An empirical investigation into a financial poverty trap

April 27, 2020
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Abstract Despite the claimed target to the poor, the existing microcredits rarely cover the ultra poor people. Using a randomised controlled trial in a rural, low income setting of northern Bangladesh, we assess the creditworthiness of the ultra poor and a suitable microcredit scheme to help them escape from the poverty trap. We use a stepped-wedge design over the key features of loans, i.e., small-scale sequential disbursement vs lumpy upfront disbursement, with vs without grace period, and cash vs in-kind loans with managerial training programs. Compared with the traditional, Grameen-style microcredit, the provision of upfront liquidity increases both repayment rates and asset levels. This is consistent with the existence of asset-based poverty traps which can be overcome by increasing the loan size. It is also shown that entrepreneurship supports induce participation to microfinance of less experienced and poorer households, but a grace period does not change asset levels. These are accompanied with increased labour income growth towards the end of loan cycle. We interpret this as evidence of repayment discipline. Given the lack of alternative lenders in the area, we argue that high repayment rates need not generalise to other contexts. Our main findings, managerial support programs induces the participation of the ultra poor and upfront liquidity with a large sum results in faster asset accumulation that is suggestive of an escape from a poverty trap, are generalisable to other rural areas that are suited to cattle and goat production.

Contents

I Introduction

According to over 3700 microfinance institutions (MFIs), there are estimated 204 million borrowers around the world in 2013, of which 110 million are the poor borrowers whose incomes are below the national poverty line (Microcredit Summit Campaign, 2015). The outreach to the extremely poor population or the *ultra poor*, however, is arguably slow in comparison.[*1] This is in contrast with the idea that "everyone is an entrepreneur" where MFIs provide credits to the people of any income levels.[Abu-san: Can you get a reference for this in the BibTeX format? I have a 2017 Guardian article quoting https://www.theguardian.com/sustainable-business/2017/mar/29/we-are-all-entrepreneurs-muhammad-yunus-on-changing-the-world-one-microloan-at-a-time]

The potential reasons behind the slow outreach to the ultra poor can be classified into demand and supply sides. On the demand side, the ultra poor borrowers may not be entrepreneurial enough to demand credits for production, or may face an inferior production possibility than wealthier borrowers. On the supply side, MFIs may perceive the ultra poor as riskier than the moderately poor, or the loan size may be too small to justify the fixed transaction costs while the lender is constrained to keep the interest rate low to avoid adverse selection and moral hazard. However, the creditworthiness of the ultra poor and the resultant welfare dynamics have been rarely examined empirically. The existing program targeting the ultra poor, exemplified by BRAC graduation program, is based on grants, rather than loans, and the sustainability of such a program may be questionable given the limited governmental budgets.

In assessing the creditworthiness and suitable credit scheme for the ultra poor on a quasi-commercial basis, we ran a randomised controlled trial on the poorest population in the river island areas of northern Bangladesh. By changing the conditions on the credit supply, we estimate and test the effects of demand side constraints. Specifically, by collaborating with a local NGO operating microcredit, we assign the following four arms that have the equivalent loan size with different characteristics in frontloaded liquidity, grace period, the lending vehicle, and bundling of support programs: (1) A traditional Grameen-style microcredit programme with a small loan amount, which requires clients to start repayment within two weeks after receiving the loan, with one-year maturity. Loan disbursement is repeated twice so the total loan size becomes the same with other schemes; (2) A loan that is three times larger than the regular programme with three-year maturity; (3) A loan that equivalent to the second one, except that it comes with a one-year grace period before they start to repay; (4) An in-kind loan equivalent to the third one bundled with services to implement a microenterprise project. Hence, we take a stepped-wedge design over the key attributes of loans: small-scale credit vs upfront lumpy credit; with vs without a grace period; and cash vs in-kind loans with support programs. By comparing the additional traits assigned to each treatment arm, this study aims to identify the demand-side constraints as well as welfare and asset dynamics of alternative credit schemes.

The leased out asset, a heifer, is a prime investment choice in the studied area. where periodic floods and land erosion frequently threaten the livelihoods of its dwellers. A heifer needs to be at least two years old to start lactation. The maximum amount households can borrow is set at the affordable level to purchase a one-year old heifer except for the traditional Grameen-style credit arm. We explore the investment decisions and welfare consequences induced by relaxing liquidity constraints in comparison between (1) and others. Since households with a one-year old heifer must wait for another one year before it starts to lactate, we give one year grace period to match the cash

[*1] MF is not successful in reaching out to the poorest of the poor, or the ultra poor (Scully, 2004). Empirical evidence in Yaron (1994); Navajas et al. (2000); Rahman and Razzaque (2000); Armendáriz-Aghion and Morduch (2007) supports this claim. Some authors discuss the tradeoff between sustainability and outreach for microfinance institutions (MFIs) Hermes and Lensink (2011); Hermes et al. (2011); Cull et al. (2011).

flow profile of presumed (dairy cattle) production in treatment (3) and (4).

An in-kind offer in treatment (4) is generally thought to be less efficient than a cash offer as it takes away a choice from the borrower. In addition, only the borrowers of cash lending have a chance to misuse the cash unproductively. However, the local microfinance practitioners widely agree that other production opportunities are limited in our setting given environmental constraints.[*2] We also found in our data that most of cash borrowers started to invest in cattle, hence we find no evidence of misuse. Consequently, in our study, the cash-grace period and in-kind-grace-period lending differ only in the bundled services provided in the latter. Given the small set of the productive investment choices in our setting, our experiment gives a unique chance to compare cash lending with in-kind lending, even without controlling for the different choice set of projects. Moreover, a packaged loan that bundles an asset lease (one-year old heifer) with managerial support programs is intended to render entrepreneurship unnecessary, which is thought to be one of the major constraints for the ultra poor to access the microcredit. Provided that our managerial support program offers a sufficiently wide range of services, the package is expected to achieve a return that is no smaller than a regular credit, even when the entrepreneurial skills are essential. As we track all — barring the flood victims whose villages were washed away — the potential borrowers including who eventually opted out the borrowing, we are able to estimate the intention-to-treat effects of offering loans and their implied necessity for entrepreneurial skills.

Our study closely follows the literature of microfinance design as hallmarked in Field et al. (2013) who found a grace period induces more risk taking and subsequent loan delinquency. Similar to their study, we allow selected borrowers a grace period in repayment. Under our setting, however, it is irrational to invest in riskier assets when the designed grace period suits the actual cash flow, provided that a heifer has a Pareto-dominant risk-return investment profile. A strategic default is also more difficult in our setting because the number of alternative credit suppliers is limited, which is probably zero.[*3] We therefore expect a larger loan size, longer maturity, and a grace period would not directly result in moral hazard both in *ex ante* and *ex post* sense.

Our study is closely related to a large scale cattle transfer study conducted in the neighbouring area (Bandiera et al., 2017; **?**). The targeted population of their study is similar to ours, yet our study population resides on less stable terrain, are more exposed to flood and water logging, are considered to be less well connected to the market, are equally less trained, and are probably poorer. The chance of survival for each investment is expected to be no higher. The difference in experimental design is that they use a transfer while we use loans and leases, and charge a market-rate fee to everything we provide. Our experiment is designed to be financially viable if the repayment is made.

Our study is also related to the poverty trap literature. With the stepped-wedge design, the difference in the loan size allows us to test if there is an increasing returns to scale, or nonconvexity in the production set. A nonconvex production set is considered as the leading cause of a poverty trap in development economics (Galor and Zeira, 1993). In our study area, a regular, small scale loan is just the size of acquiring a goat or a sheep, while a larger sized arm allows a purchase of a heifer. When the return to a heifer is higher than to a goat/sheep, there is a scope of poverty trap because a heifer cannot be acquired in parts and the borrower is facing a binding credit constraint. Our study therefore serves to provide micro-level evidence of a poverty trap that is frequently studied in macroeconomics.

We found that having large liquidity in upfront leads to faster asset accumulation and higher loan repayment rates. We consider this as evidence of a poverty trap which is formed by the nonconvex production set of a heifer, consistent with the recent study by **?**. There is little difference in the outcomes between cash and in-kind lending as well as with and without a grace period. This implies

[*2] I is also notable that a closely related project in the neighbouring areas transfers an asset in the form of a cow(Bandiera et al., 2017).

[*3] As we surveyed the area before the study, we note several NGOs provide a relief credit to flood victims, not regular finance. We also choose population without access to any financial institution.[Abu-san: A better description for this?]

they have no ITT effects. We interpret this as due to a more homogenous investment opportunity in the area compared with the urban setting of Field et al. (2013). Looking closely at the participant characteristics, however, we found that in-kind lending attracted the borrowers with less cattle rearing experiences and lower asset values. In interpretation, people who are not entrepreneurial enough to overcome less cattle rearing experiences and not entrepreneurial enough to take risks at a lower asset level did not participate in the cash lending arms, while did so in the in-kind lending arm. This hints some entrepreneurship is required for microfinance participation and repayments, and the managerial support program might have closed such gaps in entrepreneurial skills.

In the following section, we summarise the existing literature. Section III gives the brief account of background of study site. Section VII shows a possible mechanism of poverty trap that our target population is under. Section IV lays out the details of experimental design. Section V explains the estimation strategy. In section VI, we provide a brief overview of the experimental results. Section VIII discusses the interpretation of results.

II A brief review of existing studies

Much has been discussed about the poverty reduction impacts of microfinance in the early days of microfinance studies (Morduch, 1999). Recently, doubts are cast on the magnitude of microfinance impacts (Banerjee et al., 2015a; Duvendack and Mader, 2019; Meager, 2019) while asset grants (capital injection) remain to show high returns (de Mel et al., 2008; de Mel et al., 2014; Fafchamps et al., 2014; Bandiera et al., 2017). [*4] Lack of mean impacts led researchers to look for a particular subgroup which shows impacts, or impact heterogeneity (Banerjee et al., 2017): Borrowers with prior experiences or high ability are shown to have higher returns (Banerjee et al., 2015c; McKenzie, 2017; Buera et al., 2017). The studies with a focus on experienced members or existing firms can be considered as looking at impacts on the intensive margins. In contrast, our study is targeted to an isolated greenfield population. We look at impacts on the extensive margins which are relatively less studied.

The fact that experienced members gain larger benefits from microcredit is consistent with the positive impacts of capital grant programs on existing firm owners. Whether such experience is trainable for novice entrepreneurs remains unsettled. A growing body of management capital literature in developing countries is insightful yet most of the research is necessarily geared to existing firms, so it does not inform much on how one can assist novice entrepreneurs.[*5] Karlan and Valdivia (2011); Bruhn and Zia (2011); Argent et al. (2014) are the exceptions, but results and quality of evidence are mixed and inconclusive. The current study explicitly tests if the entrepreneurship matters in microfinance outcomes for an isolated greenfield population, which is still relatively less studied.

Another strand of the literature links capital grant effectiveness with production set nonconvexity. Theories base lumpiness and credit market imperfection as keys to a povety trap (e.g., Galor and Zeira, 1993) but its empirical application is scant. When the production set is convex, a small scale transfer may not lead to a sustained increase in income, as it can be either consumed or invested

[*4] This is due partly to insufficient statistical power (McKenzie and Woodruff, 2013). Banerjee et al. (2015a) collects five studies of microfinance lending impacts. They raise lack of statistical power due to low take up. This naturally gives way to erroneously large impacts. Banerjee et al. (2015a) point that more able and experienced borrowers saw larger, "transformative effects." In the current study, in contrast, the up take rate is relatively high at 75%, of which 5% is lost to flood.

[*5] Bruhn et al. (2018) shows intensive management consulting services to the small scale firms in Mexico resulted in sustained improvements in management practices which led to higher TFP and larger employment. Others also show effectiveness (Calderon et al., 2011; Berge et al., 2012; Bloom et al., 2013) while others do not (Bruhn et al., 2012; Karlan et al., 2015). McKenzie and Woodruff (2013) put them as: These managerial impacts studies are too different to compare, in terms of population, interventions, measurement (variables, timing), and most importantly, implied statistical power in the design.

to a technology with decreasing marginal returns that brings back to the original income level (i.e., the lower equilibrium of poverty trap). A few studies of transfer programs report sustained increase in assets and incomes. A transfer program in northern Bangladesh that is closely related to this study shows an occupational change and an income increase (Bandiera et al., 2017). Other transfer programs to the ultra poor also show increases in incomes and assets (Blattman et al., 2014; Banerjee et al., 2015b; Blattman et al., 2016; Haushofer and Shapiro, 2016). Banerjee et al. (2015b) reports increased consumption, asset levels, saving, various incomes of the ultra poor after receiving a large transfer. Similar to these studies, our study our study examines the nonconvexity of higher-return production set. finds evidence consistent with the nonconvexity of higher-return production set. Our study incorporates a heifer lease. As a heifer requires a lead time before producing milk, we introduced a grace period in the cash lending to make the comparison with the heifer lease more straightforward. Previous research in the urban setting has shown that a grace period induces more aggressive risk-taking (Field et al., 2013). The experimental setting of the current study has much a smaller choice set that limits the scope of risk taking. The design of this study is in line with Beaman et al. (2015) who redesigned the repayment schedule adopted to the borrower's cash flow profile (repay after harvest), thus, on a good faith, a grace period is expected to reduce delinquency because the term mismatch is eased.

III Background

he study area is in the river island, known as Chars in Bengali, of northern Bangladesh in Gaibandha and Kurigram districts. Chars are formed by sediments and silt depositions and are prone to cyclical river erosions and floods. Chars are not stable in size and even in existence, and episodes of their partial or complete erosion or submerging are quite common. Chars accommodate ultra-poor inhabitants who are forced, as a desperate attempt for survival, to relocate across islands due to river erosion and floods.

In the study area, cattle and goats/sheep are the main livestock that residents own. Rearing costs are higher for cattle as it requires fodder while a goat will eat the bushes. Cattle requires vaccination shots when a goat is usually left unvaccinated. Reproductive capacity of goats are high that parity size approaches to 2 at the third birth, and the birth interval is about 200 days (Hasan et al., 2014). An indigenous cow has a birth interval of 375 to 458 days (Hasan et al., 2018), resulting in about 2 years for gestation and calving interval (Habib et al., 2012) with the mean lifetime births of 4 (Hasan et al., 2018, Table 1).

Goat kid's potentially higher reproductive capacity and lower rearing costs are, however, more than offset by the elevated morbidity and mortality risks, and a less frequent cash flow. Indeed, morbidity of goat kids ranges from 12% (Mahmud et al., 2015) to more than 50% in some diseases (Nandi et al., 2011, Table 5), while cattle morbidity is around 22% (Bangar et al., 2013). Goat kid mortality ranges from 6% (Mahmud et al., 2015) to 30% (Paul et al., 2014, Table 5) (Ershaduzzaman et al., 2007). Heifer mortality is between 5% (Hossain et al., 2014, p.332R) to 10% (Alauddin et al., 2018). Higher morbidity of goat kids partly reflects their eating style that uses lips rather than tongues (as cattles do) and vulnerability to logging water.

Lactation length is 227 days and milk yield is 2.2 kg per day (Rokonuzzaman et al., 2009) while goat milk is seldom marketed. It is also worth noting that a meat market requires a cluster of relatively high income earners, which takes some efforts to get to from the river islands. Goat meat sales is seasonal and it does not provide a frequent cash flow. Residents also report that a goat herd is less mobile than single cattle when they are forced to evacuate during the flood. All of these considerations prompt residents to opt for cattle when they can afford it, and do not expand the herd size of goats, which are both confirmed in our data.

