.068)	(0.072)	(0.0)	(0.0)	(0.072)	(0.060)	(0.036)
Endline Control group mean	20.5	13.8	6.63	0.78	25.7	75.9	49.0	105.4	118.9	77.9
Observations	645	645	645	640	645	645	645	640	643	644
R-squared	0.257	0.175	0.216	0.51	0.242	0.086	0.064	0.225	0.524	0.534
F-test on all UCT arms	0.154	0.601	0.00615	0.0101	0.0635	0.38	0.548	0.00209	0.631	0.393
F-test on both Training arms	0.196	0.484	0.0331	0.174	0.0201	0.733	0.618	0.165	0.641	0.0726

Notes: *** p<0.01, ** p<0.05, * p<0.1. Both panels are estimated as endline (R3) cross-sectional ANCOVA regressions, including randomization block fixed effects. Panel A includes the UCT treatment amount in hundreds of dollars, and Panel B estimates separate impacts for each cell in the research design (all cells compared to the control). F-tests at the bottom report p-values on joint tests of significant for the three UCT arms (penultimate row) and the two Training arms (last row). Consumption numbers are monthly adult equivalents, and all monetary figures are in constant 2008 USD. Survey weights are used to make the analysis representative of all TASAF group members in study villages. All outcomes Winsorized at 1% and 99%. Standard errors clustered at the village level (unit of assignment).

Table 5: Impact of Cash Transfers on Contributions to Group

	Monthly Earnings	Monthly Inputs	Monthly Profits	Monthly Labor (hours)	Daily Wage
	(1)	(2)	(3)	(4)	(5)
UCT Effect in R3 (100 USD)	0.47	0.19	0.27	3.70*	0.056
	(0.32)	(0.14)	(0.24)	(2.09)	(0.077)
UCT Endline Control group mean	4.11	1.20	2.77	41.1	0.54
Observations	702	702	702	702	702
R-Squared	0.11	0.13	0.11	0.18	0.037

Notes: *** p<0.01, ** p<0.05, * p<0.1. Analysis uses the survey conducted at the group member level describing contributions to, and earnings from, the group activity. Regressions use only Round 3 data for TASAF group members, including the UCT amount in hundreds of USD as well as block randomization fixed effects to compare the members who were assigned a cash transfer at the individual level to those who were not. All outcomes Winsorized at 1% and 99%. Standard errors clustered at the village level (unit of assignment).

Table 6: Group-level Impacts of Cumulative Cash Transfers to All Group Members

	Total Stock		**Total Sales (last month)**		**Total Profits (last 6 months)**	
	Winsorized	Transformed	Winsorized	Transformed	Winsorized	Transformed
UCT effect (100 USD)	402.107***	0.188***	-0.805	0.041	3.907	0.127
	(140.810)	(0.062)	(2.703)	(0.055)	(11.907)	(0.110)
Mean (no UCT)	2,984.315***	7.252***	77.016***	2.286***	245.426***	1.642**
	(401.169)	(0.503)	(18.151)	(0.361)	(86.612)	(0.683)
Number of observations	119	119	119	119	119	119

Notes: *** p<0.01, ** p<0.05, * p<0.1. Table uses R3 outcomes from the Group survey to analyze the impact of the cumulative UCT amount randomized to all members of the group. UCT impact is measured in hundreds of USD, and all outcomes are in constant 2008 USD. All outcomes Winsorized at 1% and 99%. Standard errors clustered at the village level (unit of assignment).

