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# More Evidence on the Impact of Government Social Protection in Sub Saharan Africa: Ghana, Malawi and Zimbabwe

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## Summary

**Motivation:** Governments in sub-Saharan Africa have rapidly expanded cash transfer programmes as part of their social protection strategy over the last decade. Currently 46 countries have a state-sponsored social protection programme, compared to just 25 countries in 2005, and the most common type of programmes are cash transfers, representing 51% of all social protection spending in the region.

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**Purpose:** We present evidence on the *overall* impacts of state-sponsored cash transfer programmes in SSA, using data from three impact evaluations of government programmes. All three programmes were a key component of the poverty reduction strategy of the respective governments at the time of the evaluations.

**Methods and approach:** We show effects across nine broad domains including both protection, production and human development, using baseline and follow-up household surveys on treatment and control groups. We relate the pattern of impacts to programme design parameters to further understand the constraints faced by ultra-poor rural households.

**Findings:** All three programmes have strong effects on their primary objective—food security or food consumption, as well as on secondary objectives that include livelihood strengthening and children’s well-being. The largest and most consistent impacts occur in Malawi, where transfer values are in line with international best practice and payments were made regularly during the study period. All programmes show a positive income multiplier, with the multiplier largest in Malawi at 2.94.

**Policy implications:** The overall results across three national programmes add to the growing evidence from Africa that government unconditional cash transfers have important positive effects on households, that these effects are not limited to just food security, and that programme design features influence the pattern and size of impacts. Results in this paper are based on programmes that pass both criteria of implementation feasibility and political acceptability, and thus provide a more accurate reflection of what real-world cash transfer programmes can achieve in SSA.

**Keywords:** Africa, cash transfers, poverty, social protection

## 1 INTRODUCTION

Social protection as a state-sponsored policy tool has increased rapidly in sub-Saharan Africa (SSA) over the last 15 years (Beegle et al., 2020). Currently 46 countries have some type of state-sponsored social protection programme, compared to just 25 countries in 2005, and the most common type of programmes are cash transfers, representing 51% of all social protection spending in the region (World Bank, 2018). This rapid increase is due in part to a fundamental change in the discourse around the role of social protection, especially cash transfers, in a country’s wider economic development strategy. While often viewed suspiciously as a ‘hand-out’ that leads to dependency, cash transfers are slowly being recognized as a cost-effective approach to supporting a country’s inclusive growth agenda (Davis et al., 2016; Handa et al., 2018b). Examples of countries that have recently scaled up cash transfers as part of their overall economic development strategy include Ghana, Kenya, Lesotho, Malawi and Zambia.

In this article we present further evidence on the *overall* impacts of state-sponsored cash transfer programmes in SSA. This evidence comes from impact evaluations of three government programmes conducted under the auspices of the Transfer Project. All three programmes were a

key component of the poverty reduction strategy of the respective governments at the time of the evaluations; in two cases, Ghana and Malawi, the programmes were scaled up and now reach over one million individuals. All three programmes are unconditional, so while the primary objective of the programmes is consumption support, households are free to choose how to spend the cash, and impacts could conceivably be found in many other domains beyond consumption. For this reason, and building on an assessment of two Zambian government cash transfer programmes reported in Handa et al (2018a), we show effects across nine broad domains including both protection, production and human development. The pattern of results across these domains provides insights into what households view as their most binding constraints and the best use of the cash to achieve their own goals. We relate the pattern of impacts to programme design parameters to further understand the constraints faced by ultra-poor rural households.

Finally, we quantify all impacts directly related to cash spending and compare them to the value of the transfer, and find a positive multiplier effect, as high as 2.94 in Malawi. These positive multiplier effects are comparable to those found in the Zambian programmes, and together provide strong evidence that ultra-poor households use unconditional cash transfers for productive purposes, and not just to maintain consumption. This in turn supports the idea, now slowly being recognized by governments and development partners, that state-sponsored unconditional cash transfers can play an important role in promoting inclusive growth in SSA. This is an important insight because SSA has the highest monetary poverty rates of any world region, and under a business as usual scenario, global poverty is predicted to become increasingly concentrated in SSA in the next few decades (Chandy et al., 2013; Ravallion, 2013)

## 2 THE THREE PROGRAMMES

The three programmes we assess have several common design elements. They are all targeted and unconditional, payment is made in cash every two months, and they are implemented by ministries of social welfare in each country as part of their national social protection strategies—see Table 1. The profile of beneficiaries in Malawi and Zimbabwe is almost identical as both programmes have similar demographic targeting criteria related to labor constraints or high dependency ratios. In contrast, the Ghana LEAP programme has several demographic eligibility criteria, and the one we specifically evaluate in this article is the so-called LEAP 1000, which is a window of the LEAP programme that specifically targets pregnant women and families with a child under age 15 months, and which started a few years after the initial LEAP. LEAP 1000 is administratively part of LEAP and there is no longer a formal distinction between this window and the others.

**Table 1: Programme Details**

Country	Programme	Year programme began	Implementing ministry	Target group	Transfer size (% of baseline consumption)
(1)	(2)	(3)	(4)	(5)	(6)
Ghana	Livelihood Empowerment Against Poverty (LEAP)	2008	Ministry of Gender, Children and Social Protection	Extreme poor with elderly, disabled or OVC member, or pregnant women or a child under age 15 months <sup>1</sup>	14
Malawi	Social Cash Transfer Programme (SCTP) [Expansion]	2009	Ministry of Gender, Children, Disability and Social Welfare	Ultra-poor, labor constrained	18
Zimbabwe	Harmonized Social Cash Transfer (HSCT)	2011	Ministry of Public Service, Labour and Social Welfare	Food poor and labor constrained	21

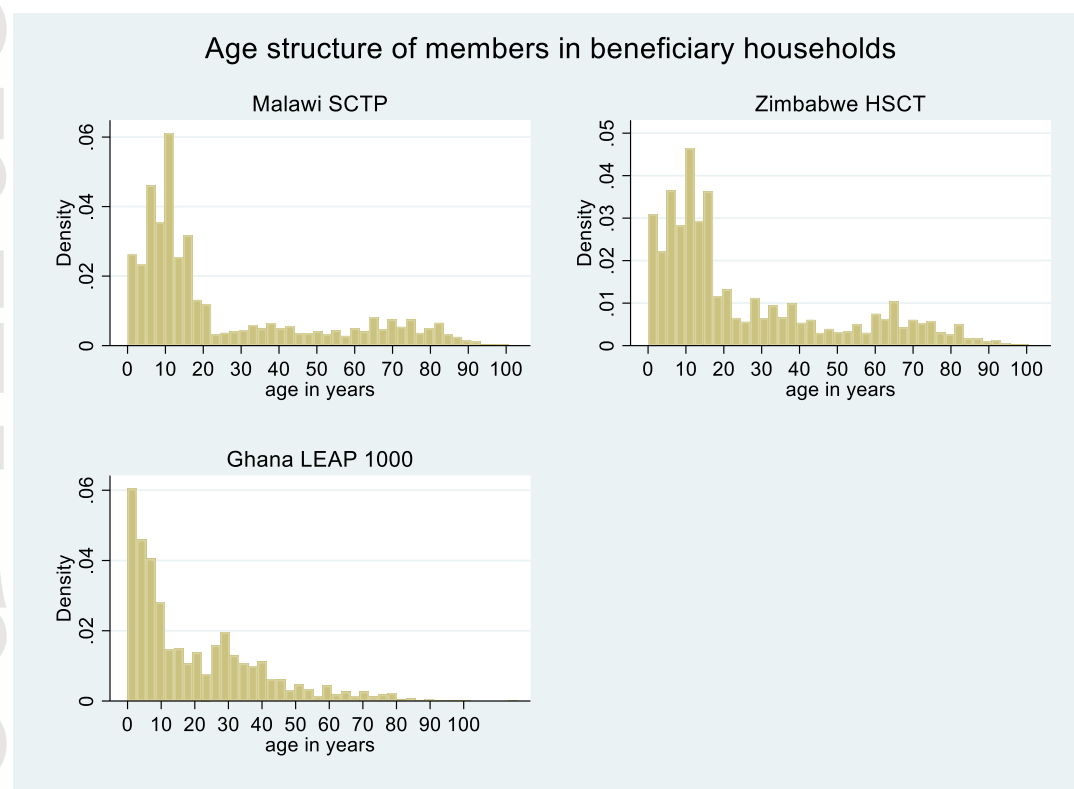
1/ These are the eligibility criteria for the entire LEAP programme. The evaluation we report on in this article is of LEAP 1000, the window of the LEAP programme that is targeted to pregnant women and families with a child under age 15 months.

Two key programme parameters are worth highlighting as they potentially have implications for subsequent household behavioral responses. The size of the transfer is an important factor determining both the size and pattern of impacts. Experience from the Transfer Project across a dozen country programmes indicates that a transfer value that is at least 20% of the baseline consumption is more likely to result in larger, more transformative impacts, that is, impacts that move beyond food security and into broader consumption, savings and productive activity (Davis & Handa, 2015). Based on this experience we would expect to see more widespread effects in Zimbabwe and Malawi and fewer, smaller effects in Ghana. One key difference between LEAP and the other two programmes is that LEAP beneficiaries are automatically eligible for a fee waiver for the Ghana National Health Insurance Scheme (NHIS). However, this linkage and enrollment is not automatic, so that beneficiaries still have to go to a designated centre with their LEAP card to enroll and obtain their NHIS card, which in practice poses a barrier for some households (Palermo et al., 2019).

The demographic composition of target households can also influence the response to the transfer. Labor constrained households, those with fewer prime-age members, will find it harder to use the cash transfer for productive activity that require complementary labor input, or may use children for such activity, which could lead to lower school enrollment (De Hoop et al., 2020). Figure 1 highlights these demographic features by showing the age profile of beneficiaries from the baseline data from the three evaluations. The SCTP and HSCT use almost identical demographic eligibility

rules to select beneficiaries<sup>1</sup>, and resulting households have very few prime-age members, and tend to have household heads that are elderly, and a large proportion of adolescent children who are typically grandchildren or nieces/nephews of the head and are orphans. These are often AIDS-affected households. The Ghana LEAP 1000 window by contrast targets families with a pregnant woman or children under 15 months, and the typical household is much younger, with many more very young children and prime-age adults.

**Figure 1: Age structure of household members in beneficiary households by country**



### 3 EVALUATION DESIGNS, BALANCE AND ATTRITION

All three evaluations were conducted by an evaluation team under contract with the respective UNICEF country office and the implementing agency. The construction of a counterfactual was discussed with the implementing agency and needed to fit into the operational plans of the programme. All studies had a baseline household survey where households were blind to their eventual status in the programme, and at least one post-intervention survey. Table 2 summarizes the survey years, baseline household sample size and attrition at the final follow-up. Below we provide additional details on each design.

Ghana LEAP 1000: In Ghana, the counterfactual was generated using a discontinuity approach. The poverty criterion for eligibility entailed falling below a strict cut-off on a proxy means poverty score. In areas where the programme was to be implemented, all potentially eligible households (those with a pregnant woman or child under 15 months old) were administered a short questionnaire with information to estimate the poverty score. Data was sent to the programme headquarters in Accra where the poverty score was calculated. The research team were given access

<sup>1</sup> The official criteria is that households must have a dependency ratio above 3. Dependents are members age 18 and below, age 60 and above, or anyone with a chronic illness or physical disability.

to the poverty score database in order to select the sample for the study. The database contained 8,058 households from 189 communities across five of the ten expansion districts. The five districts, selected randomly from the ten, were Yendi, Karaga and East Mamprusi in the Northern Region and Bongo and Garu Tempane in the Upper East Region. Power calculations indicated the required sample size was 2,500 households in order to detect a difference of at least 0.20SD in the key objectives of the programme (child height-for-age and household food consumption). After removing households in communities containing less than three households (a total of 22 households), the remaining households were sorted in order of the poverty score and the closest 1250 households above and below the cut-off were selected for the sample. Forty-five percent of households fell below the threshold, and the distribution of households around the cut-off was particularly dense so that all households selected into the sample were within 2% of the value of the cut-off score. The final sample size of households in the baseline survey was 2497.