IV Experimental design

To investigate the detailed demand-side constraints and suitable credit scheme for the ultra poor, we implemented the village-level clustered randomization across the four treatment arms as follows:

T1 Traditional microcredit. The design of this treatment arm is similar to that of the flagship Grameen-style microcredit lending, which is widespread in Bangladesh. Under this treatment arm, members of the group will receive 5600 taka credit, with loan repayment beginning two weeks after disbursement. Members repay with weekly installments and are required to attend weekly meetings as well as to regularly save an amoun t decided jointly by the group members. The contract maturity is one year, and borrowers are allowed to make another two loan contracts of equivalent amounts over the next consecutive years. The weekly repayment is 125 taka payable in 50 installments.

T2 Upfront lumpy credit without a grace period. Under this treatment arm, group members receive 16,800 taka credit with a longer period of loan maturity, with loan repayments beginning two weeks after disbursement. The weekly repayment is the same amount as in the T1 arm. The compulsory saving applies as in the T1 arm. The loan maturity is three years. The required weekly repayment is 125 taka payable in 150 weekly instalments (for three years).

T3 Upfront lumpy credit without a grace period. Under this treatment arm, group members receive 16,800 taka credit with loan repayments beginning one year after disbursement. During the first year grace period, members are required to meet weekly and follow group activities such as compulsory savings just as in other arms. The compulsory saving is the same as in the T1, T2 arms. The loan maturity is three years. The required weekly repayment is 190 taka payable in 100 weekly installments, starting after one year.

T4 In-kind credit with a one-year grace period and managerial support programs. Under this treatment arm, group members receive in-kind credit in the form of a one-year old heifer, within the price range of 16,000 taka with loan repayment beginning one year after disbursement. In comparison with smaller livestock such as goats, cows are more versatile in flood-prone areas. They typically need to be about 15 months old to be ready for insemination and takes about 9.5 months to deliver a calf as it starts lactation, or the total of about 2 years. This corresponds to the grace period length provided under the T3 and T4 arms when we acquire one year old heifers. In addition, the members receive fodder, training on cow rearing, regular veterinary and vaccination services, and marketing consultancy services from the local NGO, at the total fee of 800 taka charged over the three years.

One of the aims of the study is to assess if the entrepreneurship matter in microfinance lending outcomes. Assuming that the economically most lucrative asset is a heifer, we bundle training with a heifer lease. At the start of a lease, our expert procures a heifer from the local market, so the leasee does not have to have the knowledge required for the quality purchase. We provide knowledge to a group of borrowers through training and disallow an investment choice by leasing out an asset, so some part of entrepreneurship will no longer be a prerequisite. It can be seen that we are offering a capacity to use the best practice or the *cristalised intelligence* related to cattle production (Cattell, 1963). This is only a part of entrepreneurial skills. The remainder, a capacity to apply a suitable action to unforeseen events or the *fluid intelligence* related to cattle production is left unchanged. Borrowers of other arms who are not provided the knowledge may opt out the loan or perform worse, if entrepreneurship raises productivity. One can measure impacts of entrepreneurship by comparing these two groups, in-kind credit vs. cash credit.

As a natural reference, we compare the in-kind packaged loan (T4) with the traditional regular microcredit, a classic Grameen style loan that is about a third in loan size and maturity with no grace

TABLE 1: A 4×4 FACTORIAL, STEPPED WEDGE DESIGN

	large, grace	large	traditional
cow	entrepreneurship constraint (InKind)	saving constraint (WithGrace)	liquidity constraint (Upfront)
large, grace		saving constraint (WithGrace)	liquidity constraint (Upfront)
large			liquidity constraint (Upfront)

Note: Cell contents are hypothesised constraints on investments that exists in the column arm but are eased in the row arm. Contents in brackets are variable names of respective attributes.

period (T1). In order to make comparison feasible, we added two intermediate treatment arms to bridge them: Two arms with a large amount of cash lending that is equivalent of heifer price, one with a grace period (T3) and another without a grace period (T2). With the loan sizes that are three times the traditional microfinance loans, we extended the maturity to three years. The comparison arm, the traditional regular microcredit, has only one year maturity. We therefore provided the total of three loans in three loan cycles which are unconditionally disbursed annually so the total loaned amount will be aligned and there is no selection before three cycles are complete due to delinquency.

In these settings, frontloading liquidity without changing total loan size eases a liquidity constraint, attaching a grace period under the same loan size and disbursement timing eases a saving constraint prior to loan receipt, and offering an in-kind lease with managerial support without changing loan size, disbursement timing, and a grace period eases an entrepreneurship constraint. In effect, we constructed a stepped-wedge design over these key features of loans, namely, upfront liquidity (Upfront), a grace period (WithGrace), and in-kind with managerial supports (InKind), to assess respective impacts on the outcomes as indicated in TABLE 1.

Our sample is drawn from the population of river island villages in Northern Bangladesh. We selected the areas of no NGO/MFI activity. 80 villages are randomly chosen and we formed a member committee of 10 households, of which 6 are ultra poor and 4 are moderately poor. The poverty status was determined by a participatory ranking process. We randomised the loan arms at the village level. All loan products are of individual liability and the committee was intended to serve as an activity platform for MFI operations.

Baseline data was collected in 2012 prior to the loan type randomisation. After offering the arms, three groups opted out as a group. This was unexpected as we have explained the loan types, the random assignment process, and have obtained everyone' s consent to participate before randomisation. Although they refused to receive a loan, they gave a consent to be surveyed so we track them in subsequent survey rounds. We further lost four groups to the flood in 2013. As they relocated, we had no choice but to drop them from the study. Counting other individual attriters, we have 116 subjects (14.5%) who attrited by the final round. We find that attrition as random (TABLE 2). In addition to group level rejection/attrition, we had 90 individual loan rejectors. They agreed to receive a loan before we offered it, and they changed their minds. We retain them in the study as they agreed to be surveyed even in the absence of loans. As a result, we have flood victims whom we do not track, group rejectors, individual rejectors and borrowers that we track. See Takahashi et al. (2017) for more details on the randomisation and acceptance process.

V Empirical strategy

We collect data in one baseline and three annual follow up surveys. With successful randomisation (see Section VI.1 and Appendix B), we use ANCOVA estimators to measure impacts of each

experimental arms and loan attributes. ANCOVA estimators are more efficient than DID estimators (Frison and Pocock, 1992; McKenzie, 2012). As we include loan rejecters, what we are estimating is intention-to-treat effects. For an ease of interpretation, we will also use indicator variables for each attribute, Upfront, WithGrace, InKind. Numerically, both are equivalent. Arms and attributes are just two ways of labeling the same data, so, in what follows, we will jointly refer to them as attributes for simplicity.

The basic estimating equation for our intention-to-treat effects is:

$$y_{it} = b_{10} + \boldsymbol{b}_1' \mathbf{d}_i + b_2 y_{i0} + e_{it}, \tag{1}$$

where, for member i in period t, y_{it} is an outcome measure, $\mathbf{d}_i$ is a vector of indicator variables in loan attributes that i receives, e_{it} is an error term. For the traditional arm, the conditional mean of outcome given covariates and baseline outcome variable is given by b_{10}. For an attribute a, the impact relative to the traditional arm is measured with b_{1a}. As we are interested in the time course of impacts, we allow for time-varying impacts as:

$$y_{it} = b_{10} + \boldsymbol{b}_1' \mathbf{d}_i + b_{t0} c_t + \boldsymbol{b}_t' c_t \mathbf{d}_i + b_2 y_{i0} + e_{it}, \tag{2}$$

where c_t is a period indicator variable for $t > 1$ that takes the value of 1 at t, 0 otherwise. We use the second period (period 2 in most cases) as the reference for time dummies. b_{t0} measures the period t deviation from b_{10} for the traditional arm, $\boldsymbol{b}_t'$ measures the period t deviation from the concurrent traditional arm for each attribute. For the traditional arm, the conditional mean of outcome given covariates and baseline outcome variable is provided by $b_{10}+b_{t0}$. All the standard errors are clustered at the group (char) level as suggested by Abadie et al. (2017).

VI Results

VI.1 Participation

The reasons behind nonparticipation are fundamental in understanding the outreach. In addition, selective attrition from the sample, if any, biases the estimates so we need to compare the attriter's characteristics with the nonattriters. In this section, we check how participation and attrition are different between the arms. To do so, we test if the household characteristics are different between participants and rejecters, or attriters and nonattriters. We use permutation tests to examine if there is a difference in mean characteristics between any two groups. We use 100000 random draws from all admissible permutations. Holm's step-down method is used to adjust p values for multiple testing of multi-factor grouping variables.

Before examining participation decisions, we confirm the randomisation balance. Despite there were rejections to participate at the group level, we see randomisation balance was reasonably achieved as there is no household characteristics whose p value for the mean difference to exceed 10% between intervention arms (Table B1 in Appendix B).

We examined the difference between various groups defined by rejections and attrition in Appendix C. In summary, group rejecters of traditional and non-traditional differ. Lower livestock values, smaller cattle holding, and smaller net asset values are associated with group rejection for traditional arm (Table C9), while a higher baseline flood exposure rate, a younger household head, and higher cattle holding are associated with group rejection for non-traditional arms (Table C10). Given randomisation, we conjecture that it is lack of liquidity, or lack of Upfront attribute, prevented smaller livestock holders of traditional arm from participating because they cannot purchase cattle due to insufficient net asset values or an insufficient resale value of livestock, when members of similar characteristics partcipated in non-traditional arms. It is reasonable to see that flood victims did not participate in the non-traditional arm, when they are younger and have already relatively more cattle than average.

While group rejecters have different characteristics between traditional and non-traditional arms, we observe the similarity between individual rejecters of traditional arm and non-traditional arms (Table C13). In fact, they are not very different in all the variables considered. The common factors associated with nonparticipation are a smaller household size and smaller livestock holding (Table C14, Table C15), although, in non-traditional arms, the individual rejecters have only marginally different mean values relative to individual nonrejecters (Table C16).

[I added below but deleted by Takahashi-san, any reason why we should?]

- These hint that it may take a larger household size to raise cattle, and the households who have more livestock may have the capacity to raise more. To interpret this, it is possible that smaller households may be facing a domestic labour constraint in raising cattle. There is yet another possibility that a smaller household size reflects the space limitation to accommodate cattle under the roof. These constraints are expected to be absent in asset transfer programs where targeted residents can sell the asset if the constraint binds. In either case, it is a binding domestic physical capacity constraint that withholds participation. We conjecture that the households under a binding liquidity constraint and/or a binding domestic capacity constraint did not meet the conditions to raise cattle, thereby have withheld themselves from the program. This self selection may have caused the repayment rates to be higher than when everyone participated.

For the non-traditional arm members, baseline flood exposure is strongly correlated with individual rejection. This suggests that a population prone to natural calamity and associated asset shocks may voluntarily opt out the borrowing, which explains the lack of commercial and even noncommercial/NGO lenders in the flood prone area.

It is worth noting that partcipants in in-kind arm differ from other arms in having less cattle rearing experience seen in initial cattle holding, in having higher flood exposure rate, and in having lower asset values. These may be seen as disadvantages in rearing a heifer, and in-kind arm induced partcipation despite them.

The survey resulted in a moderate rate of attrition. We checked for systematic differences between attriters and nonattriters in Table 2 (see more detailed attrition examination in Appendix C). The attrition is not correlated with a household level characteristics. As attrition rates differ between traditional and non-traditional arms, we compare them in Table 3. It shows that traditional arm attriters have a lower rate of head literacy while non-traditional arm attriters are more exposed to the flood. The traditional arm attriters may be less entrepreneurial, if anything, so their attrition can upwardly bias the positive gains of the arm, hence understate the relative impacts of non-traditional arm. Attriters of non-traditional arms have similar literacy as non-attriters but have more exposure to flood. Attrited members of non-traditional arms do not show indication of being different in terms of productivity, thus is expected not to cause a bias in a predictable way. Overall, attrition may have attenuated the impacts but is not likely to inflate them.[*6]

VI.2 Impacts

Figure 1 summarises the main impact estimation results in time-varying specification of (2). See Appendix D for full estimation results. There are three stock outcome variables, land holding values, number of cattle, and net asset values, where net assets are defined as total assets less debt outstanding. For each outcome, there are six panels. The left most column panel shows stock evolution for the traditional arm. The traditional panels are intended to indicate the underlying trend conditional on covariates and baseline outcomes. In all other panel columns show the deviation from concurrent

[*6] So one can employ the Lee bounds for stronger results, but doing so will give us less precision and require more assumptions. We will not use the Lee bounds [we can show them if necessary].

TABLE 2: PERMUTATION TEST RESULTS OF ATTRITION

variables	NonAttrited	Attrited	p-value.lower	p-value.mid	p-value.upper
HeadLiteracy	0.115	0.112	0.873	0.937	1.000
HeadAge	37.996	39.095	0.279	0.280	0.281
HHsize	4.178	4.267	0.537	0.548	0.559
Arm	0.789	0.517	0.000	0.000	0.000
FloodInRd1	0.493	0.496	0.920	0.960	1.000
HAssetAmount	774	705	0.210	0.210	0.210
PAssetAmount	1161	1266	0.665	0.665	0.665
LivestockValue	6069	5554	0.533	0.533	0.533
NumCows	0.271	0.262	0.813	0.832	0.850
NetValue	7722	7790	0.962	0.962	0.962
n	684	116	(rate: 0.145)		

Source: Estimated with GUK administrative and survey data.

Notes: 1. R's package coin is used for baseline mean covariates to conduct approximate permutation tests. Number of repetition is set to 100000. Step-down method is used to adjust for multiple testing of a multi-factor grouping variable. Attrited and Nonattrited columns show means of each group. For Arm, proportions of non-traditional arm are given.

2. ***, **, * indicate statistical significance at 1%, 5%, 10%, respetively. Standard errors are clustered at group (village) level.

TABLE 3: PERMUTATION TEST RESULTS OF ATTRITERS BETWEEN TRADITIONAL AND NON-TRADITIONAL ARMS

variables	NonTradArm	TradArm	p-value.lower	p-value.mid	p-value.upper
HeadLiteracy	0.125	0.028	0.096	0.151	0.206
HeadAge	40.175	38.694	0.578	0.582	0.585
HHsize	4.275	3.972	0.382	0.402	0.423
FloodInRd1	0.650	0.400	0.021	0.030	0.039
HAssetAmount	697	684	0.919	0.921	0.924
PAssetAmount	767	882	0.252	0.252	0.252
LivestockValue	3382	5094	0.246	0.247	0.247
NumCows	0.152	0.242	0.220	0.241	0.263
NetValue	4702	5375	0.818	0.818	0.818
n	40	36	(rate: 0.474)		

Source: Estimated with GUK administrative and survey data.

Notes: 1. R's package coin is used for baseline mean covariates to conduct approximate permutation tests. Number of repetition is set to 100000. Step-down method is used to adjust for multiple testing of a multi-factor grouping variable. NonTradArm and TradArm columns show means of each group. Attrition due to flood is dropped.

2. ***, **, * indicate statistical significance at 1%, 5%, 10%, respetively. Standard errors are clustered at group (village) level.

