The Dynamic Effects of Cash Transfers to Agricultural Households*

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Abstract

While cash transfers will tautologically increase contemporaneous consumption, it is unclear whether these gains will persist, especially in rural agricultural settings with limited productive investment opportunities. Using bi-monthly survey data from recipients of a large, unconditional cash transfer in Liberia and Malawi, we document sustained food security improvements until 1.5-2 years after disbursement, driven by increased farm investments and production. We additionally document reductions in casual off-farm labor, increases in psychological well-being and, in Liberia, a decline in IPV. We find similar increases in harvest output across different transfer sizes. Those receiving larger transfers spend more on housing and durables.

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1 Introduction

While cash transfers will tautologically increase the contemporaneous consumption of any normal good, evidence on whether this effect persists is limited. This is particularly relevant for time-limited unconditional cash transfers (UCTs) because realizing sustained impacts from temporary infusions of cash necessarily requires making investments in income-generating activities (as opposed to regular transfers, such as a universal basic income or disability payments, which will mechanically increase disposable income). It is not obvious, however, if such productivity-enhancing opportunities exist for the average rural agricultural household in a developing country.

Evidence from prior experiments on the impact of cash transfers on productive investments is mixed. Several studies show sizeable effects on income, at least for one to two years post-disbursement, especially when the transfers are targeted around income generation. For example, Blattman et al. (2014) and Blattman et al. (2020) document short- but not long-term effects of cash grants (intended for business investment) that were allocated to groups which had submitted business plans; as do Brudevold-Newman et al. (2023) in the context of cash grants (and business training) among applicants to an entrepreneurship program targeting young women in Nairobi. McIntosh and Zeitlin (2022) document substantial effects over 14 months among underemployed youth in Rwanda. On the other hand, Baird et al. (2024) find effects of a UCT program designed around business plans on assets but not on income or consumption in the short or in the long-run in Tanzania. A fairly large literature on cash-drop experiments among existing entrepreneurs shows sizeable effects on both investment and profits,[1] and de Mel et al. (2012) show that these effects persist even at 5 years after disbursement.

However, studies with a more representative sample of individuals in various countries in sub-Saharan Africa, who live in rural areas where the primary occupation is farming,

[1] A partial list of papers on this topic include de Mel et al. (2008), McKenzie and Woodruff (2008), Fafchamps et al. (2014), McKenzie (2017), Bernhardt et al. (2019), Hussam et al. (2022), and Crépon et al. (2024).

show more heterogeneous results. Haushofer and Shapiro (2016) show sizeable short-run (9 months) effects on assets, income, and consumption, with the latter two impacts having largely dissipated 3 years after the transfers (Haushofer and Shapiro 2018). Other studies such as Egger et al. (2022) show large gains in assets, but a modest and statistically insignificant effect on income 9-31 months after the first transfer installment. In a multi-armed intervention in Uganda, Sedlmayr et al. (2020) find that respondents receiving cash alone have higher assets but no higher income and consumption relative to a pure control group. There are also a couple of studies that have worked exclusively with farmers: Karlan et al. (2014) find that those in the cash grant arm (average grant amount of $420) invested more in chemical fertilizer but did not increase total farm investment and saw a small, statistically insignificant increase in harvest output; Beaman et al. (2023) provided cash grants of about $140 just before planting in one of their experimental arms. Eighteen months later, grant recipients had increased agricultural investments and saw a larger harvest and higher consumption; however, these effects had petered out by the time of their long-term follow-up (though this occurred quite some time – 7 years – later). Overall, while the evidence is fairly conclusive that large cash transfers cause households to invest in assets, it is less certain whether income and consumption increase, and even if they do, the time path of these effects is entirely unclear. Also note that in many of these studies, the asset outcome spans productive assets as well as durable consumption goods.[2] It is possible, therefore, that the observed increases in assets are largely driven by consumption goods, and if so, that may partly explain why income gains have been short-lived at best.

In this paper, we combine detailed information on productive investments with data on consumption, income and expenditures collected from high-frequency surveys to measure the evolution of effects over time. In this way, we broaden our understanding of the effect of cash transfers beyond the standard protocol of collecting a single follow-up (or in some cases a

[2]For example, in Haushofer and Shapiro (2016), non-land assets include livestock, furniture, agricultural tools, radio, TV, roof, savings, and "other" assets and in Egger et al. (2022), assets are made up of livestock, transportation (bicycles, motorcycles, and cars), electronics, farm tools, furniture, other home goods, and net savings.

small number of follow-ups). In particular, we implemented high-frequency phone surveys that continued until an in-person endline survey, conducted 1.5-2 years after the transfers, to study the persistence and dynamics of large, lump-sum unconditional cash transfers among approximately 6,000 households in rural Liberia and Malawi.

The context is heavily agrarian and respondents are extremely poor: monthly household expenditures in 2019 PPP dollars are only $120 in Liberia and $92 in Malawi,[3] putting these households well below the global poverty line.[4] These households earn their livelihood primarily from agriculture: at baseline, 99% of households in Malawi and 88% in Liberia report engaging in agriculture. While about half the households also report earning supplemental income from other sources, only 20% earn income from non-agricultural self-employment. On average, at baseline, the unconditional value of non-agricultural income in the prior month was only $16.16 PPP in Liberia and $15.28 PPP in Malawi (of this, $9.39 and $5.14 was from self-employment), i.e., around 15% of household consumption. Thus, realizing sustained gains in this context will require either productivity increases in agricultural production, or creation of new businesses.

To study dynamics, we randomly enrolled 20% of study households at baseline to participate in a bi-monthly phone panel survey. These surveys took about 40 minutes to complete, and included questions on food security, income, consumption, savings, credit, transfers and related topics. To enable participation, we provided households with phones, and incentivized them to participate in each call. The surveys began as soon as the cash was disbursed, and continued for about 1 year in Liberia and 2 years in Malawi.[5] Compliance with the

[3]In 2021, the two countries were ranked 222nd and 220th (out of 229) in terms of GDP per capita (CIA's World Factbook).

[4]These consumption numbers are similar to those of the ultra-poor populations studied in recent papers about multi-faceted "graduation" programs such as Bandiera et al. (2017) and Balboni et al. (2021) in Bangladesh ($52 PPP in 2007) or the 6 countries in Banerjee et al. (2015) (average $79 PPP in 2010). These households are also poorer than those in ultra-poor studies in conflict settings such as Afghanistan (assuming a 5 member household) documented by (Bedoya et al. 2019 - $435 PPP in 2015), and Yemen (Brune et al. 2022 - $616 PPP in 2010). One study with substantially poorer households is Angelucci et al. (2023) in the DRC ($25 PPP in 2017).

[5]Because the disbursement of transfers was slightly delayed in Liberia because of the pandemic (we provide more details below), the phone surveys here ended up starting a little bit before the transfers did.

survey was high, though substantially better in Malawi (which has a more advanced cell phone network): we completed about 88% of surveys in Malawi and 62% in Liberia, and in both countries, compliance was balanced between the treatment and control groups. In addition, we conducted a much longer ($\sim$ 3 hour) in-person endline survey 18-25 months post-disbursement, which included many more questions, as well as modules on outcomes that do not change at a high frequency, such as agriculture, psychological wellbeing, and intimate partner violence. We use these surveys to both measure the persistence of those effects measured in the phone surveys (and corroborate them with a larger sample), as well as to use the additional questions to examine other outcomes.

Using our high-frequency data, we find that in Malawi, food security improves by about 0.5 standard deviations immediately post-transfer, but then diminishes to about 0.25 standard deviations within 6 months. However, the effect size remains at this elevated level for the remainder of our study period, suggesting lasting effects. These effects are also corroborated by our endline survey, where the measured effect size is 0.11 SD. In Liberia, dynamics are less apparent; instead, we observe a steady and persistent effect (of about 0.25 SD), both in the phone surveys and in the endline survey.[6] Yet while we see lasting impacts on food security, this effect is not driven by market transactions: we see a fleeting increase in expenditures, including on large purchases such as durable goods (and this too, in Malawi only), but this effect vanishes within about 6 months. We see no effect on non-agricultural income, savings, or debt at any point, and only modest evidence of effects on interpersonal transfers in Liberia.

What accounts for these sustained gains in food security? Our evidence suggests that they are driven by increased agricultural production. In the endline survey, we asked about production decisions for the agricultural season following the transfers, and find evidence of substantial effects on agricultural output: the value of harvest output increased by about 50% in Liberia and 20% in Malawi, and households in both countries report growing a larger number

[6]Incidentally, our effect sizes are fairly similar to those documented in other UCT studies - Haushofer and Shapiro (2016) find a 0.26 SD impact on food security at 9 months and Beaman et al. (2023) find a 0.1 SD effect on their food consumption measure at 18 months.

of crops. This increase is driven by investments in both 'capital' and intermediate goods: input purchases go up by about 10% in both countries (although statistically insignificant in Liberia, a context with extremely underdeveloped agricultural input markets) and respondents in the treatment group report having a larger stock of farm tools (23% higher in Liberia and a statistically insignificant 5% in Malawi). We also find a clear increase in livestock investment of about 25% in both countries. There is also some suggestive evidence of more labor being hired on the farm in Malawi.

On the other hand, we find little evidence of any other kind of productive investments, especially in Malawi, where we find no treatment effects on business capital, income, or investment in education and health. In Liberia, we find an $8 increase in enterprise capital (on a $17 control mean) and a $27 increase in education expenditures (on a $129 control mean). However, effects on non-agricultural income (and enterprise income, specifically) are statistically insignificant.

We use our data to examine several other key outcomes. First, we find that households in both countries reduce their supply of casual labor. The hours reduction is large and significant in Liberia (about 7.6 less hours over the month prior to the survey, a reduction of about 45%) but smaller and insignificant in Malawi. We do not see a subsequent increase in other forms of labor, and so attribute this to an increase in leisure. Our paper contributes to a large literature that studies the question of whether receipt of cash (via cash transfer programs or as other kinds of welfare payments) may cause beneficiaries to reduce their labor supply, and finds mixed evidence, with most papers finding no effect (see Banerjee et al. 2017 for a review). Our result is also generally consistent with Fink et al. (2020), who find that access to credit decreases casual labor off the farm (though increases labor on the farm, in contrast to our result).[7]

Lastly, we examine a few non-economic outcomes, such as intimate partner violence (IPV) and psychological well-being. In theory, cash transfers could impact IPV in either direction:

[7]It is also related to Aggarwal et al. (2023) who find that savings accounts (in the form of lockboxes or mobile money) reduce labor supply in business and increase agricultural labor.

IPV could decrease if the transfers boost household income, leading to a reduction in stress and conflict, that may be triggers for IPV (Ellsberg et al. (2015)). On the other hand, a sub-literature on women's economic empowerment suggests that interventions that improve women's financial status (cash transfers would be one of these) could increase IPV due to shifts in power dynamics, for example, as backlash (Buller et al. 2018; Chin 2012) or as a method for male partners to gain control over resources (Bobonis et al. 2013). Several papers have analyzed this question empirically, and by now, there is an emerging consensus that cash transfers generally lead to a decrease in IPV (Haushofer and Shapiro 2016; Hidrobo et al. 2016; Baranov et al. 2021; Heath et al. 2020), though this is not always the case. In fact, we find that IPV is affected only in Liberia but not Malawi. One reason for this is that the contexts are quite different. Liberia has a recent history of civil conflict in which violence against women was widely used as a weapon of war, and baseline IPV rates are extremely high: 38% of the control group report IPV over the past year. Malawi has a much lower prevalence of 18%. We find a large, statistically significant decline of about 8 percentage points in Liberia, but no effect in Malawi. Consistent with the prior literature, we find improvements in psychological well-being in both countries.

2 Experimental Design

2.1 Experimental context and design

The NGO GiveDirectly (henceforth, GD) implemented a cash transfer program in 300 villages in both Liberia and Malawi in 2019-2021 (600 villages total), with the sample split equally between treatment and control. Targeted counties and districts were identified by GD and the funding partner, USAID, based on poverty levels, mobile phone coverage, and proximity to roads. Villages were eligible if their population (as of the most recent population census),

was below a threshold size (100 households in Malawi and 125 in Liberia).[8] Households were identified in collaboration with GD, who visited every village in the sampling frame and recorded every habitation structure with a GPS pin. Even though the households in our study sample are specifically selected on the criterion of being inhabitants of "small" villages, they look very similar to the average rural household in the study region.[9]

Amongst the 600 villages, we randomized treatment, stratifying by country and by administrative unit (district in Liberia, traditional authority in Malawi). Treatment villages were randomized into one of three *nominal* amounts: $250 ($555 PPP in Liberia; $678 PPP in Malawi), $500 ($1,100; $1,355 PPP) or $750 ($1,665; $2,033 PPP).[10] Targeting was universal: in treatment villages, every household received the transfer. For logistical reasons, transfers were disbursed in 1-3 tranches. GD capped disbursements at $250 per tranche, making additional tranches in the following months; they did this to smooth the amount of money being sent out in a given month. Thus, respondents who received $250 received their transfer in a single transfer; while those receiving $500 or $750 received 2 or 3 transfers, respectively. These were given out over consecutive months in Liberia, and every other month in Malawi, i.e., transfers were fully given out over 1-3 months in Liberia and over 1-5 months in Malawi (depending on the amount).[11]

In addition, in Malawi, we cross-randomized an "input fair" intervention which was designed to reduce transport costs to invest in agricultural inputs. We coordinated with a local agricultural retailer to offer inputs for sale on predesignated days at locations near

[8] Since the transfers were universal, GD targeted smaller villages in order to cover enough villages while staying within its budget.