The baseline report is available at the Transfer Project website and provides a full assessment of the success of the identification strategy. The distribution of the poverty score is smooth around the threshold. We performed balance tests on over 200 indicators including all potential outcome variables and found less than 5% were statistically different. Tables A1 and A2 in the Appendix shows these balance tests for all the outcome variables used in this paper, plus the control variables we use in our empirical model. The estimation sample is the 2,331 households that are found in both waves of data (a 6.6% attrition rate) as this is our eventual analytical sample and the balance tests control for the poverty score. Among household level variables there is one statistically significant difference, 8% of household heads are female in the comparison arm versus 9% in the treated arm, a 0.04SD difference. Among child-level outcomes there is likewise one statistically significant difference for whether or not a child had a pair of shoes, the effect size is 0.14SD. These results indicate that the balance observed at baseline between the two arms was maintained in the panel of households, that is, there was no differential attrition.

Malawi SCT: The design of this evaluation was a longitudinal randomized control trial with a baseline in 2013 and two post-treatment surveys in 2014 and 2015. The study districts, Salima and Mangochi, were selected for the study in order to integrate with the Ministry of Gender, Children, Disability and Social Welfare's (MoGCDSW) expansion plans as these districts were scheduled for scale-up in early 2013 and the MoGCDSW could use this opportunity to conduct a baseline. The research team worked with the Ministry to randomly select two Traditional Authorities (TAs) in each district (Maganga and Ndindi TAs in Salima, Jalasi and M'bwana Nyambi TAs in Mangochi) to enter into the study. Targeting was conducted by the Ministry in all village clusters (VCs) in these TAs. The study team visited these households in July 2013 to administer a household survey. After this baseline survey, VCs were randomly assigned to treatment or delayed-entry control status in a lottery that was held publicly at the District Commissioner's Office. The final sample for the study was 3,531 SCTP-eligible households located in 29 VCs across the four TAs in the two districts at baseline, of which 14 VCs (1,678 households) were assigned to treatment (T) and 15 VCs (1,853 households) to the delayed-entry group (C).

**Table 2: Evaluation Designs**

Programme	Identification of counterfactual	Years of data collection	Baseline sample size	Endline household attrition (%)
(1)	(2)	(3)	(4)	(5)
Ghana LEAP 1000	Regression discontinuity	2015, 2017	2,497	6.6
Malawi SCTP	Randomized controlled trial	2013, 2014, 2015	3,531	6.5
Zimbabwe HSCT	Ward level matching	2013, 2014, 2017	3,063	16.2

The fidelity of the study design was assessed by the research team and full results are available in the baseline evaluation report on the Transfer Project website (<https://transfer.cpc.unc.edu/wp-content/uploads/2015/09/Malawi-SCTP-Baseline-Report.pdf>). As in the Ghana and Zimbabwe studies, baseline balance was tested on over 200 indicators including all main outcomes and balance confirmed (see Appendix F of the baseline report). In the Appendix Tables A3 and A4 we provide balance tests for all the household and child level outcomes used in this paper as well as the control variables used in the empirical specification. These balance tests, using baseline values, are conducted on the panel of households in the baseline and endline survey waves, N=3303, which implies an attrition of 6.5%. There is no statistically significant difference in these tables, indicating that there is no differential attrition and baseline balance in the full sample was maintained at the endline.

Zimbabwe HSCT: Similar to the other two studies, the study design in Zimbabwe also had to be integrated into the scale-up plans of the ministry, and similar to Malawi the phased roll out of the HSCT allowed us to use households in Wards (local administrative units comprising a group of villages) scheduled to enter the programme at a later date as a comparison group. At the time of the study the ministry was about to enter into phase two of their expansion, and this opened up the opportunity to collect baseline information on future beneficiaries. Since the Ward was the lowest administrative unit of the programme, the decision was made with the ministry and development partners in Zimbabwe to match wards entering the programme in phase two with nearby wards that would enter the programme in a future phase. The government was not prepared to randomly assign wards to early and late entry because the phase out plan had been previously negotiated with development partners and was politically sensitive in that it ensured that several important ethnic groups were treated equally in the roll out plan.

Once the intervention wards were identified, our national research partner Ruzivo Trust led a detailed analysis of all wards in treatment areas and neighboring non-treatment areas. Each ward was assigned a point score based on five characteristics: forest cover, nearness to main roads, resistance to shocks, nearness to business centers, and water sources. Wards in treatment areas were ranked from highest point score (most vulnerable) to lowest and paired within one of three stratum. Then, for each treatment ward pair with a given score, a comparison ward with the same score in the same stratum was selected to serve as the ‘matched’ comparison ward. If no comparison ward existed with the exact same score, the Ward with the closest point score was selected. If more than one comparison ward existed with the same score, then one Ward of the two



was picked randomly. Power calculations based on the expected number of households per ward indicated that a total of 60 intervention and 30 comparison wards were necessary for the study.<sup>2</sup>

The Department of Social Services of the Ministry of Labor and Social Services (MLSS) conducted programme targeting in the selected study wards, both treatment and comparison, as per standard programme operation guidelines. Therefore, all households in comparison wards in the study sample were actual eligible households who would have received the transfer if the programme was operating in their ward, or who would receive benefits once the programme reached their area. Since eligibility criteria are the same across the country and there is universal programme take-up, these households thus serve as an excellent counterfactual for treatment households. The distinction between this design and a randomized control trial is that wards were not randomly assigned to treatment or control status. In a large-scale national programme such as this one, randomization of roll out is often not feasible since programme roll out is determined by both technical (e.g. poverty) and political considerations. However if the eligibility criteria are applied uniformly, targeting is supply-driven, and take-up is universal, then the only threat to internal validity is the geographical differences across wards. Our stratified matched design was chosen to minimize geographical differences.

The baseline evaluation report provides a full assessment of baseline equivalence across households in treatment and comparison wards and as with the other two studies, is also available at the Transfer Project website.<sup>3</sup> The identification process appeared to have worked in terms of creating equivalent groups at baseline. Appendix Tables A5 and A6 show balance tests for all outcomes used in this paper as well as control variables used in the estimation. These tables are based on the 2,567 households that appeared in both the baseline and endline surveys, a 16.2% attrition rate. There does seem to be some differential attrition in the study sample, 8 of the 36 household level variables are statistically different from each other at baseline, as are two of the seven child level indicators. The largest differences at 0.21SD are for school enrollment and owning an ox plough. Note that differences below 0.25SD are considered small and do not necessarily imply selection (What Works Clearing House, n.d.). Nevertheless, in our estimates below we use difference-in-differences (DD) to account for baseline differences in the outcomes.

**Research ethics:** All three studies received ethics approval in the country of the study as well as at the University of North Carolina at Chapel Hill. The Zimbabwe study also received ethics approval from the American Institutes for Research in Washington DC, as they were the prime contractor for the baseline and first follow-up surveys. All approval letters are available upon request.<sup>4</sup>

## METHODOLOGY AND MEASURES

**Methodology:** Our core estimation approach is a difference-in-differences (DD) model with the addition of a small set of baseline covariates using baseline and the last follow-up survey wave in each country:

$$Y_{i,t} = \alpha + \beta_T T_i + \beta_{R2}(R2) + \beta_{TR2}(T_i * R2) + \gamma X_i + \varepsilon_{i,t} \quad (1)$$

In this framework  $Y_{i,t}$  is the outcome for the household/child  $i$  at time  $t$ .  $T_i$  is a dummy equal to one if an observation is in the treatment group,  $R2$  is a dummy equal to one if an observation is from the follow-up round, and  $\beta_{TR2}$  captures the intent-to-treat (ITT) effect and is our coefficient

<sup>2</sup> Sample size calculations were based on the power to detect a meaningful change in the height-for-age z-score of children under age 60 months, the indicator for which the largest effective sample size was required.

<sup>3</sup> [https://transfer.cpc.unc.edu/wp-content/uploads/2019/11/HSCT\\_Baseline\\_Report\\_Round-2-Revision\\_FINAL\\_27Feb14a.pdf](https://transfer.cpc.unc.edu/wp-content/uploads/2019/11/HSCT_Baseline_Report_Round-2-Revision_FINAL_27Feb14a.pdf)



of interest;  $X$  is a set of pre-treatment demographic controls and  $\varepsilon$  is the error term. Regressions are estimated using OLS with robust standard errors clustered at the primary sampling unit (community, village cluster and Ward respectively). We focus the analysis on the household panel, that is, households that appear in the baseline and follow-up waves. While differential attrition is not a major concern as explained above, there is overall or general attrition in both Malawi and Zimbabwe—the panel sample as a whole is slightly different from the baseline sample suggesting that the impact estimates may not be representative of all programme beneficiaries. This is an issue of external validity rather than internal validity. In the evaluation reports themselves we reweight the samples to make the estimates representative of all programme beneficiaries, while in this paper we report unweighted estimates as our focus is on internal validity and comparisons across countries. The additional covariates employed in the regressions are shown in Tables A1-A3 in the Appendix and include the age, sex, education level and marital status of the household head and household demographic composition, all measured at baseline. We also included stratifying variables where relevant, and for child outcomes we also included the age and sex of the child.

The DD approach assumes parallel trends in the intervention and comparison groups. We do not have multiple pre-treatment data points to explicitly test for differences in trends between treatment arms. In Ghana and Malawi comparison communities are from the same districts as treatment ones, while in Zimbabwe wards are geographically close and matched on agro-ecological characteristics. We have analyzed trends in community/village/ward level prices and incidence of covariate shocks during the study period and these showed no statistically significant differences between treatment and comparison arms.

Measures, pre-analysis considerations and multiple tests: Tables 3 and 4 describe the outcomes used in this paper to understand the behavioral effects of the three unconditional cash transfer programmes. All three programmes have food security/consumption as their primary stated objective. Secondary objectives relate to livelihood strengthening through either asset accumulation, strengthening of existing livelihood streams (typically farming) or diversification, and children's human capital accumulation (schooling). LEAP 1000, because it focuses on families with a child under age 15 months, is also concerned with child nutritional status. All three programmes are part of national poverty reduction strategies and have stated objectives and corresponding budgets that have been through a political process in each country. The studies were commissioned through a competitive tendering process, and technical proposals submitted through this competition specified the research design, statistical methodology and key indicators to be used for the evaluation. The final indicator lists were further refined at inception workshops with programme managers and development partners to ensure they aligned with each programme's results frameworks and overarching objectives. Consequently, while it is now expected that independent investigator-led experiments develop a pre-analysis plan to guard against cherry-picking results, the conditions under which these three studies were conceived, designed and implemented are quite different from investigator-led experiments. Indeed, the entire process from the political discussions leading to the establishment of the programmes themselves, to the competitive tender of technical proposals to the engagement of programme implementers and development partners at each key decision point of the evaluations serve the purpose of the pre-analysis plan in investigator-led experiments in that they ensure that the study parameters respond to the ex-ante stated objective of the evaluations.

We have grouped indicators into nine domains (eight in Zimbabwe) as shown in Tables 3 and 4, of which six are household level and the remaining child level. The domains of Subjective Well-being and Finance and Debt are not strictly part of the stated objectives of the three programmes but we

report on them here to provide comparisons with the Zambia results as well as the six-country assessment of the graduation model (Banerjee et al 2015). Within Income and Revenue, the value of harvest and engagement in non-farm enterprise represent livelihood strengthening/diversification, within the assets domain livestock ownership is the lead indicator for the programme. Food security is measured slightly differently across the three studies because we chose to align measures with existing national survey instruments to respond to country-level needs for comparing programme beneficiaries with national populations. Consumption expenditure aggregates are modelled after national expenditure surveys in the respective countries, the Integrated Household Survey in Malawi, the Ghana Living Standards Survey, and the Zimbabwe Income and Expenditure Survey. All consumption modules entail over 250 individual items of differing reference periods depending on the expected frequency of purchase (longer reference periods for lumpy items), and include the value of gifts and own production, the latter being especially important for staple foods. Values are deflated to the baseline using official consumer price indexes.