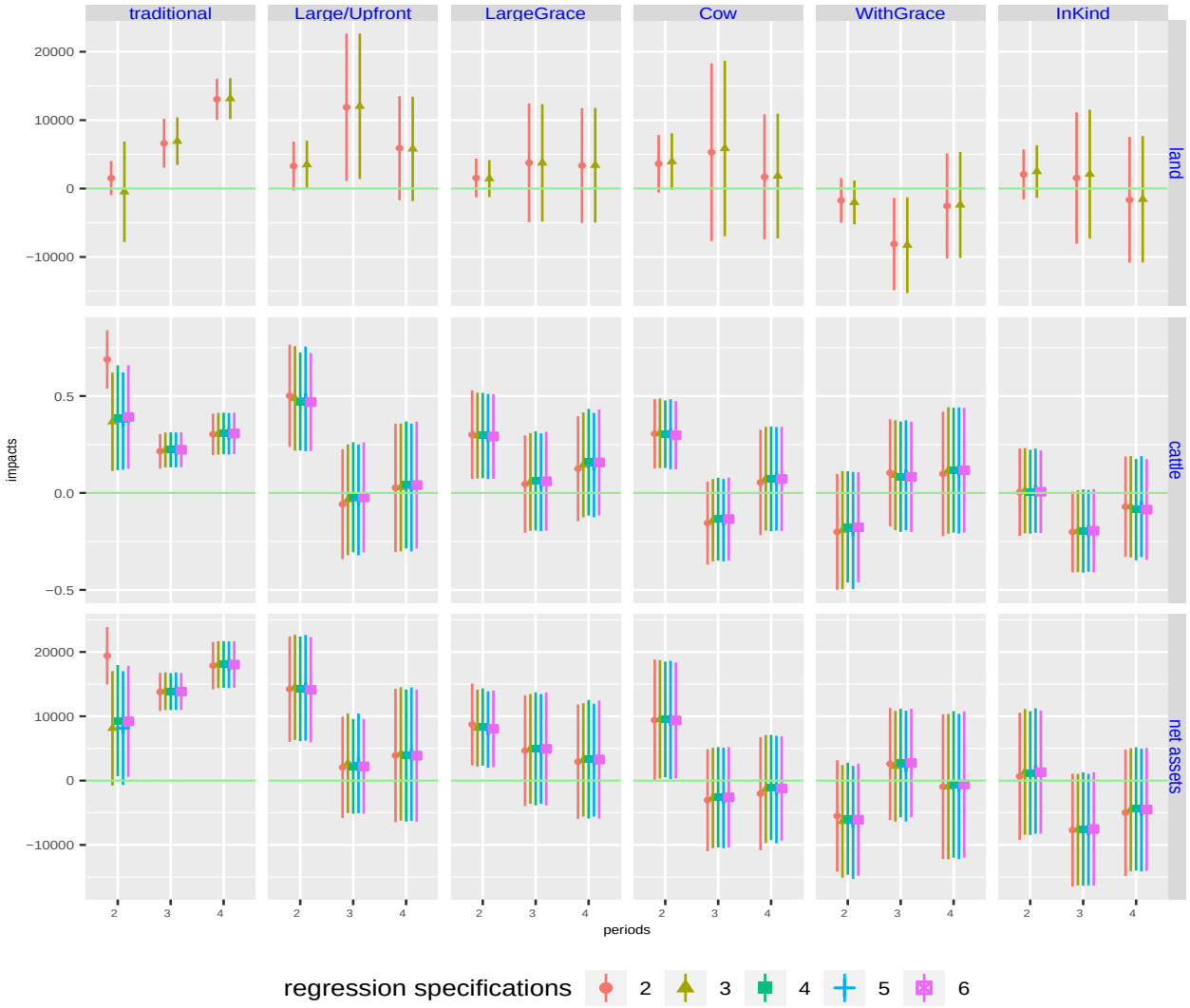
traditional arm values. The non-traditional panels give the time-varying impact estimates (relative to traditional arm) of each attribute and their 95% confidence intervals. In each period, there are several estimation specifications which are bunched side-by-side. [Following may be in footnote] Specification 1, which is omitted from the plot, is an OLS regression without the baseline outcome provides a reference for ANCOVA estimates. This is intended to show robustness to specification changes at a glance.[*7] One sees that there is little variation across specifications. Cattle and net assets have more regression specifications due to their possible dependence on previous cattle ownership and its inclusion as a covariate.

There are notable tendencies in the figure. First, in cattle holding and net asset panels, there is a one time increase at period 2 in all non-traditional arms while the conditional mean values are relatively unchanged for the traditional arm. This means that the non-traditional arms have increased cattle holding once and stayed increased relative to the traditional arm. Estimates for cattle holding of traditional arm remain relatively unchanged in all periods, so a one time increase implies a gap in cattle holding was created in period 2 and the gap stayed unchanged.

Secondly, it is the Upfront attribute that shows positive impacts in all outcomes. Estimates for net assets of traditional arm show an upward trend. On top of this underlying trend, all non-traditional arms show a one-time increase, or a gap relative to traditional due to the Upfront aspect of lending. Results of land holding is similar to net assets, as it is a part of net assets, but the gap widens as period progresses. This is seen in the point estimates of non-traditional arms that are positive, yet most of estimates are imprecise and have their 95% confidence intervals crossing zero. This is consistent with the nonconvex production technology for cattle under a liquidity constraint coupled with an inferior, goat production technology.

[*7] As multiple tests are conducted to show uniformity across specifications, not to pick one specific estimate, inference corrections for multiple testing are unncessary.

FIGURE 1: EFFECTS ON LAND, LIVESTOCK, AND NET ASSETS

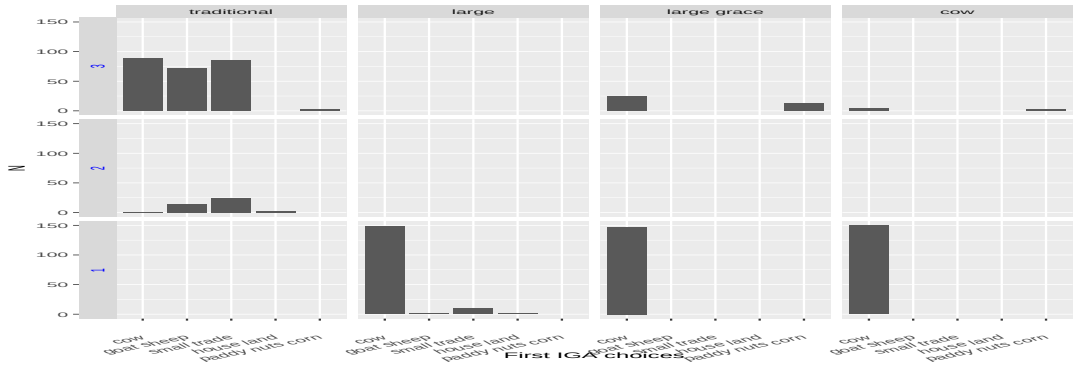


Source: Constructed from ANCOVA estimation results.

Note: Left most column panel shows the conditional means of traditional arm which serves as a benchmark in estimating impacts. In other column panels, all points show the relative difference from concurrent traditional levels depicted in the left most column. Large and Upfront are the same values. Other column panels are grouped either by arm or by attribute. Row panels show different outcomes. Bars show 95% confidence intervals using cluster robust standard errors.

Third, comparing the impacts of the InKind attribute on all stock outcomes against Upfront and WithGrace, we see statistically zero differences. In light of the fact that individuals with less cattle rearing experiences, lower asset values, and higher rate of flood exposure participated in the in-kind arm, the finding that their outcomes are statistically indistinguishable from other arms implies the treatment arm facilitated the average returns to cattle rearing. This implies that the entrepreneurial skills increase the participation to microfinance. This is consisitent with the finding by Banerjee et al that only the experienced or skilled members could reap the benefits. It can be due either to the managerial support program that complimented the necessary codifiable knowledge, or these participants had the same level of knowledge as other participants but found the utility of the managerial support program at their participation decisions. Previous studies targeted the population with a richer set of investment possibilities in a more urbanised setting under which the experience may have a positive return. In the current study, the population resides in a remote area. Even the simpler production process of dairy cattle farming that consists of feeding, grazing, insemination and calving turn out to demand some codifiable skills, or the crystalised intelligence, for participation in microfinance.

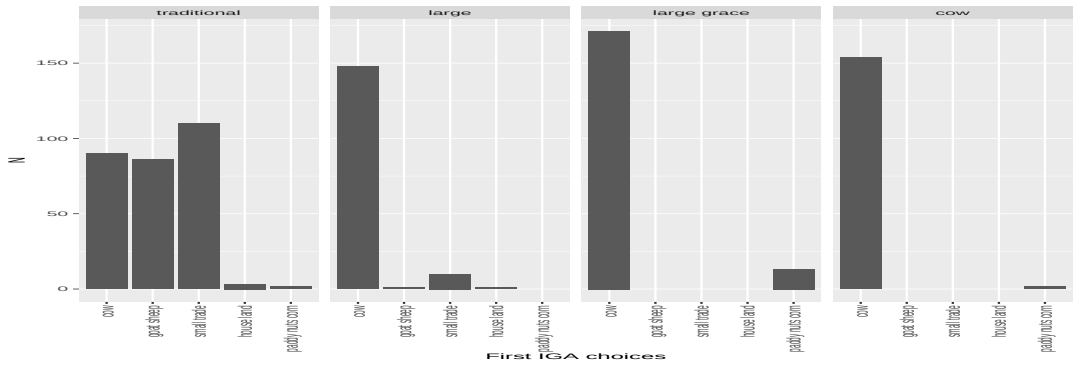
FIGURE 2: ALL IGA CHOICES



Source: Administrative data.

Note: Based on information reported at the weekly meeting. Row panels indicate the total number of IGAs that borrowers own. For example, the row panel under the number '1' indicates the distribution of projects owned by single project members. There is no borrower with only one project in the traditional arm.

FIGURE 3: ALL IGA CHOICES



Source: Administrative data.

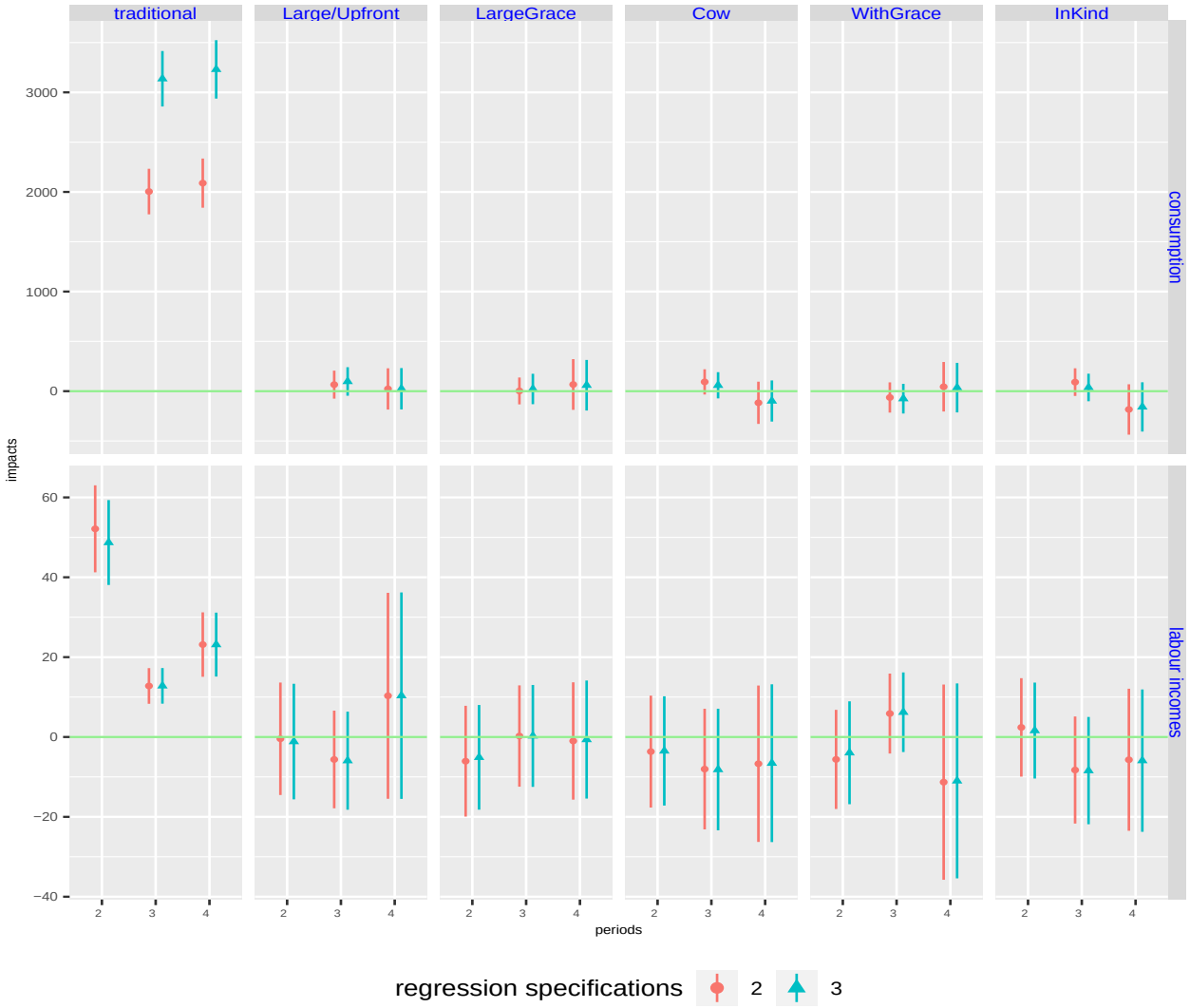
Note: Based on information reported at the weekly meeting. The figure shows the sum collapsed over the total number of projects in each arms of FIGURE 2.

Among all three assets, land holding may be most reliable indicator of wealth for fewer missingness. Net assets are defined as total assets less debt outstanding, yet we have smaller coverage of asset items in the first period which inflates the increasing trend.[*8] Cattle shows the number of cattle owned and it also serves as a check that non-traditional members actually own cattle once the loan/lease is made. [Move this to footnote: The ANCOVA estimates plotted in the figure are net of baseline cattle holding, so even the non-traditional holding estimates sometimes add up to less than 1.] As shown in column (1) of TABLE D34, TABLE D35, in traditional arm, about 79% of members own cattle in period 2. This indicates that even a small loan helped some borrower to increase cattle ownership. On the other hand, non-traditional arms show a larger increase in cattle ownership.

To understand the reasons behind a slower pace of asset accumulation of traditional arm, we plot borrower's reported income generating activities (IGAs)in FIGURE 2 shown by the total number of reported projects that the borrowers have. Row panel under the number '1' indicates the distribution of projects owned by single project members, and so on. This shows that almost no one of the traditional arm invested only in one project while only few members did so with the Upfront

[*8] This change in coverage is common to all arms, and given randomisation, this should not affect identification of imapcts by ANCOVA estimator as it is captured in the estimates of traditional arm, although it adds an extra noise.

FIGURE 4: EFFECTS ON INCOME AND CONSUMPTION



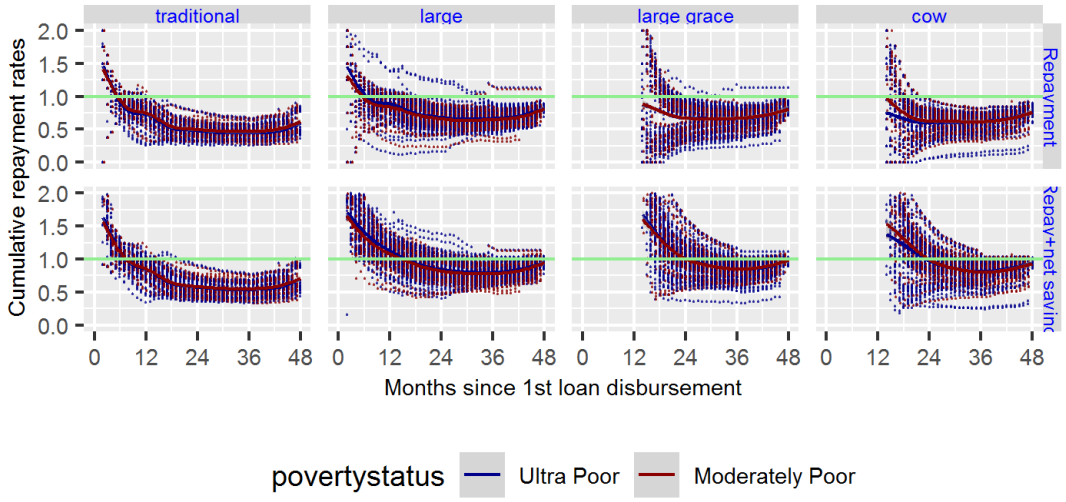
Source: Constructed from ANCOVA estimation results.

