

Making Money Work: Unconditional cash transfers allow women to save and re-invest in rural Zambia

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Gelson Tembo on behalf of The Zambia Cash Transfer Evaluation Team

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MAKING MONEY WORK: UNCONDITIONAL CASH TRANSFERS ALLOW WOMEN TO SAVE AND RE-INVEST IN RURAL ZAMBIA

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Abstract: Savings play a crucial role in facilitating investment in income-generating activities and the pathway out of poverty for low-income households in developing settings. Yet there is little evidence of successful programmes that increase savings, particularly those that are simultaneously cost effective, scaleable and address gender inequalities. This paper examines the impact of the Government of Zambia's Child Grant Programme (CGP), an unconditional cash transfer targeted to women in households with young children, on women's savings and participation in non-farm enterprises. We use data over three years from a large-scale randomized controlled trial across three rural districts in Zambia. We find that the CGP enabled poor women to save more cash and that the impact is larger for women who had lower decision-making power at baseline. Moreover, we find that the programme increased diversification into non-farm enterprises that are traditionally operated by women, driven in part by the increased savings generated by the cash transfer. We posit that the key design feature of the programme that make these results possible is that the transfer is unconditional and paid directly to women. The results support the proposition that cash transfers have the potential for long-term sustainable improvements in women's financial position and household well-being by promoting savings and facilitating productive investments among low-income rural households.

Keywords: Cash savings, social cash transfers, non-farm enterprises, women's empowerment, Zambia.

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Acronyms

<u>AIR</u>	<u>American Institutes for Research</u>
<u>CCT</u>	<u>Conditional Cash Transfer</u>
<u>CGP</u>	<u>Cash Grant Programme</u>
<u>CWAC</u>	<u>Community Welfare Assistance Committee</u>
<u>DD</u>	<u>Difference in difference</u>
<u>DM</u>	<u>Decision-making</u>
<u>ITT</u>	<u>Intent to treat</u>
<u>MCDMCH</u>	<u>Ministry of Community Development, Mother and Child Health</u>
<u>MFI</u>	<u>Micro-finance initiative</u>
<u>NFE</u>	<u>Non-farm enterprise</u>
<u>RCT</u>	<u>Randomized Controlled Trial</u>
<u>SSA</u>	<u>sub-Saharan Africa</u>
<u>UCT</u>	<u>Unconditional Cash Transfer</u>
<u>ZMW</u>	<u>Zambian kwacha</u>

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Interviewer: *“What does it mean to you to be empowered? For example, if you were to describe a woman in your community who is empowered, what would she be like? What would she be able to do?”*

Respondent: *“Yes, there is a certain woman called Mary. She buys fish and sells in Mansa and other places outside Kaputa. Before that she never used to do anything. She was also receiving the CWAC money [cash transfer]. Her husband had two wives and she is the first wife, he never paid attention to the CWAC money. She saved some money and started buying fish and give her friends to sell for her in Mansa. She was giving her friends because she didn’t have enough money for transport costs. The friends were very honest because she made some good money and started going to sell herself. She has changed; her children look very clean and they eat well. She buys new clothes for herself and she looks nice.”¹*

1. INTRODUCTION

In this article we show that a poverty-targeted unconditional cash transfer (UCT) implemented by the Government of Zambia significantly increases women’s savings, as well as household ownership of livestock and participation in business activity. The types of business activity and the patterns of time-use among men and women in programme households indicate that these small businesses are primarily operated by women. In addition, women’s savings appear to be an important determinant of participation in non-farm enterprises (NFEs). The effects are large. For savings rates, the average treatment effect is 10 percentage points after three years, which represents a 100 per cent increase over baseline and the average amount saved by women increased by 300 per cent. Similarly, the programme increases participation in NFEs by 50 per cent and approximately 15 per cent of this increase can be linked to women’s savings. Moreover the programme increased consumption by approximately 30 per cent, one of the largest effect sizes observed for a national cash transfer programme, whether conditional or unconditional, anywhere in the world (Handa et al. 2015). Given the objective of the programme, which is primarily social protection against hunger, malnutrition, disease, and vulnerability to negative income shocks, we believe these large consumption effects occur first, and subsequently allow households to save and invest, rather than the other way around. Nevertheless, the results on savings and self-employment raise provocative questions about approaches to raise the productivity and income of the poorest, and how best to engage women in the development process.

Over the last three decades millions of dollars have been spent on innovative programmes to generate self-employment, increase savings and provide financial services to the poor. These programmes include provision of free or subsidized credit to start a business (micro-credit), small loans to those without collateral or access to formal banking systems (micro-finance), and incentive systems to encourage savings through dedicated savings accounts or commitment devices such as text message reminders to save, or savings associations (micro-savings). Such programmes often target women and involve some type of group-based lending mechanism to encourage peer support and

¹ Quote from female beneficiary of the Child Grant Programme.

policing. The over-arching objective of these programmes, which we refer to collectively as micro-finance initiatives (MFIs), is to raise incomes of the poor through enabling new and more productive livelihoods, to smooth consumption and to improve financial planning. Further, by focusing on women, MFIs also seek to increase women's control over resources, an important first step in empowerment. However, in the last five years a series of systematic reviews have essentially shown that the MFI has over-promised and under-delivered in terms of both increasing incomes of the poor and improving the economic position of women.

Two recent systematic reviews synthesized existing evidence on the impact of MFIs on the poor. Duvendack and colleagues (2011) review 58 papers across 19 developing countries, the majority of which employed non-experimental methods or failed to identify a clean comparison group. Two randomized controlled trials (RCTs), the strongest studies in terms of internal validity, showed no impact on income or other measures of well-being though there was some evidence of increases in business activity. The authors conclude that there is no good evidence of benefits of microfinance on the well-being of the poor. A systematic review with the same research question, but focused only on sub-Saharan Africa (SSA), identified 35 potential studies of which 15 were rigorous enough for inclusion (Stewart et al. 2010). The authors also found no evidence of a systematic positive effect of MFIs on income or accumulation of wealth among the poor. In fact, the review uncovers several instances of negative impacts of micro-credit, which are attributed to over lending coupled with high interest rates, which have the potential to result in loan default. The authors suggest that programmes specifically attempting to support small business development should not target the ultra-poor, and that micro-savings are perhaps more promising in terms of their impact on savings rates, which could ultimately allow consumption smoothing.

The track record of MFIs in addressing gender inequalities is similarly weak. The explicit objective in targeting women is precisely to provide them access to and control over resources, which would otherwise accrue to a spouse or male household member in the absence of targeting. Vaessen and colleagues (2014) synthesize 29 rigorous studies on the effect of MFIs on women's control over household spending and find no evidence to support a causal link, a conclusion also reached by a systematic review conducted by Stewart and colleagues (2012). Yoong and colleagues (2012) look more broadly at interventions that put resources into the hands of women, including cash transfers, to see if those resources either raise income or are spent differently as compared to resources transferred to men (e.g. on children or family-friendly goods). They find no evidence that MFIs targeted to women affect spending patterns or raise incomes. The strongest links between women's access to resources and spending patterns derive from conditional cash transfer programmes (CCTs), however the authors note that may be due to programme conditionality rather than the fact that women receive the money.² They also note that the evidence-base for UCTs in SSA, the type of programme studied in this paper, is particularly weak.