All indicators are defined so that higher values are positive outcomes. Following our earlier work in Zambia reported in Handa et al (2018) as well as Banerjee et al (2015), we convert all variables into z-scores by subtracting the comparison group mean (at each wave) and dividing by the comparison group standard deviation (at each wave); this implies that at each wave the comparison group has a mean of 0 and standard deviation of 1. We then create an overall index for each domain based on the equally weighted average of the z-score of each indicator in the domain. The specific indicators that compose each domain vary across countries because of the need to tailor each evaluation to the country context, and the aforementioned need to align survey items to existing national survey instruments.

The construction of domain indexes addresses the concern of multiple hypothesis testing, as we effectively collapse our indicators into nine and treat these as our lead indicators. In the appendix we also report results that adjust the p-values for the overall domain indexes using the Sidak-Bonferroni approach (Abdi, 2007), and comment in the text when these alter statistical significance. In general, by showing results across all major domains the reader is provided a complete and transparent snapshot of the overall impacts of each programme. The nature of the intervention, an unconditional cash transfer with no strings attached, allows each household to spend money in accordance with their own priorities and constraints. This makes it difficult to narrow down the set of outcomes based on theory beyond the immediate need for food security. It also implies that the effects of the programme can be spread out across many different outcomes, rendering each individual effect statistically zero. Tying outcomes to the lead indicators/domains in the programme results framework provides an organizing structure for measuring and presenting results, while building domain indexes using multiple items addresses the fact that effects could be spread thinly across different outcomes within a domain due to the nature of the intervention.

Table 3: Household-level domain and indicator definitions						
Domains and Indicators	Baseline			Endline		
	SC TP	HSC T	LEA P	SCTP	HSCT	LEAP
<b>Consumption</b>						
Total consumption expenditures per capita	x	x	x	x	x	x
Food consumption expenditures per capita	x	x	x	x	x	x
Non-food consumption expenditures per capita	x	x	x	x	x	x
<b>Food security</b>						
Does not (or rarely) worry about food	x	x	x	x	x	x
Able to eat preferred food most of the times		x			x	
Does not (or rarely) eat food he/she does not want to eat due to lack of resources		x			x	
Does not (or rarely) eat smaller meal than needed		x			x	
Does not (or rarely) at fewer meals because there is not enough food		x			x	
Never (or rarely) no food to eat because of lack of resources		x			x	
Does not (or rarely) go to sleep hungry		x			x	
Does not (or rarely) go a whole day/night without eating		x			x	
Does not (or rarely) eat a limited variety of food due to lack of resources		x			x	
Number of meals per day in the household	x		x	x		x
<b>Assets</b>						
Livestock index	x	x	x	x	x	x
Productive assets	x	x		x	x	
Domestic assets				x		
<b>Finance/debt</b>						
Any savings	x		x	x	x	x
Amount saved	x		x	x	x	x
Reduction in the total outstanding debt	x	x	x	x	x	x
<b>Income &amp; Revenue</b>						
Value of harvest	x	x		x	x	
Expenditure on agricultural inputs		x	x		x	x
Operating a non-farm enterprise (NFE)	x	x	x	x	x	x
Revenues from NFEs	x	x	x	x	x	x
Revenues from livestock byproducts		x			x	
<b>Subjective well-being</b>						
In most ways my life is close to ideal	x	x		x	x	
The conditions in my life are excellent	x	x		x	x	
Satisfied with my life	x	x	x	x	x	x
Have gotten the important things I want in life	x	x		x	x	
If I could live my life over, I would change almost nothing	x	x		x	x	
I feel positive about my future	x	x		x	x	
I generally feel happy	x	x		x	x	

I am satisfied with my health	x	x	
Happy with my life		x	x
Total number	21	27	14
	22	28	14
X signifies that the measure is available in that survey wave and country			

**Table 4: Child-level domain and indicator definitions**

Domains and Indicators	Baseline			Endline		
	SCTP	HSCT	LEAP	SCTP	HSCT	LEAP
<b>Material needs (Aged 5-17 years)</b>						
Has a pair of shoes	x	x	X	x	x	x
Has at least two sets of clothes	x	x	X	x	x	x
Has a blanket (either shared or owned)	x	x		x	x	
<b>Schooling (Aged 5-17 years)</b>						
Attends school	x	x	X	x	x	x
<b>Anthropometric (Aged 0-5 years)</b>						
Not stunted	x		X	x		x
Not wasted	x		X	x		x
Not underweight	x		X	x		x
X signifies that the measure is available in that survey wave and country						

## 5 MAIN RESULTS

### 5.1 Implementation

The study team tracked the disbursement of cash to treated households during the study period in all three countries. Implementation in Malawi and Ghana was timely and consistent, with payments made every two months as scheduled during the study period. In Zimbabwe, payments started in October 2013, four months after baseline data collection ended, and were made consistently through October 2015. In the following year just one payment was subsequently made (April 2016), followed by a double and triple payment in in October and December 2016. In 2017 prior to the endline survey in July, the first payment of the year was missed and resulted in a double payment in April and a regular payment June. Ultimately eligible households received the total sum of cash that they were due over the study period, but with two significant payment gaps between October 2015 and 2016, followed by a relative normalization of payment regularity in the year of the endline survey itself. It is difficult to predict the effects of this payment schedule on behavior. Lumpy payments would tend to generate lumpy spending, either purchase of livestock or other assets and repayment of debt. The payment immediately prior to the endline survey was a regular payment, while the one prior to that in April was a double payment. The bulk of consumption consists of food (see Section 5.2) which is reported with a seven day reference period in the survey, while spending on assets has a one year reference period, which includes the double and triple payments in October and December 2016.

### 5.2 Relative Poverty of Study Population

All programmes include a poverty criterion in their eligibility rules, with a more stringent cut-off in Malawi (ultra-poor) and Zimbabwe (food poor) compared to Ghana where households falling below the poverty line are eligible. Though poverty rates among programme participants are highest in Ghana and Zimbabwe, median consumption is significantly lower in Malawi at just \$0.34 per person per day, over half that of participants in the other two countries. Net national income

figures from the World Development Indicators database, which refer to 2016, show that Ghana is three times richer than Malawi, and Zimbabwe twice as rich. The food share is a useful way to characterize and compare well-being of households across space and Table 5 suggests that the HSCT participants might be slightly better off than participants in the other two countries, consistent with their median daily consumption. Nevertheless, even the Zimbabwean households have a per person median daily consumption that is less than half the \$1.90 per day poverty line used by the World Bank to monitor global changes in poverty, which underscores the severe deprivation faced by these households across all countries.

**Table 5: Poverty and consumption in the target population**

	Ghana LEAP	Malawi SCTP	Zimbabwe HSCT
Below national poverty line (%)	91	85	97
Median daily consumption per person (US\$)	0.79	0.34	0.85
Food share (%)	78	76	62

Statistics calculated from baseline evaluation data.

### 5.3 Main Results on Domain Indices

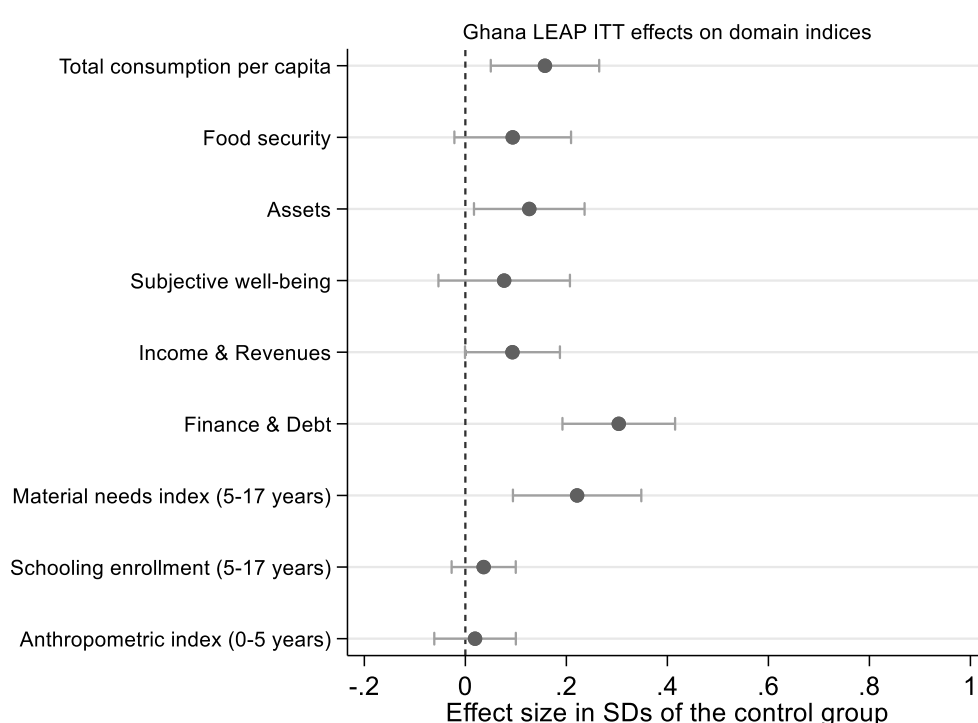
Figures 2,3 and 4 show results for the three countries across all the domain indices available. These are intent-to-treat DD effects, follow-up time periods are 24-months in Ghana, 30-months in Malawi and 48-months in Zimbabwe. An index with an asterisk is one that includes one or more indicators that are only available at follow-up and impact estimates are based on single difference; impacts on these indices based on DD estimates using available indicators in both waves are also shown.

The primary objective of these social protection programmes is to alleviate hunger, and all programmes do that through large positive effects on consumption (Malawi, Ghana) or food security (Malawi, Zimbabwe). Effect sizes for food security are noteworthy in Malawi (0.8SD) and Zimbabwe (0.5SD). The stated secondary objectives of all programmes relate to economic strengthening and children's well-being. All three programmes show significant effects on assets, with the largest effect size in Malawi at 0.63SD. Children's well-being is captured through three indicators, material well-being (MWB), schooling, and in Ghana only, anthropometry (given that LEAP 1000 targets households with a young child or pregnant woman). MWB is statistically significant across all three countries indicating that households do spend part of the transfer on material items that are specifically earmarked for children (in this case shoes, clothing or a blanket). Effects on the other indicators are not consistent across countries, schooling only shows as significant in Malawi, and there are no significant effects on anthropometry in Ghana, which is consistent with the accumulated evidence on the relationship between cash transfer programmes and child anthropometry (Chakrabarti et al., 2020; Manley & Slavchevska, 2019).

The overall pattern of results can plausibly be linked to features of the respective country programmes. Ghana has the fewest significant domain impacts (four) and effect sizes are generally smaller, followed by Zimbabwe with five significant domain effects, while the largest overall impacts are observed in Malawi. In Ghana the size of the transfer is the smallest of the three programmes, and the follow-up period the shortest. The RDD design of the impact evaluation means that better off households within the eligibility range comprise the treatment group, which reduces the relative transfer size, and implies that the estimates are representative of a small sliver of the eligible households for whom the effect of the programme may actually be the smallest. In

Zimbabwe, the follow-up period is longest but there were important implementation hiccups during the study period so that the transfer did not necessarily represent a predictable flow of income support, a key assumption in the programme's results framework. Overall results are largest and most consistent in Malawi, where the follow-up period is reasonably long at 30 months, the evaluation design is the strongest, and cash was delivered on time throughout the study period. Given these programme and design characteristics, Malawi likely represents the best possible scenario in terms of impacts among these three programmes, and this is borne out by the pattern of results. Nevertheless, there are significant impacts across multiple domains even in the other two programmes, suggesting that these unconditional cash transfer programmes are fulfilling their stated objectives of alleviating hunger, strengthening the household economy, and improving children's well-being despite imperfections in programme implementation.