[9] See Appendix Table S4 in Aggarwal et al. (2022c) for a comparison between the characteristics of the study households and that of representative households from large scale surveys done by the World Bank - the HIES 2016 for Liberia and the IHS 2019 for Malawi.

[10] Values for USD purchasing power parity (PPP) are calculated based on the PPP conversion factor at baseline (2018 for Liberia and 2019 for Malawi).

[11] Within each treatment village in Liberia, transfers were also randomized between being paid either in this "lump-sum" manner, or via quarterly payments spread out over a year (this design is similar to one of the treatment conditions in Haushofer and Shapiro 2016). This randomization was done within, rather than across, villages. Because this payment modality was done only in Liberia, we remove these households from our analysis in this paper. Please see the prior version of this paper (Aggarwal et al. 2022a) for a discussion of those results.

farmers' homes (usually in schools), and marketed these as input fairs. We subsidized the cost for farmers to attend these events. At one of our partners' request, the input fair was only offered in a third of villages: ultimately, 100 villages received cash only, 50 received market access only, 50 received both, and 100 served as control. Because the input fair was designed solely around agricultural investment, it is unlikely to have major effects beyond that channel. In this analysis, we therefore control for the input fair treatment, and its interaction with cash, but do not report results for the input fair treatment itself.

Within each household, the transfer was made to a beneficiary chosen by the household. As the household beneficiary had to be home at the time of enrollment, the majority of beneficiaries were women. Since beneficiary selection was endogenous and because the mechanics of how the transfer was shared within the household are unknown to us, the household is our unit of analysis. That said, as we will explain in greater detail below in Section 2.2, the vast majority of our survey respondents are also women.

In Liberia, the project was implemented in two waves: a smaller "Wave 1" with 90 villages, in which transfers were disbursed from March 2019 to February 2020; and a larger "Wave 2" with 210 villages, in which transfers were disbursed from March 2020 to July 2021. In Malawi, all 300 villages were enrolled in a single wave (though enrollment was protracted) and transfers were disbursed from July 2019 to February 2020. As village enrollment took several months, the start date of transfers varied across villages. We estimate all results relative to the start date in that specific village (while controlling for month fixed effects).

In both countries, transfers were disbursed via mobile money. Household could enroll using a phone they already owned or purchase a cell phone with a mobile-money-enabled SIM during enrollment from GD. GD estimates that the vast majority of households exercised the option of buying a new phone. We know anecdotally that households did not hold the GD transfers as balance in their mobile money accounts, and instead cashed-out shortly after receipt.[12] It is noteworthy that the average household reported spending 3% of the total

[12]In surveys conducted in Malawi shortly after receipt, the treatment group reported having cashed out 92% of the transfer. The actual cash-out rate may be even higher if respondents were hesitant to report holding

transfer received on mobile money withdrawal fees and 1% on transport for the withdrawal.

Some part of the fieldwork for this project overlapped with COVID-19 lockdowns, particularly in Liberia. As a result, our in-person data collection and GD's enrollment activities had to be paused in early 2020, and the Wave 2 transfers in Liberia were consequently delayed. In Malawi, enrollment ended just before the pandemic started, and in-person data collection even before that. Phone surveys went on as planned throughout the lockdown. However, it is possible that the effects we observe were affected by the general economic environment in the COVID and immediate post-COVID period. For more detail on the dynamics of food security and other outcomes during this time period, please see Aggarwal et al. (2022c) which uses the phone-data to track outcomes pre- and post-COVID.

2.2 Data

To construct the sample, we randomly sampled 10 pins from the census list that GD collected and conducted baseline surveys with those households (6,000 households across both countries). These surveys took place in November-December 2018 for Liberia Wave 1, November-December 2019 for Liberia Wave 2, and April-July 2019 for Malawi. The surveys took about 2-3 hours to administer, and included questions on demographics, agriculture, cash flows, food security, mobile money usage, shocks and resilience, and IPV (among other subjects). Since IPV is a primary outcome, surveys targeted female heads of (dual-headed) households.[13] While we attempted to survey 3,000 households in each country (10 per village), we were only able to enroll fewer than this in some small villages which had less than 10 households total, leading to a final sample of 2,715 in Liberia and 2,944 in Malawi.

Two of the 10 households from every village were further sampled to answer a monthly phone survey designed to measure a pre-defined set of outcomes. Each respondent sampled for this activity received a phone (worth $10-15). Of these 2, we called one household per village in even-numbered months, and the other in odd-numbered months. This results in a monthly

large amounts of cash on hand.

[13]Male heads were interviewed only when the female was absent and unreachable.

village-level panel and a bi-monthly household-level panel. The surveys included questions on food security, expenditures, income, labor supply, transfers, savings, and credit.[14] The phone surveys were administered from July 2019 to August 2021 in Malawi, from February 2019 to September 2020 for Liberia Wave 1, and from January 2020 to October 2021 for Liberia Wave 2. The responses to this panel survey form our high-frequency data which we use to study dynamics.

We collected a fuller set of outcomes from the entire sample via in-person endline surveys, which were conducted in late 2020 for Liberia Wave 1 (18-20 months after disbursement), late 2021 for Liberia Wave 2 (18-22 months after disbursement) and April-July 2021 in Malawi (21-25 months after disbursement). These surveys were similar to the baselines in length and scope.[15] Figure A1 provides a timeline of project-related activities.

As shown in Table A1, there was little attrition from the endline survey in either country (96% of households completed the endline in Liberia, and 94% in Malawi), and attrition was balanced between treatment and control. Attrition in the phone survey, shown in Table A2, is more heterogeneous across countries. In Malawi (Panel A), over 95% of the sample participated in early rounds; though this percentage fell over time, we still successfully interviewed 80% or more until the 12th round (approximately 2 years after cash was disbursed). However, in Liberia, attrition is substantially higher, largely due to the country's inferior phone network. Also, in Wave 1, we noticed that households in the treatment group were more likely to switch to the SIM card provided by GD, thus making it more difficult to reach these respondents. We, therefore, drop Liberia Wave 1 from the phone survey analysis. In Wave 2, we took proactive steps to avoid this problem and managed to achieve balanced compliance, but the overall level of compliance is still lower than Malawi: compliance peaks at 72%, but falls below 60% in 7th round (14 months).[16]

[14] During COVID-19 lockdowns, we added questions aimed at measuring their impact. Aggarwal et al. (2022c) documents the impact of COVID in these two countries.

[15] See Jeong et al. (2023) and Park et al. (2024) for analyses of cross-randomized survey experiments on survey length and interview modality of IPV, respectively, in these baseline and endline surveys.

[16] We examine correlates of attrition in Table A3, in which we regress the percentage of rounds completed on various covariates. We find a few common predictors: in general, older and richer respondents are

2.3 Summary statistics and randomization check

Table 1 presents summary statistics and a randomization balance check. Columns 1 and 4 show the means and standard deviations of the control group in Liberia and Malawi, respectively. Columns 2 and 5 show the p-values for a t-test of equality between treatment and control, and Columns 3 and 6 report the p-values for an F-test of equality of means across the 3 sub-treatments ($250, $500, $750) and control. The underlying regressions control for strata fixed effects and cluster standard errors by village.

Because we targeted women for surveys, the sample skews female: 77% of the sample in Liberia and 94% in Malawi are women. Eighty-five percent are married in Liberia, and 67% in Malawi. The average age (about 40 years) is similar in the 2 countries. Education levels are low, averaging 2.9 years in Liberia and 4.7 years in Malawi. On average, households have nearly 5 members. There are no statistically significant differences across experimental arms.

Panel A also includes a few measures relevant to the context. In prior evaluations with GD, the presence of a thatched roof was a targeting criteria, but only a minority in Liberia (23%) and about half in Malawi have a thatch roof (despite, as we will see, the high level of poverty).[17] In terms of occupation, 88% of households in Liberia and 99% in Malawi earn income from farming while about half earn any non-agricultural income. A little less than a quarter own a business.

Panel B shows baseline measures of some important primary outcomes: a food security index (FSI),[18] expenditures, assets, and income (all values in 2019 PPP dollars). Overall,

more likely to complete surveys, likely reflective of better cell phone network coverage (or perhaps access to power) or that older respondents may be more likely to be at home for the calls. In any case, this baseline imbalance in phone survey attrition is unlikely to be driving the results as we show in Table A2 that attrition is balanced across treatments and also because the endline corroborates the findings from the phone surveys. Even so, to bolster confidence in our findings, we replicate our main results using a balanced panel and find similar results, though the sample size is dramatically reduced (results on request).

[17] Liberia is exceptionally rainy, so metal roofs are the norm, even among the poor. In the Liberia DHS 2019-2020, 82% of households had a roof made of zinc, metal, or aluminum.

[18] The FSI is comprised of standardized scores of the Household Dietary Diversity Score (HDDS), measured over the past 24 hours, the Food Consumption Score (FCS), measured over the past 7 days, and the Household Hunger Scale (HHS), measured over the past month. The baseline and endline FSI also includes a fourth measure, the Food Insecurity Experience Scale (FIES), which we didn't measure in the phone surveys because it has a one-year recall. A z-score is calculated using inverse covariance weighting (Anderson

total monthly expenditures in the control group are $51 in Liberia and $39 in Malawi, with food expenditures being about 42% of the total in each country. The total value of durables, livestock, and financial assets is approximately $250 in both countries. Total non-agricultural incomes ($16) are also fairly similar in both contexts. Again, we observe sample balance on each of these attributes across treatment and control, other than in the case of the FSI over the disaggregated treatment arms. Overall, randomization appears successful; in any case, all regressions were pre-specified as ANCOVA and we control for baseline measures throughout the paper.

3 Results

3.1 Dynamic treatment effects

We estimate time-varying treatment effects using the phone survey data as follows:

$$Y_{ivst} = \sum_t \beta_t Cash_{vs} D_{tvs} + \gamma Y_{ivs0} + \delta I_{vs} + \eta I_{vs} * Cash_{vs} + \phi_m + \lambda_s + \varepsilon_{ivst} \quad (1)$$

where Y_{ivst} is an outcome for individual i in village v and strata s at time t, which is defined as the number of months since cash transfers began (defined for each stratum, and thus, able to take on values for both treatment and control). $Cash_{vs}$ is a binary variable equal to 1 for villages assigned to any cash transfer, 0 otherwise; D_{tvs} is a binary variable equal to 1 for a survey that occurred t months since transfers began; Y_{ivs0} is the baseline value of the outcome variable; I_{vs} is an indicator for the input fair treatment (in Malawi only); and ϕ_m and λ_s are calendar month and strata fixed effects, respectively. We cluster standard errors by village, the level of randomization.

Figure 1 plots the coefficient and confidence intervals from Equation (1) for four important outcomes: food security, expenditures, large purchases, and non-agricultural income. The figures pool two months together so that the comparison across points in the graph is for the

2008).

same set of respondents. In Malawi, we observe a spike in food security, expenditures, and large purchases immediately after disbursement, but no effect on non-agricultural income. For these 3 outcomes, we also observe clear evidence of time-varying treatment effects. Specifically, food security increased by over 0.5 standard deviations in the first six months (statistically significant at 1%) but then fell to approximately 0.25 standard deviations by the 8th month. These levels persist for the duration of the survey period (24-26 months after the initial transfer).[19] For expenditures and large purchases, treatment effects are substantial initially, but then fall to being indistinguishable from zero within 10-12 months. The result that large purchases increase for about 8 months indicates that these larger outlays were not all spent immediately post-disbursement but spread out over some period of time. Non-agricultural income shows little effect throughout.[20]

The picture is slightly different for Liberia. While there is also a clear increase in food security immediately post-transfer, the magnitude is smaller, 0.25-0.4 standard deviations. This effect persists for the duration of surveying.[21] The effects on expenditure are fairly modest relative to Malawi (and to the total transfer size) and indistinguishable from zero. There is also no strong evidence of effects on non-agricultural income in Liberia, though the results are noisier than in Malawi.[22]

Figure 2 shows effects on other outcomes measured in the phone surveys, specifically savings, debt, and inter-personal transfers. We report savings as a stock variable, measured as the total balance held by the household at the time of the survey, and it is remarkable for its low baseline value: the average control household reports holding only $5-$23 in savings

[19] Figure A3 shows food security results by each of the components of the index (HDDS, FCS, and HHS), and shows that the time path is similar for each.