Note: Left most column panel shows the conditional means of traditional arm which serves as a benchmark in estimating impacts. In other column panels, all points show the relative difference from concurrent traditional levels depicted in the left most column. Large and Upfront are the same values. Other column panels are grouped either by arm or by attribute. Row panels show different outcomes. Bars show 95% confidence intervals using cluster robust standard errors.

attribute. Goat/sheep and small trades are the top choices for the first income generating activities in traditional. This is consistent with convexity in the production technology of large domestic animals under a liquidity constraint. This also validates our supposition in experimental design that cattle production is the most preferred and probably the only economically viable investment choice. It eases a concern that the cow arm may have imposed an unnecessary restriction in an investment choice by forcing to receive cattle. FIGURE 3 collapses the reported projects over borrowers and shows the total number of IGAs in each arms. There are a significant number of cases in the traditional arm that members reportedly raise cows, yet they are also accompanied by pararell projects in smaller livestock production and small trades.

FIGURE 4 shows impacts on consumption and labour incomes. Style and placement of panels follow the FIGURE 1. Consumption is not measured at the baseline, so we do not use it to understand the welfare impacts but to understand how the members have dealt with the loan repayment through consumption choices. Given randomisation, one can still identify impacts on repayment efforts in terms of consumption suppression relative to the traditional arm. In obtaining ANCOVA estimates, we

FIGURE 5: CUMULATIVE WEEKLY REPAYMENT RATES



Note: Each dot represents weekly observations. Only members who received loans are shown. Each panel shows ratio of cumulative repayment sum to cumulative due amount sum, ratio of sum of cumulative repayment and cumulative net saving (saving - withdrawal) sum to cumulative due amount sum, both are plotted against weeks after first disbursement. Value of 1 indicates the member is at per with repayment schedule. Horizontal lines has a Y intercept at 1. Lines are smoothed lines with a penalized cubic regression spline in ggplot2::geom_smooth function, originally from mgcv::gam with bs='cs'.

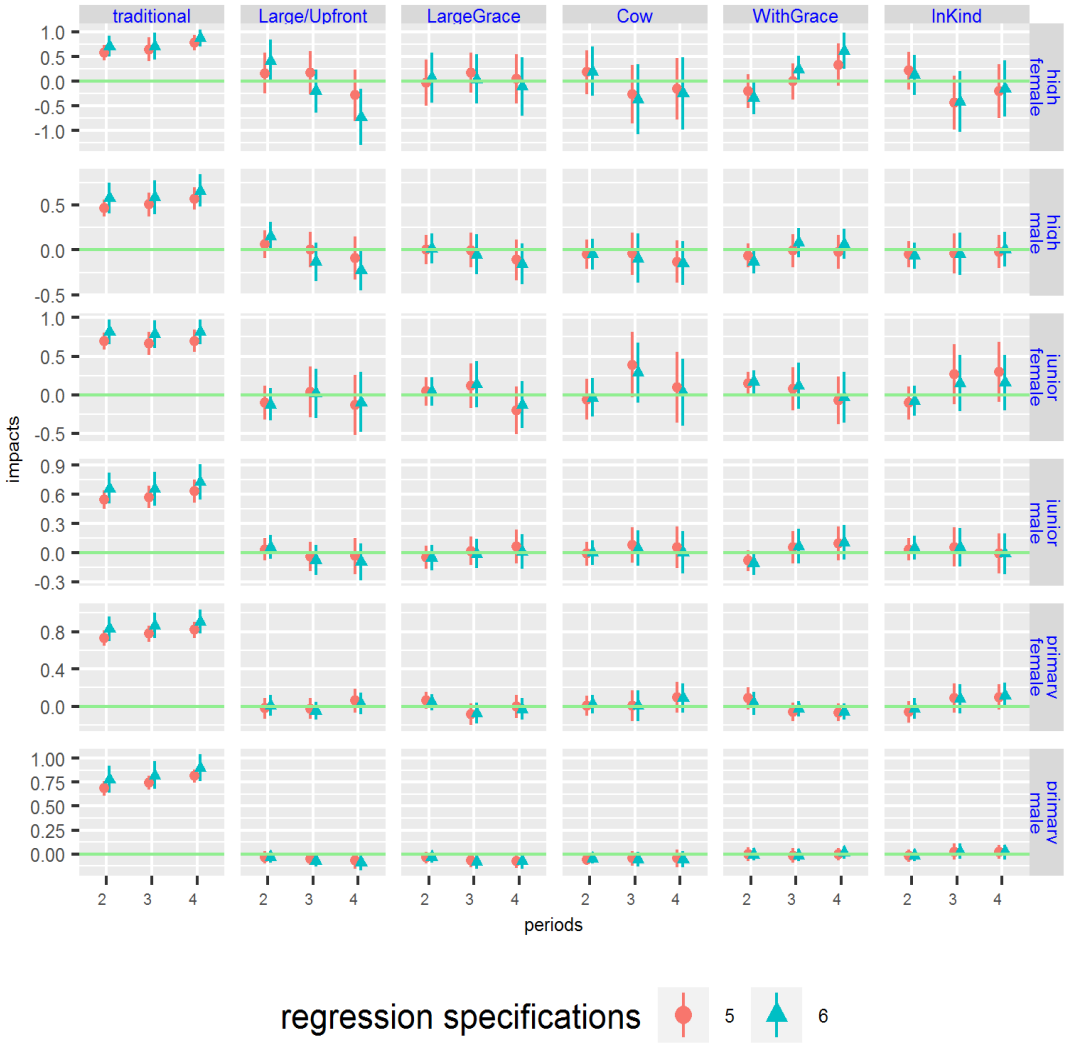
condition on period 2 consumption. [This can be problematic as period 2 consumption is correlated with arm assignment. But the results do not change if we estimate without period 2 consumption as a covariate in specification 1.] Consumption is per capita consumption of the household. Labour incomes is a household level variable and measures earnings from day-to-day casual jobs.

In consumption estimation, the estimates of traditional in specification 2 and 3 differ significantly as the latter involves baseline household size. The impacts of non-traditional arms are almost zero in all panels. This is in contrast to assets where we saw an increase in cattle, land holding and net assets. Borrowing members seem to have put asset accumulation a priority before consumption. Labour incomes are volatile across periods in traditional arm. Just like the consumption, we see no impact in all non-traditional arms. One also notes that labour income is highest in period 2 and is rising from period 3 onwards. Former is due to the flood in period 2 when members were trying to make up for the losses with an increased labour supply. The latter rising trend is consistent with the repayment burden, and is further consistent with the view that the borrowers did not choose to strategically default but tried to repay.

FIGURE 5 shows the repayment results. Top panel shows the ratios of cumulative repayment to cumulative planned installment, the bottom panel shows the ratios of sum of cumulative repayment and cumulative net saving (saving - withdrawal) to cumulative planned installment. Both are plotted against weeks after first disbursement. Each dot represents a member at each time point. Value of 1, which is given by a horizontal line, indicates the member is at per with repayment schedule. Some members saved more than the required repayment at each time points that go beyond 1 in the figure. One sees that repayment rates are above 1 at the beginning but stay below 1 for most of the time. The majority of borrowing members did not repay the loan by the 48th month with prespecified installments. One notes the traditional arm has more of lower repayment rates among all arms. When a member does not reach the due amount with installments, they had to repay from the (net) saving, an arrangement to which the lender and the borrowers agreed at the loan contract signment. Repayment rates after using net saving are 44.71, 93.57, 97.01, 95.42%, respectively, for traditional, large, large grace, cow arms and 87.85% for overall (from AllMeetingsRepaymentInitialSample.rds). [Abu-san: Why does the admin data continue up to the 48th month, not 36th?]

There is little difference in repayment rates by poverty classes. FIGURE 5 depicts both moderately poor and ultra poor in different colours. It is impossible to distinguish between them with eyeballs,

FIGURE 6: EFFECTS ON SCHOOLING



Source: Constructed from ANCOVA estimation results.

Note: See footnotes of FIGURE 1.

and ANCOVA estimates also confirm this (see Appendix D.1.2 for details). This is in contrast to a popular belief that the ultra poor are the riskiest among all income classes. Poverty gradation through a participatory process, however, does not distinguish the moderately poor and the ultra poor on the observables. FIGURE A1 shows net asset values at baseline by poverty class, and FIGURE A2 shows initial livestock values at baseline by poverty class. Both show little difference in these observable characteristics. [According to Abu-san, participatory poverty gradation may have been imprecise.]

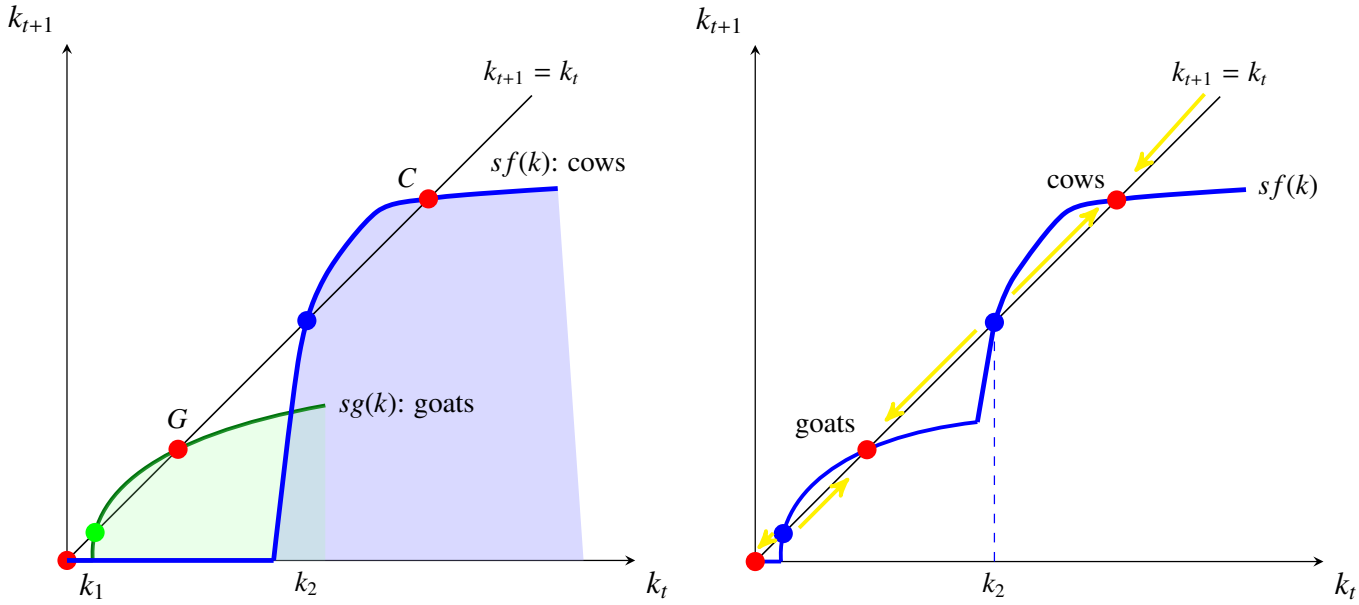
Smaller cumulative impacts and lower repayment rates of traditional arm members stand out once we acknowledge that they are receiving an equivalent amount and their contract differs with other arms only in the attributes we focus. These differences arise partly from the difference in investment choices observed in FIGURE 2, 3 that were induced by availability of Upfront attribute in lending.

In FIGURE 6, effects on child school enrollment are plotted. As in the previous figure, traditional column shows the conditional mean values and other non-traditional columns show impacts relative to concurrent traditional arm values. In general, there is no detectable impact of the intervention, except for a negative impact for women at the college level for Upfront in period 4 and a positive

impact for women at the college level for WithGrace in period 4. Women at the college level are about 5.9% of sample, so the effective sample size of each cell is about 1-3, and it is difficult to interpret the results on these small samples. If anything, negative impacts of elder girl's schooling may be due to stronger demand for cattle production in a household. This is in line with the finding in rejection that the limited household size can be a constraint on participation, especially when there is no grace period. Cattle ownership naturally shifts the relative prices in a household against child schooling, especially for the elder girls as their returns on human capital are considered to be lower than younger girls, and task contents of cattle labour are less brawn intensive yet requires to be above the primary school ages. This may be a downside of having more household production with cattle.

VII Theory

FIGURE 7: A POVERTY TRAP WITH GOATS AND COWS



In this section, we use a simplified version of Galor and Zeira (1993) to illustrate a theoretical framework to aid the interpretation of the empirical finding that asset accumulation is faster while the repayment rate is higher for upfront lending. Let us consider that there are two production sets called 'goat' and 'cow.' Both sets are nonconvex with fixed inputs. We note from the previous section that returns to goat net of mortality are lower in this area, and one cannot scale up goats as it takes a long period to reproduce to the herd size that is large enough to switch to cow ownership. We also note that a goat investment relative to a heifer has an infrequent income stream, limited local consumption, vulnerability to logging water, all pointing to lower returns. We will use these points to assume that the fixed costs and steady state production level are smaller for goats than cows.

When there is only a goat production technology, individuals eventually reaches the point G, a steady state where the capital-labour ratio is constant, or $k_{t+1} = k_t$. When the cow production technology is added to the picture, there is no change in the equlibrium for individuals whose initial assets are in $[k_1, k_2)$. For individuals with initial assets in $[k_2, \infty)$, one chooses a cow, because the resulting income level is higher, and eventually arrive at the steady state C.

For the economy as a whole, the production possibility frontier, or the contour of the union of two production sets, becomes M-shaped. Under the configuration depicted in the figure, there will be five equilibria of which three are stable. Ruling out the zero equilbrium as irrelevant, one is left with two stable equilibria, named as goats and cows in the figure.

Formally, one requires the production set $j = \{\text{goat, cow}\}$ to satisfy: there exists $\underline{k}_j > 0$ that the production is zero for input $k < \underline{k}_j$ and strictly positive for $k \geqslant \underline{k}_j$. We assume the production set

exhibits decreasing returns to scale for $k \geqslant \underline{k}_j$. Let the contour of the production set be $f(k)$. Assume for expositional simplcity that a fixed saving rate s is such that the steady state saving $sf(k^*)$ is net of capital depreciation. Further assume that there exists $k_2 > \underline{k}_j$ such that $sf(k) > k$ for $k \in (k_2, k^*)$, with $k^* > k_2$ is a fixed point $k^* = sf(k^*)$. Under these assumptions, decreasing returns ensure there exists two intersections between the steady state line, one unstable and one stable equilibria.[*9]

In light of this argument, a loan that is larger than $\underline{k}$ allows individuals in the goat equilibrium to transition to cow production and arrive at the cow equilibrium. If the lending market is competitive, the interest rate is the same as the return on capital and thus lending, not a transfer, suffices for the transition. The entire region depicted in the diagram is considered as in the realm of poverty, so it shows a poverty trap within poverty (i.e., goat as ultra poor and cow as moderately poor).

In the empirical section, we follow Bandiera et al. (2017) and take the production nonconvexity as given and examine lower repayment rates and smaller cattle holding for a smaller loan size as evidence consistent with a poverty trap.