**Figure 2: Twenty-four Month Intent-to-Treat Impacts on Domain Indices for Ghana LEAP 1000**



#### 5.4 Meta analysis of importance of transfer value

As noted earlier, the relative value of the transfer varies noticeably across the three programmes, and the pattern of impacts seem to correspond to the variation in transfer values, with smaller impacts in Ghana where the relative size of the transfer is the smallest. We provide some additional evidence on the importance of the transfer by combining post-intervention data from all three countries and relating the magnitude of the change in outcomes (measured by our domain indexes) to the size of the transfer. In each country we know the actual size of the transfer received by each household in the treatment group, which we divide by their baseline consumption to obtain the transfer share. We estimate a household fixed effects model on treatment households only, using baseline and follow-up data, and including the transfer share directly as a predictor as well as a time dummy.



Results of this model are shown in Panel A of Table 6. The coefficient of the transfer share is statistically significant and positive in six of the eight domains, not significant for school enrollment, and negative for Finance and Debt. The largest effect size is for consumption, where an additional one percentage point increase in the transfer share raises consumption by 0.02SD over the baseline among the treated households. In Panel B we introduce interactions between the transfer share and country. Ghana is the excluded country, and the interaction terms indicate the difference in the effect of transfer value on each outcome between the indicated country and Ghana. These interaction terms are statistically significant in five domains for Zimbabwe and six for Malawi. In these countries and for these domains, the transfer share has a stronger effect than in Ghana, with largest effects for food security and subjective well-being. In Ghana, the transfer share is just 13% of baseline consumption and without much variation in the sample, while in the other two countries the average share is higher and with considerable variation. Transfer share seems to not be strongly related to Finance and Debt, and is negatively associated with Finance & Debt in Panel A.

#### 5.4 Individual Indicators

As we noted earlier, a key feature of the unconditional cash transfer (UCT) is that households can use the money in the ways that best alleviate their constraints as they see them. Providing summary indices over domains addresses the issue that effects can be spread out across a large set of indicators. Indeed, UCTs are often compared to sector interventions that target a narrow set of outcomes (such as school enrollment or preventive health check-ups), which misses the underlying purpose of a UCT, which is to expand the budget constraint to allow greater choice across all consumption bundles (McIntosh et al., 2018). In this section, we report impacts on each of the individual components of the domain indices both for transparency, and also to see if there are distinct patterns in the way that these ultra-poor households choose to spend their transfer, which in turn can help us understand their main constraints.

Figures 5-8 show the individual indicator impacts for each of the three programmes, where as before, all indicators are defined so that higher is better, and converted to z-scores of the control group in the same wave. Rather than sifting through each of the indicators, we identify broad patterns in the results. The Finance & Debt Index consists of the (change in the) stock of debt and whether the household has any savings and if so, the amount saved. The point estimates for debt reduction are positive, indicating that households reduce debt as a result of receiving the cash, rather than taking on more debt, though none of the estimates are statistically significant. On the other hand, in all three countries, there is a significant increase in cash savings and the amount held (which is defined over all households and not just among savers), suggesting a precautionary savings motive consistent with households who are credit constrained. The Asset index is significant in all three countries. Analysis of the components of the index indicate that in all countries the livestock component of the index is statistically significant, with a particularly large 0.62SD effect size in Malawi. Livestock can of course be viewed as a form of savings as well as a livelihood strategy. The Food Security index in Zimbabwe is measured by the comprehensive Household Food Insecurity Access Scale (HFIAS), but by just two indicators in the other two countries; in those two countries the indicator on number of meals eaten per day shows a statistically significant improvement, as does the closest comparable item in the HFIAS in Zimbabwe ('eat fewer meals in a day'). In all countries the sub-component of 'shoes' in the children's MWB index show statistically significant improvements among the treated group over the controls, indicating that this is the dimension of child material possessions that is the major constraint. Finally, the subjective well-being index includes an indicator on happiness, which is statistically significant at 5% in Malawi and Zimbabwe, and at 10% in Ghana.

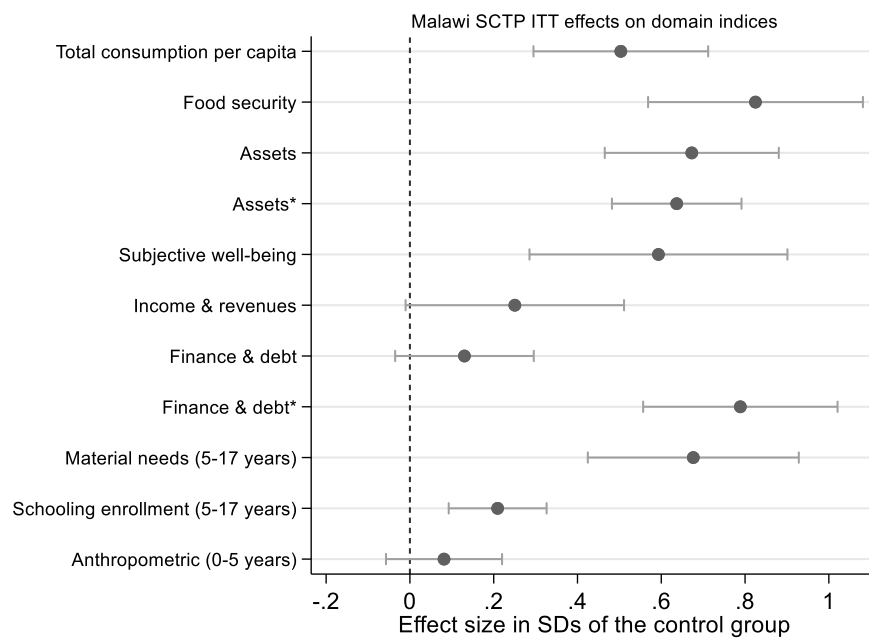
**Table 6: Effects of transfer share on indices**

	Total consumption per capita	Food security	Assets	Subjective well- being	Income & Revenues	Finance & Debt	Material needs <sup>1</sup>	Schooling enrollment <sup>1</sup>
Panel A								
Transfer share	0.0169 (0.003)*	0.00927 (0.003)*	0.0129 (0.002)*	0.00796 (0.002)*	0.00340 (0.002)*	- (0.002)*	0.00883 (0.003)*	0.00212 (0.001)
Panel B								
Transfer share	0.001 (0.005)	-0.018 (0.005)*	-0.002 (0.004)	-0.008 (0.004)*	-0.007 (0.004)	-0.001 (0.004)	-0.009 (0.005)	-0.001 (0.002)
Transfer share * Zimbabwe	0.008 (0.004)*	0.023 (0.004)*	0.009 (0.004)*	0.015 (0.004)*	0.006 (0.003)	-0.007 (0.003)*	0.012 (0.004)*	0.001 (0.002)
Transfer share * Malawi	0.031 (0.004)*	0.033 (0.006)*	0.026 (0.005)*	0.016 (0.004)*	0.018 (0.004)*	-0.008 (0.004)	0.025 (0.006)*	0.007 (0.003)*
N	7,956	7,952	7,960	7,952	7,962	7,962	19,735	19,802

1/ Children ages 5-17 years.

Estimations use fixed-effects modeling (treated group only) and include a time dummy. Robust standard errors (clustered at the relevant level) are in parentheses. \*  $p < 0.05$ ; Mean transfer shares are 20.5, 24.8 and 13.4% in Malawi, Zimbabwe and Ghana respectively.

**Figure 3: Thirty Month Intent-to-Treat Impacts for Malawi Sctp**



**Figure 4: Forty-eight Month Intent-to-treat Impacts for Zimbabwe HSCT**

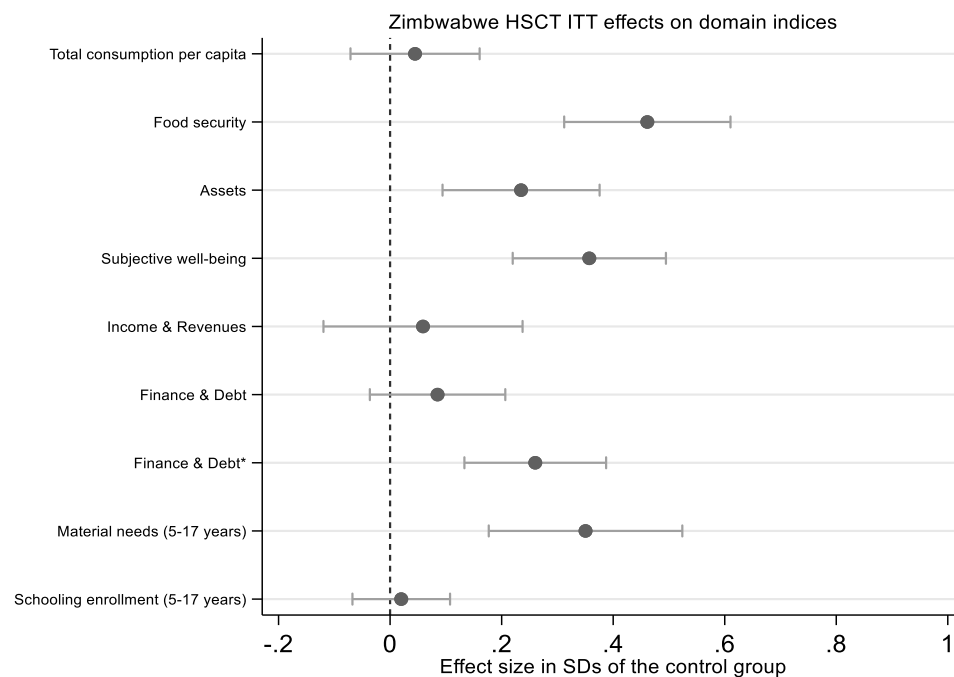


Figure 5: Intent to Treat Impacts on individual indicators for Ghana LEAP 1000

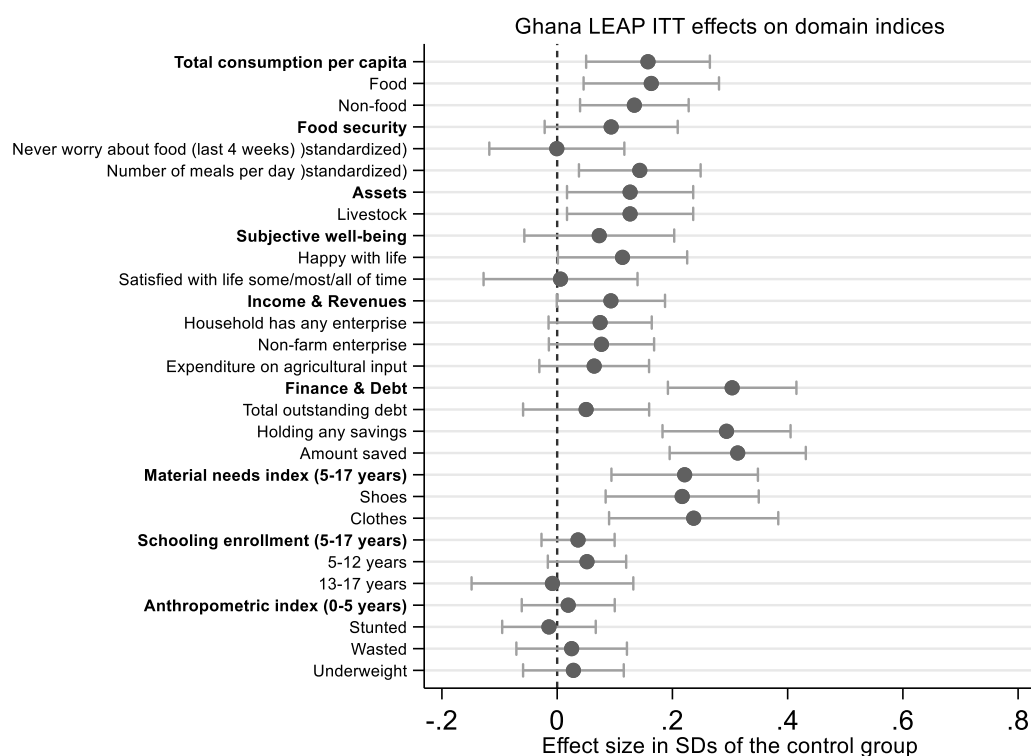
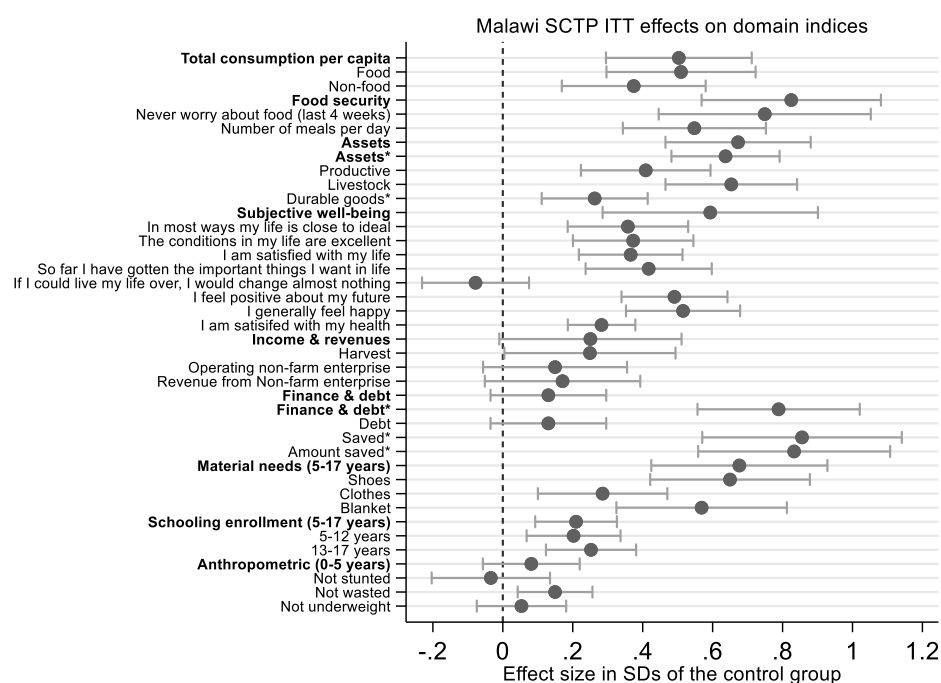