[20] We also look at the dynamics of our 4 main outcomes by transfer amount in Figure A4. We can clearly see here that the effects, especially those on expenditures, last longer if the transfers are larger. However, the overall picture of an attenuation or even complete dissipation of effects after a period of time remains unchanged.

[21] Figure 1 suggests that food security outcomes in the treatment group improved in the round *before* the first payment. Although not statistically significant, it is possible that effects manifest before the recorded date because of measurement error in the date of the first GD transfer, or because treatment households could have started spending in anticipation.

[22] Since even our pooled effects are so noisy in the case of Liberia, we do not plot the varying trajectories of these effects by the different transfer sizes.

over this period in Liberia, and $12-$24 in Malawi. We see minimal treatment effects on reported savings, as well as on outstanding debt on the date of each survey round. The lack of effects suggests that the vast majority of income is spent, rather than used to build savings or discharge debt, and suggests a marginal propensity to consume close to 1.

Finally, we show inter-personal transfers sent and received. In Liberia, we see small but positive point estimates on transfers sent (of a few dollars per month) and no effect whatsoever on those received. In Malawi, we observe no effect on either at any point in time. These results suggest that little or none of the cash transfer amount is directly shared with others (which may be because the transfers were targeted universally within villages and so, unlike studies such as Angelucci and De Giorgi (2009), there is little scope for sharing, at least within village networks.

We also pool the phone surveys together to analyze average effects on these outcomes over the entire post-transfer period in Table A4. These results corroborate the results we observed in the round-by-round graphs. Moreover, they also now show a statistically significant effect for expenditures in Liberia, as well as on transfers sent out in both countries. While these effects are small in magnitude, they represent a 30% increase over the control group in each country. Consistent with what we show in Figure 2, no other outcomes show any effects.

We use the endline to look at these effects 18-24 months post-transfer. This helps us compare how the effects compare in the immediate post-disbursal period versus a later point in time, as well as look at the effects on a larger sample. To do this, we use a similar specification:

$$Y_{ivs} = \beta Cash_{vs} + \gamma Y_{ivs0} + \delta I_{vs} + \eta I_{vs} * Cash_{vs} + \lambda_s + \varepsilon_{ivs} \tag{2}$$

where Y_{ivs} is the value of the outcome at endline. Standard errors are clustered by village. For each outcome, we show results from two separate regressions: one with all cash treatments pooled, and a second with treatment effects disaggregated by grant size. For the latter, we report p-values from a test for the linearity of the effect size in the dollar value of the cash

amount, as well as from a test for equality of the three effect sizes.

Table 2 shows effects for all of the outcomes shown in the previous figures, with Panel A for Liberia and Panel B for Malawi. In the first row, we start by showing effects pooled across the different amounts. Consistent with the phone survey, we see significant improvements in food security. Households in treated villages reported a 0.29 and 0.11 standard deviations improvement in the Food Security Index (FSI) in Liberia and Malawi respectively, both statistically significant. We also observe an increase in expenditures in Liberia, and the effect is sizeable: a $14.36 increase on a $141 base. However, we find no such effect in Malawi. We also observe an increase in savings in both countries, although it is small relative to the total transfer amount. This is also in line with other work, such as Sedlmayr et al. (2020) who find that only about 1500 UGX out of a transfer of nearly 300,000 UGX was saved and Haushofer and Shapiro (2016) who report a savings effect of $10 out of a $700 transfer on average. Other than these effects, our endline fails to pick up statistically significant effects on any outcome, including larger purchases and non-agricultural income in either country. Overall, these results confirm the findings from the phone surveys and validate them on a larger sample for some outcomes such as food security and non-agricultural income, and point to how certain outcomes have disappeared by the time of the endline (such as large purchases).

The bottom of the table shows tests for whether effects are linear in the grant amount, as well as those for equality of coefficients. Of the 5 statistically significant coefficients, we reject equality for 3 in Liberia: food security, expenditures and large purchases in Liberia. In Malawi, we reject it only for non-agricultural income, although we do observe larger point estimates for larger grant sizes for food security and savings, but ultimately cannot reject equality. We reject linearity for several outcomes: large purchases, interpersonal transfers sent, and at at 10% fortotal expenditures in Liberia; also at 10% for non-agricultural income, savings balance, and debt amount in Malawi. Some of these exceptions provide some suggestive evidence that effects may be longer-lasting for larger transfers: in Liberia, total expenditures

are insignificantly different from zero for $250 but not the other two amount sizes, while in Malawi savings are increased for the $750 treatment, but not the smaller ones. However, due to power issues, these results are more suggestive than definitive.

3.2 Effects on Investment

Agricultural Investment

Table 3 shows effects on agriculture, covering one full agricultural season after transfers were disbursed. In Column 1, we start by showing that transfer beneficiaries reported large increases in the value of harvest (aggregated over all crops, and using average prices as reported in our survey data. We find an increase of $133 in Liberia (a 50% increase, on a base of $266) and an increase of $21 in Malawi (a 19% increase, on a base of $111).

The remaining columns report effects on crop and input choices. Column 2 shows crop choice. We find that beneficiaries grow more crops in both countries: 0.34 more crops in Liberia and 0.15 more in Malawi on a base of about 2 crops. Columns 3-5 show investment in physical capital for crop agriculture, specifically irrigation (Column 3), fertilizer, seeds and pesticides (Column 4), and tools (Column 5). We find a treatment effect of $64 on irrigation expenses and $13 more in fertilizer, seeds and pesticides in Malawi, though no effect in Liberia. The effect on fertilizer, seeds and pesticides represents a 25% increase, despite relatively high baseline input usage ($52) due to the country's FISP program. We find no effect in Liberia, a country with a much less developed agricultural input market. In Column 5, we do find a modest increase in farm tool spending in Liberia but no effect in Malawi.

We show effects on the stock of livestock owned by the study households at endline in Column 6. In both countries, the treatment group reports about a 25% increase in the value of livestock owned. This is a particularly noteworthy finding in that livestock transfers have been a central element of the multifaceted 'graduation' (out-of-poverty) programs that were tried out in many countries.[23] Our results suggest that similar outcomes may be attainable

[23]See Balboni et al. (2021) and Banerjee et al. (2021b) for evidence on the long-term effectiveness of these

just by giving households cash alone, which can be delivered at a fraction of the cost of graduation programs which require costly administration.

While the previous columns show a larger effect on physical capital in Malawi than in Liberia, Column 7 shows expenses on hired labor,[24] and shows a very large effect in Liberia ($49, on a $81 base) but no effect in Malawi. Finally, Column 8 shows land under cultivation and shows no effect.[25]

In each panel, we also show disaggregated results by transfer amount. From these, we can see that the increases in the farm harvest are in the same range for the $250 group as they are for the $750 group (curiously, they are almost across the board, smaller for the $500 group, but we attribute that to sampling variation). We cannot reject equality of the effects on harvest quantities. While, as explained above, we cannot fully identify what is driving these larger harvests, these results demonstrate that investments in those drivers were just as big for those who received the small transfers as they were for those who received the large ones. For livestock, we see similar investments from all transfer arms in Liberia; in Malawi, however, livestock investments are limited to those who received the larger transfers. Finally, for all statistically significant outcomes, we cannot reject that effects are linear in grant size. However, we can reject equality for the value of livestock in Malawi, which shows a smaller effect for the $250 group than the $500 or $750.

Non-Agricultural Investment

Table 4 shows results on physical and human capital investments. Columns 1-3 display enterprise starts, investment and income, and show some evidence of an increase in enterprise activity in Liberia: the probability of starting an enterprise increases by 3 percentage points

programs in Bangladesh and India respectively.

[24] We measured retrospective information on labor inputs during different phases of the agricultural season in the endline.

[25] In Table A5, we examine whether the increase in output is generally commensurate with increases in inputs. In particular, we regress the value of harvest (as measured in the endline survey) on the various measures of agricultural investment described in the prior table (for the control group only). In both countries, the measured changes in inputs and investments explain about 60% of the observed output increase. However, we also note that the R-squared of this cross-sectional correlation is on the low side.

(significant at 10%), on a base of only 8%, and the value of business capital increases by $8 on a base of $17 (also significant at 10%). Enterprise income also increases by about 50% (on a very low base), but is not statistically significant. In Malawi, on the other hand, we find no evidence of any entrepreneurial activity in response to receiving cash (in fact point estimates are negative). A possible reason for the modest effects on enterprise income is that effects may be larger for those that already own a business (as in Banerjee et al. 2021a), but only a minority in these contexts have a business at baseline (21-23% of our sample). To investigate this, we examine heterogeneity in impacts by whether the respondent has a business at baseline in Table A7. The results do not suggest this is the channel: there is no statistically significant heterogeneity in Liberia, and in Malawi the point estimate is actually negative (though only significant at 10%).[26]

Column 4 shows investment in housing and durables and, consistent with the literature, show sizeable effects in both countries. Housing and durable investment increases by $197 (24%) in Liberia and $324 (20%) in Malawi. Since these are PPP amounts, this translates to 18% of the transfer in Liberia and 24% in Malawi being spent on housing and durables. Finally, Columns 5-6 show spending on education and health. In Liberia, we see an increase in education spending ($27, base $129) but no effect in Malawi (on a base only half as large). We attribute this to the fact that primary school is free in Malawi but not in Liberia, and thus is an important investment channel in Liberia. Finally, we see no effect on health expenditures in either country.

Turning to disaggregated effects by grant size, what jumps out is the fact that the "large" (both $500 and $750) grant recipients made similar and large outlays on housing and durables (coefficients are between 270 and 290 in Liberia and between 400 and 490 in Malawi), but we observe virtually no effects for the $250 grant size; however, we only reject equality in Malawi. We observe a similar pattern for education expenses in Liberia, where we also reject

[26] A part of the reason why these effects may be divergent in the two contexts is that our sample is universally agricultural in Malawi (98% at baseline), while in Liberia, about 12% do not earn any income from agriculture. Cash transfers may have enabled a reallocation towards the primary occupation.

equality. We reject linearity for only one outcome (the value of self-owned capital in Liberia), which shows a puzzling pattern that effects are actually decreasing in grant size and we formally reject linearity. One possible explanation for this is that, as discussed, we do not see a statistically significant increase in housing and durable wealth in the $250 arm, in either country, and perhaps some of this investment was put into the business in Liberia.

In Table A6, we examine whether these education investments that we observe in Table 4 translate into schooling outcomes. In Liberia, only 48% of primary-age children are enrolled in school (compared to 93% in Malawi), and we see a 10 percentage point enrollment increase due to cash. We also see negative point estimates on days of school missed in the past year (total and due specifically to lack of money) in both countries, as well as an increase in the proportion of days attended in the past week. Interestingly, in Malawi we also see positive effects on school attendance.

3.3 Other results

In this subsection, we discuss a few other key results. For an exhausting list of the outcomes pre-specified in our pre-analysis plan, please see the older version of this paper Aggarwal et al. (2022a).

Labor Supply

The effect of transfers on labor supply is an important question in regards to cash transfers generally, but also in this context of agricultural households in which households may choose between supplying labor in multiple occupations, and cash may affect this choice in various ways. For example, Fink et al. (2020) show that credit reduces casual labor in favor of on-farm labor, and Aggarwal et al. (2023), where savings accounts given to entrepreneurs reduce labor supply in the primary business and increase agricultural labor. We show results in Table 5. In Liberia, we find a sizeable decline in casual labor of 7.5 hours (almost a 50% decline on the control mean of 17 hours per week), and we cannot reject that effects are linear

in the grant amount. However, unlike prior papers, we do not detect an increase in labor on the farm, in the business, or in other jobs, suggesting an overall decline in labor supply. In Malawi, we observe no evidence of effects on this margin.

Intimate partner violence and psychological well-being

A key aim of this study was the measurement of intimate partner violence and psychological well-being, and we set up data-collection with the goal of measuring IPV as an outcome in mind. To the extent possible, we enrolled the female head of the household in our surveys, the entire enumeration team was female, and we extensively piloted out the IPV modules in our survey questionnaire to ensure comprehension. As part of this endeavour, we also set up the most up-to-date interview protocols to confidentiality as well as respondent confidence.[27]

We report these results in Table 6. We start by noting that these contexts differ dramatically in reported IPV – 38% of women in Liberia report IPV of some sort in the past year (Column 4), compared to 18% in Malawi. In Liberia, where IPV is much more prevalent, we see a large reduction in reported IPV of 8 percentage points. There are declines in all sub-categories of IPV (emotional, physical and sexual), and effects are increasing in the grant size. However, we cannot reject equality (nor linearity) for any outcome. By contrast, we see no effect in Malawi.