The micro-credit model has been specifically interrogated in a recent special issue of the *American Economics Journal: Applied Economics*, which reports impacts from similar programmes in six countries (Bosnia, Ethiopia, India, Mexico, Morocco, and Mongolia) evaluated using RCTs

² CCTs, though they typically channel money to women, have also been criticized for disempowering women by perpetuating the traditional division of labour within the household (Molyneux, 2006).

(Banerjee et al. 2015). Results indicated that across a variety of borrower, loan and lender characteristics, the effects of micro-credit on entrepreneurship or self-employment were modest (three studies with no impacts, and three studies with impacts on the extensive margin). Further, there were mixed impacts on measures of investment, business size and profits. Finally, there were few impacts on household consumption and other human capital outcomes, including women's decision-making and locus of control, leading to the conclusion that there were "few transformative effects (p. 14)" of these programmes.

Of course, MFIs make up only one segment of possible savings and investment instruments. In fact, a systematic review that focuses exclusively on the effects of formal banking services on the poor is more encouraging (Pande et al. 2011). This review focused only on institutions that were licensed by the country's central bank, and so excluded the MFIs covered in the syntheses described above. Out of a pool of 226 papers that fit the initial inclusion criteria, twelve papers covering ten programmes were ultimately used in the final synthesis, three of which were from SSA. The types of programmes covered included policy changes to encourage financial services to the poor, bank saturation programmes (primarily extensions of credit to farmers), and programmes to induce savings including the use of mobile technology, all of which were in urban areas. The review concluded that these supply-side approaches did increase income in the short run, and that savings programmes in particular were successful at increasing savings through commitment strategies. Despite this promise, results were context specific, programmes were costly, and it was therefore difficult to propose promising generalized strategies to increase savings and investments of poor populations.

The existing evidence on MFIs makes our results, which show strong impacts on precisely the domains MFIs aim to affect, particularly thought provoking when reflecting on promising strategies to increase productive activity, permanently raise consumption, and strengthen women's control over resources.

Of particular interest is the relative simplicity of the CGP design. Implemented by the Ministry of Community Development, Mother and Child Health (MCDMCH), the programme is geographically targeted to all households with a child under five in three rural districts of Zambia, provides a flat, unconditional transfer of approximately \$12 per month (paid bimonthly) irrespective of household size, and gives the money to the child's primary caregiver of whom 99 per cent are women.³ The core objective of the CGP is poverty alleviation and after 24-months the programme had large impacts on poverty-related outcomes including overall consumption, food security, and the proportion of children with a blanket, shoes or second set of clothes, among others (Handa et al. 2015). In this paper we report impacts at 24 and 36 months on the outcomes described above: women's cash savings, household livestock holdings, and engagement in non-farm enterprises (NFEs).

Our findings suggest that, despite the lack of specific objectives related to productivity, unconditional cash can not only smooth consumption, but also provide a pathway out of poverty and contribute to women's empowerment.

³The transfer was distributed through a local pay-point manager and administrative data indicate that the programme functioned as expected (AIR, 2011), with all payments provided on schedule during the evaluation period and over 95 per cent of beneficiaries claiming their transfers.

2. STUDY DESIGN

The impact evaluation of the CGP was commissioned by the Government of Zambia and UNICEF and consists of a longitudinal cluster RCT with one baseline (2010) and four subsequent follow-ups. An experimental design was feasible because the government was not able to immediately scale-up the programme in the three initial districts due to financial and human resource constraints. In each of the three districts, 30 community welfare assistance committees (CWACs) were randomly selected (out of a total of approximately 100) by lottery to appear in the study. Within these 30 CWACs all eligible households were identified and from this list, 28 households were randomly selected to enter the study sample leading to a representative sample of 2,519 households that met the targeting criteria across 90 CWACs in three districts. The baseline survey was conducted in October-November 2010 prior to the start of the programme. After baseline, a coin flip conducted by the Permanent Secretary of the MCDMCH determined which group of CWACs would be in the early treatment or the delayed entry control condition (45 in each treatment and control). Four follow-up surveys were subsequently collected after 24, 30, 36 and 48 months on the original baseline panel of households (Figure A2 in the Annex presents the flowchart of the study design). This analysis uses data from the baseline, 24- and 36-month waves, as results from the 48-month wave were not officially released by the Government of Zambia. The 30-month wave was a shorter survey to assess the impact of the programme on consumption smoothing, fielded during the harvest season, and the survey instrument is thus less comparable to those from other survey rounds.

The main survey instrument is extensive, and includes, among others, modules on consumption, health, education, housing, agricultural and other productive activities. During each wave, a module on women's decision-making, savings and future expectations was administered to one person in the household, typically the biological mother or primary care-giver of the target child. Our key indicator on cash savings comes from this module. The study sample size was powered to detect significant effects for child anthropometry measures accounting for non-response and attrition rates. The study underwent ethical review at the American Institutes for Research (AIR) in Washington, D.C. and at the University of Zambia. Questionnaires and reports for the CGP are available on the Transfer Project website (<http://www.cpc.unc.edu/projects/transfer>).

3. DATA, ATTRITION AND ANALYSIS METHODOLOGY

3.1 Data

The full baseline sample contains 2,519 households and 14,565 individuals. Our analysis sample comprises all female respondents to the special module on savings, decision-making and time-preference administered to the programme beneficiary. We exclude the one per cent of male respondents who answered this module in the absence of a qualifying female respondent. In total the pooled cross-sectional sample consists of 7,189 women, which includes all women interviewed at least once in any of the three waves (Table 1, Column A). A slightly smaller number of women, 7,028 (Column B) were interviewed at least twice across the three waves while 2,124 women were interviewed in all three rounds representing a total sample of 6,372 (Column C). The complete

(balanced) panel is the strongest in terms of internal validity and is the sample we utilize for subsequent analysis; however, sensitivity analysis shows that results are consistent across all three samples.

Table 1 - Samples of women answering empowerment module across waves in the Child Grant Programme evaluation

	Column A Cross-sectional	Column B Unbalanced panel	Column C Panel only
Baseline	2,488	2,414	2,124
24-month follow-up	2,282	2,246	2,124
36-month follow-up	2,419	2,368	2,124
Total	7,189	7,028	6,372

Note: One woman per household, targeting the cash transfer beneficiary, answered the empowerment module. We exclude the one per cent of male respondents who answered this module in the absence of a qualifying female respondent.

Table 2 – Baseline Characteristics of Women (Panel sample) and test for equivalence at baseline

Variable	All (1)	Treated (2)	Control (3)	Mean difference (T-C) (4)
Age (years)	29.46	29.66	29.26	0.401
Attended school	0.71	0.73	0.70	0.034
Never married	0.11	0.11	0.11	0.007
Divorced or separated	0.10	0.08	0.11	0.030**
Widowed	0.06	0.05	0.06	0.008
Women's decision-making (DM) index (0 low; 9 high)	5.60	5.56	5.65	0.093
Proportion of women with high (above the mean) DM	0.57	0.56	0.58	0.021
Household characteristics				
Shangombo district	0.32	0.32	0.31	0.006
Kaputa district	0.24	0.22	0.25	0.025
Consumption expenditure per capita (ZMW)	40.66	41.74	39.57	2.172
Household size	5.67	5.72	5.62	0.101
Number of members aged 0-5	1.90	1.89	1.91	-0.020
Number of members aged 6-12	1.26	1.25	1.27	-0.021
Number of members aged 13-18	0.56	0.58	0.53	0.054
Number of members aged 19-35	1.33	1.37	1.30	0.070
Number of members aged 36-55	0.53	0.54	0.52	0.012
Number of members aged 56-69	0.06	0.06	0.06	0.003
Number of members aged 70+	0.03	0.03	0.02	0.004

Note: Number of women is 2078 (1041 in treated sample).** indicates significance at $p < 0.05$.