Figure 6: Intent to Treat Impacts on individual indicators for Malawi SCTP



## 5.5 Sidak-Bonferroni Adjustments

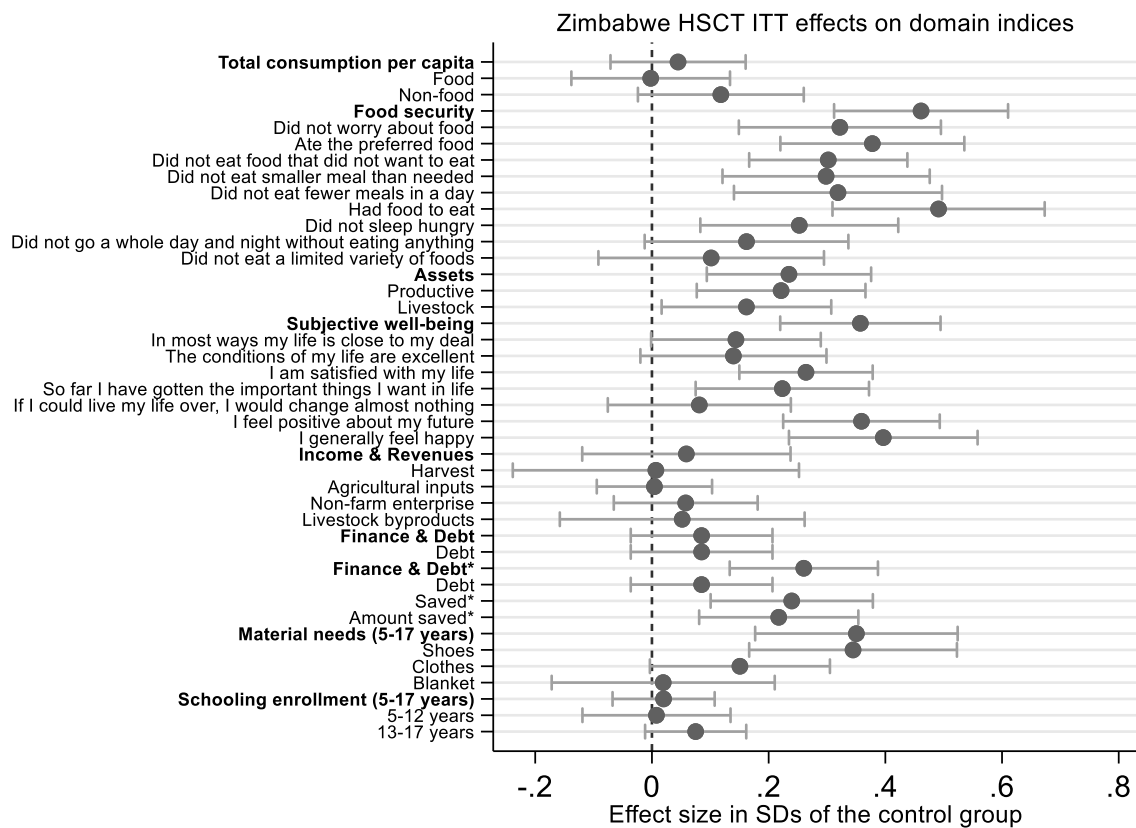
Multiple inference testing produces a different Type I error rate that increases with the number of tests. Because we are reporting evidence on multiple domains, we are more susceptible to reject the

null hypothesis when it is true (Abdi, 2007) in at least one domain. An approach to guard against this false positive is to adjust p-values using the Sidak-Bonferroni adjustment (Abdi, 2007).

$$Pval_j^* = 1 - (1 - Pval_j)^N \quad (2)$$

In equation (2) above,  $Pval_j^*$  is the Sidak-Bonferroni adjusted p-value for outcome  $j$ , where  $j$  is the domain of interest (consumption, food security, assets, finance/debt, income and revenue, subjective wellbeing, material needs, schooling, or anthropometric) and  $Pval_j$  is the unadjusted p-value from a two-tail test for outcome  $j$ .  $N$  is the number of tests we performed (9 in Ghana and Malawi, 8 in Zimbabwe).

**Figure 7: Intent to Treat Impacts on individual indicators for Zimbabwe HSCT**



In Zimbabwe, the household-level and child-level results are robust to multiple-testing adjustments. Overall, the adjusted p-values are larger than the unadjusted p-values. However, statistically significant results are unaffected. For example, food security scale, asset index, subjective wellbeing index, and material needs index remain statistically significant at 1% level even after adjusting the p-values.

In Malawi, the results are also robust to multiple-testing adjustment, except for income and revenue index. While income and revenue index becomes insignificant after correcting for multiple testing, the unadjusted income and revenue index is only weakly significant ( $p$ -value  $< 0.1$ ). All other indices remain statistically significant at the 1% level. In Ghana, adjusting for multiple testing produces mixed results. Total consumption per capita remains statistically significant, while the

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asset index and income and revenue index become insignificant after adjusting for multiple testing. Finance and debt index and material needs index remains significant at 1% level. Results based on these corrections are provided in the Appendix.

## 6 FOLLOWING THE MONEY

The survey questionnaires are such that we are able to track and construct a fairly comprehensive measure of total household expenditure, which we can compare to the value of the transfer received by the household to get an overall sense of spending patterns and possible multiplier effects of the cash transfer. The largest component of total spending is consumption, where our measure is identical to the consumption measure used by the respective national statistical offices to construct national poverty lines and associated monetary poverty estimates (comprising 200+ individual items). Our consumption measure includes gifts, which we separate out for this exercise in order to focus on cash spending. Beyond consumption, other components of spending we can measure include cash savings, loan payments or debt reduction, agricultural inputs (fertilizer, hired labor, seeds, rental equipment), and purchases of livestock in the past year. In Malawi and Zimbabwe we also have a measure of spending on agricultural or productive assets in the past year (tools such as hoe, axe, machete, spade, wheelbarrow and so on). In terms of inflows, we capture the value of gifts of consumption and net remittances (cash gifts received less sent), and of course the value of the cash transfer received by the household. The reference period is annual, and all monetary figures are in local currency at the base year of the study.

Results of our tracking exercise are summarized in Table 7, which shows treatment effects in local currency for each of the components of outlay and inflows as well as the annual mean value of the cash transfer received by recipients. The implied multiplier is simply the sum of the outlays divided by the sum of the inflows, and are showed in the last row of the table. These range from 1.19 in Ghana to 2.94 in Malawi, and generally follow the pattern of effect sizes reported earlier across the domains. Thus, on average it appears that households are able to translate the cash transfer into additional spending, which must naturally come through increased income generating activity. Clues to how the cash supports productive activity is evident from Table 6. In Ghana households use the cash to purchase agricultural inputs, in Malawi to purchase inputs and productive assets, and in Zimbabwe to purchase productive assets. Another insight from Table 7 is the important reduction in gifts received by HSCT recipients, representing 20% of their total consumption. This explains the somewhat contradictory results in Figure 3 where the treatment effect of the HSCT on total consumption is not statistically significant but the impact on food security is 0.5 SD; Table 7 shows that the HSCT in fact has a significant impact on *purchased* consumption of the household.

We have constructed similar multiplier estimates for two cash transfer programmes operated by the Government of Zambia (Handa et al., 2018), which averaged to 1.65, about the same range of the average (1.78) of the three estimates shown in Table 7. We show bias-corrected bootstrapped confidence intervals (1000 repetitions) for each of the multiplier estimates, in two cases the confidence intervals do include one; on the other hand for Malawi the implied multiplier could be as large as five. We note that even with such sizeable multipliers, these households continue to be ultra-poor. Mean daily per capita consumption as shown in Table 5 in Ghana is US\$0.79, a multiplier of 1.19 would raise daily consumption to US\$0.94, still well below the international poverty line of US\$1.90. In Malawi even if the multiplier were as high as 5, which is rather improbable, mean consumption would be US\$1.70, also below the international poverty line, though higher than the national poverty line. So while these estimates provide further evidence that unconditional cash transfers to the ultra-poor can have both protective and productive effects, they



are unlikely by themselves to represent an approach to ensuring permanent ‘graduation’ out of extreme poverty given the extremely low baseline consumption of the households involved. Of course, this is not the primary objective of these programmes in the first place.

**Table 7: Summary of annual total spending and monetary inflows to cash transfer households**

	Ghana LEAP 1000 (adult equivalents)	Malawi SCTP	Zimbabwe HSCT
<u>Outflows</u>			
Purchased consumption	<b>98.92</b> (39.68)	<b>57752.21</b> (10368.03)	<b>232.97</b> (78.30)
Agricultural inputs	<b>9.40</b> (3.11)	<b>1123.33</b> (279.98)	1.41 (1.54)
Savings	<b>14.62</b> (4.54)	<b>455.54<sup>1</sup></b> (101.50)	<b>11.31<sup>1</sup></b> (5.16)
Debt reduction	-2.41 (3.35)	<b>679.74</b> (235.42)	4.05 (6.75)
Livestock	-0.30 <sup>1</sup> (4.82)	<b>516.41</b> (80.98)	2.45 (1.48)
Productive asset	-	111.02 (70.09)	<b>6.94</b> (3.47)
<u>Inflows</u>			
Mean value of cash transfer	100	22490	262
Value of consumption gifts	6.56 (6.72)	3634.97 (3135.27)	58.83 (42.64)
Net remittances	1.05 <sup>1</sup> (1.94)	1265.05 (1735.04)	7.96 (17.36)
Implied multiplier (outflows/inflows) <sup>2</sup>	1.19 [0.35-2.04]	2.94 [1.80-5.32]	1.21 [0.57-2.32]

Numbers are treatment effects on the indicator in the first column, estimated in local currency using equation (1) unless noted otherwise; clustered standard errors shown in parentheses, bolded coefficients are significant at 5%. 1/Single difference estimates. 2/ Implied multiplier calculated by summing each of the estimated outflows and dividing by the sum of the inflows. The resulting multiplier is bootstrapped with 1000 replications to obtain a confidence interval, shown in square brackets.