We also measured psychosocial well-being, and we report here our two key measures: depression as measured by the PHQ-9 index, which a widely-used 9-question scale designed to screen, diagnose and monitor depression; as well as a "happiness index" that is based on the happiness questions which are included in the World Values Survey.[28] The happiness questions measure overall life satisfaction, but also feelings of control over one's circumstances

[27] During this exercise, we became aware of an open measurement issue in this area, wherein the evidence on how best to ask these types of sensitive questions is inconclusive. Therefore, we also conducted an individual-level measurement experiment in which we asked about IPV experience using either face-to-face interviewing, or audio computer assisted self-interviewing (ACASI). The results of that experiment are reported in Park et al. (2024); the key result is that our evidence suggests that data collected via FTFI is more reliable than ACASI in this setting. As such, we rely only on FTFI reports here.

[28] Responses to the five happiness and life satisfaction questions from the World Values Survey are standardized into a z-score per Anderson (2008).

as well as over one's financial situation. These subjective perceptions of well-being, especially those in financial matters, could arguably be impacted by cash transfers.

In Liberia, we find a 0.76 point decline in the PHQ-9 (about 0.18 standard deviations) and a 0.38 standard deviation increase in the happiness index. In Malawi, there is a much smaller and not significant negative point estimate in PHQ-9 and a smaller but significant 0.1 standard deviation increase in happiness. Effects are generally increasing in the grant size, though we cannot reject equality for any outcome (nor linearity).

While important in their own right, we view these effects as further indication of a lasting effect of the transfers at the time of the endline, 18-25 months after the cash transfers, which is consistent with other evidence shown earlier.

4 Conclusion

We use high-frequency panel data and in-person surveys to measure the evolution and persistence of the effect of UCTs among farming households in rural Liberia and Malawi. We find evidence that effects on food security and expenditures attenuate after about 6 months, but that persistent positive effects on food security are achieved for up to 2 years post-transfer. Effects appear to be driven by increased agricultural output, rather than through enterprise income or other sources.

Our results confirm the commonly-discussed but rarely tested notion that the measurement of treatment effects of interventions such as cash will vary over time. Our results suggest that the somewhat arbitrary timing of many endlines around a year from disbursement may actually capture lasting food security.[29] An open question for future work is what the effects become in the next period. It is unclear whether higher harvest income and further investment will cause these effects to accrete over time, or if the effects may attenuate as the new capital stocks depreciate.

[29] For example, the endlines in Haushofer and Shapiro (2016) and McIntosh and Zeitlin (2021) were 9 and 13 months after the final transfers respectively. The first endline in Blattman et al. (2014) was after two years, a timeline similar to ours.

This paper raises several questions for future work. First, what size transfer would be most effective to generate lasting effects for agricultural households such as those in our study?[30] Theoretically, larger transfers may be better at spurring investment and therefore, generating persistent effects either if investments are lumpy (Balboni et al. 2021) or if households are close to subsistence, and therefore, a large proportion of the "smaller" transfers ends up being consumed soon after receipt, i.e., if the marginal propensity to consume is diminishing in transfer size. In this paper, we find that larger transfers were more effective in inducing certain kinds of investment responses, such as in livestock and irrigation (in the case of Malawi), and farm labor (in the case of Liberia) as well as in durable assets such as housing. Yet many other outcomes are similarly-sized, for example, harvest gains are similar for the small as well as the large transfers.

We also note that in the setting that we study (and other similar contexts), households often face other constraints that may prevent them from making productive investments, such as limits in entrepreneurial ability (Banerjee et al. 2021a; Beaman et al. 2023; Maitra et al. 2017), missing markets for risk mitigation (Cole et al. 2017; Emerick et al. 2016; Ghosh and Vats 2023; Karlan et al. 2014), or, in remote contexts, poor access to markets, such as those for farm inputs (Aggarwal et al. 2022b; Cedrez et al. 2020; Minten et al. 2013). Therefore, one way to increase the efficacy of cash transfers may be to combine them with complementary "cash-plus" interventions. Since our study was set in an agrarian context with limited market access, we cross cut our treatment arms with an "input fair" treatment in Malawi,[31] which we describe in greater detail in our companion paper Aggarwal et al. (2024). Broadly, we find that the input fair treatment boosts the effect of cash-alone on input expenditures by 50%. While effective, market access is only one out of a large set of potential cash-plus interventions, such as entrepreneurial training and mentorship, insurance or access to savings devices. Testing and identifying the most effective of these may be a

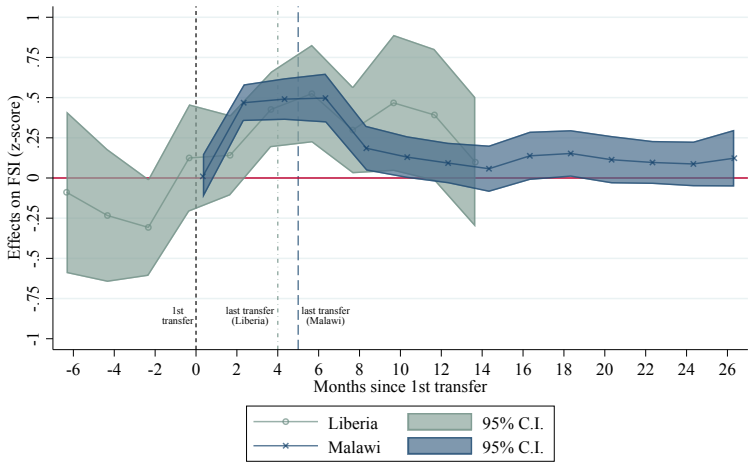
[30] See Kondylis and Loeser (2021) for a discussion on this subject, structured around a meta-analysis of the UCT and ultra-poor graduation literature.

[31] We had originally planned to conduct the input fair intervention at both our study sites, but we missed the relevant planting season in Liberia due to the pandemic.

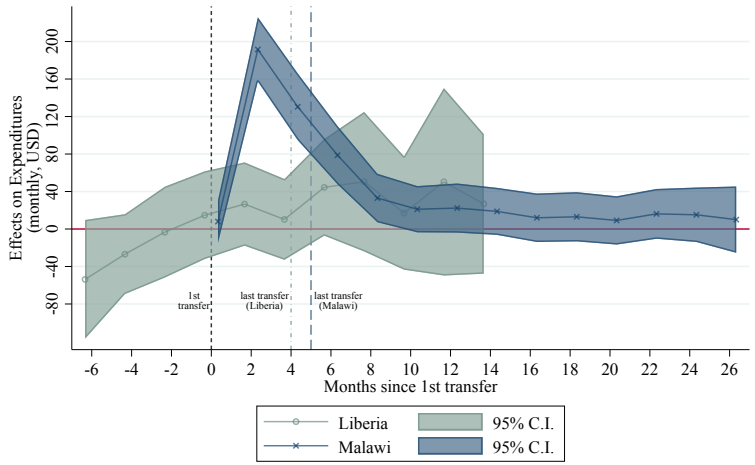
fruitful avenue for future research in this area.

Figure 1: Dynamic Effects of Cash on Food Security, Expenditures, Large Purchases, and Income

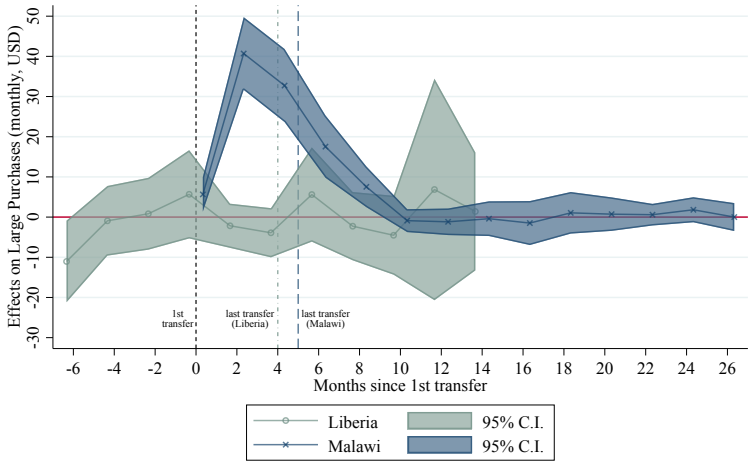
(a) Food Security Index[a]



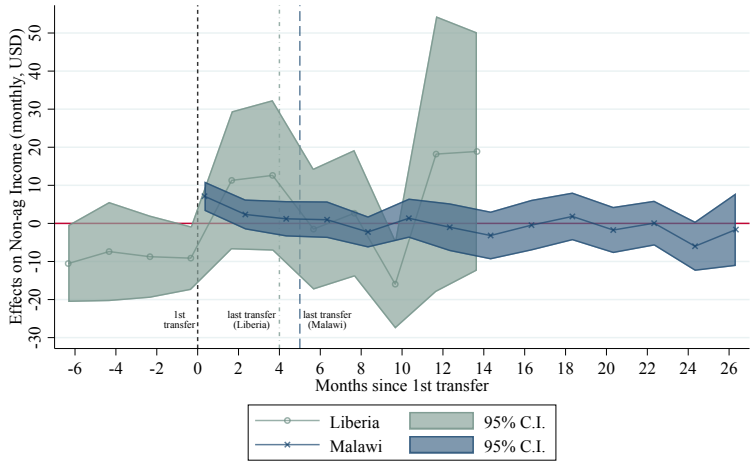
(b) Expenditures



(c) Large Purchases[b]



(d) Non-agricultural Income



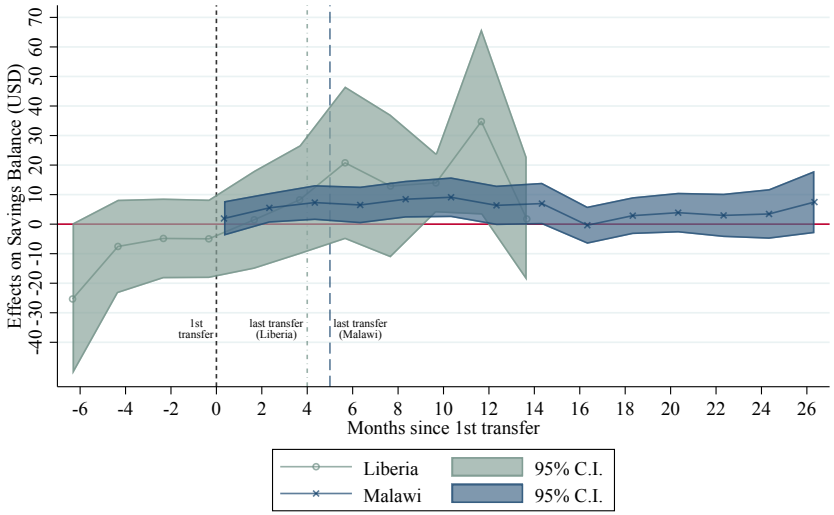
Note: Regressions include baseline measurement of outcome and strata fixed effects. Standard errors clustered at village level. First transfer for each treatment household was made across July-October 2019 for Malawi and March-September 2020 for Liberia (Wave 2). Sample includes only those households receiving "lump-sum" transfers (see text for details). Sample includes 596 households in Malawi and 253 in Liberia (Wave 2).

[a]Outcome variable is Food Security Index (FSI), a re-standardized z-score of HDDS, FCS, and HHS (negatively weighted) per Anderson (2008).

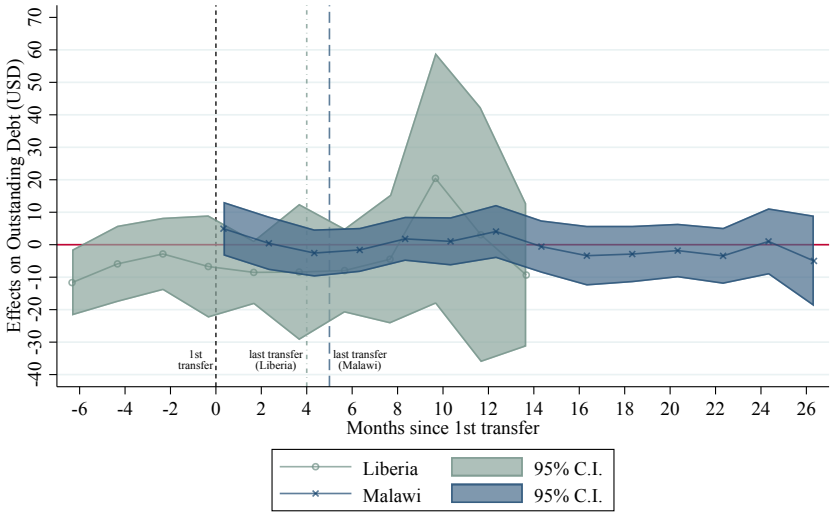
[b]Purchases of health preventatives (e.g. bednets, family planning, water purification), durables (e.g. furniture, electronics, livestock), and farm investments (e.g. farm tool, fertilizer/hybrid seeds).