VIII Conclusion

Conclusion

- No entrepreneurship is necessary for project success, due probably to a simpler production process.
- Upfront liquidity increases asset holding and repayment rates, not the loan size *per se*.
- Cattle has higher returns and lower risks, resulting in higher repayment rates, but also has larger initial fixed costs, possibly generating a poverty trap.
- Lending uptake is impeded by small household size and asset shocks.
- If these are relaxed, a poverty trap may be overcome.
- In the remote rural setting, larger upfront loan suited to project needs is shown to be Pareto improving, despite widely believed fears of inefficiency due to information asymmetry.
- In the remote rural setting, slow pace of outreach may be explained by not sufficiently cracking the liquidity constraint.
- Consumption and labour incomes were not affected in non-traditional arms. Labour income increased toward the end of repayment which can be a repayment effort.
- Schooling was not affected in general. It finds a sign of a loss to college level women, hinting a domestic labour constraint in cattle production. But there was also a positive impact for women at the college level in WithGrace arm. While these are possibilities, cell sample sizes are too small to draw anything conclusive.

The poverty reduction impacts of microfinance was a firm belief in the early days of microfinance. Yet it suffered from a puzzling weak spot that microfinance is slow to reach the ultra poor, which is still debated today. Recently, even the poverty reduction impacts are subject to doubts, and it has been shown that the only borrowers with experience or skills are able to leap benefits. In this study, we examined the role of entrepreneurship in leaping benefits. We showed, under the rural setting, experiences or entrepreneurship seem to matter for participation and resulting impacts. note the usefulness of having consulting services available for the prospective clients of MFIs when expanding

[*9] In Figure 7, depreciation below $\underline{k}$ is not accounted as capital cannot be negative. Once the production starts for $k > \underline{k}$, the contour shows net of depreciation so $sf(k) - \delta k$.

the credit to the ultra poor.

This study employs a stepped-wedge design of multiple arms to isolate different attributes of loan contract: Frontloading, a grace period, and in-kind lease with management supports. These map to a liquidity constraint, a saving constraint, and an entrepreneurship constraint. Only frontloading the disbursement matters in all outcomes, which signifies the importance of a liquidity constraint. With evidence that borrowers with frontloaded arms invested in cattle while the borrowers under incremental lending invested in multiple, smaller livestock, and the repayment rates are higher for the frontloaded arms, we conclude that there is a poverty trap which cannot be overcome by the traditional approach of microfinance. Under the study's setting, escaping from the poverty trap only requires frontloading the lending, not lending incrementally as practiced by the majority of microfinance institutions. In addition, lending rather than a transfer may suffice to support the transition. To expand the coverage to the ultra poor, it may be useful to have consulting services.

We have witnessed that a binding domestic capacity constraint may impede potential borrowers from participation. This limits the potential benefit of lending a larger amount from the start of the program. While it in unclear why the outsourced labour cannot substitute the domestic labour, one can consider organising a day service run in each group, which can be tended by the group members by taking turns, to collectively graze the cattle during the daytime. This partly eases the domestic labour and/or space constraints faced by small households.

We have seen that borrowers accumulated assets, increased labour supplies, but not increasing the consumption. This is consistent with high morale of repayment, which can be explained by the lack of alternative lenders in the study area. With stronger incentives to repay, the evidence on stronger repayment discipline of large sized arm members need not generalise in the areas outside the study site. On the other hand, the necessity of codifiable knowledge in participation even for a simple production process and the scope for escaping the poverty trap with larger lending may be more generalisable to other rural areas that are suited to cow and goat production.

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A Data description

TABLE A1: DESCRIPTIVE STATISTICS BY ARM IN ADMINISTRATIVE DATA

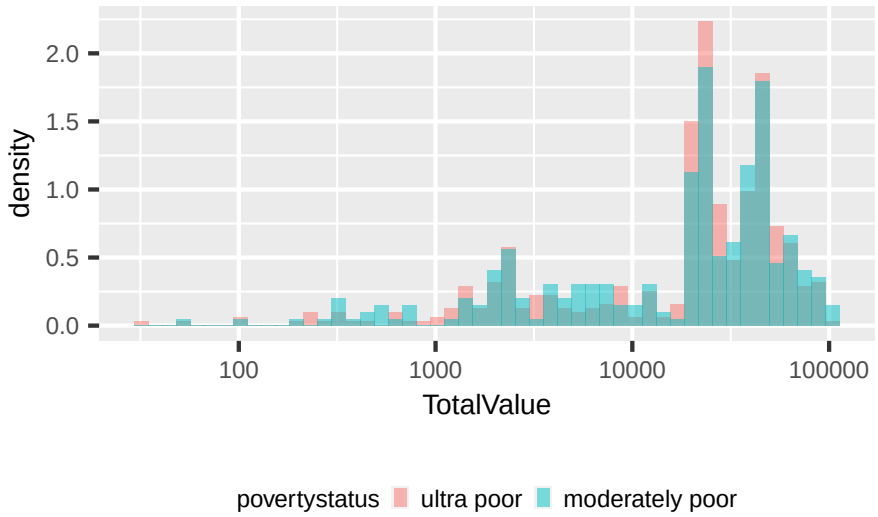
variables	traditional	large	large grace	cow
Head Literacy	0.11	0.14	0.10	0.13
Head Age	37.96	38.12	38.66	37.86
Household size	4.37	4.08	4.17	4.08
Flood in round 1	0.58	0.50	0.36	0.55
Net saving (% of loan) in 2013	3.45	4.02	5.49	6.70
Effective Repayentment in Loan Year -1	165.45	517.45	567.27	565.26
Effective Repayentment in Loan Year 1	403.33	493.44	212.63	211.66
Effective Repayentment in Loan Year 2	179.06	320.09	499.23	455.44
Effective Repayentment in Loan Year 3	248.21	382.42	566.32	535.22
Effective Repayentment in Loan Year 4	345.50	314.41	282.75	350.22
Repayment in Loan Year -1	55.19	38.93	0.00	0.00
Repayment in Loan Year 1	352.96	420.63	42.87	37.67
Repayment in Loan Year 2	139.43	272.92	463.21	420.32
Repayment in Loan Year 3	206.11	338.97	538.29	505.76
Repayment in Loan Year 4	318.00	291.86	270.47	333.69
Number of loan receiving members	116	180	180	190

Source: Estimated with GUK administrative and survey data.

Notes: 1. Information of original 800 households. Net saving as percentage of loan amount is a mean over loan recipients whose first disbursement is in 2013. Effective repayment is a sum of repayment and net saving.

2. Loan year -1 is preparation period for loan disbursement when only saving is allowed.

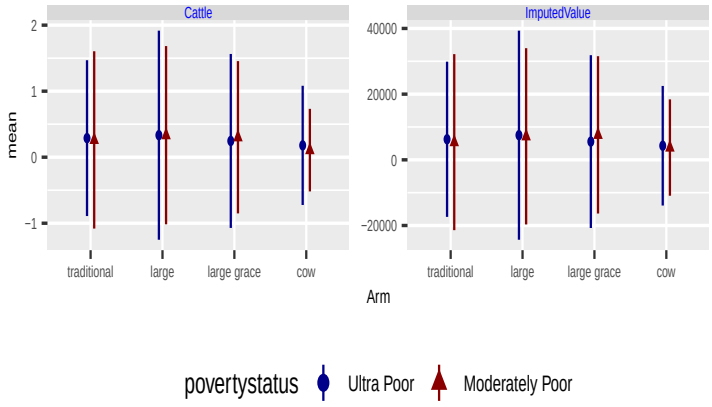
FIGURE A1: NET ASSET VALUES AT BASELINE



Source: Survey data.

Note: Net asset values = total gross asset values - debt outstanding. Debt outstanding takes the value of the month immediately after the respective survey round interview.

FIGURE A2: LVESTOCK HOLDING AT BASELINE



Source: Survey data.

Note: Livestock holding at baseline. Median market price is used to convert holding to values.

TABLE A2: NUMBER OF OBSERVATIONS BY BORROWER STATUS AND ARM

(a) File	(b) BStatus	(c) traditional	(d) large	(e) large grace	(f) cow	(g) sum
Schooling	borrower	128	224	205	183	740
	individual rejection	23	9	16	41	89
	group rejection	54	13	17	0	84
	rejection by flood	27	0	13	11	51
	sum	232	246	251	235	964
AllMeetingsRepayment	borrower	85	171	167	153	576
	individual rejection	31	9	13	37	90
	group rejection	0	0	0	0	0
	rejection by flood	0	0	0	0	0
	sum	116	180	180	190	666
Repayment	borrower	109	171	167	153	600
	individual rejection	31	9	13	37	90
	group rejection	40	20	10	0	70
	rejection by flood	20	0	10	10	40
	sum	200	200	200	200	800
Asset	borrower	109	171	167	153	600
	individual rejection	30	9	13	37	89
	group rejection	40	20	10	0	70
	rejection by flood	20	0	10	10	40
	sum	199	200	200	200	799
Livestock	borrower	109	171	166	153	599
	individual rejection	30	9	13	37	89
	group rejection	40	20	0	0	60
	rejection by flood	20	0	10	10	40
	sum	199	200	189	200	788
LivestockProducts	borrower	109	171	167	153	600
	individual rejection	30	9	13	37	89
	group rejection	40	20	10	0	70
	rejection by flood	20	0	10	10	40
	sum	199	200	200	200	799
LabourIncome	borrower	109	171	167	153	600
	individual rejection	30	9	13	37	89
	group rejection	40	20	10	0	70
	rejection by flood	20	0	10	10	40
	sum	199	200	200	200	799
FarmIncome	borrower	9	38	24	23	94
	individual rejection	2	0	0	2	4
	group rejection	0	8	0	0	8
	rejection by flood	1	0	0	0	1
	sum	12	46	24	25	107
Consumption	borrower	84	166	166	152	568
	individual rejection	27	9	11	33	80
	group rejection	39	19	0	0	58
	rejection by flood	18	0	0	10	28
	sum	168	194	177	195	734

Source: Survey data.

Note:

TABLE A3: NUMBER OF OBSERVATIONS USED IN ESTIMATION BY BORROWER STATUS AND ARM AT PERIOD 1

(a) File	(b) BStatus	(c) traditional	(d) large	(e) large grace	(f) cow	(g) sum
saving	borrower	82	163	165	149	559
saving	individual rejection	0	0	0	0	0
saving	group rejection	0	0	0	0	0
saving	rejection by flood	0	0	0	0	0
saving	sum	82	163	165	149	559
schooling	borrower	79	160	156	139	534
schooling	individual rejection	15	5	8	25	53
schooling	group rejection	45	10	0	0	55
schooling	rejection by flood	17	0	0	10	27
schooling	sum	156	175	164	174	669
assets	borrower	83	161	155	145	544
assets	individual rejection	24	8	9	26	67
assets	group rejection	36	19	0	0	55
assets	rejection by flood	0	0	0	0	0
assets	sum	143	188	164	171	666
livestock	borrower	83	161	155	144	543
livestock	individual rejection	24	8	9	26	67
livestock	group rejection	36	19	0	0	55
livestock	rejection by flood	0	0	0	0	0
livestock	sum	143	188	164	170	665
assetslivestock	borrower	83	161	155	144	543
assetslivestock	individual rejection	24	8	9	26	67
assetslivestock	group rejection	36	19	0	0	55
assetslivestock	rejection by flood	0	0	0	0	0
assetslivestock	sum	143	188	164	170	665
netassets	borrower	83	161	155	144	543
netassets	individual rejection	24	8	9	26	67
netassets	group rejection	36	19	0	0	55
netassets	rejection by flood	0	0	0	0	0
netassets	sum	143	188	164	170	665
income	borrower	2	16	9	6	33
income	individual rejection	0	0	0	0	0
income	group rejection	0	0	0	0	0
income	rejection by flood	0	0	0	0	0
income	sum	2	16	9	6	33
consumption	borrower	84	164	163	150	561
consumption	individual rejection	26	9	11	30	76
consumption	group rejection	36	18	0	0	54
consumption	rejection by flood	17	0	0	10	27
consumption	sum	163	191	174	190	718

Source: Survey data.

Note:

TABLE A4: NUMBER OF OBSERVATIONS USED IN ESTIMATION BY BORROWER STATUS AND ARM AT LAST PERIOD

(a) File	(b) BStatus	(c) traditional	(d) large	(e) large grace	(f) cow	(g) sum
saving	borrower	85	171	167	153	576
saving	individual rejection	0	0	0	0	0
saving	group rejection	0	0	0	0	0
saving	rejection by flood	0	0	0	0	0
saving	sum	85	171	167	153	576
schooling	borrower	65	140	134	112	451
schooling	individual rejection	11	6	5	22	44
schooling	group rejection	38	9	0	0	47
schooling	rejection by flood	0	0	0	0	0
schooling	sum	114	155	139	134	542
assets	borrower	83	161	155	145	544
assets	individual rejection	24	8	9	26	67
assets	group rejection	36	19	0	0	55
assets	rejection by flood	0	0	0	0	0
assets	sum	143	188	164	171	666
livestock	borrower	83	161	155	144	543
livestock	individual rejection	24	8	9	26	67
livestock	group rejection	36	19	0	0	55
livestock	rejection by flood	0	0	0	0	0
livestock	sum	143	188	164	170	665
assetslivestock	borrower	83	161	155	144	543
assetslivestock	individual rejection	24	8	9	26	67
assetslivestock	group rejection	36	19	0	0	55
assetslivestock	rejection by flood	0	0	0	0	0
assetslivestock	sum	143	188	164	170	665
netassets	borrower	83	161	155	144	543
netassets	individual rejection	24	8	9	26	67
netassets	group rejection	36	19	0	0	55
netassets	rejection by flood	0	0	0	0	0
netassets	sum	143	188	164	170	665
income	borrower	4	15	10	7	36
income	individual rejection	0	0	0	0	0
income	group rejection	0	0	0	0	0
income	rejection by flood	0	0	0	0	0
income	sum	4	15	10	7	36
consumption	borrower	83	162	156	146	547
consumption	individual rejection	24	8	9	26	67
consumption	group rejection	36	18	0	0	54
consumption	rejection by flood	0	0	0	0	0
consumption	sum	143	188	165	172	668

Source: Survey data.

Note:

B Randomisation checks

TABLE B1: PERMUTATION TEST RESULTS

variables	p-value	p-value adjustments: step-down			
		traditional	large	large grace	cow
MeanHeadLiteracy	0.213	0.213	0.753	0.917	0.510
MeanHeadAge	0.882	0.882	0.882	0.882	0.882
MeanHHsize	0.198	0.830	0.198	0.920	0.459
MeanFlood	0.177	0.933	0.271	0.177	0.964
MeanFemale	0.693	0.896	0.924	0.924	0.693
MeanEnrolled	0.880	0.950	0.950	0.950	0.880
MeanHAssetAmount	0.877	0.877	0.959	0.986	0.986
MeanPAssetAmount	0.183	0.628	0.628	0.183	0.183
MeanLivestockValue	0.528	0.720	0.528	0.720	0.628
MeanNumCows	0.451	0.866	0.451	0.866	0.451

Source: Estimated with GUK administrative and survey data.

Notes: 1. R's package coin is used for baseline group mean covariates to conduct approximate permutation tests. Number of repetition is set to 100000. Number of groups is 72. Step-down method is used to adjust for multiple testing of a multi-factor grouping variable.

2. ***, **, * indicate statistical significance at 1%, 5%, 10%, respetively. Standard errors are clustered at group (village) level.