**7 POLICY DISCUSSION AND CONCLUSION** We add to the small but growing evidence on the impacts of *government* cash transfer programmes in SSA on household well-being. We emphasize government programmes in contrast to NGO (e.g. Give Directly reported in Haushofer & Shapiro (2016) or investigator run programmes (e.g. the Zomba trial reported in Baird et al (2011)), since government programmes represent the outcome of a political process that results in programme parameters that are realistic and feasible, and account for implementation capacity, which is important in low-income settings. Our results are thus a better reflection of the actual impacts of unconditional cash transfers as a public policy initiative in SSA.

Results indicate a wide range of impacts across protective and productive domains. All three programmes have strong effects on the primary outcome area of these social protection programmes—food security or consumption. This occurs in Zimbabwe despite a significant reduction in gifts (equivalent to 20% of baseline consumption) received by beneficiaries in the post-treatment period. This is a positive spill over on the households that would have otherwise had to provide these gifts. Qualitative evidence indicates that the reduced reliance on gifts brought about by the transfer allowed households to be more independent in assuring their food security. All programmes have a significant impact on stabilizing and strengthening the financial security of

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households, by increasing asset ownership, reducing debt and increasing savings. The material well-being of children in these households also improves, notably through the acquisition of shoes.

From a theoretical perspective, the unconditional nature of these three programmes, which is reflective of almost all the major government programmes in SSA, empowers households to use the cash to satisfy their most pressing needs as they define them. This can pose a challenge for impact evaluation because the range of potential indicators and domains that can be affected is large. However, ultra-poor households in rural SSA tend to share a common set of constraints, and this is borne out in a consistent pattern of individual indicators that are moved by the programmes. Beyond food security, households in all countries use the cash to increase their cash savings, to pay down debt and to buy livestock. In these settings where access to formal savings institutions is low, livestock serves as a form of savings, and can also be a productive livelihood strategy to complement usual farming activities. On the other hand, impacts on children's schooling is mixed, with significant impacts only in Malawi. Most cash transfer countries in Latin America tend to be conditional on households sending children to school, and the World Bank in particular has been a strong advocate of conditional cash transfers (Lagarde et al., 2007); the three large conditional cash transfer programmes in SSA (Senegal, Madagascar and Tanzania) are all products of World Bank loans. In Zimbabwe, enrollment rates among children age 5-17 years in our study population is 80%, the remaining out-of-school children are likely to be harder to reach and income may be just one of many barriers to schooling. In Ghana and Malawi enrollment rates are slightly lower at 70%, suggesting more room for the programmes to have an effect. In Malawi we do see a positive impact on schooling, while in Ghana the lack of impact may be attributable to the low value of transfer.

Our summary of total sending shows positive multiplier effects—households spend more than the total value of the cash transfer they receive, net of gifts. The multiplier is only statistically significant in Malawi, where the overall size of impacts is also the largest. As noted above, Malawi represents the best-case scenario of an adequate transfer size delivered consistently, and can thus serve as a benchmark for what is possible if governments get these two key parameters right in their programme design and implementation of unconditional cash transfers.

The pattern of results we report varies in a plausible way with programme parameters and the features of our study design. The important programme features are the value of the transfer and the consistency of payment. The key behavioral changes described in programme results framework assume the transfer is viewed as a permanent change in income, which in turn requires that households expect payments to be made consistently. This was not the case in Zimbabwe for example. Meanwhile in Ghana transfers were the lowest (of the three programmes) relative to pre-programme consumption in part because the study design used the richest eligible households. The pattern of results shows the smallest impacts in Ghana, and the largest impacts in Malawi where transfers were of reasonable size and were made consistently through the entire study period. The impacts in Malawi represent the base case scenario of a smoothly functioning programme that delivers an adequate amount of cash.

The overall results across three national programmes add to the growing evidence from SSA that government unconditional cash transfers have important positive effects on households, that these effects are not limited to just food security, and that programme design features influence the pattern and size of impacts. A key distinguishing feature of our results is that they all come from programmes designed and implemented by national governments, an important dimension that is often overlooked in the discussion of evidence around cash transfers. Ultimately, for programmes to be taken to scale, they must be feasible to implement and acceptable by governments and

citizens. Many of the cash transfer results cited in the literature (see above) do not satisfy these basic requirements, and so while they provide important insights about behavior, remain limited in terms of implications for public policy. Results in this paper are based on programmes that pass both criteria of implementation feasibility and political acceptability, and may thus provide a more accurate reflection of what real-world cash transfer programmes can achieve in SSA.

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## DATA AVAILABILITY STATEMENT

Data for the Ghana LEAP 1000 evaluation are openly available at the Carolina Population Center Data Portal at <https://data.cpc.unc.edu/projects/13/view>

Data that support the findings for Zimbabwe and Malawi can be made available for replication purposes upon request from the corresponding author. These data are not publicly available due to privacy restrictions.

## REFERENCES

- Abdi, H. (2007). The Bonferroni and Šidák Corrections for Multiple Comparisons. *Encyclopedia of Measurement and Statistics*, 103–107. <https://doi.org/10.4135/9781412952644>
- Baird, S., McIntosh, C., & Özler, B. (2011). Cash or condition? Evidence from a cash transfer experiment. *Quarterly Journal of Economics*, 126(4), 1709–1753. <https://doi.org/10.1093/qje/qjr032>
- Banerjee, A., Duflo, E., Goldberg, N., Karlan, D., Osei, R., Parienté, W., Shapiro, J., Thuysbaert, B., & Udry, C. (2015). A multifaceted program causes lasting progress for the very poor: Evidence from six countries. *Science*, 348(6236). <https://doi.org/10.1126/science.1260799>
- Beegle, K., Coudouel, A., & Monsalve, E. (2018). Realizing the Full Potential of Social Safety Nets in Africa. Africa Development Forum series. Washington, DC: World Bank. doi:10.1596/978-1-4648-1164-7.
- Chakrabarti, A., Handa, S., Natali, L., Seidenfeld, D., & Tembo, G. (2020). More evidence on the relationship between cash transfers and child height. *Journal of Development Effectiveness*, 12(1), 14–37. <https://doi.org/10.1080/19439342.2020.1731568>
- Chandy, L., Ledlie, N., & Penciakova, V. (2013). The Final Countdown: Prospects for Ending Extreme Poverty by 2030. *Global Economy and Development at Brookings*, April. [http://www.brookings.edu/~media/research/files/reports/2013/04/ending\\_extreme\\_poverty\\_chandy/the\\_final\\_countdown.pdf](http://www.brookings.edu/~media/research/files/reports/2013/04/ending_extreme_poverty_chandy/the_final_countdown.pdf)
- Davis, B., & Handa, S. (2015). How much do programmes pay? Transfer size in selected national cash transfer programmes in sub-saharan Africa. In *Innocenti Research Briefs* (Issues 2015–05).

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<https://www.unicef-irc.org/publications/786-how-much-do-programmes-pay-transfer-size-in-selected-national-cash-transfer-programmes.html>

- Davis, B., Handa, S., Hypher, N., Winters, P., Yablonski, J., & Winder-Rossi, N. (2016). *FROM EVIDENCE TO ACTION, 19/4/2016, SPi* (1st ed.). Oxford University Press.
- De Hoop, J., Groppo, V., & Handa, S. (2020). Cash Transfers, Microentrepreneurial Activity, and Child Work: Evidence from Malawi and Zambia. *World Bank Economic Review*, 34(3), 670–697. <https://doi.org/10.1093/wber/lhz004>
- Handa, S., Natali, L., Seidenfeld, D., Tembo, G., & Davis, B. (2018a). Can unconditional cash transfers raise long-term living standards? Evidence from Zambia. *Journal of Development Economics*, 133(April 2017), 42–65. <https://doi.org/10.1016/j.jdeveco.2018.01.008>
- Handa, S., Daidone, S., Peterman, A., Davis, B., Pereira, A., Palermo, T., & Yablonski, J. (2018b). Mythbusting? Confronting six common misperceptions about unconditional cash transfers as a poverty reduction strategy in Africa. *World Bank Research Observer*, 33, 259–298.
- Haushofer, J., & Shapiro, J. (2016). The short-term impact of unconditional cash transfers to the poor: Experimental evidence from Kenya. *Quarterly Journal of Economics*, 131(4), 1973–2042. <https://doi.org/10.1093/qje/qjw025>
- Lagarde, M., Haines, A., & Palmer, N. (2007). Conditional cash transfers for improving uptake of health interventions in low- and middle-income countries: A systematic review. In *Journal of the American Medical Association* (Vol. 298, Issue 16). World Bank. <https://doi.org/10.1001/jama.298.16.1900>
- Manley, J., & Slavchevska, V. (2019). Are cash transfers the answer for child nutrition in sub-Saharan Africa? A literature review. *Development Policy Review*, 37(2), 204–224. <https://doi.org/10.1111/dpr.12346>
- McIntosh, C., Zeitlin, A., Appell, R., Cardenas-Rodriguez, S., Gray, C., Hamza, A., & Koch, B. (2018). Benchmarking a Child Nutrition Program against Cash: Experimental Evidence from Rwanda \* and IPA for their close collaboration. We thank Leodimir Mfura and Marius Chabi for overseeing the fieldwork. In *Ipa*. <https://www.poverty-action.org/sites/default/files/publications/Benchmarking.pdf>
- Palermo, T. M., Valli, E., Angeles-Tagliaferro, G., De Milliano, M., Adamba, C., Spadafora, T. R., & Barrington, C. (2019). Impact evaluation of a social protection programme paired with fee waivers on enrolment in Ghana's National Health Insurance Scheme. *BMJ Open*, 9(11), 1–10. <https://doi.org/10.1136/bmjopen-2018-028726>
- Ravallion, M. (2013). How long will it take to lift one billion people out of poverty? Review. *World Bank Research Observer*, 28(2), 139–159. <https://doi.org/10.1093/wbro/lkt003>
- The Transfer Project (n.d.) [dataset] LEAP 1000 Impact Evaluation; 2021; Ghana LEAP 1000 Impact Evaluation Data; Carolina Population Center Data Portal. <https://data.cpc.unc.edu/projects/13/view>
- What Works Clearing House. (n.d.). *WWC Standards Brief: Baseline Equivalence*. [https://ies.ed.gov/ncee/wwc/Docs/referenceresources/wwc\\_brief\\_baseline\\_080715.pdf](https://ies.ed.gov/ncee/wwc/Docs/referenceresources/wwc_brief_baseline_080715.pdf)
- World Bank. (2018). *The State of Social Safety Nets 2018*. Washington, DC: The World Bank. World

Accepted Article

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## Appendix 1

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## Appendix 2

**Table A1: Baseline balance tests for key household and respondent characteristics in LEAP 1000**

	LEAP 1000 (N = 2331)		P-value of diff
	Control	Treatment	
East Mamprusi	0.34	0.32	0.37
Karaga	0.21	0.18	0.67
Yendi	0.15	0.16	0.31
Bongo	0.15	0.17	0.46
Household size	6.35	6.96	0.08
Head is female	0.08	0.09	0.04
Age of head	38.14	40.45	0.62
Head no formal schooling	0.78	0.82	0.62
Total consumption per capita	124.00	117.81	0.24
Food consumption per capita	91.57	87.01	0.74
Non-food consumption per capita	32.43	30.80	0.04
Never worry about food (last 4 weeks)	0.12	0.11	0.40
Number of meals per day	2.65	2.62	0.12
Raised sheep	0.21	0.21	0.28
Raised goats	0.30	0.32	0.66
Raised chicken	0.42	0.43	0.44
Own goat, sheep, or chicken	0.50	0.51	0.49
Holding any savings (women)	0.09	0.07	0.09
Amount of money saved last month (real)	5.06	3.86	0.16
Total outstanding loan	-61.38	-73.20	0.10
Total outstanding debt on credit purchases	-35.24	-29.07	0.32
Total outstanding debt	-96.62	-102.27	0.46
Household has any enterprise	0.22	0.21	0.91
Annual enterprise profits	90.79	72.44	0.81
Total expenditure on agricultural inputs	222.80	201.30	0.56
Happy with life	0.81	0.77	0.31
Satisfied with life some/most/all of time	0.57	0.57	0.72

Note: P-values are reported from Wald tests on the equality of means of Treatment and Control for each variable. Standard errors are clustered at the community level. Estimations are adjusted by the proxy means test score.