Figure 2: Dynamic Effects of Cash on Interpersonal Transfers, Savings, and Debt

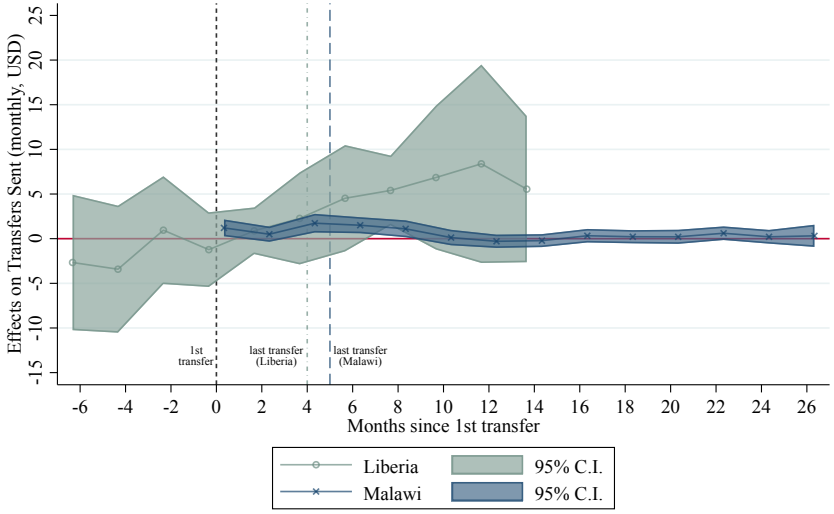
(a) Savings Balance



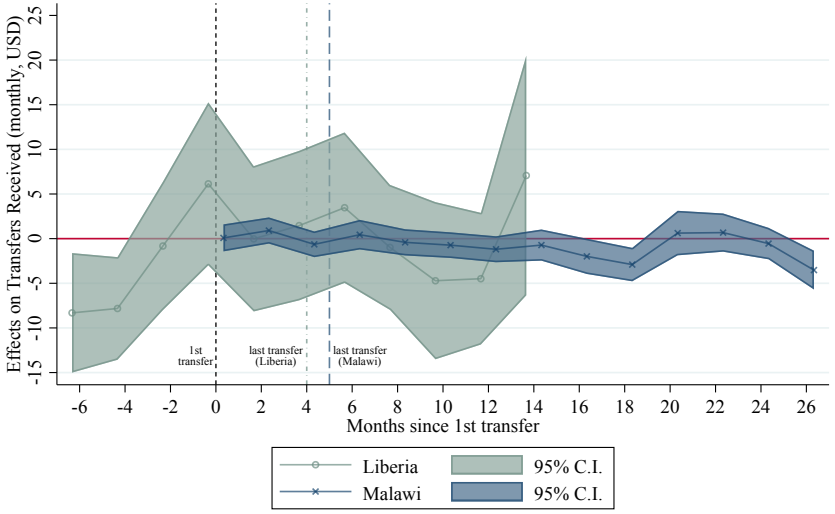
(b) Debt Amount



(c) Inter-personal Transfers Sent



(d) Inter-personal Transfers Received



Note: Data comes from phone surveys, and transfers are measured over the past month. Regressions include baseline measurement of outcome and strata fixed effects. Standard errors clustered at village level. First transfer for each treatment household was made across July-October 2019 for Malawi and March-September 2020 for Liberia (Wave 2). Sample includes only those households receiving "lump-sum" transfers (see text for details). Sample includes 596 households in Malawi and 253 in Liberia (Wave 2).

Table 1: Baseline Summary Statistics and Experimental Balance

	(1)	(2)	(3)	(4)	(5)	(6)
	Liberia			Malawi		
	Control Mean [SD]	p-value: pooled treatment = control	p-value: equality over 4 arms	Control Mean [SD]	p-value: pooled treatment = control	p-value: equality over 4 arms
Panel A. Demographics						
=1 if female	0.77	0.770	0.780	0.94	0.648	0.600
=1 if currently married or has partner	0.85	0.347	0.717	0.67	0.166	0.534
Age	39.23	0.329	0.636	40.65	0.439	0.873
	[13.92]			[15.05]		
Years of education	2.89	0.427	0.163	4.72	0.572	0.712
	[3.74]			[3.40]		
Number of household members	4.62	0.338	0.688	4.79	0.427	0.698
	[2.20]			[2.10]		
=1 if housing roof material is thatch	0.23	0.265	0.366	0.50	0.764	0.221
=1 if planted/harvested any crop (past season)	0.88	0.704	0.693	0.99	0.128	0.171
=1 if earns any non-agricultural income	0.50	0.830	0.450	0.47	0.733	0.522
=1 if operates own business	0.23	0.983	0.628	0.21	0.512	0.570
Panel B. Baseline measures of key outcomes						
Food security index (z-score, past year)	0.00	0.718	0.002	-0.00	0.462	0.762
	[1.00]			[0.99]		
Food expenditure (past month)	50.55	0.551	0.700	39.04	0.833	0.795
	[40.82]			[41.04]		
Total expenditure (past month)	120.14	0.485	0.632	92.35	0.978	0.952
	[94.35]			[86.74]		
Net value of durables, livestock, financial assets	254.26	0.463	0.577	251.47	0.373	0.784
	[513.86]			[524.84]		
Non-agricultural income (past month)	16.16	0.116	0.391	15.50	0.907	0.175
	[38.46]			[40.25]		
Observations		1,843			2,784	

Note: Columns 1 and 4 present the mean for the control groups; Columns 2 and 5 report the p-values for testing difference between the pooled cash treatment and control groups; Columns 3 and 6 report the p-values for testing difference across individual treatment arms by cash amounts (i.e. 250, 500, or 750 dollars) and the control group. Standard deviations are in square brackets in Columns 1 and 4 and standard errors clustered at village level in parentheses in Columns 2,3,5 and 6. Monetary outcomes are in USD PPP and Winsorized at the 99th percentile.

Table 2: Treatment Effects at Endline

	(1) Food Security Index[a] (past month)	(2) Total Expenditures (past month)	(3) Large Purchases (past month)	(4) Non-agricultural Income (past month)	(5) Savings Balance	(6) Debt Amount	(7) Inter-personal Transfers Sent (past month)	(8) Inter-personal Transfers Received (past month)
Panel A. Liberia								
Pooled cash treatment:								
Cash	0.29	14.36	1.14	4.10	20.70	0.28	-1.67	-1.13
	(0.06)	(5.49)	(0.80)	(4.05)	(9.08)	(2.89)	(1.03)	(1.63)
Individual treatments by cash amount:								
Cash 250 (β_1)	0.15	-5.61	-1.03	5.80	16.90	0.27	-3.20	-1.88
	(0.09)	(8.55)	(0.84)	(7.91)	(12.85)	(4.90)	(1.21)	(1.76)
Cash 500 (β_2)	0.18	26.79	3.19	5.71	23.29	0.44	-0.37	-2.06
	(0.08)	(7.36)	(1.54)	(6.21)	(12.27)	(3.64)	(1.28)	(1.64)
Cash 750 (β_3)	0.56	20.26	1.03	0.69	21.57	0.13	-1.59	0.63
	(0.09)	(8.87)	(1.10)	(5.19)	(17.45)	(4.86)	(1.47)	(3.38)
Control mean	0.00	141.08	3.40	21.04	48.70	13.66	5.18	6.83
Control SD	1.00	109.97	12.45	71.25	168.76	51.79	29.41	37.34
p-values:								
$\beta_1 = \beta_2 = \beta_3$	0.001	0.007	0.023	0.757	0.925	0.998	0.102	0.731
$\beta_1 = \frac{1}{2}\beta_2 = \frac{1}{3}\beta_3$	0.128	0.064	0.048	0.614	0.732	0.997	0.024	0.475
Observations	1,843	1,843	1,843	1,843	1,843	1,843	1,843	1,843
Panel B. Malawi								
Pooled cash treatment:								
Cash	0.11	2.00	0.12	0.38	6.07	-2.22	0.10	0.57
	(0.05)	(3.04)	(0.34)	(2.81)	(2.89)	(3.20)	(0.22)	(0.67)
Individual treatments by cash amount:								
Cash 250 (β_1)	0.06	0.69	0.10	4.62	2.69	-1.10	0.16	0.26
	(0.06)	(3.66)	(0.46)	(4.10)	(4.72)	(3.77)	(0.27)	(0.84)
Cash 500 (β_2)	0.12	0.33	0.07	-4.27	-1.42	-6.48	-0.17	0.38
	(0.06)	(3.96)	(0.45)	(3.31)	(4.36)	(3.45)	(0.23)	(0.83)
Cash 750 (β_3)	0.16	4.97	0.17	0.77	16.89	0.90	0.31	1.06
	(0.07)	(4.32)	(0.41)	(3.59)	(7.81)	(4.34)	(0.29)	(0.94)
Control mean	0.00	60.16	2.36	26.92	18.01	21.43	1.21	2.89
Control SD	1.00	61.80	7.43	58.62	47.11	56.41	5.28	12.36
p-values:								
$\beta_1 = \beta_2 = \beta_3$	0.265	0.561	0.975	0.081	0.140	0.118	0.127	0.683
$\beta_1 = \frac{1}{2}\beta_2 = \frac{1}{3}\beta_3$	0.982	0.751	0.987	0.087	0.087	0.087	0.132	0.924
Observations	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784

Note: The endline was conducted about 18-22 months after first transfers were received in Liberia and 21-25 months in Malawi (see Figure A1 for more detail). Regressions are ANCOVA (include baseline measurement of the dependent variable) and strata fixed effects; for Malawi, regressions also include treatment indicators for market access and cash times market access. Results in the sub-panels on pooled and individual treatments are from separate regressions. Monetary outcomes are in USD PPP and winsorized at the 99th percentile. Standard errors clustered at the village level in parentheses.

[a] Food Security Index is standardized z-score of HDDS, FCS, HHS (negatively weighted), and FIES (negatively weighted), using inverse covariance weighting (Anderson 2008) relative to the control mean and SD in each country.

Table 3: Agricultural Investment and Productivity

	(1) Value of harvest (USD)	(2) Number of crops planted/ harvested	(3) Investment in irrigation (USD)	(4) Input purchase value (USD)	(5) Farm tools value (USD)	(6) Livestock value (USD)	(7) Hired labor (USD)	(8) Land under cultivation (acre)
Panel A. Liberia								
Pooled cash treatment:								
Cash	133.41	0.34	-0.38	4.00	6.86	25.86	49.08	-0.20
	(44.05)	(0.10)	(0.60)	(4.69)	(2.31)	(12.81)	(16.16)	(0.97)
Individual treatments by cash amount:								
Cash 250 (β_1)	213.99	0.32	-0.82	-2.48	6.18	20.14	19.77	1.72
	(91.88)	(0.17)	(0.58)	(4.62)	(3.90)	(20.13)	(11.89)	(2.44)
Cash 500 (β_2)	55.20	0.34	-0.03	3.97	5.53	34.50	35.49	-1.36
	(51.82)	(0.13)	(0.94)	(6.05)	(3.45)	(20.14)	(18.73)	(0.58)
Cash 750 (β_3)	140.47	0.35	-0.34	10.37	8.98	21.98	92.57	-0.79
	(66.75)	(0.16)	(0.65)	(9.77)	(3.68)	(20.60)	(38.09)	(0.93)
Control mean	266.01	1.83	0.95	18.12	29.67	99.50	81.38	1.72
Control SD	590.66	1.69	19.66	69.06	35.84	243.65	228.79	18.97
p-values:								
$\beta_1 = \beta_2 = \beta_3$	0.247	0.990	0.410	0.307	0.752	0.847	0.144	0.350
$\beta_1 = \frac{1}{2}\beta_2 = \frac{1}{3}\beta_3$	0.136	0.451	0.244	0.486	0.702	0.621	0.670	0.218
Observations	1,843	1,843	1,843	1,843	1,843	1,843	1,843	1,843
Panel B. Malawi								
Pooled cash treatment:								
Cash	21.00	0.15	64.16	13.08	1.52	40.46	5.06	-0.68
	(10.63)	(0.05)	(31.31)	(2.93)	(1.56)	(16.37)	(4.28)	(0.47)
Individual treatments by cash amount:								
Cash 250 (β_1)	25.78	0.13	35.18	5.26	-0.94	2.24	0.17	-0.82
	(13.91)	(0.07)	(35.20)	(3.31)	(1.93)	(18.05)	(5.40)	(0.55)
Cash 500 (β_2)	5.64	0.10	67.94	16.42	2.11	61.64	6.31	-0.95
	(12.33)	(0.07)	(39.03)	(3.82)	(1.75)	(21.29)	(5.24)	(0.48)
Cash 750 (β_3)	31.53	0.21	89.34	17.56	3.40	57.57	8.71	-0.26
	(15.51)	(0.07)	(46.53)	(3.82)	(2.36)	(23.44)	(5.73)	(0.63)
Control mean	111.23	2.23	113.72	52.49	27.27	139.40	19.27	1.96
Control SD	172.81	1.02	470.27	55.24	29.18	345.75	88.83	8.22
p-values:								
$\beta_1 = \beta_2 = \beta_3$	0.214	0.282	0.467	0.001	0.159	0.006	0.338	0.472
$\beta_1 = \frac{1}{2}\beta_2 = \frac{1}{3}\beta_3$	0.161	0.421	0.973	0.370	0.501	0.179	0.830	0.162
Observations	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784

Note: The endline was conducted about 18-22 months after first transfers were received in Liberia and 21-25 months in Malawi. Regressions include baseline measurement and strata fixed effects; for Malawi, regressions also include treatment indicators for market access and cash times market access. Results in the sub-panels on pooled and individual treatments are from separate regressions. Monetary outcomes are in USD PPP and winsorized at the 99th percentile. Standard errors clustered at the village level in parentheses.