Table 7: Spillover Effect of Cash Transfer on Contributions of Other Group Members

Panel A: Only individuals not themselves receiving a UCT

	Monthly Earnings	Monthly Inputs	Monthly Profits	Monthly Labor (hours)	Daily Wage
	(1)	(2)	(3)	(4)	(5)
Cumulative Group UCT (100 USD)	0.21	0.17**	0.056	1.61*	0.031
	(0.16)	(0.066)	(0.12)	(0.94)	(0.036)
Mean in groups with no UCT	3.61	0.87	2.57	36.9	0.45
Observations	467	467	467	467	467
R-Squared	0.14	0.13	0.17	0.19	0.083

Panel B: All Surveyed Group Members

	Monthly Earnings	Monthly Inputs	Monthly Profits	Monthly Labor (hours)	Daily Wage
	(1)	(2)	(3)	(4)	(5)
Individual UCT Transfer (100 USD)	0.14	-0.034	0.17	1.55	0.016
	(0.18)	(0.092)	(0.15)	(1.30)	(0.040)
Cumulative UCT to others in group (100 USD)	0.22	0.15***	0.073	1.45*	0.027
	(0.13)	(0.052)	(0.100)	(0.74)	(0.030)
Mean for individuals not receiving UCT	4.11	1.20	2.77	41.1	0.54
Observations	702	702	702	702	702
R-Squared	0.12	0.15	0.11	0.19	0.039

Notes: *** p<0.01, ** p<0.05, * p<0.1. Analysis uses the survey conducted at the group member level describing contributions to, and earnings from, the group activity. Regressions use only Round 3 data for TASAF group members. Panel A uses all surveyed members, and includes control for transfers to an individual as well as transfer for that individual to all other members of the group. Panel B uses only the group members who were not themselves assigned to receive any UCT. Regressions include the UCT amount in hundreds of USD as well as block randomization fixed effects. All outcomes Winsorized at 1% and 99%. Standard errors clustered at the village level (unit of random assignment).