Table 2 reports the background characteristics of the panel of women and the households they live in. The mean age of women respondents is 30, 73 per cent are married, while fewer are divorced or

separated (10 per cent), widowed (6 per cent) or never married (11 per cent). Women have low levels of education, approximately 30 per cent have never attended school and over half did not go beyond grade four (not shown in Table). The mean household size is six and the mean number of children aged 0-5 years is 1.9 per household. There are very few elderly in these households and the majority of adults (1.3 on average) are in the age range 19 to 35 years. Finally, the sample is poor with mean monthly per capita expenditure of 41 ZMW (Zambian kwacha), or approximately \$0.30 USD per person per day. Overall, randomization was successful in producing balanced treatment and control groups. We found no significant differences between treatment and control women along a number of household and individual characteristics, including key outcomes of interest, the proportion of women savers and amount saved (see Table 2 Column 4). Only one indicator achieved statistical significance, women in treated communities were three percentage points less likely to be divorced at baseline. Therefore, we conclude that randomization was successful.

3.2 Attrition

Attrition is a potential source of bias for any longitudinal study. Household attrition was nine per cent at 24 months and two per cent at 36 months (see Table A1 in the Annex). The higher attrition rate at 24 months is driven by migration out of Kaputa District due to the drought-induced drying of the Cheshi Lake over the initial study years. However, many of these households returned by the 36-month follow-up. Household-level analysis of overall and selective attrition was conducted as part of the larger evaluation and concluded that neither is a problem (AIR, 2013; AIR, 2014). We also conduct attrition analysis at the individual level within our sample. Overall attrition is higher than that at the household level with eleven and six per cent of the baseline sample lost to follow-up after 24 and 36 months respectively (see Table A2 in the Annex). We investigate differential attrition by background characteristics across treatment and control groups using the same core characteristics reported in Table 1. Table A3 in the Annex shows differences in baseline characteristics between attritors and non-attritors using both the 24-month and 36-month panels (Table A4). Differential attrition is assessed in Column 11 of both tables, where we test for significant differences in attritor means across the two study arms. None of these differences are statistically significant, suggesting that, consistent with the household-level analysis, individual attrition does not threaten the internal validity of our results.

3.3 Analysis methodology and key indicators

In order to estimate impacts for women savings, we estimate the following difference-in-differences (DD) model on women interviewed in all three survey rounds:

$$Y(i,t) = \alpha + \beta_T T(i) + \beta_{R2} (R2) + \beta_{R3} (R3) + \beta_{TR2} (T(i) * R2) + \beta_{TR3} (T(i) * R3) + \sum_{j=1}^J \theta_j X_j(i,t) + \varepsilon(i,t) \quad (1)$$

In this framework $Y(i,t)$ is the outcome indicator for the individual woman i at time t ; and is equal to one if the woman is currently saving in cash. $T(i)$ is a binary indicator of treatment status, equal to one if in the treatment group, $R2$ and $R3$ are indicators for the two time periods where $R2$ refers to the 24-month follow-up and $R3$ to the 36-month follow-up while β_{TR2} and β_{TR3} capture the intent to

treat (ITT)⁴ effect at time two and three; X is a set of basic control variables that are all measured at baseline and ε is the error term. Robust standard errors are adjusted for clustering at the CWAC level. The primary savings outcome is a measure of current cash savings, and the secondary savings outcome is value of cash saved in the last month (logged ZMW).

We present estimates with and without a vector of pre-treatment control variables to increase the precision of the point estimates and to account for any imbalances between treatment and control. In the multivariate model, our set of basic demographic covariates include: 1) women's characteristics (age in years and its square, whether the woman has ever attended school and marital status); and 2) household characteristics (log of household size, a set of indicators capturing household composition and district of residence indicators).⁵ Means for these variables were presented in Table 2.

Heterogenous effects by baseline decision-making power: as autonomy and control over transfers may differ by women's bargaining power inside the household, we posit that the programme impact might be moderated by her baseline decision-making power, a possibility which is also raised by Stewart et al. (2012) in their review of the impact of MFIs on women's outcomes. Women were asked nine questions over different economic and social domains to assess how much say each had in the decision.⁶ For each of these questions, the respondent had to report who participates in decision-making by selecting one of the following options: 1) the respondent herself; 2) her husband/partner; 3) respondent and partner jointly, 4) other members of the household (either alone or jointly). A value of one is given for each question if the decision is made by the respondent, either alone or jointly with her husband/partner, and a value zero if the decision is made by her husband/partner only or others in the household. In order to compute the decision-making index we summed values for the nine questions: the index therefore ranges from zero to nine with higher values indicating higher women decision-making power.⁷ In cases where the decision was not applicable (e.g. a decision about children's schooling, when no members of the household are in the school age range) the value was replaced by the sample mode. To estimate heterogeneous impacts of the programme by women's baseline decision-making, we augment equation (1) by adding a dummy variable indicating high baseline decision-making (defined as having a score above the mean) and interactions between this variable and the round multiplied by treatment status dummies – these latter two variables represent the triple difference (DDD), and measure the differential effect of the programme according to baseline decision-making status at 24 and 36 months.

⁴ Analysis of administrative data by the study team indicates that not only were payments made on schedule during the study period but over 95 per cent of beneficiaries collected their payments on time. An operations module fielded as part of the evaluation did not reveal any indication of leakage due to bribes or requests for payments from village elders or programme officials. The ITT will be very close to the average treatment effect on the treated.

⁵ We experimented with a specification that includes a vector of cluster level prices measured contemporaneously since we find no inflationary impacts of the CGP at the community level. Results are consistent with those reported here.

⁶ The nine questions are: 1) If a child is not feeling well, who decides whether to seek treatment? 2) If a child does not want to go to school who would decide whether s/he must go? 3) Who usually decides how the money you usually earn will be used? 4) Who usually decides how the money your partner earns will be used? 5) Who usually makes decisions about making major household purchases? 6) Who usually makes decisions about making purchases for daily household needs? 7) Who usually makes decisions about purchasing children's clothes or shoes? 8) Who usually makes decisions about visits to your family or friends? 9) If you are feeling sick, who usually decides whether you should seek treatment?

⁷ Alternative women's decision-making indices were computed: 1) by assigning a value of 0.5 instead of one if the decision is made jointly (see Handa et al. 2009); 2) by using the proportion of decisions made solely or jointly out of the number of applicable questions; 3) using the z-score rather than the raw index.