Table 4: Non-agricultural Investment and Enterprise Income

	(1) =1 if started enterprise since baseline	(2) Self-own enterprise capital value (at endline)	(3) Enterprise income	(4) Housing & durables value (at endline)	(5) Education expenditures[a] (annualized)	(6) Health expenditures[b] (annualized)
Panel A. Liberia						
Pooled cash treatment:						
Cash	0.03	7.91	3.33	197.03	27.40	5.17
	(0.02)	(4.78)	(2.85)	(93.09)	(16.00)	(4.16)
Individual treatments by cash amount:						
Cash 250 (β_1)	0.02	20.39	7.85	19.69	-11.53	0.03
	(0.02)	(9.54)	(6.33)	(113.16)	(22.39)	(4.81)
Cash 500 (β_2)	0.03	9.21	3.58	287.78	64.24	9.99
	(0.02)	(5.46)	(3.81)	(156.90)	(27.15)	(6.92)
Cash 750 (β_3)	0.04	-5.73	-1.35	271.24	24.20	4.90
	(0.03)	(6.49)	(2.32)	(172.91)	(25.00)	(7.03)
Control mean	0.08	16.82	7.34	823.92	128.80	27.98
Control SD	0.27	85.50	60.86	1,667.81	251.58	70.32
p-values:						
$\beta_1 = \beta_2 = \beta_3$	0.797	0.034	0.197	0.247	0.081	0.429
$\beta_1 = \frac{1}{2}\beta_2 = \frac{1}{3}\beta_3$	0.974	0.015	0.220	0.638	0.148	0.598
Observations	1,843	1,843	1,843	1,843	1,332	1,843
Panel B. Malawi						
Pooled cash treatment:						
Cash	-0.02	-4.02	-1.61	323.77	-7.40	-1.66
	(0.01)	(2.49)	(1.51)	(127.53)	(6.45)	(1.10)
Individual treatments by cash amount:						
Cash 250 (β_1)	0.00	-5.17	-1.65	77.43	-7.28	-1.76
	(0.02)	(2.79)	(1.79)	(156.37)	(8.90)	(1.40)
Cash 500 (β_2)	-0.03	-5.37	-4.25	406.50	-12.92	-0.49
	(0.02)	(3.30)	(1.85)	(186.32)	(7.50)	(1.43)
Cash 750 (β_3)	-0.01	-1.52	1.05	487.89	-2.19	-2.71
	(0.02)	(3.20)	(2.41)	(146.28)	(8.04)	(1.23)
Control mean	0.10	14.39	6.77	1,621.78	61.86	7.11
Control SD	0.30	60.03	34.21	2,690.94	130.01	22.80
p-values:						
$\beta_1 = \beta_2 = \beta_3$	0.165	0.453	0.090	0.038	0.328	0.287
$\beta_1 = \frac{1}{2}\beta_2 = \frac{1}{3}\beta_3$	0.220	0.138	0.057	0.700	0.179	0.360
Observations	2,784	2,784	2,784	2,784	2,158	2,784

Note: All outcomes are in USD PPP and Winsorized at the 99th percentile. The endline was conducted about 18-22 months after first transfers were received in Liberia and 21-25 months in Malawi. Regressions include baseline measurement and strata fixed effects; for Malawi, regressions also include treatment indicators for market access and cash times market access. Results in the sub-panels on pooled and individual treatments are from separate regressions. Standard errors clustered at the village level in parentheses.

[a] Sample restricted to households with any school-aged children (age 6-18).

[b] Includes investments in health preventatives.

Table 5: Labor Supply

	(1)	(2)	(3)	(4)
	Number of labor hours supplied on (past month):			
	Casual labor	Own farm	Own enterprise	Other job
Panel A. Liberia				
Pooled cash treatment:				
Cash	-7.54	-0.04	-0.17	0.64
	(1.79)	(3.64)	(2.00)	(0.79)
Individual treatments by cash amount:				
Cash 250 (β_1)	-5.29	1.03	1.13	-1.24
	(2.92)	(5.77)	(3.46)	(0.63)
Cash 500 (β_2)	-8.28	-2.93	-2.72	1.29
	(2.40)	(4.89)	(2.44)	(1.29)
Cash 750 (β_3)	-8.94	2.07	1.37	1.78
	(2.04)	(5.30)	(3.10)	(1.55)
Control mean	16.98	43.50	9.09	1.98
Control SD	39.93	70.13	38.66	14.84
p-values:				
$\beta_1 = \beta_2 = \beta_3$	0.486	0.709	0.422	0.044
$\beta_1 = \frac{1}{2}\beta_2 = \frac{1}{3}\beta_3$	0.472	0.707	0.408	0.026
Observations	1,843	1,843	1,843	1,843
Panel B. Malawi				
Pooled cash treatment:				
Cash	0.45	1.08	0.79	0.19
	(2.37)	(0.92)	(1.29)	(1.17)
Individual treatments by cash amount:				
Cash 250 (β_1)	2.13	-0.45	2.21	1.33
	(2.95)	(0.98)	(1.79)	(1.49)
Cash 500 (β_2)	-0.23	2.00	0.34	0.01
	(2.90)	(1.36)	(1.61)	(1.57)
Cash 750 (β_3)	-0.55	1.69	-0.17	-0.78
	(2.95)	(1.27)	(1.65)	(1.37)
Control mean	21.90	9.85	6.21	3.69
Control SD	47.52	19.48	29.29	25.84
p-values:				
$\beta_1 = \beta_2 = \beta_3$	0.623	0.089	0.465	0.354
$\beta_1 = \frac{1}{2}\beta_2 = \frac{1}{3}\beta_3$	0.665	0.294	0.402	0.487
Observations	2,784	2,784	2,784	2,784

Note: Labor supply hours are summed up between female and male household heads. Regressions include baseline measurement and strata fixed effects; for Malawi, regressions also include treatment indicators for market access and cash times market access. Results in the sub-panels on pooled and individual treatments are from separate regressions. Standard errors clustered at the village level in parentheses. Nonbinary outcomes are Winsorized at the 99th percentile.

Table 6: Intimate Partner Violence and Psychological Well Being

	(1) Emotional IPV	(2) Physical IPV	(3) Sexual IPV	(4) Any IPV	(5) Depression (PHQ-9) Index	(6) Happiness Index[a]
Panel A. Liberia						
Pooled cash treatment:						
Cash	-0.10	-0.04	-0.04	-0.08	-0.76	0.38
	(0.03)	(0.03)	(0.02)	(0.04)	(0.27)	(0.05)
Individual treatments by cash amount:						
Cash 250 (β_1)	-0.06	-0.02	-0.03	-0.04	-0.24	0.26
	(0.05)	(0.04)	(0.02)	(0.06)	(0.47)	(0.08)
Cash 500 (β_2)	-0.10	-0.05	-0.04	-0.10	-1.15	0.40
	(0.05)	(0.04)	(0.02)	(0.05)	(0.36)	(0.08)
Cash 750 (β_3)	-0.14	-0.04	-0.06	-0.10	-0.87	0.47
	(0.05)	(0.05)	(0.02)	(0.06)	(0.42)	(0.07)
Control mean	0.34	0.23	0.10	0.38	4.76	0.00
Control SD	0.48	0.42	0.31	0.49	4.44	1.00
p-values:						
$\beta_1 = \beta_2 = \beta_3$	0.551	0.802	0.568	0.659	0.259	0.104
$\beta_1 = \frac{1}{2}\beta_2 = \frac{1}{3}\beta_3$	0.972	0.921	0.787	0.844	0.363	0.315
Observations	867	867	867	867	1,298	1,843
Panel B. Malawi						
Pooled cash treatment:						
Cash	0.01	-0.00	0.00	0.01	-0.15	0.10
	(0.01)	(0.01)	(0.01)	(0.02)	(0.20)	(0.05)
Individual treatments by cash amount:						
Cash 250 (β_1)	0.02	-0.00	0.01	0.02	-0.02	0.04
	(0.02)	(0.01)	(0.01)	(0.02)	(0.27)	(0.06)
Cash 500 (β_2)	0.00	0.01	0.01	0.02	-0.02	0.14
	(0.02)	(0.01)	(0.01)	(0.02)	(0.25)	(0.07)
Cash 750 (β_3)	0.00	-0.01	-0.01	-0.00	-0.42	0.12
	(0.02)	(0.01)	(0.01)	(0.02)	(0.25)	(0.07)
Control mean	0.14	0.08	0.07	0.18	4.56	0.00
Control SD	0.35	0.27	0.26	0.39	4.22	1.00
p-values:						
$\beta_1 = \beta_2 = \beta_3$	0.667	0.501	0.161	0.589	0.252	0.294
$\beta_1 = \frac{1}{2}\beta_2 = \frac{1}{3}\beta_3$	0.611	0.556	0.266	0.495	0.535	0.634
Observations	1,829	1,829	1,829	1,829	2,733	2,784

Note: IPV is measured over the past year, while psychological well-being is over the past 2 weeks. For IPV, IPV was measured using face-to-face intervewing. Regressions include baseline measurement and strata fixed effects; for Malawi, regressions also include treatment indicators for market access and cash times market access. Results in the sub-panels on pooled and individual treatments are from separate regressions. Standard errors clustered at the village level in parentheses.

[a] Responses to World Values Survey happiness questions are standardized using inverse covariance weighting (Anderson 2008).

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Appendix A. Additional Results