TABLE B2: ANOVA RESULTS FOR CATTLE HOLDING EQUALITY BY ARM

	(1)	(2)	(3)	(4)	(5)
Tests	rd4	rd4 edited	rd3	rd2	rd1
a	b	c	d	e	f
ANOVA	0.0016	0.0008	0.0075	0.0000	0.3082
Kruskal-Wallis	0.0011	0.0003	0.0132	0.0001	0.3768
Tukey HST					
large-traditional	0.4537	0.4537	0.3535	0.5438	0.0955
	(0.0009)	(0.0007)	(0.0065)	(0.0000)	(0.3909)
large grace-traditional	0.3617	0.3617	0.2627	0.2582	0.0452
	(0.0173)	(0.0142)	(0.0862)	(0.1142)	(0.8774)
cow-traditional	0.3071	0.3763	0.1338	0.2826	−0.0050
	(0.0571)	(0.0083)	(0.6093)	(0.0600)	(0.9998)
large grace-large	−0.0920	−0.0920	−0.0908	−0.2856	−0.0503
	(0.8517)	(0.8435)	(0.8311)	(0.0517)	(0.8396)
cow-large	−0.1466	−0.0774	−0.2198	−0.2613	−0.1005
	(0.5659)	(0.8951)	(0.1527)	(0.0777)	(0.3443)
cow-large grace	−0.0546	0.0146	−0.1290	0.0244	−0.0503
	(0.9658)	(0.9992)	(0.6266)	(0.9963)	(0.8396)

Source: Survey data.

Note: Each column uses respective year cattle ownership information. For ANOVA and Kruskal-Wallis, each entry indicates p values. ANOVA tests for the null of equality of means under normality. Kruskal-Wallis tests for the null of no stochastic dominance among samples without using the normality assumption. Tukey's honest significant tests show difference in means and p values in parenthesis that account for multiple testing under normality. In column 2, we edited data by assigning 1 to members of cow arm at dates after disbursement if reported holding is NA or zero.

C Attrition and rejection

Among 800 observations, there are 4 whose villages are washd away and 70 who by group rejected the assigned arms which are traditional, large, large grace with 40, 20, 10, 0 individuals, respectively. There are 31, 9, 13, 37 individuals who individually rejected traditional, large, large grace, cow, respectively. Among attrited HHs, when were they lost?

```
  1
116
```

Reasons for attrition and relation to flood damage.

```
          BStatus
FloodInRd1 borrower individual rejection group rejection rejection by flood
      0          26                    7               2                  23
```

```
      1          20                    7                13                   17
      <NA>        0                    1                 0                    0
```

```
                BStatus
AssignOriginal borrower individual rejection group rejection rejection by flood
   traditional       26                    6                0                  0
   large              7                    0                0                  0
   large grace        7                    2                0                  0
   cow                6                    7                0                  0
   <NA>               0                    0               15                 40
```

Use coin package's independence_test: Approximate permutation tests by randomly resampling 100000 times.

TABLE C1: PERMUTATION TEST RESULTS OF ATTRITION

variables	NonAttrited	Attrited	p-value.lower	p-value.mid	p-value.upper
HeadLiteracy	0.115	0.112	0.873	0.937	1.000
HeadAge	37.996	39.095	0.279	0.280	0.281
HHsize	4.178	4.267	0.537	0.548	0.559
Arm	0.789	0.517	0.000	0.000	0.000
FloodInRd1	0.493	0.496	0.920	0.960	1.000
HAssetAmount	774	705	0.210	0.210	0.210
PAssetAmount	1161	1266	0.665	0.665	0.665
LivestockValue	6069	5554	0.533	0.533	0.533
NumCows	0.271	0.262	0.813	0.832	0.850
NetValue	7722	7790	0.962	0.962	0.962
n	684	116	(rate: 0.145)		

Source: Estimated with GUK administrative and survey data.

Notes: 1. R's package coin is used for baseline mean covariates to conduct approximate permutation tests. Number of repetition is set to 100000. Step-down method is used to adjust for multiple testing of a multi-factor grouping variable. Attrited and Nonattrited columns show means of each group. For Arm, proportions of non-traditional arm are given.

2. ***, **, * indicate statistical significance at 1%, 5%, 10%, respetively. Standard errors are clustered at group (village) level.

TABLE C2: PERMUTATION TEST RESULTS OF ATTRITION AMONG TRADITIONAL ARM

variables	NonAttrited	Attrited	p-value.lower	p-value.mid	p-value.upper
HeadLiteracy	0.118	0.028	0.057	0.094	0.131
HeadAge	38.497	38.694	0.913	0.916	0.920
HHsize	4.167	3.972	0.441	0.461	0.481
FloodInRd1	0.479	0.400	0.346	0.399	0.452
HAssetAmount	693	684	0.925	0.928	0.932
PAssetAmount	1185	882	0.252	0.252	0.252
LivestockValue	5230	5094	0.919	0.919	0.919
NumCows	0.235	0.242	0.850	0.887	0.925
NetValue	6913	5375	0.503	0.503	0.503
n	144	36	(rate: 0.200)		

Source: Estimated with GUK administrative and survey data.

Notes: 1. R's package coin is used for baseline mean covariates to conduct approximate permutation tests. Number of repetition is set to 100000. Step-down method is used to adjust for multiple testing of a multi-factor grouping variable. Attrited and Nonattrited columns show means of each group. For Arm, proportions of non-traditional arm are given.

2. ***, **, * indicate statistical significance at 1%, 5%, 10%, respetively. Standard errors are clustered at group (village) level.

TABLE C3: PERMUTATION TEST RESULTS OF ATTRITERS BETWEEN TRADITIONAL AND NON-TRADITIONAL ARMS

variables	NonTradArm	TradArm	p-value.lower	p-value.mid	p-value.upper
HeadLiteracy	0.125	0.028	0.096	0.151	0.206
HeadAge	40.175	38.694	0.578	0.582	0.585
HHsize	4.275	3.972	0.382	0.402	0.423
FloodInRd1	0.650	0.400	0.021	0.030	0.039
HAssetAmount	697	684	0.919	0.921	0.924
PAssetAmount	767	882	0.252	0.252	0.252
LivestockValue	3382	5094	0.246	0.247	0.247
NumCows	0.152	0.242	0.220	0.241	0.263
NetValue	4702	5375	0.818	0.818	0.818
n	40	36	(rate: 0.474)		

Source: Estimated with GUK administrative and survey data.

Notes: 1. R's package coin is used for baseline mean covariates to conduct approximate permutation tests. Number of repetition is set to 100000. Step-down method is used to adjust for multiple testing of a multi-factor grouping variable. NonTradArm and TradArm columns show means of each group. Attrition due to flood is dropped.

2. ***, **, * indicate statistical significance at 1%, 5%, 10%, respetively. Standard errors are clustered at group (village) level.

TABLE C4: PERMUTATION TEST RESULTS OF REJECTION

variables	NonRejected	Rejected	p-value.lower	p-value.mid	p-value.upper
HeadLiteracy	0.120	0.081	0.157	0.181	0.204
HeadAge	38.244	37.763	0.592	0.594	0.595
HHsize	4.237	3.938	0.019	0.020	0.021
Arm	0.818	0.556	0.000	0.000	0.000
FloodInRd1	0.474	0.585	0.013	0.014	0.016
HAssetAmount	775	699	0.185	0.185	0.185
PAssetAmount	1130	1013	0.432	0.432	0.432
LivestockValue	6115	4352	0.035	0.035	0.035
NumCows	0.278	0.182	0.021	0.022	0.023
NetValue	7990	5124	0.014	0.014	0.014
n	600	160	(rate: 0.211)		

TABLE C5: PERMUTATION TEST RESULTS OF REJECTION AMONG TRADITIONAL ARM

variables	NonRejected	Rejected	p-value.lower	p-value.mid	p-value.upper
HeadLiteracy	0.101	0.099	0.798	0.899	1.000
HeadAge	39.009	37.800	0.429	0.431	0.434
HHsize	4.239	3.958	0.188	0.198	0.208
FloodInRd1	0.514	0.386	0.093	0.109	0.124
HAssetAmount	652	756	0.264	0.265	0.266
PAssetAmount	1032	1172	0.605	0.605	0.605
LivestockValue	6803	2380	0.001	0.001	0.001
NumCows	0.326	0.084	0.000	0.000	0.000
NetValue	8284	3986	0.018	0.018	0.018
n	109	71	(rate: 0.394)		

TABLE C6: PERMUTATION TEST RESULTS OF REJECTION AMONG NON-TRADITIONAL ARM

variables	NonRejected	Rejected	p-value.lower	p-value.mid	p-value.upper
HeadLiteracy	0.124	0.067	0.105	0.128	0.150
HeadAge	38.073	37.733	0.773	0.775	0.777
HHsize	4.236	3.921	0.056	0.058	0.061
FloodInRd1	0.465	0.742	0.000	0.000	0.000
HAssetAmount	804	655	0.045	0.045	0.045
PAssetAmount	1152	888	0.143	0.143	0.143
LivestockValue	5958	5909	0.964	0.964	0.964
NumCows	0.267	0.259	0.849	0.874	0.899
NetValue	7924	6133	0.260	0.260	0.260
n	491	89	(rate: 0.153)		

TABLE C7: PERMUTATION TEST RESULTS OF REJECTERS, TRADITIONAL VS. NON-TRADITIONAL ARM

variables	NonTradArm	TradArm	p-value.lower	p-value.mid	p-value.upper
HeadLiteracy	0.067	0.099	0.390	0.478	0.566
HeadAge	37.733	37.800	0.966	0.970	0.973
HHsize	3.921	3.958	0.883	0.903	0.922
FloodInRd1	0.742	0.386	0.000	0.000	0.000
HAssetAmount	655	756	0.262	0.263	0.264
PAssetAmount	888	1172	0.197	0.198	0.198
LivestockValue	5909	2380	0.003	0.003	0.003
NumCows	0.259	0.084	0.003	0.003	0.003
NetValue	6133	3986	0.144	0.144	0.144
n	89	71	(rate: 0.444)		

Source: Estimated with GUK administrative and survey data.

Notes: 1. R's package coin is used for baseline group mean covariates to conduct approximate permutation tests. Number of repetition is set to 100000. Step-down method is used to adjust for multiple testing of a multi-factor grouping variable. Rejection is either group-rejection or individual-rejection. TradArm and NonTradArm columns show means of each group.
2. ***, **, * indicate statistical significance at 1%, 5%, 10%, respetively. Standard errors are clustered at group (village) level.

TABLE C1 shows results from tests of independence between attriters and non-attriters. We see a moderate rate of attrition is not correlated with household level characteristics. TABLE C2 shows attrition in the traditional arm. Household heads of attriters are relatively less literate than non-attriters. TABLE C3 compares attriters of traditional arm and non-traditional arms. It shows that traditional arm attriters have a (marginally) lower rate of head literacy while non-traditional arm attriters are more exposed to the flood. The traditional arm attriters may be less entrepreneurial, if anything, so their attrition may upwardly bias the positive gains of the arm, hence understate the impacts of non-traditional arm. So one can employ Lee bounds for stronger results, but doing so will give us less precision and require more assumptions.

TABLE C4 shows test results of independence between loan receivers and nonreceivers (group, individual rejecters) on 760 members whose residence was not washed away by flood. It shows that smaller household size, being affected by flood at the baseline, smaller livestock holding, smaller net

assets, and less exposue to cattle growing are correlated with opting out the offered type of lending.

Group rejecters and non-group rejecters are compared in Table C8. Marked differences are found in arm (traditional vs. non-traditional) and net asset values. Table C9 compares group rejecters in traditional arm and finds lower livestock values, smaller cattle holding, smaller net asset values, and smaller flood exposure are associated with group rejection for traditional arm (Table C9). Group rejecters in non-traditional arm are examined in Table C10 and flood at baseline, younger head age, and higher cattle holding are correlated with rejection. Comparing group rejecters between traditional and non-traditional arms, flood at baseline, net asset values, and livestock holding are different (Table C11). These hint that for non-traditional arm group rejecters, it is baseline flood that may have constrained them from participation, and asset levels for traditional group rejecters.

Acknowledging the reasons for rejection can be different, we tested the independence of each characteristics for individual rejecters (vs. non-individual rejeceters) in Table C14. Smaller HHsize, being affected with FloodInRd1, and smaller NumCows are associated with individual rejecters. Individual decisions not to participate may be more straightforward: Smaller household size may indicate difficulty in securing the cattle production labour in a household, being hit with a flood may have resulted in lower livestock levels that would prompt them to reconsider partaking in another livestock project.

Table C15 and Table C16 compare individual rejecters and nonrejecters in traditional arm and non-traditional arms, respectively. Somewhat surprisingly, smaller household size is found to be correlated with rejection in all arms but more pronounced among traditional members. This hints that traditional arm borrowers may have been looking into cattle production but were held back by lack of household labour. Livestock and other asset values are not correlated with rejection, only cattle holding is smaller for traditional rejecters. Comparison of individual rejecters between traditional and non-traditional arms show no detectable difference (Table C13). This suggests that indvidual rejecters in all arms were constrained with small household size.

In summary, group level rejecters between traditional and non-traditional differ that smaller household size and baseline flood withheld participation for non-traditional while low livestock values withheld participation for traditional. Individual rejecters have similar characteristics between two groups.

Table C8: Permutation test results of group rejection

variables	NonGRejected	GRejected	p-value.lower	p-value.mid	p-value.upper
HeadLiteracy	0.117	0.057	0.110	0.136	0.162
HeadAge	38.276	36.841	0.262	0.263	0.264
HHsize	4.184	4.071	0.514	0.528	0.543
Arm	0.797	0.429	0.000	0.000	0.000
FloodInRd1	0.490	0.571	0.169	0.192	0.214
HAssetAmount	763	739	0.762	0.762	0.763
PAssetAmount	1098	1199	0.633	0.633	0.633
LivestockValue	5913	4366	0.178	0.178	0.178
NumCows	0.265	0.200	0.245	0.261	0.277
NetValue	7685	4371	0.053	0.053	0.053
n	690	70	(rate: 0.092)		

Table C9: Permutation test results of group rejection among traditional arm

variables	NonGRejected	GRejected	p-value.lower	p-value.mid	p-value.upper
HeadLiteracy	0.114	0.050	0.130	0.251	0.372
HeadAge	38.400	39.026	0.726	0.730	0.733
HHsize	4.107	4.200	0.710	0.733	0.755
FloodInRd1	0.518	0.275	0.004	0.005	0.007
HAssetAmount	637	872	0.029	0.029	0.030
PAssetAmount	1003	1362	0.203	0.203	0.203
LivestockValue	6305	1291	0.001	0.001	0.001
NumCows	0.295	0.037	0.001	0.001	0.001
NetValue	7618	3078	0.034	0.034	0.034
n	140	40	(rate: 0.222)		

TABLE C10: PERMUTATION TEST RESULTS OF GROUP REJECTION AMONG NON-TRADITIONAL ARM

variables	NonGRejected	GRejected	p-value.lower	p-value.mid	p-value.upper
HeadLiteracy	0.118	0.067	0.374	0.467	0.560
HeadAge	38.244	34.000	0.023	0.024	0.024
HHsize	4.204	3.900	0.242	0.255	0.269
FloodInRd1	0.483	0.967	0.000	0.000	0.000
HAssetAmount	794	561	0.047	0.047	0.047
PAssetAmount	1122	982	0.652	0.653	0.653
LivestockValue	5814	8467	0.130	0.130	0.130
NumCows	0.257	0.417	0.055	0.063	0.071
NetValue	7702	6957	0.805	0.805	0.805
n	550	30	(rate: 0.052)		

TABLE C11: PERMUTATION TEST RESULTS OF GROUP REJECTERS, TRADITIONAL VS. NON-TRADITIONAL ARM

variables	NonTradArm	TradArm	p-value.lower	p-value.mid	p-value.upper
HeadLiteracy	0.067	0.050	0.631	0.816	1.000
HeadAge	34.000	39.026	0.025	0.026	0.026
HHsize	3.900	4.200	0.341	0.364	0.387
FloodInRd1	0.967	0.275	0.000	0.000	0.000
HAssetAmount	561	872	0.022	0.022	0.022
PAssetAmount	982	1362	0.588	0.588	0.588
LivestockValue	8467	1291	0.000	0.000	0.000
NumCows	0.417	0.037	0.000	0.000	0.000
NetValue	6957	3078	0.032	0.032	0.032
n	30	40	(rate: 0.571)		

Source: Estimated with GUK administrative and survey data.