**Table A2: Baseline balance tests for key child characteristics in LEAP 1000.**

	LEAP 1000 (N = 8956)		P-value of diff
	Control	Treatment	
Child has pair of shoes (5-17 years)	0.27	0.21	0.05
Child has two sets of clothes (5-17 years)	0.66	0.62	0.67
All needs met (shoes, blanket, clothes)	0.24	0.18	0.05
Schooling enrollment (36-59 months)	0.39	0.40	0.01
Schooling enrollment (5-12 years)	0.73	0.75	0.49
Schooling enrollment (13-17 years)	0.70	0.68	0.61
Schooling enrollment (5-17 years)	0.72	0.73	0.65
Stunted (HAZ < -2 SD) for (0-5 years)	0.29	0.29	0.43
Wasted (WHZ < -2 SD) for (0-5 years)	0.15	0.15	0.89
Underweight (WAZ < -2 SD) for (0-5 years)	0.19	0.20	0.30

Note: P-values are reported from Wald tests on the equality of means of Treatment and Control

for each variable. Standard errors are clustered at the community level. Estimations are adjusted by the proxy means test score.

**Table A3: Baseline balance tests for key household and respondent characteristics in Malawi SCTP**

	SCT (N = 3303)		P-value of diff
	Control	Treatment	
Main respondent ever attended school	0.32	0.34	0.75
Main respondent female	0.85	0.83	0.44
Main respondent age	56.30	58.17	0.42
Main respondent widow	0.41	0.44	0.56
District dummy 1=Salima)	0.53	0.48	0.82
Household members 6-11 years	1.24	1.17	0.35
Household members 12-17 years	0.95	0.95	0.96
Household members 18-65 years	1.21	1.18	0.77
Household members 65 and over	0.55	0.61	0.29
Numbers of persons in household	4.64	4.59	0.80
Total consumption per capita	43,018.07	45,587.60	0.49
Food consumption per capita	33,200.65	35,027.39	0.55
Non-food consumption per capita	9,817.41	10,560.21	0.40
Never worry about food (last 4 weeks)	0.15	0.15	0.90
Number of meals per day	1.93	1.89	0.52
Productive assets	-0.18	-0.14	0.64
Household owned Goat/Sheep in last rainy season	0.10	0.11	0.74
Household owned Chickens in last rainy season	0.19	0.20	0.41
Raised goats, sheep, or chicken	0.25	0.27	0.54
Total outstanding loan (from more than 12 months ago)	218.73	215.75	0.96
Total outstanding loan (in the last 12 months)	596.99	606.30	0.93
Total outstanding debt on credit purchases	161.37	185.60	0.53
Total outstanding debt	-977.09	-1,007.65	0.86
Total value of crop harvest (MWK)	27,187.64	27,562.02	0.95
Household has non-farm enterprise	0.23	0.26	0.49
Total revenue in last operating month	1,072.95	1,136.60	0.82
Psychological well-being index	18.08	17.56	0.57

Note: P-values are reported from Wald tests on the equality of means of Treatment and Control for each variable. Standard errors are clustered at the community level.

**Table A4: Baseline balance tests for key child characteristics in Malawi SCTP**

	MSCT (N = 9358)		P-value of diff
	Control	Treatment	
Child has a blanket	0.33	0.35	0.62
Child has a pair of shoes	0.18	0.19	0.71
Child has two sets of clothes	0.69	0.74	0.26
All needs met (shoes, blanket, clothes)	1.19	1.28	0.41
Schooling enrollment (36-59 months)	0.23	0.23	1.00
Schooling enrollment (5-12 years)	0.69	0.68	0.72
Schooling enrollment (13-17 years)	0.71	0.67	0.20
Schooling enrollment (5-17 years)	0.70	0.68	0.51

Not stunted	0.56	0.53	0.42
Not wasted	0.96	0.95	0.16
Not underweight	0.83	0.82	0.63

Note: P-values are reported from Wald tests on the equality of means of Treatment and Control for each variable. Standard errors are clustered at the community level.

**Table A5: Baseline balance tests for key household and respondent characteristics in Zimbabwe HSCT**

	HSCT (N = 2567)		P-value of diff
	Control	Treatment	
Household size	1.69	1.68	0.62
Female	0.64	0.69	0.03
Age of respondent (years)	58.39	56.28	0.11
Widowed	0.36	0.36	0.75
Divorced or separated	0.08	0.09	0.17
Ever attended school	0.63	0.53	0.00
Highest grade completed (0-16)	3.46	3.05	0.05
Number of members aged 0-5 years	0.75	0.73	0.76
Number of members aged 6-17 years	2.17	2.20	0.76
Number of adults	1.23	1.21	0.81
Number of elderly	0.92	0.85	0.18
Mashona	0.30	0.30	0.99
Masvingo	0.30	0.30	0.95
Total consumption per capita	30.62	29.32	0.39
Food consumption per capita	18.98	18.69	0.78
Non-food consumption per capita	11.64	10.63	0.14
Food security scale	-13.71	-14.15	0.20
Raise/own chicken/duck/geese	0.68	0.64	0.11
Raise/own goats	0.51	0.44	0.02
Livestock asset	0.77	0.72	0.05
Owned Axe in last 12m	0.77	0.74	0.35
Owned Sickle in last 12m	0.41	0.40	0.65
Owned Yokes in last 12m	0.38	0.30	0.02
Owned Ox-plough in last 12m	0.42	0.32	0.00
Owned Chicken House in last 12m	0.51	0.49	0.53
Owned Livestock kraal in last 12m	0.48	0.42	0.04
Productive asset	0.90	0.87	0.14
Outstanding debt from 12+ months	-5.61	-6.33	0.71
Outstanding debt on credit purchases	-3.78	-4.86	0.24
Outstanding debt on loan with last 12 months	-10.44	-10.35	0.98
Total outstanding debt	-19.83	-21.54	0.75
Revenues from Non-farm enterprise	569.23	450.31	0.33
Expenditure on agricultural inputs	6.08	2.69	0.07
revenue from livestock byproducts	4.02	0.82	0.19
Value of harvest (in \$)	77.55	74.38	0.61
Subjective wellbeing	14.98	14.56	0.08

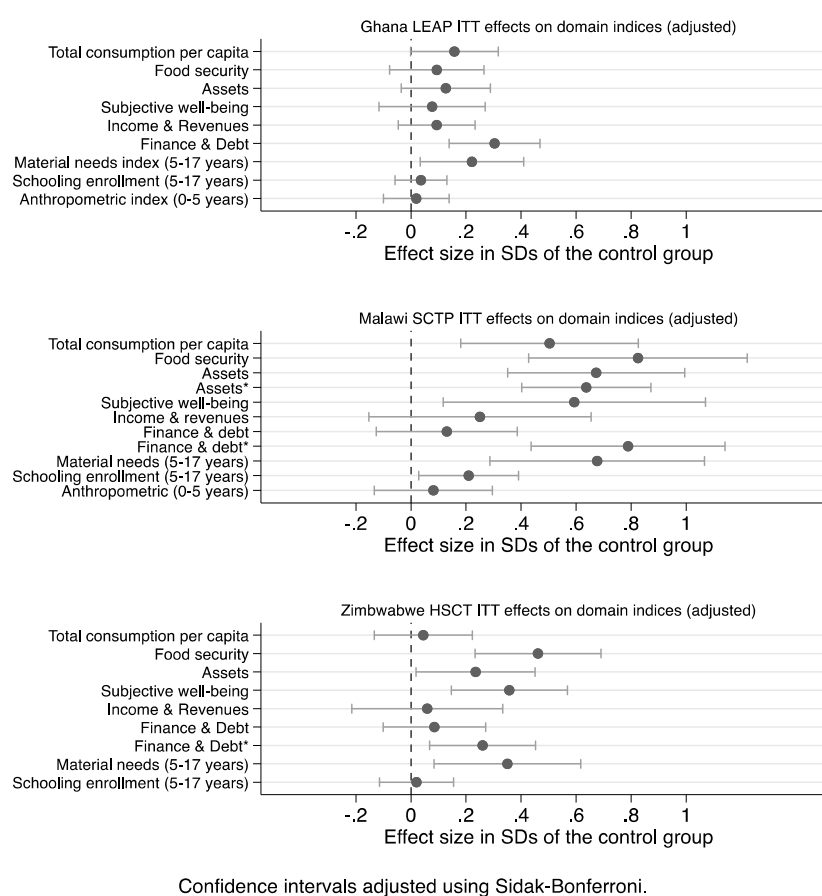
Note: P-values are reported from Wald tests on the equality of means of Treatment and Control for each variable. Standard errors are clustered at the community level.

**Table A6: Baseline balance tests for key child characteristics in Zimbabwe HSCT**

	HSCT (N = 12904)		P-value of diff
	Control	Treatment	
Child has pair of shoes (5-17 years)	0.43	0.40	0.37
Child has two sets of clothes (5-17 years)	0.83	0.75	0.01
Child has a blanket (5-17 years)	0.82	0.77	0.02
All needs met (shoes, blanket, clothes)	0.39	0.35	0.24
Schooling enrollment (5-12 years)	0.87	0.87	0.76
Schooling enrollment (13-17 years)	0.70	0.73	0.32
Schooling enrollment (5-17 years)	0.81	0.82	0.50

Note: P-values are reported from Wald tests on the equality of means of Treatment and Control for each variable. Standard errors are clustered at the community level.

**Figure A1: Sidak-Bonferroni Adjusted Intent-to-Treat Impacts on Domain Indices**



**Table A7: Ghana LEAP 1000 ITT effects on domains indices**

	Impact	N	P-value	Adjusted p-value
Total consumption per capita	0.16*** (0.05)	4,662	0.00	0.04
Food security	0.09 (0.06)	4,662	0.11	0.65
Assets	0.13** (0.06)	4,661	0.02	0.19

Subjective well-being	0.08 (0.07)	4,662	0.25	0.92
Income & Revenues	0.09* (0.05)	4,662	0.05	0.38
Finance & Debt	0.30*** (0.06)	4,662	0.00	0.00
Material needs (5-17 years)	0.22*** (0.06)	10,564	0.00	0.01
Schooling enrollment (5-17 years)	0.04 (0.03)	10,565	0.26	0.93
Anthropometric (0-5 years)	0.02 (0.04)	6,681	0.64	1.00

Notes: Estimations use difference in difference modeling. Robust standard errors clustered at the community level are in parentheses. All estimations control for baseline proxy means test, baseline household size, baseline household head characteristics (age in years, sex, and indicator of any schooling), and district fixed effects. \*  $p < 0.1$  \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . Adjusted p-values are Sidak-Bonferroni corrected p-values.

**Table A8: Malawi SCTP ITT effects on domains indices**

	Impact	N	P-value	Adjusted p-value
Total consumption per capita	0.50*** (0.10)	6,595	0.00	0.00
Food security	0.82*** (0.13)	6,598	0.00	0.00
Assets	0.67*** (0.10)	6,605	0.00	0.00
Assets*	0.64*** (0.08)	3,302	0.00	0.00
Subjective well-being	0.59*** (0.15)	6,605	0.00	0.01
Income & Revenues	0.25* (0.13)	6,605	0.06	0.49
Finance & Debt	0.13 (0.08)	6,605	0.12	0.75
Finance & Debt*	0.79*** (0.11)	3,302	0.00	0.00
Material needs (5-17 years)	0.68*** (0.12)	15,421	0.00	0.00
Schooling enrollment (5-17 years)	0.21*** (0.06)	15,421	0.00	0.01
Anthropometric (0-5 years)	0.08 (0.07)	3,126	0.24	0.95

Notes: Estimations use difference in difference modeling (single difference for the Asset index\* at 24m). Robust standard errors clustered at the community level are in parentheses. All estimations control for baseline household composition and household size, household head characteristics (age in years, sex, indicator for any schooling, indicator for widowed), and district fixed effects. \*  $p < 0.1$  \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . Adjusted p-values are Sidak-Bonferroni corrected p-values.