Figure A1: Timeline of Cash Transfer Disbursements and Survey Activities

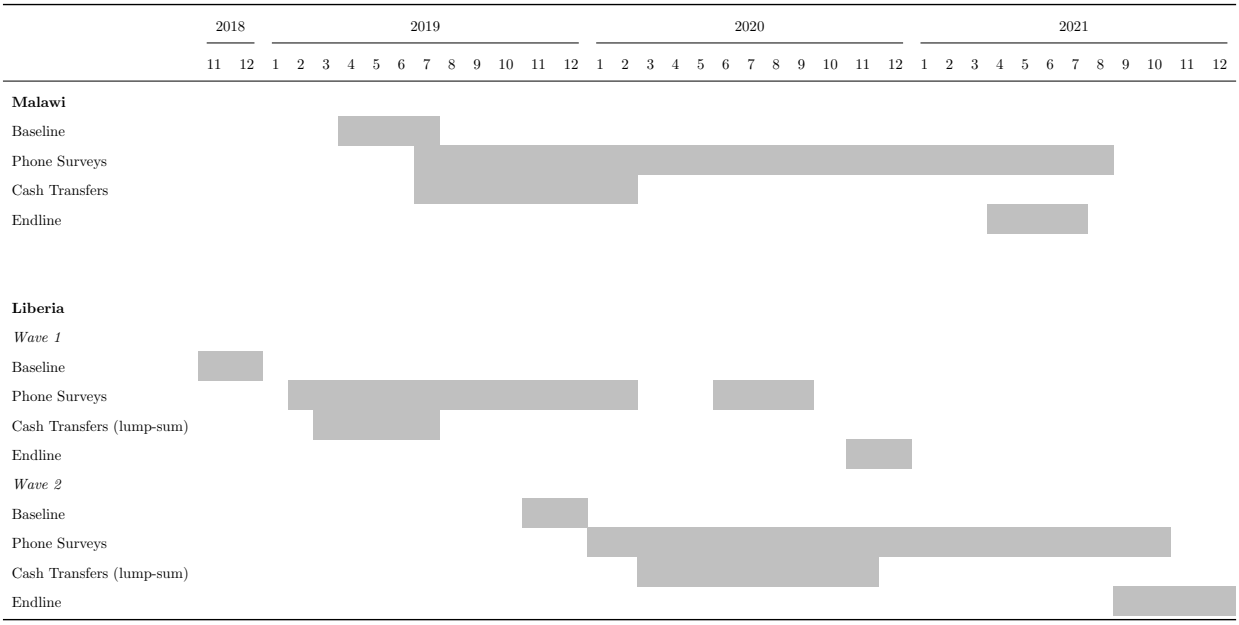
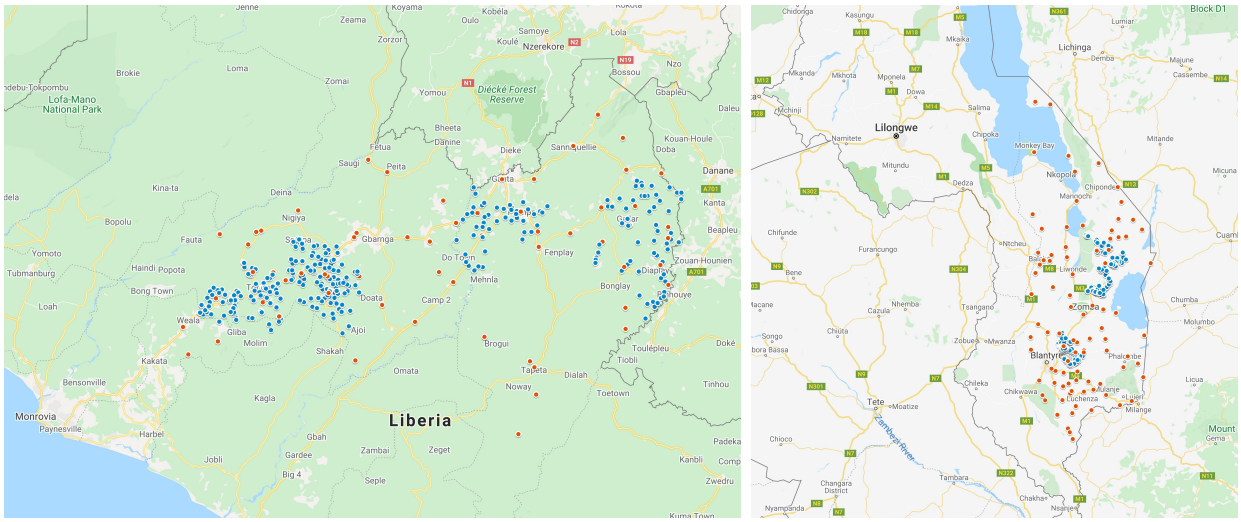


Figure A2: Map of Study Villages and Markets in Liberia and Malawi

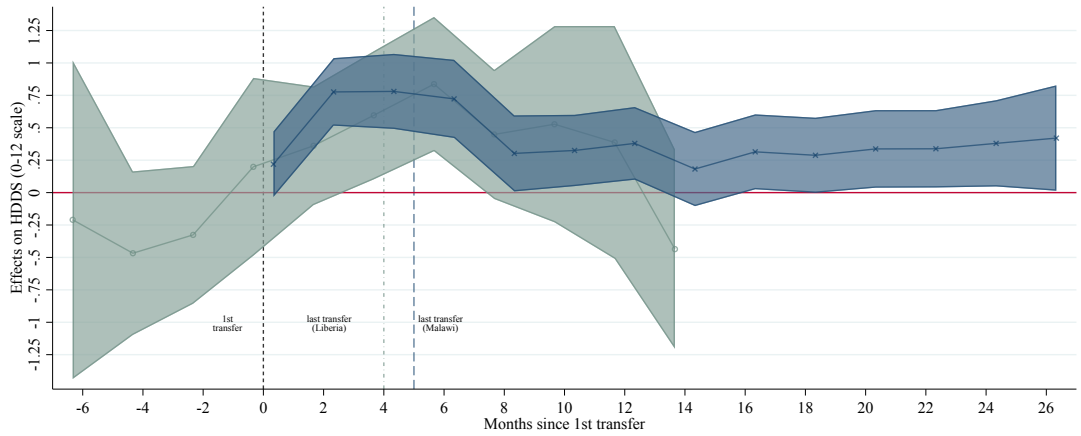
(a) Liberia (b) Malawi



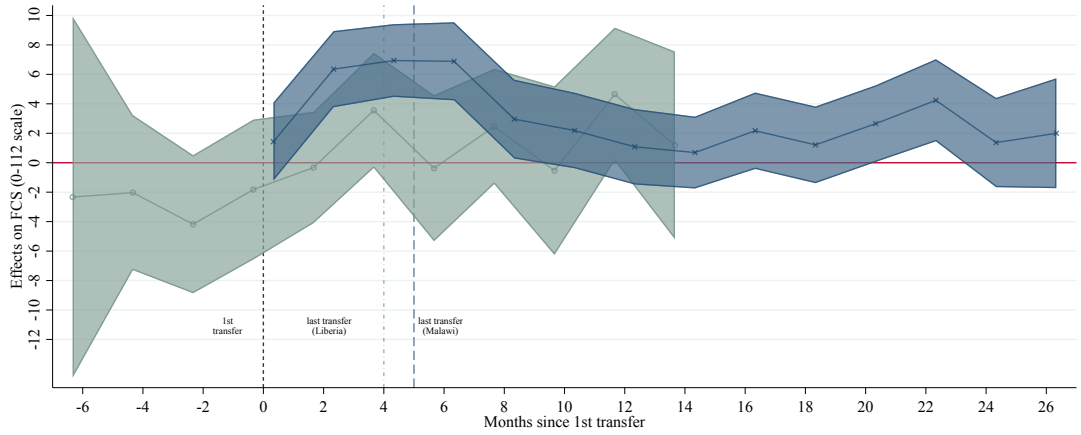
Note: Blue dots refer to villages, and orange dots markets. For Liberia, there are 300 villages and 80 markets. For Malawi, there are 300 villages and 95 markets.

Figure A3: Effects on Individual Components of Food Security Index (HDDS, FCS, and HHS)

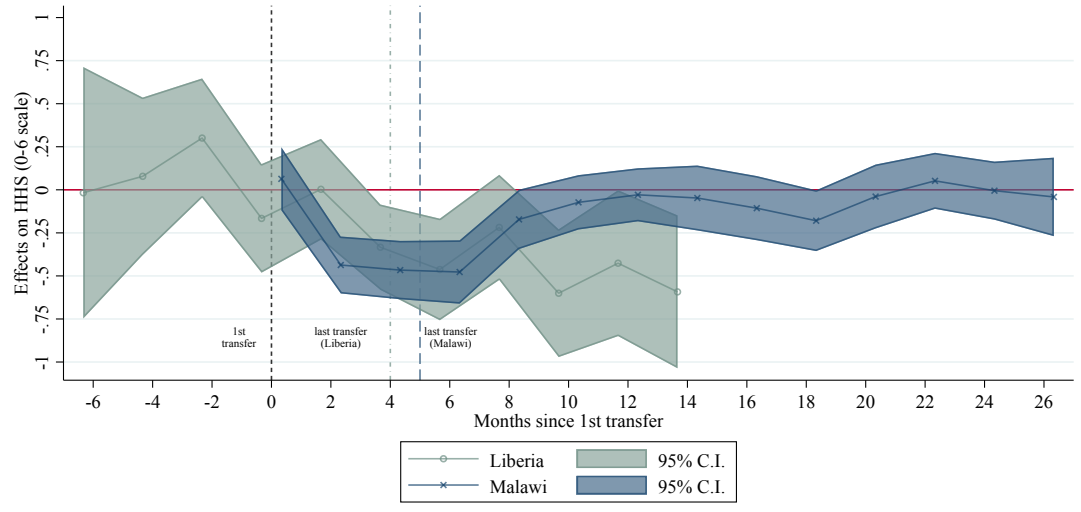
(a) Household Dietary Diversity Score (baseline control mean = 5.9, 5.4)



(b) Food Consumption Score (baseline control mean = 51.3, 46.3)

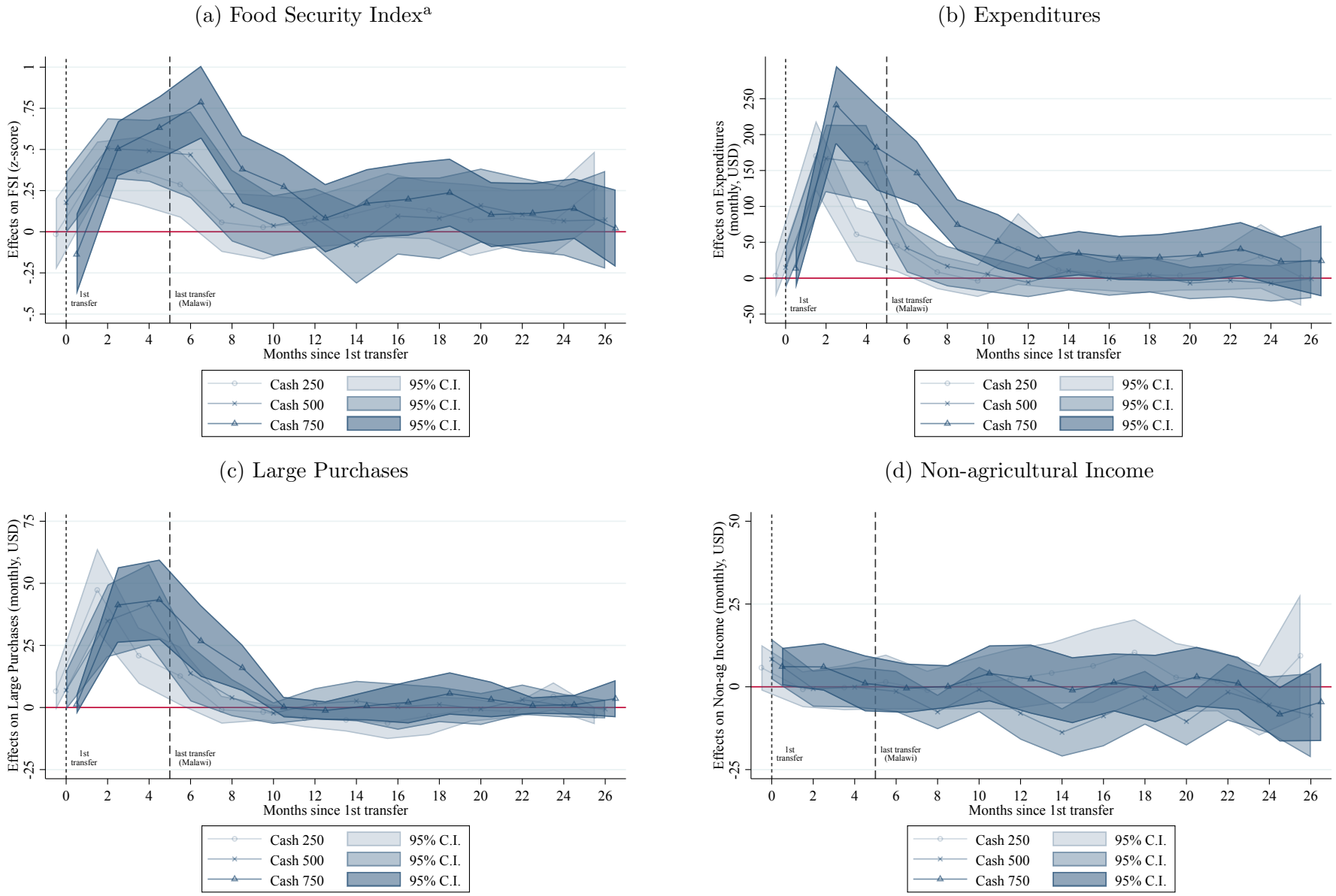


(c) Household Hunger Scale (baseline control mean = 0.9, 1.2)



Note: Regressions include baseline measurement and strata fixed effects; for Malawi, regressions also include treatment indicators for market access and cash times market access. Standard errors are clustered at village level. First transfer for each treatment household was made across July-October 2019 for Malawi and March-September 2020 for Liberia (Wave 2). Sample includes 596 households in Malawi and 253 in Liberia (Wave 2).

Figure A4: Effects of Different Grant Sizes on Dynamics of Main Outcomes



Note: Sample includes data from Malawi only (596 households). Regressions include baseline measurement of outcome, strata fixed effects, and treatment indicators for market access and cash times market access. Standard errors are clustered at village level. First transfer for each treatment household was made during July-October 2019 for Malawi.
[a]Outcome variable is Food Security Index (FSI), a re-standardized z-score of HDDS, FCS, and HHS (negatively weighted) per Anderson (2008).