Notes: 1. R's package coin is used for baseline group mean covariates to conduct approximate permutation tests. Number of repetition is set to 100000. Step-down method is used to adjust for multiple testing of a multi-factor grouping variable. Rejection is individual-rejection. TradArm and NonTradArm columns show means of each group.

2. ***, **, * indicate statistical significance at 1%, 5%, 10%, respetively. Standard errors are clustered at group (village) level.

TABLE C12: PERMUTATION TEST RESULTS OF GROUP REJECTION IN TRADITIONAL ARM VS. PARTICIPANTS IN NON-TRADITIONAL ARM

variables	NonTradArm	TradArm	p-value.lower	p-value.mid	p-value.upper
HeadLiteracy	0.124	0.050	0.123	0.166	0.210
HeadAge	38.073	39.026	0.559	0.562	0.565
HHsize	4.236	4.200	0.860	0.883	0.906
FloodInRd1	0.465	0.275	0.013	0.017	0.022
HAssetAmount	804	872	0.502	0.504	0.505
PAssetAmount	1152	1362	0.490	0.490	0.490
LivestockValue	5958	1291	0.004	0.004	0.004
NumCows	0.267	0.037	0.005	0.005	0.005
NetValue	7924	3078	0.024	0.024	0.024
n	491	40	(rate: 0.075)		

Source: Estimated with GUK administrative and survey data.

Notes: 1. R's package coin is used for baseline group mean covariates to conduct approximate permutation tests. Number of repetition is set to 100000. Step-down method is used to adjust for multiple testing of a multi-factor grouping variable. Rejection is group-rejection. TradArm and NonTradArm columns show means of each group.

2. ***, **, * indicate statistical significance at 1%, 5%, 10%, respetively. Standard errors are clustered at group (village) level.

TABLE C13: PERMUTATION TEST RESULTS OF INDIVIDUAL REJECTERS, TRADITIONAL VS. NON-TRADITIONAL ARM

variables	NonTradArm	TradArm	p-value.lower	p-value.mid	p-value.upper
HeadLiteracy	0.068	0.161	0.155	0.210	0.265
HeadAge	39.732	36.258	0.217	0.219	0.220
HHsize	3.932	3.645	0.447	0.467	0.486
FloodInRd1	0.627	0.533	0.368	0.431	0.493
HAssetAmount	708	575	0.304	0.307	0.310
PAssetAmount	834	874	0.764	0.764	0.764
LivestockValue	4461	4088	0.821	0.822	0.822
NumCows	0.170	0.157	0.856	0.928	1.000
NetValue	5853	5197	0.780	0.780	0.780
n	59	31	(rate: 0.344)		

Source: Estimated with GUK administrative and survey data.

Notes: 1. R's package coin is used for baseline group mean covariates to conduct approximate permutation tests. Number of repetition is set to 100000. Step-down method is used to adjust for multiple testing of a multi-factor grouping variable. Rejection is individual-rejection. TradArm and NonTradArm columns show means of each group.

2. ***, **, * indicate statistical significance at 1%, 5%, 10%, respetively. Standard errors are clustered at group (village) level.

Table C14: Permutation test results of individual rejection

variables	NonIRejected	IRejected	p-value.lower	p-value.mid	p-value.upper
HeadLiteracy	0.120	0.100	0.480	0.543	0.606
HeadAge	38.244	38.494	0.827	0.829	0.831
HHsize	4.237	3.833	0.012	0.013	0.013
Arm	0.818	0.656	0.001	0.001	0.001
FloodInRd1	0.474	0.596	0.032	0.036	0.041
HAssetAmount	775	664	0.141	0.141	0.142
PAssetAmount	1130	847	0.112	0.112	0.112
LivestockValue	6115	4340	0.110	0.110	0.110
NumCows	0.278	0.166	0.038	0.041	0.044
NetValue	7990	5632	0.115	0.115	0.115
n	600	90	(rate: 0.130)		

Source: Estimated with GUK administrative and survey data.

Notes: 1. R's package coin is used for baseline group mean covariates to conduct approximate permutation tests. Number of repetition is set to 100000. Step-down method is used to adjust for multiple testing of a multi-factor grouping variable. Rejection is either group-rejection or individual-rejection. Rejected and Nonrejected columns show means of each group. For Arm, proportions of non-traditional arm are given. Individual rejection is observed only for non group rejecters. Sample size is smaller in Table C14 as 70 observations are dropped.

2. ***, **, * indicate statistical significance at 1%, 5%, 10%, respetively. Standard errors are clustered at group (village) level.

Table C15: Permutation test results of individual rejection among traditional arm

variables	NonIRejected	IRejected	p-value.lower	p-value.mid	p-value.upper
HeadLiteracy	0.101	0.161	0.372	0.449	0.526
HeadAge	39.009	36.258	0.180	0.182	0.184
HHsize	4.239	3.645	0.038	0.042	0.046
FloodInRd1	0.514	0.533	0.838	0.919	1.000
HAssetAmount	652	575	0.565	0.568	0.570
PAssetAmount	1032	874	0.617	0.618	0.618
LivestockValue	6803	4088	0.175	0.175	0.175
NumCows	0.326	0.157	0.070	0.082	0.094
NetValue	8284	5197	0.270	0.270	0.270
n	109	31	(rate: 0.221)		

Table C16: Permutation test results of individual rejection among non-traditional arm

variables	NonIRejected	IRejected	p-value.lower	p-value.mid	p-value.upper
HeadLiteracy	0.124	0.068	0.202	0.244	0.285
HeadAge	38.073	39.732	0.247	0.248	0.249
HHsize	4.236	3.932	0.118	0.124	0.130
FloodInRd1	0.465	0.627	0.013	0.017	0.020
HAssetAmount	804	708	0.293	0.294	0.295
PAssetAmount	1152	834	0.137	0.137	0.137
LivestockValue	5958	4461	0.267	0.267	0.267
NumCows	0.267	0.170	0.135	0.147	0.159
NetValue	7924	5853	0.252	0.252	0.252
n	491	59	(rate: 0.107)		

Table C17: Permutation test results of borrowers, cow vs. non-cow arms

variables	NonCowArm	CowArm	p-value.lower	p-value.mid	p-value.upper
HeadLiteracy	0.107	0.157	0.082	0.097	0.112
HeadAge	38.412	37.750	0.470	0.471	0.473
HHsize	4.275	4.124	0.241	0.248	0.255
FloodInRd1	0.476	0.467	0.779	0.815	0.852
HAssetAmount	783	751	0.589	0.589	0.590
PAssetAmount	1220	862	0.018	0.018	0.018
LivestockValue	6778	4150	0.003	0.003	0.003
NumCows	0.310	0.182	0.004	0.004	0.004
NetValue	8875	5409	0.006	0.006	0.006
n	447	153	(rate: 0.255)		

Source: Estimated with GUK administrative and survey data.

Notes: 1. R's package coin is used for baseline group mean covariates to conduct approximate permutation tests. Number of repetition is set to 100000. Step-down method is used to adjust for multiple testing of a multi-factor grouping variable. Rejection is group-rejection. CowArm and NonCowArm columns show means of each group.

2. ***, **, * indicate statistical significance at 1%, 5%, 10%, respetively. Standard errors are clustered at group (village) level.

TABLE C18: PERMUTATION TEST RESULTS OF INDIVIDUAL REJECTERS, TRADITIONAL VS. NON-TRADITIONAL ARM

variables	NonTradArm	TradArm	p-value.lower	p-value.mid	p-value.upper
HeadLiteracy	0.068	0.161	0.155	0.210	0.265
HeadAge	39.732	36.258	0.217	0.219	0.220
HHsize	3.932	3.645	0.447	0.467	0.486
FloodInRd1	0.627	0.533	0.368	0.431	0.493
HAssetAmount	708	575	0.304	0.307	0.310
PAssetAmount	834	874	0.764	0.764	0.764
LivestockValue	4461	4088	0.821	0.822	0.822
NumCows	0.170	0.157	0.856	0.928	1.000
NetValue	5853	5197	0.780	0.780	0.780
n	59	31	(rate: 0.344)		

Source: Estimated with GUK administrative and survey data.

Notes: 1. R's package coin is used for baseline group mean covariates to conduct approximate permutation tests. Number of repetition is set to 100000. Step-down method is used to adjust for multiple testing of a multi-factor grouping variable. TradArm is group-rejecters in traditional arm NonTradArm is borrowers in non-traditional arms. Both columns show means of each group.

2. ***, **, * indicate statistical significance at 1%, 5%, 10%, respetively. Standard errors are clustered at group (village) level.

TABLE C19: PERMUTATION TEST RESULTS OF BOROWERS, COW VS. LARGE GRACE ARMS

variables	NonCowArm	CowArm	p-value.lower	p-value.mid	p-value.upper
HeadLiteracy	0.102	0.157	0.134	0.157	0.180
HeadAge	38.731	37.750	0.365	0.366	0.368
HHsize	4.174	4.124	0.734	0.750	0.767
FloodInRd1	0.349	0.467	0.030	0.035	0.039
HAssetAmount	858	751	0.138	0.138	0.139
PAssetAmount	1369	862	0.005	0.005	0.005
LivestockValue	7374	4150	0.002	0.002	0.002
NumCows	0.331	0.182	0.003	0.004	0.004
NetValue	8300	5409	0.029	0.029	0.029
n	167	153	(rate: 0.478)		

Source: Estimated with GUK administrative and survey data.

Notes: 1. R's package coin is used for baseline group mean covariates to conduct approximate permutation tests. Number of repetition is set to 100000. Step-down method is used to adjust for multiple testing of a multi-factor grouping variable. Rejection is group-rejection. CowArm and LargeGraceArm columns show means of each group.

2. ***, **, * indicate statistical significance at 1%, 5%, 10%, respetively. Standard errors are clustered at group (village) level.

TABLE C20: PERMUTATION TEST RESULTS OF ARM ASSIGNMENT, TRADITIONAL VS. NON-TRADITIONAL ARMS

variables	NonTradArm	TradArm	p-value.lower	p-value.mid	p-value.upper
HeadLiteracy	0.116	0.100	0.498	0.545	0.591
HeadAge	38.023	38.536	0.549	0.550	0.551
HHsize	4.188	4.128	0.618	0.629	0.640
FloodInRd1	0.508	0.464	0.265	0.285	0.305
HAssetAmount	782	690	0.085	0.085	0.085
PAssetAmount	1114	1083	0.823	0.823	0.823
LivestockValue	5951	5184	0.328	0.328	0.328
NumCows	0.266	0.237	0.458	0.472	0.487
NetValue	7675	6604	0.334	0.334	0.334
n	580	180	(rate: 0.237)		

Source: Estimated with GUK administrative and survey data.

Notes: 1. R's package coin is used for baseline group mean covariates to conduct approximate permutation tests. Number of repetition is set to 100000. Step-down method is used to adjust for multiple testing of a multi-factor grouping variable. Rejection is group-rejection. CowArm and LargeGraceArm columns show means of each group.

2. 40 are lost to flood before arm assignment. Standard errors are clustered at group (village) level.

D Estimated results

D.1 Repayment

D.1.1 Saving and repayment

TABLE D1: ANCOVA ESTIMATION OF NET SAVING AND REPAYMENT

		Net saving					Repayment				
covariates	mean/std	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(Intercept)		39.8 (0.0)	49.4 (0.0)	39.0 (0.0)	48.6 (0.0)	46.3 (0.0)	250.8 (0.0)	349.4 (0.0)	251.7 (0.0)	349.4 (0.0)	355.4 (0.0)
Large	0.297 (0.46)	7.1 (4.3)	13.2 (0.8)	5.4 (13.9)	11.5 (2.5)	11.2 (2.3)	80.1 (0.0)	82.4 (0.0)	79.8 (0.0)	82.4 (0.0)	82.7 (0.0)
LargeGrace	0.291 (0.45)	20.8 (0.0)	54.4 (0.0)	17.8 (0.0)	51.3 (0.0)	52.1 (0.0)	81.5 (0.0)	−40.0 (1.0)	80.6 (0.0)	−40.0 (0.5)	−42.2 (0.2)
Cow	0.264 (0.44)	22.6 (0.0)	55.7 (0.0)	19.7 (0.0)	52.8 (0.0)	53.1 (0.0)	75.6 (0.0)	−50.0 (0.0)	74.8 (0.0)	−50.0 (0.0)	−51.4 (0.0)
LY2	0.258 (0.44)		−9.8 (5.3)		−9.8 (5.3)	−9.8 (5.3)		−209.9 (0.0)		−209.9 (0.0)	−209.8 (0.0)
Large × LY2	0.077 (0.27)		−15.8 (1.3)		−15.7 (1.3)	−15.6 (1.4)		64.5 (6.0)		64.5 (6.0)	64.8 (5.9)
LargeGrace × LY2	0.075 (0.26)		−118.6 (0.0)		−118.6 (0.0)	−119.2 (0.0)		629.1 (0.0)		629.1 (0.0)	628.3 (0.0)
Cow × LY2	0.069 (0.25)		−121.0 (0.0)		−121.0 (0.0)	−121.1 (0.0)		591.5 (0.0)		591.5 (0.0)	590.4 (0.0)
LY3	0.258 (0.44)		−7.3 (7.3)		−7.3 (7.4)	−7.3 (7.3)		−143.2 (0.0)		−143.2 (0.0)	−143.2 (0.0)
Large × LY3	0.077 (0.27)		−22.0 (0.6)		−21.9 (0.7)	−21.6 (0.7)		63.9 (2.9)		63.9 (2.9)	63.7 (3.0)
LargeGrace × LY3	0.075 (0.26)		−129.1 (0.0)		−129.1 (0.0)	−129.7 (0.0)		637.5 (0.0)		637.5 (0.0)	637.7 (0.0)
Cow × LY3	0.069 (0.25)		−129.1 (0.0)		−129.1 (0.0)	−129.3 (0.0)		610.2 (0.0)		610.2 (0.0)	610.3 (0.0)
LY4	0.233 (0.42)		−21.9 (0.0)		−21.9 (0.0)	−21.9 (0.0)		−31.4 (49.9)		−31.4 (49.9)	−31.1 (50.3)
Large × LY4	0.069 (0.25)		−28.3 (0.5)		−28.3 (0.5)	−27.8 (0.5)		−95.1 (12.7)		−95.1 (12.7)	−95.8 (12.6)
LargeGrace × LY4	0.068 (0.25)		−130.2 (0.0)		−130.2 (0.0)	−130.8 (0.0)		257.8 (0.0)		257.8 (0.0)	256.1 (0.0)
Cow × LY4	0.061 (0.24)		−127.4 (0.0)		−127.7 (0.0)	−127.8 (0.0)		326.3 (0.0)		326.3 (0.0)	325.2 (0.0)
FloodInRd1	0.477 (0.50)					1.5 (65.0)					−12.0 (1.7)
Head literate0	0.122 (0.33)					1.9 (43.6)					10.3 (12.2)
net saving0	355.719 (513.67)			0.0 (3.6)	0.0 (3.0)	0.0 (4.1)					
HHsize0	4.241 (1.38)					0.3 (64.9)					−0.2 (89.7)
Repaid0	98.890 (195.66)								−0.0 (83.6)	−0.0 (99.5)	0.0 (99.1)
mean of initial value mean of dependent variable		427 54	427 54	427 54	427 54	427 54	134 318	134 318	134 318	134 318	134 318
$\bar{R}^2$ N		0.008 26758	0.223 26758	0.009 26758	0.224 26758	0.225 26627	0.005 26758	0.15 26758	0.005 26758	0.15 26758	0.15 26627

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. Saving and repayment information is taken from administrative data. Time invariant household characteristics are taken from household survey data. Administrative data are merged with survey data by the dating the survey rounds in administrative data. Net saving is saving - withdrawal. Excess repayment is repayment - due amount. LY2, LY3, LY4 are dummy variables for second, third, and fourth year into borrowing.