4. RESULTS

4.1 Descriptive statistics

At baseline, the proportion of women who save is balanced between the treatment and the control group and is in the 16-19 per cent range (Table 3). However, after 24 months of receiving transfers, this percentage more than doubles in the treatment group from 18.6 per cent to 47.4 per cent. The control group also increases savings behaviour, by a much smaller margin from 15.7 to 21.6 per cent. After 36 months, the percentage of women holding savings in the treatment group has decreased to 35.6 per cent but is still higher than the corresponding figure for the control group (22.7 per cent). Additional descriptive information indicates that cash savings are typically kept at home (94 per cent at baseline), confirming that these women likely do not have access to institutions or other formal saving facilities. No significant differences are found between place of saving between treatment and control groups (not shown).

Descriptive patterns for the amount saved during the last month are shown in the bottom panel of Table 3. At baseline, the amount saved does not differ between the treatment and control group (around 12 ZMW), however women in the programme save approximately 35.6 and 26.6 ZMW more than at baseline after 24 and 36 months, more than a threefold increase with respect to initial levels of savings. Note that these statistics refer to the full sample and not just to women who saved.

Table 3 - Proportion of women savers and amount saved by treatment status and wave

		Baseline	24 month follow-up	36 month follow-up
Proportion of women savers (per cent)	Control	15.7	21.6	22.7
	N	1037	1060	1062
	Treated	18.6	47.4	35.6
	N	1041	1055	1061
	Difference (T-C)	2.9	25.8**	12.9**
Amount saved (ZMW)	Control	11.8	16.8	20.0
	N	1037	1060	1062
	Treated	11.9	47.5	38.5
	N	1040	1055	1061
	Difference (T-C)	0.1	30.7**	18.5**

Note: ** indicates difference in means significant at $p < 0.05$.

4.2 CGP impacts on cash savings

Columns 1 and 2 of Table 4 display the impact estimates of the CGP on women's savings. After 24 months the programme significantly increased the proportion of women savers by around 23 percentage points, and by 10 percentage points after 36 months – the average impact across the two follow-up waves is 18 percentage points. We find a similar pattern of impacts on the amount saved (Table A5 in Annex). The right panel of Table 4 tests for heterogeneity in the

treatment effect by women's decision-making power at baseline. The triple interaction term for the 24-month follow-up is negative and statistically significant: the impact on cash savings for women with high (or above the mean) decision-making power at baseline is around 12 percentage points lower compared to the impact for low-decision-making women. Thus women with low decision-making power at baseline are those for whom the treatment effect on savings is largest. This heterogeneous impact however is not significant at 36 months. This result is driven by the fact that women with low decision-making power at baseline saved significantly less than their counterparts; by 24 months these women catch-up and maintain these levels at 36 months. The results are not sensitive to alternative ways of combining the decision-making questions.⁸

Table 4 - Impact on cash savings and heterogeneous impact by decision-making power

VARIABLES	Impact on savings		Heterogeneous impacts by women's decision-making at baseline	
	(1) Unadj.	(2) Adj.	(3) Unadj.	(4) Adj.
Treated	0.0283 (0.0317)	0.0213 (0.0304)	-0.00942 (0.0335)	-0.0172 (0.0327)
DD 24 months	0.229** (0.0460)	0.229** (0.0459)	0.296** (0.0485)	0.296** (0.0485)
DD 36 months	0.101** (0.0453)	0.101** (0.0452)	0.141** (0.0521)	0.141** (0.0521)
Treated * High DM at baseline * 24 months		(0.0550)	-0.117** (0.0550)	-0.117**
Treated * High DM at baseline * 36 months		(0.0634)	-0.0711 (0.0634)	-0.0709
Observations	6,316	6,316	6,316	6,316
R-squared	0.062	0.078	0.064	0.081

Notes: Robust standard errors clustered at the CWAC level are in parentheses. ** indicates significant at $p < 0.05$. Estimations with adjustment include woman's age, education and marital status, household size and household demographic composition, and districts – see text for details.

Poor households also consider livestock as a form of savings given the dearth of formal savings mechanisms available in rural areas (Hulme and Arun, 2009). In fact, two studies that investigate the impact of Mexico's CCT use livestock rather than actual cash as their measure of savings (Gertler et al. 2012; Rubalcava et al. 2009). Are women simply substituting cash for more traditional forms of savings such as livestock, thus leading to no net increase in this broader concept of savings? We assess this hypothesis by estimating the impact of the programme on livestock ownership though for this indicator we cannot discern who the actual owner within the household is as information is only reported for the household as a whole. However there is some evidence

⁸ We also tested for heterogeneous impacts using an alternative women's decision-making index, computed by assigning a value of 0.5 instead of one if the decision is made jointly (see Handa et al., 2009). Results are unchanged.

that in most rural African societies rearing of small animals such as goats, sheep and poultry falls under women's domains (Njuki and Sanginga 2013; SOFA Team and Doss 2011), and Rubalcava et al. (2009) make this same argument for rural Mexico. Results in Table 5 show that the programme has a positive impact on holding ducks (3 percentage points), chickens (between 11 and 16 percentage points) and cattle (10 percentage points). Hence the increase in cash savings by women is occurring even as programme households also significantly boost their ownership of both small and large livestock.

Table 5 – Impact of the CGP on Livestock Ownership

Dependent variable	DD 24 months	DD 36 months	Per cent ownership at baseline
Milk cows	0.0315 (0.0230)	0.0153 (0.0216)	5.6
Cattle	0.0902** (0.0232)	0.104** (0.0291)	10.5
Goats	0.0407** (0.0141)	0.0177 (0.0160)	2.0
Chickens	0.113** (0.0494)	0.158** (0.0416)	43.7
Ducks	0.0340** (0.0117)	0.0318** (0.00905)	2.9

Note: Robust standard errors clustered at the CWAC level are in parentheses. N is 6316. ** indicates significance at $p < 0.05$. Impact estimates reported are from the unadjusted model; impact estimates from the adjusted model (controlling for woman's age, education and marital status, household size and household demographic composition, and districts) are consistent.

4.3 Why are women saving?

We next explore motives behind savings using a question from the 36-month survey which asks women savers about the three most important reasons for which they are saving. Women can choose among more than ten options, including purchasing bulk or other food items, household consumables, agricultural inputs, assets to start a new small business and so on. We classify these reasons into precautionary versus investment reasons and create three mutually exclusive groups

Table 6 – Self-reported reasons for saving at 36 months

	Reasons for saving			
	Mainly investment	Mainly precautionary	Investment and precautionary	No reason reported
Control	11.2	78.4	8.7	1.6
Treated	17.2	72.7	9.0	1.1
<i>Difference (T-C)</i>	6**	-5.7	0.3	-0.5

Note: N is 618 women savers. Differences between treatment and control** $p < 0.05$. T-tests based on standard errors clustered at the CWAC level.

defined by whether the woman saves mainly for investment reasons, mainly for precautionary reasons, or for both reasons. The main reason for saving among both groups is to smooth income fluctuations (75 per cent – Table 6) and the three most reported specific reasons are to purchase bulk or other food items, to purchase household consumables and for medical expenses or health care. Of particular interest however is the fact that women in the treatment arm are significantly more likely to mainly save for investment purposes (by six percentage points) and somewhat less likely to save for mainly precautionary motives.