**Table A9: Zimbabwe HSCT ITT effects on domains indices**

	Impact	N	P-value	Adjusted p-value
Total consumption per capita	0.04 (0.06)	5,133	0.44	0.99
Food security	0.46*** (0.08)	5,131	0.00	0.00
Assets	0.23*** (0.07)	5,133	0.00	0.01
Subjective well-being	0.36*** (0.07)	5,127	0.00	0.00
Income & Revenues	0.06 (0.09)	5,133	0.51	1.00
Finance & Debt	0.09 (0.06)	5,133	0.17	0.81
Finance & Debt*	0.26*** (0.06)	2,566	0.00	0.00
Material needs (5-17 years)	0.35*** (0.09)	11,778	0.00	0.00
Schooling enrollment (5-17 years)	0.02 (0.04)	11,872	0.65	1.00

Notes: Estimations use difference in difference modeling (single difference for the Finance & Debt index 2 at 24m). Robust standard errors clustered at the wards level are in parentheses. All estimations control for baseline household size, household demographic composition, household head characteristics (age in years, sex, indicator for widowed, indicator for divorced or separated, and highest grade completed), and region fixed effects. \*  $p < 0.1$  \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . Adjusted p-values are Sidak-Bonferroni corrected p-values.

**Table A10: Ghana LEAP ITT effects on individual indicators**

	Impact	N	P-value	Adjusted p-value
Total consumption per capita	0.16*** (0.05)	4,662	0.00	0.12
Food consumption per capita	0.16*** (0.06)	4,662	0.01	0.18
Non-food consumption per capita	0.13*** (0.05)	4,662	0.01	0.15
Food security	0.09 (0.06)	4,662	0.11	0.97
Does not (or rarely) worry about food	-0.00 (0.06)	4,662	0.99	1.00
Number of meals per day	0.14*** (0.05)	4,662	0.01	0.21
Assets	0.13** (0.06)	4,661	0.02	0.50
Livestock asset	0.13** (0.06)	4,661	0.02	0.50
Subjective well-being	0.07 (0.07)	4,662	0.27	1.00
Happy with my life	0.11** (0.06)	4,662	0.05	0.76
Satisfied with my life	0.01 (0.07)	4,662	0.93	1.00



Income & Revenues	0.09* (0.05)	4,662	0.05	0.79
Operating a NFE	0.07 (0.05)	4,662	0.10	0.96
Revenues from NFEs	0.08* (0.05)	4,662	0.10	0.95
Expenditure on agricultural inputs	0.06 (0.05)	4,662	0.18	1.00
Finance & Debt	0.30*** (0.06)	4,662	0.00	0.00
Reduction in the total outstanding debt	0.05 (0.06)	4,662	0.37	1.00
Any savings	0.29*** (0.06)	4,662	0.00	0.00
Amount saved	0.31*** (0.06)	4,662	0.00	0.00
Material needs (5-17 years)	0.22*** (0.06)	10,564	0.00	0.02
Child has pair of shoes (5-17 years)	0.22*** (0.07)	10,563	0.00	0.04
Child has two sets of clothes (5-17 years)	0.24*** (0.07)	10,564	0.00	0.05
Schooling enrollment (5-17 years)	0.04 (0.03)	10,565	0.26	1.00
Schooling enrollment (5-12 years)	0.05 (0.03)	8,230	0.13	0.98
Schooling enrollment (13-17 years)	-0.01 (0.07)	2,335	0.91	1.00
Anthropometric (0-5 years)	0.02 (0.04)	6,681	0.64	1.00
Not stunted	-0.01 (0.04)	6,681	0.73	1.00
Not wasted	0.03 (0.05)	6,681	0.61	1.00
Not underweight	0.03 (0.04)	6,681	0.52	1.00

Notes: Estimations use difference in difference modeling. Robust standard errors clustered at the community level are in parentheses. All estimations control for baseline proxy means test, baseline household size, baseline household head characteristics (age in years, sex, and indicator of any schooling), and district fixed effects. \*  $p < 0.1$  \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . Adjusted p-values are Sidak-Bonferroni corrected p-values.

**Table A11: Malawi SCTP ITT effects on individual indicators**

	Impact	N	P-value	Adjusted p-value
Total consumption per capita	0.50*** (0.10)	6,595	0.00	0.00
Food consumption per capita	0.51*** (0.10)	6,595	0.00	0.00
Non-food consumption per capita	0.37*** (0.10)	6,595	0.00	0.03
Food security	0.82*** (0.13)	6,598	0.00	0.00
Never worry about food (last 4 weeks)	0.75*** (0.15)	6,598	0.00	0.00
Number of meals per day	0.55*** (0.10)	6,598	0.00	0.00
Assets	0.67*** (0.10)	6,605	0.00	0.00
Assets*	0.64*** (0.08)	3,302	0.00	0.00
Productive assets	0.41*** (0.09)	6,604	0.00	0.00
Livestock assets	0.65*** (0.09)	6,605	0.00	0.00
Durable goods assets	0.26*** (0.07)	3,301	0.00	0.05
Subjective well-being	0.59*** (0.15)	6,605	0.00	0.02
In most ways my life is close to ideal	0.36*** (0.08)	3,302	0.00	0.01
The conditions in my life are excellent	0.37*** (0.08)	3,302	0.00	0.01
Satisfied with my life	0.37*** (0.07)	3,302	0.00	0.00
Have gotten the important things I want in life	0.42*** (0.09)	3,302	0.00	0.00
If I could live my life over, I would change almost nothing	-0.08 (0.07)	3,302	0.31	1.00
I feel positive about my future	0.49*** (0.07)	3,302	0.00	0.00
I generally feel happy	0.52*** (0.08)	3,302	0.00	0.00
I am satisfied with my health	0.28*** (0.05)	3,302	0.00	0.00
Income & Revenues	0.25* (0.13)	6,605	0.06	0.91
Value of harvest	0.25** (0.12)	6,605	0.05	0.85
Household has non-farm enterprise	0.15 (0.10)	6,605	0.15	1.00
Revenues from NFEs	0.17 (0.11)	6,605	0.13	1.00
Finance & Debt	0.13 (0.08)	6,605	0.12	0.99

Finance & Debt*	0.79*** (0.11)	3,302	0.00	0.00
Reduction in the total outstanding debt	0.13 (0.08)	6,605	0.12	0.99
Any savings	0.86*** (0.14)	3,302	0.00	0.00
Amount saved	0.83*** (0.13)	3,302	0.00	0.00
Material needs (5-17 years)	0.68*** (0.12)	15,421	0.00	0.00
Child has a pair of shoes	0.65*** (0.11)	15,421	0.00	0.00
Child has two sets of clothes	0.29*** (0.09)	15,421	0.00	0.14
Child has a blanket	0.57*** (0.12)	15,421	0.00	0.00
Schooling enrollment (5-17 years)	0.21*** (0.06)	15,421	0.00	0.04
Schooling enrollment (5-12 years)	0.20*** (0.07)	10,410	0.00	0.17
Schooling enrollment (13-17 years)	0.25*** (0.06)	5,011	0.00	0.02
Anthropometric (0-5 years)	0.08 (0.07)	3,126	0.24	1.00
Not stunted	-0.03 (0.08)	3,126	0.68	1.00
Not wasted	0.15*** (0.05)	3,126	0.01	0.27
Not underweight	0.05 (0.06)	3,126	0.40	1.00

Notes: Estimations use difference in difference modeling. Robust standard errors clustered at the community level are in parentheses. All estimations control for baseline household composition and household size, household head characteristics (age in years, sex, indicator for any schooling, indicator for widowed), and district fixed effect. \*  $p < 0.1$  \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . Adjusted p-values are Sidak-Bonferroni corrected p-values.

**Table A12: Zimbabwe HSCT ITT effects on individual indicators**

	Impact	N	P-value	Adjusted p-value
Total consumption per capita	0.04 (0.06)	5,133	0.44	1.00
Food consumption per capita	-0.00 (0.07)	5,133	0.98	1.00
Non-food consumption per capita	0.12 (0.07)	5,133	0.10	0.99
Food security	0.46*** (0.08)	5,131	0.00	0.00
Does not (or rarely) worry about food	0.32*** (0.09)	5,129	0.00	0.02
Able to eat preferred food most of the times	0.38*** (0.08)	5,131	0.00	0.00
Does not (or rarely) eat food he/she does not want to eat	0.30*** (0.07)	5,131	0.00	0.00

Does not (or rarely) eat smaller meal than needed	0.30*** (0.09)	5,123	0.00	0.05
Does not (or rarely) eat fewer meals because there is not enough food	0.32*** (0.09)	4,645	0.00	0.03
Never (or rarely) no food to eat because of lack of resources	0.49*** (0.09)	5,130	0.00	0.00
Does not (or rarely) go to sleep hungry	0.25*** (0.09)	5,129	0.00	0.15
Does not (or rarely) go a whole day/night without eating	0.16* (0.09)	5,130	0.07	0.95
Does not (or rarely) eat a limited variety of food due to lack of resources	0.10 (0.10)	5,131	0.30	1.00
Assets	0.23*** (0.07)	5,133	0.00	0.05
Productive assets	0.22*** (0.07)	5,133	0.00	0.12
Livestock index	0.16** (0.07)	5,133	0.03	0.71
Subjective well-being	0.36*** (0.07)	5,127	0.00	0.00
In most ways my life is close to ideal	0.14* (0.07)	5,130	0.05	0.89
The conditions in my life are excellent	0.14* (0.08)	5,130	0.09	0.98
Satisfied with my life	0.26*** (0.06)	5,130	0.00	0.00
Have gotten the important things I want in life	0.22*** (0.07)	5,130	0.00	0.14
If I could live my life over, I would change almost nothing	0.08 (0.08)	5,130	0.31	1.00
I feel positive about my future	0.36*** (0.07)	5,130	0.00	0.00
I generally feel happy	0.40*** (0.08)	5,130	0.00	0.00
Income & Revenues	0.06 (0.09)	5,133	0.51	1.00
Value of harvest	0.01 (0.12)	5,133	0.96	1.00
Spending on ag. inputs	0.00 (0.05)	5,133	0.93	1.00
Revenues from Non-farm enterprise	0.06 (0.06)	5,132	0.35	1.00
Revenues from livestock byproducts	0.05 (0.11)	5,133	0.62	1.00
Finance & Debt	0.09 (0.06)	5,133	0.17	1.00
Reduction in the total outstanding debt	0.09 (0.06)	5,133	0.17	1.00
Finance & Debt*	0.26***	2,566	0.00	0.00

Reduction in the total outstanding debt	(0.06) 0.09	5,133	0.17	1.00
Holding any savings	(0.06) 0.24***	2,566	0.00	0.04
Amount saved	(0.07) 0.22***	2,566	0.00	0.09
Material needs (5-17 years)	(0.07) 0.35***	11,778	0.00	0.01
Child has pair of shoes (5-17 years)	(0.09) 0.34***	11,768	0.00	0.01
Child has two sets of clothes (5-17 years)	(0.09) 0.15*	11,772	0.06	0.91
Child has a blanket (5-17 years)	(0.08) 0.02	11,776	0.84	1.00
Schooling enrollment (5-17 years)	(0.10) 0.02	11,872	0.65	1.00
Schooling enrollment (5-12 years)	(0.04) 0.01	7,292	0.90	1.00
Schooling enrollment (13-17 years)	(0.06) 0.07*	4,580	0.09	0.98
	(0.04)			

Notes: Estimations use difference in difference modeling. Robust standard errors clustered at the community level are in parentheses. All estimations control for baseline household size, household demographic composition, household head characteristics (age in years, sex, indicator for widowed, indicator for divorced or separated, and highest grade completed), and region fixed effect. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . Adjusted p-values are Sidak-Bonferroni corrected p-values.