Figure 1: Diagram of Study Design

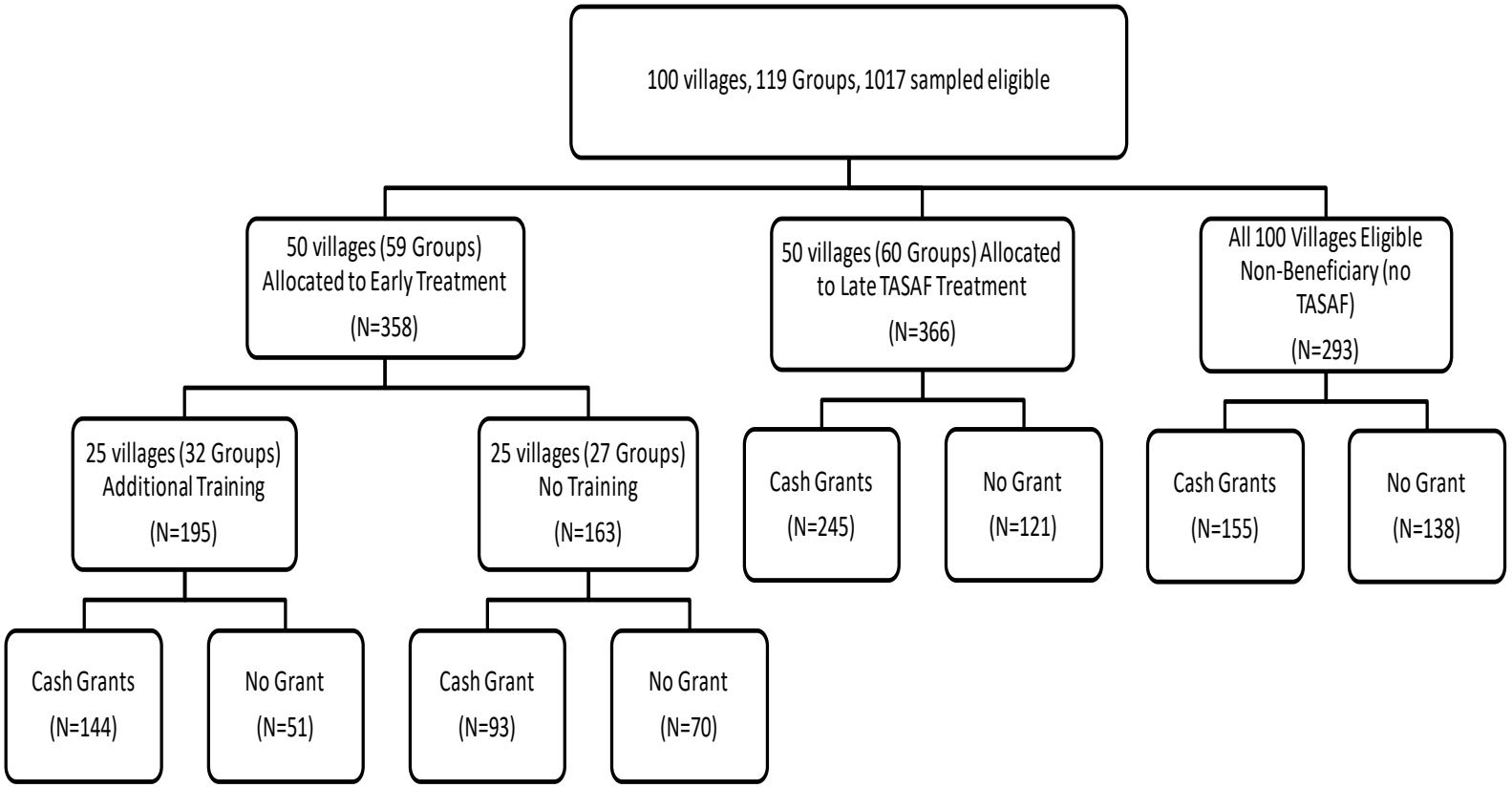

Figure 2: Evolution of Group Total Asset + Working Capital Value over Time.

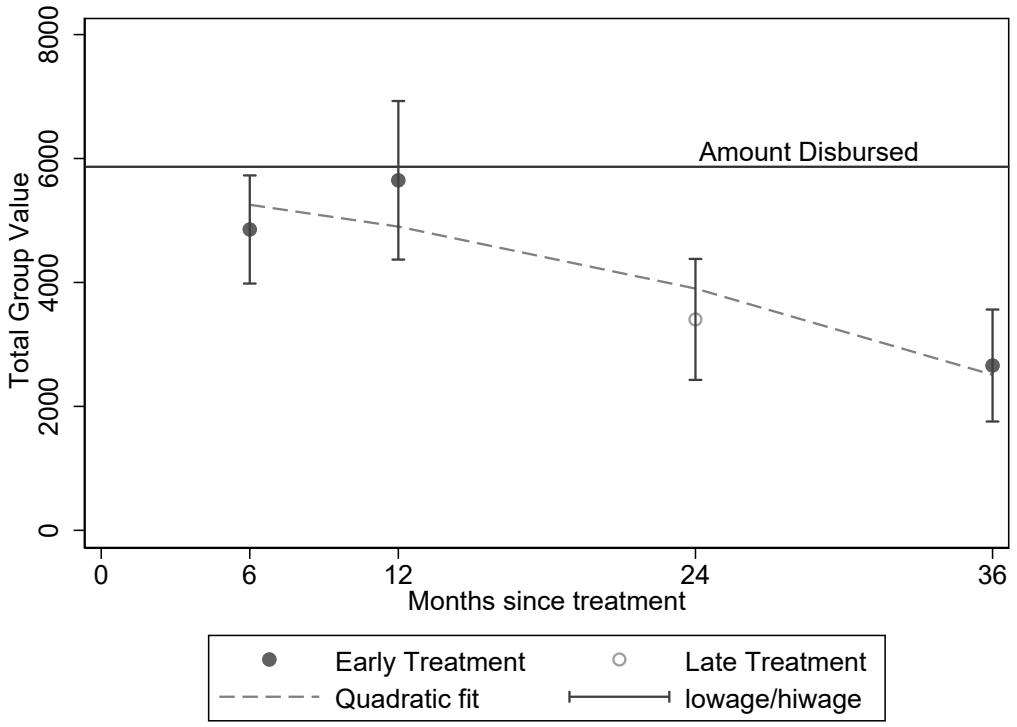

Figure 3: Effective Daily Wage Rate from Business, USD.