4.4 Do women’s cash savings facilitate self-employment?

The fact that more women in the treatment arm save mainly for investment suggests that these cash savings could facilitate diversification of income through investment in productive activity. Such behaviour could potentially improve the well-being of programme households in the long-term, and is exactly the objective of the many MFI-related programmes reviewed earlier. In the 24- and 36-month surveys we implemented a NFE module to the household and asked the main respondent to report on up to three non-farm business activities that anyone in the household was engaged in, in addition to related information on the type of business, revenues and profits.

Table 7 reports the proportion of households operating any NFE by treatment status and wave. Almost half of programme participant households operate a NFE compared to less than a third in the control group (29.7 per cent and 30.8 per cent after 24 and 36 months respectively) and the difference between the two groups is 15 and 17 percentage points at 24 and 36 months respectively. The three main types of NFE reported are petty trade, fish-selling and home brewery, representing about 70 per cent of all reported businesses, and these are businesses that are typically operated by women in this setting. The distribution of business types is the same across the study arms, indicating that the programme increases the overall level of engagement in NFE but not the type of activity.

Table 7 - Proportion of households engaged in non-farm enterprise by study arm and survey wave (%)

	24 month follow-up	36 month follow-up
Control	29.7	30.8
N	1060	1062
Treated	46.6	45.4
N	1055	1061
<i>Difference (T-C)</i>	16.9**	14.6**

Note: ** p<0.05. T-tests based on standard errors clustered at the CWAC level.

To further understand the extent to which NFE engagement is primarily driven by women we investigate time spent in NFE by gender. Table 8 compares the participation in such activities for our female respondents and a ‘comparable’ adult male, defined as the spouse or partner of the woman, and if there is no spouse/partner, her brother or next closest adult male relative – 77 per cent of households have a ‘comparable’ male so we restrict our comparisons to this smaller sample of household in order to offer a clean comparison. We define involvement for men and women if they spend at least one day per week working in the business in an average month of operation.

The first row of Table 8 shows that households are far more likely to have women engaged in NFE than men – 83 per cent of households report a woman engaged in an NFE compared to 55 per cent who report a man across the two survey waves. Looking at the three most common types of activity we see the largest differences for petty trade and home breweries and more gender balance for fish selling. In home breweries for example, 92 per cent of households report a woman engaged in this activity and only 35 per cent reporting a male engaged in this activity. The last two columns of Table 8 report average days in the reference week (aggregated to the household level) and tell the same story – overall women spend more days at NFE than men, particularly in petty trade and home brewery. We can also track the engagement in NFE of the individual women who responded to the savings questions rather than comparing men and women in general. This comparison shows that among these women, those in the treatment arm are more likely to be engaged in NFE compared to women in control households and spend on average 1.5 extra days per week in such activities.

Table 8 - Proportion of female respondents and 'comparable' males engaged in Non-Farm Enterprises at 24 and 36 months (%)

	Female respondent engaged in NFE	Comparable male engaged in NFE	Mean days worked	
			Female respondent	Comparable male
Full Sample				
Any NFE	82.7	54.5	3.9	2.4
Fish selling	63.1	62.2	3.5	3.1
Petty trader	86.9	31.8	4.7	1.8
Home brewery	92.1	35.1	4.2	1.4
Treatment				
Any NFE	83.4	56.3	4.0	2.6
Fish selling	65.6	62.9	3.8	3.4
Petty trader	86.8	36.4	4.7	1.8
Home brewery	92.2	36.5	4.3	1.7
Control				
Any NFE	81.7	51.7	3.8	2.5
Fish selling	58.9	60.9	3.1	3.3
Petty trader	87.0	23.1	4.6	1.6
Home brewery	92.0	33.0	4.1	1.6

Figures give the per cent of female respondents and comparable males that are engaged in the activity in the first column. Results are averaged across the 24- and 36-month survey rounds and reported only for households where a comparable adult male exists – see text for explanation.

These descriptive statistics suggest that the programme has led to engagement in NFE, that NFE engagement in general is driven by women in these communities, and more women are now participating in business activities in the treatment group relative to the control group. The first two columns of Table 9 show that at 36 months, treatment households are 14 percentage points more likely to be engaged in any type of NFE – this is similar to the descriptive statistics presented in

Table 6 for both the 24- and 36-month waves. Note that these are cross-sectional estimates and rely on baseline balance produced by the successful randomization in order to reflect the causal effect of the cash grant on non-farm enterprises.

Are women's cash savings financing the expansion into NFE? In order to understand the potential role of women's savings in increasing NFE among the treatment group, we add our indicator of savings to the equation estimating the programme effect on NFE to see if it soaks up some of the direct effect of the programme on NFE. This causal mediation strategy relies on a sequential ignorability assumption, that treatment status is exogenous to savings and savings are exogenous to NFE. The first assumption is satisfied since randomization is done with respect to treatment status, but the second is not, since randomization is not done with respect to savings. We thus require the assumption that there is no unobserved factor that affects both savings and NFE. In other words, savings is potentially a 'bad control' because it is an outcome itself (Angrist and Pischke 2009). We address this potential endogeneity in two ways. First we use lagged savings (at 24 months) in the regression predicting NFE at 36 months – this solves the problem of temporal precedence. However, there can still be some fixed (time invariant) factor that affects both savings and the propensity to engage in NFE. Keele et al. (2015) suggest that pre-treatment measures of the mediator could be a useful approach to account for the fixed unobserved heterogeneity related to both the mediator and outcome so we also present specifications that include baseline savings.

Table 9 - Impact of CGP and lagged cash savings on Non-Farm Enterprise at 36 months⁹

Outcome VARIABLES	NFE		NFE including 24-month savings		NFE including baseline and 24-month savings	
	(1) Unadj.	(2) Adj.	(3) Unadj.	(4) Adj.	(5) Unadj.	(6) Adj.
Treated	0.146** (0.0522)	0.139** (0.0323)	0.116** (0.0515)	0.121** (0.0320)	0.113** (0.0512)	0.119** (0.0323)
24-month savings			0.112** (0.0320)	0.0678** (0.0257)	0.107**	0.0648**
Baseline savings					0.0546 (0.0375)	0.0182 (0.0292)
Observations	2,123	2,123	2,114	2,114	2,069	2,069
R-squared	0.023	0.168	0.033	0.172	0.034	0.170

Notes: Estimations use single difference modeling. Robust standard errors clustered at the CWAC level are in parentheses. ** p<0.05. Estimations with adjustment include woman's age, education and marital status, household size and household demographic composition, and districts.