Table A1: Endline Survey Attrition

	(1)	(2)	(3)	(4)
	=1 if completed endline survey		=1 if completed IPV survey at endline[a]	
	Liberia	Malawi	Liberia	Malawi
Cash	-0.00	0.01	0.02	0.05
	(0.01)	(0.01)	(0.02)	(0.02)
Control mean	0.96	0.94	0.69	0.63
Overall mean	0.96	0.95	0.70	0.66
Observations	2,715	2,944	2,595	2,784

Note: Regressions include strata fixed effects. Standard errors clustered at village level in parentheses.
[a] Sample restricted to female respondents.

Table A2: Phone Survey Attrition

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	=1 if completed survey in following survey round														
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	=1 if ≥ 1R	% of rounds
Panel A. Liberia (Wave 2)															
Cash	-0.01	-0.05	-0.00	-0.05	-0.04	0.01	-0.07							-0.07	-0.04
	(0.05)	(0.06)	(0.05)	(0.06)	(0.06)	(0.06)	(0.07)							(0.04)	(0.04)
Control mean	0.61	0.70	0.71	0.72	0.64	0.62	0.57							0.90	0.67
Overall mean	0.61	0.68	0.71	0.71	0.63	0.62	0.55							0.88	0.66
Observations	287	287	287	287	287	287	287							287	287
Panel B. Malawi															
Cash	0.01	-0.03	-0.03	0.01	-0.03	-0.02	-0.04	-0.03	-0.02	0.04	-0.00	-0.00	-0.00		-0.01
	(0.01)	(0.02)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)		(0.02)
Control mean	0.97	0.95	0.87	0.91	0.93	0.95	0.96	0.94	0.89	0.84	0.86	0.80	0.62	1.00	0.88
Overall mean	0.97	0.94	0.85	0.91	0.92	0.93	0.94	0.93	0.87	0.86	0.86	0.80	0.61	1.00	0.88
Observations	596	596	596	596	596	596	596	596	596	596	596	596	596	596	596

Note: Each survey round is two months, where half of the sample is called in the even month and the other in the odd month. Regressions include strata fixed effects. Standard errors clustered at village level in parentheses.

Table A3: Correlates of participation in phone surveys

	(1)	(2)
	% of HHPS rounds reached	
	Liberia	Malawi
	Coefficient (standard error)	Coefficient (standard error)
Panel A. Demographics		
=1 if female	-0.04	-0.05
	(0.08)	(0.06)
=1 if currently married or has partner	-0.13	0.03
	(0.06)	(0.11)
Age	5.76	9.02
	(2.72)	(4.08)
Years of education	0.70	2.37
	(0.68)	(0.82)
Number of household members	-0.31	0.00
	(0.41)	(0.51)
=1 if housing roof material is thatch	-0.17	-0.55
	(0.08)	(0.10)
=1 if planted/harvested any crop (past season)	0.03	0.01
	(0.04)	(0.02)
=1 if earns any non-agricultural income	-0.01	-0.07
	(0.09)	(0.12)
=1 if operates own business	-0.02	0.11
	(0.08)	(0.11)
Panel B. Baseline measures of key outcomes		
Food security index (z-score, past year)	0.06	0.38
	(0.17)	(0.21)
Food expenditure (past month)	14.67	11.44
	(7.15)	(8.59)
Total expenditure (past month)	41.84	43.06
	(16.05)	(17.34)
Net value of durables, livestock, financial assets	133.55	326.13
	(79.68)	(122.84)
Non-agricultural income (past month)	4.40	-3.92
	(7.05)	(8.28)
Observations	287	596

Note: Each cell reports the coefficient and standard errors in parentheses for a bivariate regression of each baseline characteristic and the percentage of household phone survey (HHPS) rounds reached. Standard errors clustered at village level in parentheses. Monetary outcomes are in USD PPP and winsorized at the 99th percentile.

Table A4: Treatment effects from pooled phone survey rounds

	(1) Food Security Index[a] (past month)	(2) Total Expenditures (past month)	(3) Large Purchases (past month)	(4) Non-agricultural Income (past month)	(5) Savings Balance	(6) Debt Amount	(7) Inter-personal Transfers Sent (past month)	(8) Inter-personal Transfers Received (past month)
Panel A. Liberia								
Pooled cash treatment:								
Cash	0.23	36.23	1.45	-2.39	6.16	-5.94	2.69	1.11
	(0.10)	(18.70)	(3.25)	(5.47)	(4.89)	(5.16)	(1.59)	(2.97)
Individual treatments by cash amount:								
Cash 250	-0.07	-33.43	-10.30	-6.06	0.36	-4.35	-1.70	-2.55
	(0.13)	(25.44)	(3.74)	(8.65)	(4.81)	(5.44)	(2.49)	(4.09)
Cash 500	0.36	41.29	2.50	2.78	11.34	-9.52	3.14	2.81
	(0.14)	(22.77)	(3.97)	(8.13)	(6.29)	(6.69)	(2.05)	(4.24)
Cash 750	0.27	69.30	6.94	-5.78	3.96	-3.03	4.67	1.36
	(0.14)	(28.95)	(4.97)	(6.75)	(6.78)	(6.75)	(2.37)	(3.70)
Control mean	0.21	196.19	18.23	26.36	13.49	17.23	7.46	12.69
Control SD	0.88	144.54	32.13	46.21	47.85	53.76	16.62	24.92
p-values:								
$\beta_1 = \beta_2 = \beta_3$	0.020	0.003	0.000	0.507	0.206	0.659	0.062	0.463
$\beta_1 = \frac{1}{2}\beta_2 = \frac{1}{3}\beta_3$	0.120	0.049	0.001	0.462	0.357	0.466	0.328	0.567
No. of respondents	253	253	253	253	253	253	253	253
Observations	1,472	1,472	1,472	1,472	1,472	1,472	1,472	1,472
Panel B. Malawi								
Pooled cash treatment:								
Cash	0.18	34.38	7.21	-2.03	4.19	-2.09	0.39	-0.99
	(0.05)	(6.41)	(1.58)	(2.09)	(2.65)	(2.95)	(0.23)	(0.60)
Individual treatments by cash amount:								
Cash 250	0.10	27.83	4.43	1.05	2.11	1.04	0.13	-1.12
	(0.06)	(8.66)	(1.79)	(2.90)	(3.73)	(4.13)	(0.33)	(0.73)
Cash 500	0.21	28.54	6.98	-5.48	3.41	-4.05	0.05	-0.66
	(0.07)	(8.72)	(2.32)	(2.25)	(3.16)	(3.42)	(0.29)	(0.85)
Cash 750	0.23	47.28	10.33	-1.75	7.15	-3.39	0.99	-1.19
	(0.06)	(7.70)	(1.97)	(2.96)	(3.75)	(3.57)	(0.38)	(0.76)
Control mean	0.07	110.45	15.06	24.98	18.75	27.22	1.35	3.01
Control SD	0.91	105.82	29.42	34.58	36.49	50.52	4.97	11.55
p-values:								
$\beta_1 = \beta_2 = \beta_3$	0.065	0.057	0.023	0.070	0.485	0.434	0.085	0.856
$\beta_1 = \frac{1}{2}\beta_2 = \frac{1}{3}\beta_3$	0.753	0.249	0.827	0.084	0.912	0.664	0.231	0.474
No. of respondents	596	596	596	596	596	596	596	596
Observations	6,781	6,784	6,784	6,784	6,784	6,784	6,784	6,784

Note: Regressions include all observations collected from the phone surveys. Regressions include baseline measurement and strata fixed effects; for Malawi, regressions also include treatment indicators for market access and cash times market access. Results in the sub-panels on pooled and individual treatments are from separate regressions. Monetary outcomes are in USD PPP and winsorized at the 99th percentile. Standard errors clustered at the village level in parentheses.

[a] Food Security Index is standardized z-score of HDDS, FCS, and HHS (negatively weighted), using inverse covariance weighting (Anderson 2008) relative to the control mean and SD in each country at baseline.

Table A5: Cross-sectional Correlation between Agricultural Inputs and Output

	(1)	(2)
	Total harvest value (USD)	
	Liberia	Malawi
Number of crops	87.94	25.01
	(11.53)	(6.10)
Investment in irrigation (USD)	1.23	-0.00
	(0.62)	(0.01)
Input purchase value (USD)	0.99	0.35
	(0.53)	(0.18)
Farm tools value (USD)	1.56	0.58
	(0.71)	(0.26)
Livestock value (USD)	0.19	0.03
	(0.09)	(0.02)
Hired labor (USD)	0.41	0.21
	(0.16)	(0.16)
Land under cultivation	0.44	1.59
	(1.00)	(0.94)
Overall mean	266.01	111.23
Overall SD	590.66	172.81
R-squared	0.182	0.114
Observations	1,299	1,377

Note: Control group only. All outcomes are in USD PPP and winsorized at the 99th percentile. Standard errors clustered at the village level in parentheses.

Table A6: Effects on Educational Outcomes

	(1)	(2)	(3)	(4)
	Proportion of children enrolled	Missed school days (past year)		Proportion of school days attended (past week)
		for any reason	due to lack of money	
Panel A. Liberia				
Pooled cash treatment:				
Cash	0.10	-3.83	-1.46	0.06
	(0.03)	(2.46)	(0.78)	(0.04)
Individual treatments by cash amount:				
Cash 250 (β_1)	0.00	-7.90	-2.71	0.04
	(0.04)	(2.03)	(0.58)	(0.07)
Cash 500 (β_2)	0.12	-0.53	-0.67	0.07
	(0.04)	(3.57)	(1.10)	(0.04)
Cash 750 (β_3)	0.16	-3.56	-1.14	0.08
	(0.04)	(4.86)	(1.60)	(0.04)
Control mean	0.52	12.24	3.43	0.89
Control SD	0.45	43.64	14.12	0.28
p-values:				
$\beta_1 = \beta_2 = \beta_3$	0.010	0.086	0.098	0.846
$\beta_1 = \frac{1}{2}\beta_2 = \frac{1}{3}\beta_3$	0.476	0.001	0.000	0.891
Observations	1,332	1,334	1,334	157
Panel B. Malawi				
Pooled cash treatment:				
Cash	-0.01	-1.68	-0.53	0.02
	(0.01)	(0.74)	(0.21)	(0.01)
Individual treatments by cash amount:				
Cash 250 (β_1)	-0.02	-1.32	-0.30	0.04
	(0.01)	(1.06)	(0.27)	(0.01)
Cash 500 (β_2)	-0.01	-2.08	-0.67	0.00
	(0.01)	(0.85)	(0.22)	(0.02)
Cash 750 (β_3)	-0.02	-1.65	-0.62	0.03
	(0.01)	(0.84)	(0.23)	(0.01)
Control mean	0.93	7.28	0.99	0.91
Control SD	0.20	13.11	4.14	0.22
p-values:				
$\beta_1 = \beta_2 = \beta_3$	0.821	0.737	0.233	0.073
$\beta_1 = \frac{1}{2}\beta_2 = \frac{1}{3}\beta_3$	0.600	0.381	0.216	0.015
Observations	2,158	2,158	2,158	1,757

Note: Sample restricted to households with any school-aged children (age 6-18). Regressions include baseline measurement and strata fixed effects; for Malawi, regressions also include treatment indicators for market access and cash times market access. Results in the sub-panels on pooled and individual treatments are from separate regressions. Standard errors clustered at the village level in parentheses. Non-binary outcomes are winsorized at the 99th percentile.

Table A7: Heterogeneity by baseline enterprise ownership

	(1) Capital value	(2) Income
Panel A. Liberia		
Cash	7.41	2.98
	(3.89)	(3.30)
Cash × Enterprise	2.36	1.96
	(17.09)	(7.06)
Enterprise at baseline	10.32	4.84
	(8.32)	(3.63)
No cash × no enterprise: mean	7.91	6.01
No cash × no enterprise: SD	53.43	65.68
Observations	1,843	1,843
Panel B. Malawi		
Cash	-0.98	-2.23
	(2.24)	(1.40)
Cash × Enterprise	-13.10	3.45
	(6.86)	(4.88)
Enterprise at baseline	17.14	5.24
	(6.01)	(5.18)
No cash × no enterprise: mean	7.65	3.71
No cash × no enterprise: SD	40.33	22.90
Observations	2,784	2,784

Note: All outcomes are in USD PPP and Winsorized at the 99th percentile. The endline was conducted about 18-22 months after first transfers were received in Liberia and 21-25 months in Malawi. Regressions include baseline measurement and strata fixed effects; for Malawi, regressions also include treatment indicators for market access and cash plus market access. Standard errors are clustered at the village level in parentheses.