Columns (3) and (4) of Table 9 add lagged savings at 24 months to the regression to assess both its direct effect on the probability of engaging in NFE at 36 months and to see whether it attenuates

⁹ Results – and the partial mediation - hold also when we redefine our dependent variable to focus only on those NFEs that we believe to be predominantly female, namely petty trading and home brewing. Since non-farm enterprises, and in particular home brewing and petty trading, are typically women's investments, we suggest that the use of the cash transfer and women's savings for NFEs might reflect women's control over the transfer.

the treatment effect in the first row. The direct effect ranges from 11 to 12 percentage points depending on whether or not controls are added to the model and is statistically significant; meanwhile the 'total' effect of the programme in row one is reduced by 21 (column 3) to 13 (column 4) per cent indicating that there is partial mediation of the programme effect on NFE through women's cash savings. In order to more fully account for potential confounding between the mediator and NFE via time invariant unobservables we include baseline cash savings to the model in columns (5) and (6) in Table 9. The inclusion of baseline savings attenuates very slightly the direct effect of lagged (24-month) cash savings on NFE, but also attenuates the 'total' effect in row one, so that the per cent of the total effect from columns (1) and (2) that is mediated through cash savings is now 23 and 15 per cent respectively for the unadjusted and adjusted models.¹⁰

5. DISCUSSION AND CONCLUSION

Our headline results, that a large-scale national UCT enables poor women to save in cash and invest in small business, have implications for several strands of the development policy debate. The CGP was not designed to specifically affect savings nor to encourage entrepreneurship or 'empower' women; the evidence that unconditional cash given directly to women can potentially affect all these outcomes is novel. On savings specifically, two other studies, both from Mexico's CCT, report positive impacts on livestock holdings which the authors argue is the main form of savings in rural Mexico because poor households have no mechanism to safely store cash. The absence of safe savings mechanisms is likely to be just as acute in the remote districts of rural Zambia, and 94 per cent of women who save keep their money at home. The CGP has enabled poor women to save in cash, even in the absence of inclusive financial systems, and this behaviour has not come at the cost of other additional forms of savings such as assets and livestock accumulation. The evidence of the impacts of a UCT on liquid savings are the first of its kind, and seem to indicate that women value liquidity¹¹ in agreement with some of the advantages of cash savings, indeed, in the face of a negative shock, it is easier to spend cash than to liquidate bulky assets. These results point to the fact that households and women tend to autonomously save and are at odds with the common belief that the poor are myopic, and the parallel perceived need to design innovative programmes with complex commitment devices to encourage savings among the poor.

The effects of the CGP on self-employment also stand in contrast to the evidence on MFIs reviewed earlier. In this rural sample where households are primarily engaged in agriculture, the cash

¹⁰ Keele et al (2015) also recommend including pre-treatment values of potential confounders in the model, but also recommend that if a confounder exists it must be controlled using its pre-treatment values. We have estimated this model controlling for pre-treatment values of variables that might affect both NFEs and savings: consumption per capita, time discounting, attitudes towards the future (capturing expectations) and inflation (to capture uncertainty). Demographics are also a potential confounder but are already part of our controls. The results we report in Table 9 are robust to these inclusions.

¹¹ "It is me that saves money and he doesn't even know about it. If it is my money I save myself and use it without telling him. When it is his he keeps it and I won't see it. When I force him through his relatives he gives me, even ZMW 12 if it is school fees. If I want money for food he doesn't give me cash. (...) My savings are very important because it helps solve problems like sickness. Hospitals don't have medicine here, mostly we are told to buy. So I can use that money to buy medicine. I can also use the same money to buy food." Quote from married female beneficiary recorded in the qualitative interviews.

transfer and women's savings help households to diversify to non-agricultural activities. Though we only observe NFEs at the household level, the types of NFE in expansion suggest that women's savings are partly channeled to investment in women-operated, rather than merely household-operated, enterprises. The link between increases in cash savings and the effect of those savings on NFE, which are primarily operated by women, offers a compelling story of the potential for UCTs directed to women to foster self-employment. This link is an important finding in light of the rather bleak evidence on the ability of the MFI to bring about sustained increases in self-employment and consumption for women. Again, this result raises questions about how it is that a simple, predictable, unconditional sum of money can succeed where a more complex and directly focused suite of interventions appear to have largely failed at delivering sustained impacts.

Does the CGP "empower women"? Women's empowerment is not a prime objective of the programme, and empowerment is interpreted to mean many different things. The classic definition of empowerment defines a process of gaining agency to make strategic life choices, and access to resources could be an important facilitator in this process. Yet, when women in these households are asked directly about how they themselves would define or describe "empowerment" within their own communities, financial resources to spend how they wish are the consistent focus in their conceptualizations:¹²

"To me to be empowered means I can do what I want and have what I long to have, money. I can buy what I want." (female, married, treatment).

"If I had a business it can give me strength to keep my children well. They would dress well and they can be taken to school without difficulty. . . Women who are empowered are able to do these things. Even in this community, they are there." (female married, control)

"It means cash, to be given money. I feel I can get money from the same CWAC [cash transfer] programme. There are women in this village who manage to do things on their own like taking children to school. They do businesses, mostly selling maize. They run around, they are able to buy pots, plates and bicycles." (female, married, treatment)

These quotes illustrate themes that are repeated through the in-depth qualitative interviews conducted by the evaluation team. In the eyes of the beneficiaries themselves, the cash transfer allows choices, in terms of both consumption and investment, which makes them feel empowered. Of particular interest is the quantitative finding that the largest impacts on cash savings occur among women with lower decision-making power at baseline. The literature is mixed on the ability of cash transfers to meaningfully empower women using a variety of different indirect and direct outcomes indicators (Peterman et al., 2015; van den Bold et al., 2013). Indeed, in a companion paper which directly looks at impacts on decision-making, we find positive but relatively meaningless (from a practical perspective) effects of the CGP on decision-making due to the marginal size of changes, which seem at odds with the apparent large direct effects reported here on other dimensions of empowerment (Bonilla et al. 2016).

¹² Quotes are taken from transcripts of in-depth interviews conducted among women in treatment and control communities alongside focus-group discussions as part of the impact evaluation of the CGP. For further details see Bonilla et al. 2016.

This apparent inconsistency is because one-off questions about decisions do not fully capture the subtle nuances of negotiations which can influence decisions, but are hard to capture in a quantitative questionnaire (Peterman et al. 2015; Bonilla et al. 2016). In this sense the more direct measures used here – cash savings, employment – may be better able to capture the self-identified components of empowerment, according to women themselves.

The impacts on savings and NFE occur within an overall context of improved consumption and material well-being, so that the CGP can be viewed as truly transformative for these households. As such the results would appear to support a growing group of researchers who advocate for ‘just giving cash’ (Hanlon, Barrientos & Hulme, 2010), or argue that UCTs should be considered the benchmark with which to measure the success of any alternative intervention (Faye et al., 2015). An earlier paper by the study team based on the 24-month results argues that though transformative, the CGP does not resolve all development bottlenecks for these households because of the severe lack of social infrastructure, particularly in health, and that the impacts of the CGP could be greatly leveraged with associated supply side initiatives in the same communities (Handa et al. 2015). In addition, although our results are positive, we do not know for example, if the financial and productive impacts we identify are sustained after the cash transfer ends.

There are several limitations to this analysis. First, we do not have a direct measure of which individual in the household manages the NFE so we cannot make a direct link at the woman-level of saving and engagement in specific business activity. Second, our impact estimates for NFE rely on baseline equivalence as we did not measure this at baseline; the randomization into study arm and the overall balance across treatment and control arms mitigates the risk of there being large baseline differences in this one single indicator. Finally, we cannot provide a direct comparison between cash savings under the control of men and women, or compare to overall household-level reported savings, as we did not collect these data in our instrument.

We find that a national UCT that provides benefits to women increases their cash savings and involvement in NFE, and about a third of the programme effect on NFE can be attributed to increases in women’s cash savings generated by the programme. These results are provocative in light of the increasing body of evidence on the inability of micro-credit and other targeted MFIs to improve these very outcomes. The key design features that would appear to support our main results is that the cash is unconditional (thus allowing households to decide how best to use it), and is paid to women (thus increasing her savings and engagement in economic activity). Programmes with similar design features are currently part of national social protection strategies in over a dozen countries in SSA – the results from Zambia suggest that women’s economic and financial empowerment might also be added to the long list of positive impacts being documented in these programmes.

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ANNEX

Figure A1 – Study Flow Chart for Impact Evaluation of Child Grant Programme

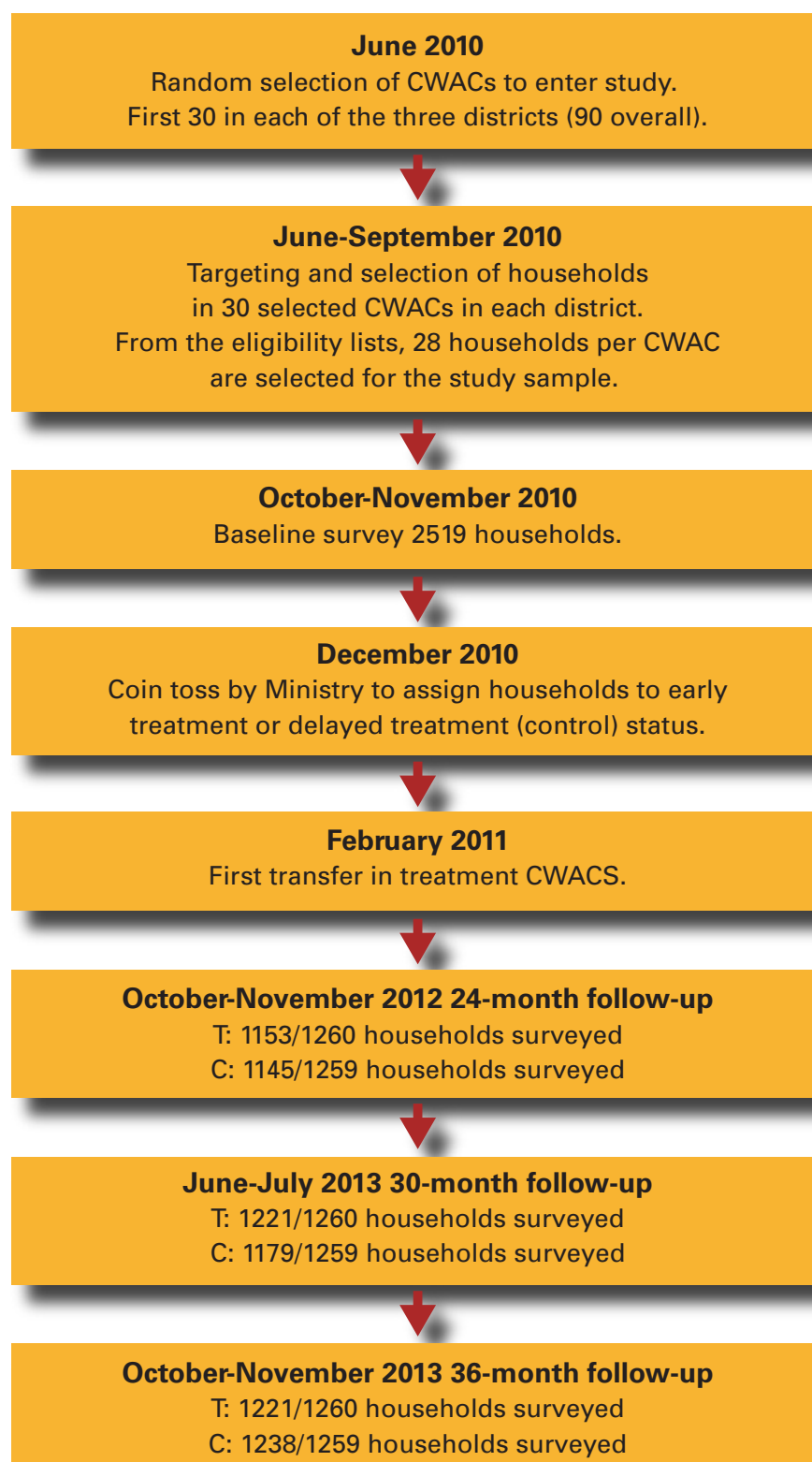


Table A1 – Number of households interviewed by wave and household overall attrition

	Households	Household overall attrition
Baseline	2519	
24-month follow-up	2298	9%
36-month follow-up	2459	2%
Total	7276	

Table A2 – Number of female respondents interviewed by wave and individual attrition rates

	Female respondents to women's empowerment module			Individual attrition rates			T-test for mean difference (T-C)	Robust p-value
	All	Treated	Control	All	Treated	Control		
Baseline	2488	1244	1244					
24 months	2208	1110	1098	0.11	0.11	0.12	-0.01	0.675
36 months	2330	1153	1177	0.06	0.07	0.05	0.0193*	-0.0716

T-tests based on standard errors clustered at the CWAC level. *** p<0.01, ** p<0.05, * p<0.1

Table A3 - Testing individual differential attrition (from baseline to 24-month follow up) by baseline characteristics

Variable	Treated				Control				Among attriters	
	Attriters (1)	Non-attriters (2)	T-test for mean difference Col(1)-Col(2) (3)	P-value (4)	Attriters (5)	Non-attriters (6)	T-test for mean difference Col(5)-Col(6) (7)	P-value (8)	T-test for mean difference Col(1)-Col(5) (11)	P-value (12)
Age (years)	31.41	29.69	1.722**	0.0417	31.05	29.43	1.616*	0.0979	0.363	0.783
Attended school	0.78	0.73	0.0525	0.162	0.75	0.70	0.0471	0.241	0.0354	0.507
Never married	0.10	0.11	-0.0149	0.636	0.09	0.11	-0.0160	0.522	0.00809	0.841
Divorced	0.13	0.08	0.0458	0.163	0.12	0.12	0.00158	0.955	0.0106	0.801
Widowed	0.14	0.06	0.0777***	0.00702	0.08	0.06	0.0208	0.411	0.0526	0.170
Shangombo district	0.15	0.31	-0.164***	0.00362	0.14	0.30	-0.159***	0.00151	0.00542	0.944
Kaputa district	0.38	0.23	0.146**	0.0228	0.53	0.26	0.271***	0.00	-0.147	0.205
Expenditure per capita (ZMW)	40.48	41.61	-1.122	0.739	38.67	39.70	-1.024	0.743	1.810	0.686
Household size	5.98	5.73	0.251	0.362	5.73	5.62	0.117	0.621	0.245	0.519
Number of members aged 0-5	1.89	1.88	0.00428	0.959	2.04	1.91	0.134**	0.0470	-0.153	0.136
Number of members aged 6-12	1.31	1.26	0.0513	0.652	1.24	1.26	-0.0226	0.863	0.0737	0.672
Number of members aged 13-18	0.70	0.59	0.112	0.122	0.47	0.53	-0.0529	0.465	0.229**	0.0329
Number of members aged 19-35	1.33	1.36	-0.0275	0.760	1.25	1.30	-0.0567	0.459	0.0818	0.460
Number of members aged 36-55	0.61	0.54	0.0732	0.246	0.59	0.53	0.0608	0.353	0.0229	0.790
Number of members aged 56-69	0.10	0.07	0.0303	0.360	0.12	0.06	0.0527	0.119	-0.0194	0.670
Number of members aged 70+	0.04	0.03	0.00758	0.614	0.03	0.03	0.00190	0.879	0.00992	0.621
Women's decision-making index (0 low; 9 high)	6.32	5.51	0.814**	0.0340	6.15	5.63	0.517	0.172	0.170	0.761
Proportion of savers	0.21	0.18	0.0304	0.392	0.18	0.16	0.0184	0.573	0.0365	0.521
Amount saved	15.99	11.89	4.103	0.376	14.19	11.47	2.717	0.561	1.800	0.778

Note: Overall N for treated is 1244 (In study=1110; Attrited=134). Overall N for control is 1244 (In study=1098; Attrited=146). *** p<0.01, ** p<0.05, * p<0.1 T-tests based on standard errors clustered at the CWAC level.

Table A4 - Testing individual differential attrition (from baseline to 36 month follow up) by baseline characteristics

Variable	Treated				Control				Among attriters	
	Attriters	Non-attriters	T-test for mean difference Col(1)-Col(2)	P-value	Attriters	Non-attriters	T-test for mean difference Col(5)-Col(6)	P-value	T-test for mean difference Col(1)-Col(5)	P-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(11)	(12)
Age (years)	30.78	29.80	0.975	0.467	32.52	29.46	3.062**	0.0454	-1.741	0.401
Attended school	0.71	0.74	-0.0293	0.548	0.79	0.70	0.0910	0.145	-0.0832	0.272
Never married	0.13	0.11	0.0241	0.519	0.11	0.10	0.00241	0.949	0.0273	0.607
Divorced	0.13	0.08	0.0501	0.251	0.15	0.11	0.0377	0.368	-0.0182	0.757
Widowed	0.13	0.06	0.0726**	0.0327	0.14	0.06	0.0760*	0.0615	-0.00303	0.956
Shangombo district	0.21	0.30	-0.0939*	0.0571	0.18	0.29	-0.111**	0.0237	0.0297	0.750
Kaputa district	0.31	0.25	0.0622	0.209	0.33	0.29	0.0429	0.433	-0.0207	0.855
Expenditure per capita (ZMW)	39.45	41.65	-2.195	0.390	44.33	39.31	5.029	0.282	-4.884	0.351
Household size	5.80	5.75	0.0528	0.828	5.93	5.61	0.313	0.407	-0.123	0.797
Number of members aged 0-5	1.84	1.89	-0.0530	0.550	1.87	1.93	-0.0604	0.498	-0.0305	0.809
Number of members aged 6-12	1.26	1.27	-0.00426	0.972	1.40	1.25	0.151	0.499	-0.139	0.591
Number of members aged 13-18	0.75	0.59	0.157	0.147	0.52	0.52	0.00327	0.974	0.225	0.130
Number of members aged 19-35	1.25	1.36	-0.108	0.330	1.27	1.30	-0.0296	0.805	-0.0159	0.921
Number of members aged 36-55	0.56	0.55	0.0149	0.866	0.69	0.53	0.160	0.165	-0.126	0.364
Number of members aged 56-69	0.11	0.07	0.0431	0.225	0.12	0.07	0.0523	0.228	-0.00951	0.865
Number of members aged 70+	0.03	0.03	0.00261	0.897	0.06	0.02	0.0359	0.228	-0.0267	0.446
Women's decision-making index (0 low; 9 high)	6.00	5.56	0.437	0.238	6.40	5.65	0.749*	0.0871	-0.403	0.514
Proportion of savers	0.19	0.18	0.00846	0.835	0.17	0.16	0.00726	0.877	0.0265	0.688
Amount saved	16.01	12.03	3.98	0.550	9.32	11.93	-2.614	0.508	6.690	0.379

Note: Overall N for treated is 1244 (In study=1153; Attrited=91). Overall N for control is 1244 (In study=1177; Attrited=67). *** p<0.01, ** p<0.05, * p<0.1 T-tests based on standard errors clustered at the CWAC level.

Table A5 - Impact on amount saved (logged) and heterogeneous impact by women's decision making at baseline

Variables	Impact on amount saved		Heterogeneous impacts by women's decision-making at baseline	
	(1) Unadj.	(2) Adj.	(3) Unadj.	(4) Adj.
DD 24 months	1.075*** (0.173)	1.077*** (0.172)	1.320*** (0.191)	1.320*** (0.191)
DD 36 months	0.508*** (0.175)	0.509*** (0.174)	0.693*** (0.221)	0.692*** (0.220)
Triple interaction term (Treated * High DM at baseline * 24 months)			-0.430* (0.218)	-0.427* (0.218)
Triple interaction term (Treated * High DM at baseline * 36 months)			-0.332 (0.272)	-0.329 (0.272)
Observations	6,324	6,324	6,324	6,324
R-squared	0.072	0.092	0.074	0.095

Notes: Estimations use difference-in-difference modeling. Robust standard errors clustered at the CWAC level are in parentheses.

*** p<0.01, ** p<0.05, * p<0.1 . Estimations with adjustment include woman's age, education and marital status, household size and household demographic composition, and districts.

Table A6 - Heterogeneous impacts on NFE: Moderator model using baseline women's empowerment at 24 months (cross-section)

Variables	Impact on NFE		Heterogeneous impact by baseline women's decision-making	
	(1) Unadj.	(2) Adj.	(3) Unadj.	(4) Adj.
Treated	0.169*** (0.0469)	0.169*** (0.0400)	0.200*** (0.0526)	0.194*** (0.0463)
High DM at baseline			0.0267 (0.0313)	-0.000853 (0.0323)
Interaction term (Treated * High DM at baseline)			-0.0528 (0.0419)	-0.0431 (0.0377)
Observations	2,115	2,115	2,115	2,115
R-squared	0.030	0.093	0.031	0.094

Notes: Estimations use difference-in-difference modeling. Robust standard errors clustered at the CWAC level are in parentheses.

*** p<0.01, ** p<0.05, * p<0.1 . Estimations with adjustment include woman's age, education and marital status, household size and household demographic composition, and districts.

Table A7 - Heterogeneous impacts on NFE: Moderator model using baseline women's empowerment at 36 months

Variables	Impact on NFE		Heterogeneous impact by baseline women's decision-making	
	(1) Unadj.	(2) Adj.	(3) Unadj.	(4) Adj.
Treated	0.146*** (0.0522)	0.139*** (0.0323)	0.143** (0.0557)	0.128*** (0.0414)
High DM at baseline			0.0658** (0.0304)	0.0269 (0.0307)
Interaction term (Treated * High DM at baseline)			0.00897 (0.0417)	0.0186 (0.0390)
Observations	2,123	2,123	2,123	2,123
R-squared	0.023	0.168	0.028	0.169

Notes: Estimations use difference-in-difference modeling. Robust standard errors clustered at the CWAC level are in parentheses.

*** p<0.01, ** p<0.05, * p<0.1 . Estimations with adjustment include woman's age, education and marital status, household size and household demographic composition, and districts.