2. *P* values in percentages in parenthesises. Standard errors are clustered at group (village) level.

Table D2: ANCOVA estimation of net saving and repayment by attributes

		Net saving					Repayment				
covariates	mean/std	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(Intercept)		39.8 (0.0)	49.4 (0.0)	39.0 (0.0)	48.6 (0.0)	46.3 (0.0)	250.8 (0.0)	349.4 (0.0)	251.7 (0.0)	349.4 (0.0)	355.4 (0.0)
Upfront	0.851 (0.36)	7.1 (4.3)	13.2 (0.8)	5.4 (13.9)	11.5 (2.5)	11.2 (2.3)	80.1 (0.0)	82.4 (0.0)	79.8 (0.0)	82.4 (0.0)	82.7 (0.0)
WithGrace	0.555 (0.50)	13.7 (0.6)	41.2 (0.0)	12.4 (1.1)	39.9 (0.0)	40.9 (0.0)	1.4 (89.0)	−122.4 (0.0)	0.8 (93.9)	−122.5 (0.0)	−124.9 (0.0)
InKind	0.264 (0.44)	1.7 (79.1)	1.3 (92.3)	1.9 (75.6)	1.5 (90.5)	1.0 (93.5)	−5.9 (58.7)	−10.0 (40.8)	−5.9 (58.7)	−10.0 (40.8)	−9.2 (43.2)
LY2	0.258 (0.44)		−9.8 (5.3)		−9.8 (5.3)	−9.8 (5.3)		−209.9 (0.0)		−209.9 (0.0)	−209.8 (0.0)
Upfront × LY2	0.220 (0.41)		−15.8 (1.3)		−15.7 (1.3)	−15.6 (1.4)		64.5 (6.0)		64.5 (6.0)	64.8 (5.9)
WithGrace × LY2	0.143 (0.35)		−102.8 (0.0)		−102.9 (0.0)	−103.5 (0.0)		564.6 (0.0)		564.6 (0.0)	563.5 (0.0)
InKind × LY2	0.069 (0.25)		−2.4 (92.5)		−2.4 (92.4)	−1.9 (93.9)		−37.6 (30.0)		−37.6 (30.0)	−37.9 (30.1)
LY3	0.258 (0.44)		−7.3 (7.3)		−7.3 (7.4)	−7.3 (7.3)		−143.2 (0.0)		−143.2 (0.0)	−143.2 (0.0)
Upfront × LY3	0.220 (0.41)		−22.0 (0.6)		−21.9 (0.7)	−21.6 (0.7)		63.9 (2.9)		63.9 (2.9)	63.7 (3.0)
WithGrace × LY3	0.143 (0.35)		−107.1 (0.0)		−107.1 (0.0)	−108.0 (0.0)		573.6 (0.0)		573.6 (0.0)	574.1 (0.0)
InKind × LY3	0.069 (0.25)		−0.0 (99.9)		−0.1 (99.8)	0.4 (98.8)		−27.3 (35.6)		−27.3 (35.6)	−27.4 (35.8)
LY4	0.233 (0.42)		−21.9 (0.0)		−21.9 (0.0)	−21.9 (0.0)		−31.4 (49.9)		−31.4 (49.9)	−31.1 (50.3)
Upfront × LY4	0.198 (0.40)		−28.3 (0.5)		−28.3 (0.5)	−27.8 (0.5)		−95.1 (12.7)		−95.1 (12.7)	−95.8 (12.6)
WithGrace × LY4	0.129 (0.34)		−102.0 (0.0)		−101.9 (0.0)	−103.0 (0.0)		352.9 (0.0)		352.9 (0.0)	351.8 (0.0)
InKind × LY4	0.061 (0.24)		2.8 (91.9)		2.6 (92.6)	3.0 (91.2)		68.5 (19.7)		68.5 (19.7)	69.2 (19.3)
FloodInRd1	0.477 (0.50)					1.5 (65.0)					−12.0 (1.7)
Head literate0	0.122 (0.33)					1.9 (43.6)					10.3 (12.2)
net saving0	355.719 (513.67)			0.0 (3.6)	0.0 (3.0)	0.0 (4.1)					
HHsize0	4.241 (1.38)					0.3 (64.9)					−0.2 (89.7)
Repaid0	98.890 (195.66)								−0.0 (83.6)	−0.0 (99.5)	0.0 (99.1)
mean of initial value		427	427	427	427	427	134	134	134	134	134
mean of dependent variable		54	54	54	54	54	318	318	318	318	318
$\bar{R}^2$		0.008	0.223	0.009	0.224	0.225	0.005	0.15	0.005	0.15	0.15
N		26758	26758	26758	26758	26627	26758	26758	26758	26758	26627

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. LargeSize is an indicator function if the arm is of large size, WithGrace is an indicator function if the arm is with a grace period, InKind is an indicator function if the arm provides a cow. Saving and repayment information is taken from administrative data. Time invariant household characteristics are taken from household survey data. Administrative data are merged with survey data by the dating the survey rounds in administrative data. Net saving is saving - withdrawal. Excess repayment is repayment - due amount. LY2, LY3, LY4 are dummy variables for second, third, and fourth year into borrowing.

2. *P* values in percentages in parenthesises. Standard errors are clustered at group (village) level.

TABLE D3: ANCOVA ESTIMATION OF NET SAVING AND REPAYMENT, ULTRA POOR VS. MODERATELY POOR

		Net saving					Repayment				
covariates	mean/std	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(Intercept)		39.8 (0.0)	44.4 (0.0)	38.9 (0.0)	43.5 (0.0)	41.1 (0.0)	250.9 (0.0)	241.9 (0.0)	251.7 (0.0)	242.6 (0.0)	249.0 (0.0)
Upfront	0.851 (0.36)	7.1 (4.3)	10.8 (1.6)	5.4 (13.8)	9.0 (5.2)	8.7 (5.0)	80.1 (0.0)	93.3 (0.0)	79.9 (0.0)	93.1 (0.0)	93.5 (0.0)
WithGrace	0.555 (0.50)	13.6 (0.6)	25.0 (0.1)	12.3 (1.2)	23.6 (0.1)	24.5 (0.0)	1.5 (87.8)	−33.5 (3.9)	1.0 (92.2)	−34.0 (3.7)	−36.7 (2.0)
InKind	0.264 (0.44)	1.7 (79.0)	0.9 (92.5)	1.9 (75.5)	1.1 (90.1)	0.7 (94.0)	−5.9 (58.4)	−15.8 (33.5)	−5.9 (58.4)	−15.8 (33.5)	−14.9 (34.9)
UltraPoor	0.714 (0.45)	2.2 (7.7)	2.5 (9.0)	2.3 (8.7)	2.5 (9.5)	2.6 (8.3)	−6.5 (5.0)	−3.5 (28.3)	−6.5 (5.0)	−3.5 (28.7)	−3.0 (38.8)
LY3	0.258 (0.44)		−2.3 (42.9)		−2.3 (43.0)	−2.3 (42.9)		−35.7 (0.6)		−35.7 (0.6)	−35.7 (0.6)
Upfront × LY3	0.220 (0.41)		−14.0 (3.6)		−14.0 (3.6)	−13.8 (3.7)		30.1 (13.8)		30.1 (13.8)	29.7 (14.5)
WithGrace × LY3	0.143 (0.35)		−54.9 (0.0)		−54.9 (0.0)	−55.4 (0.0)		287.7 (0.0)		287.7 (0.0)	288.6 (0.0)
InKind × LY3	0.069 (0.25)		1.2 (93.4)		1.2 (93.4)	1.4 (92.0)		−9.1 (75.7)		−9.1 (75.7)	−9.2 (75.8)
UltraPoor × LY3	0.184 (0.39)		−1.6 (49.7)		−1.6 (49.3)	−1.6 (50.3)		5.1 (46.2)		5.1 (46.2)	4.6 (50.4)
Upfront × UltraPoor × LY3	0.157 (0.36)		3.3 (64.3)		3.4 (63.0)	3.8 (59.5)		6.0 (75.2)		6.1 (74.7)	5.8 (76.0)
WithGrace × UltraPoor × LY3	0.104 (0.30)		−8.0 (19.9)		−7.7 (21.7)	−8.2 (19.2)		−1.3 (94.9)		−1.3 (94.9)	−0.5 (98.0)
InKind × UltraPoor × LY3	0.050 (0.22)		1.5 (75.6)		0.8 (87.1)	1.1 (81.9)		35.9 (6.9)		35.9 (6.9)	33.8 (9.3)
LY4	0.233 (0.42)		−16.9 (0.0)		−16.9 (0.0)	−16.9 (0.0)		76.1 (5.1)		76.2 (5.1)	76.4 (5.1)
Upfront × LY4	0.198 (0.40)		−20.3 (1.7)		−20.4 (1.7)	−20.0 (1.7)		−128.9 (2.6)		−128.9 (2.6)	−129.8 (2.6)
WithGrace × LY4	0.129 (0.34)		−49.9 (0.0)		−49.9 (0.0)	−50.6 (0.0)		67.6 (26.8)		67.5 (26.9)	67.1 (27.5)
InKind × LY4	0.061 (0.24)		4.3 (78.4)		4.1 (79.5)	4.3 (78.1)		87.3 (19.7)		87.3 (19.7)	88.1 (19.5)
UltraPoor × LY4	0.166 (0.37)		−0.4 (87.8)		−0.4 (86.5)	−0.4 (89.2)		−28.0 (5.0)		−28.0 (5.0)	−28.4 (4.8)
Upfront × UltraPoor × LY4	0.142 (0.35)		6.0 (28.7)		6.2 (29.4)	6.7 (26.0)		−18.4 (75.5)		−18.3 (75.7)	−19.1 (74.8)
WithGrace × UltraPoor × LY4	0.093 (0.29)		−3.0 (68.8)		−2.8 (71.4)	−3.4 (65.7)		4.2 (88.9)		4.2 (89.0)	2.8 (92.6)
InKind × UltraPoor × LY4	0.044 (0.21)		−9.4 (14.1)		−10.1 (11.5)	−9.8 (12.7)		5.7 (86.7)		5.7 (86.7)	8.9 (79.6)
FloodInRd1	0.477 (0.50)					1.4 (65.9)					−12.0 (1.8)
Head literate0	0.122 (0.33)					2.3 (35.7)					9.5 (16.3)
net saving0	355.719 (513.67)			0.0 (3.6)	0.0 (2.9)	0.0 (4.0)					
HHsize0	4.241 (1.38)					0.3 (61.6)					−0.2 (85.6)
Repaid0	98.890 (195.66)								−0.0 (85.4)	−0.0 (87.3)	−0.0 (88.2)
mean of initial value mean of dependent variable		427 54	427 54	427 54	427 54	427 54	134 318	134 318	134 318	134 318	134 318
$\bar{R}^2$ N		0.008 26758	0.1 26758	0.009 26758	0.102 26758	0.102 26627	0.005 26758	0.061 26758	0.005 26758	0.061 26758	0.061 26627

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. UltraPoor is an indicator function if the household is classified as the ultra poor. Saving and repayment information is taken from administrative data. Time invariant household characteristics are taken from household survey data. Administrative data are merged with survey data by the dating the survey rounds in administrative data. Net saving is saving - withdrawal. Excess repayment is repayment - due amount. LY2, LY3, LY4 are dummy variables for second, third, and fourth year into borrowing.

2. *P* values in percentages in parenthesises. Standard errors are clustered at group (village) level.

Finding D.1 TABLE D1 shows regression results for net saving, repayment, and effective repayment (net saving + repayment) using monthly administrative data. Monthly mean repayment is given by 48 times the estimated values in colum (5). One sees that traditional has the lowest mean repayment. It is shown that they repaid loan year 2 and 3

D.1.2 Shortfall

TABLE D4: GROUP LEVEL EFFECTS OF REPAYMENT SHORTFALL

covariates	(1)	(2)	(3)	(4)	(5)
(Intercept)	25.45 (0.5)	126.04 (0.0)	126.04 (0.0)	62.76 (0.0)	62.76 (0.0)
Large		−40.93 (3.6)		−12.52 (22.3)	
LargeGrace		−106.17 (0.0)		−54.40 (0.1)	
Cow		−95.74 (0.0)		−26.65 (12.4)	
Upfront			−40.93 (3.6)		−12.52 (22.3)
WithGrace			−65.24 (0.0)		−41.88 (0.1)
InKind			10.43 (44.2)		27.74 (14.8)
UltraPoor				−9.01 (43.2)	−9.01 (43.2)
Large × UltraPoor				−4.30 (73.9)	
LargeGrace × UltraPoor				6.81 (62.9)	
Cow × UltraPoor				−23.74 (27.2)	
Upfront × UltraPoor					−4.30 (73.9)
WithGrace × UltraPoor					11.11 (33.4)
InKind × UltraPoor					−30.55 (13.4)
LY2		111.93 (0.0)	111.93 (0.0)	30.34 (1.0)	30.34 (1.0)
Large × LY2		107.12 (0.0)		20.21 (0.4)	
LargeGrace × LY2		145.34 (0.0)		80.95 (0.0)	
Cow × LY2		123.64 (0.0)		46.59 (3.8)	
Upfront × LY2			−4.80 (81.5)		−10.13 (36.0)
WithGrace × LY2			38.21 (6.7)		60.74 (0.1)
InKind × LY2			−21.70 (21.2)		−34.36 (21.2)
UltraPoor × LY2				−5.59 (59.8)	−5.59 (59.8)
Large × UltraPoor × LY2				20.60 (4.4)	
LargeGrace × UltraPoor × LY2				−18.20 (24.9)	
Cow × UltraPoor × LY2				18.18 (44.7)	
Upfront × UltraPoor × LY2					26.19 (7.6)
WithGrace × UltraPoor × LY2					−38.80 (4.7)
InKind × UltraPoor × LY2					36.38 (20.9)

TABLE D4: GROUP LEVEL EFFECTS OF REPAYMENT SHORTFALL (CONTINUED)

covariates	(1)	(2)	(3)	(4)	(5)
LY3		19.52	19.52	−29.27	−29.27
		(42.4)	(42.4)	(19.2)	(19.2)
Large × LY3		−95.53		−248.57	
		(1.0)		(5.5)	
LargeGrace × LY3		99.89		34.94	
		(0.0)		(36.0)	
Cow × LY3		44.32		−16.38	
		(7.0)		(65.3)	
Upfront × LY3			−115.05		−219.30
			(0.9)		(9.5)
WithGrace × LY3			195.42		283.51
			(0.0)		(3.5)
InKind × LY3			−55.58		−51.32
			(10.3)		(36.2)
UltraPoor × LY3				2.12	2.12
				(93.7)	(93.7)
Large × UltraPoor × LY3				181.26	
				(16.7)	
LargeGrace × UltraPoor × LY3				−19.29	
				(60.5)	
Cow × UltraPoor × LY3				5.55	
				(90.7)	
Upfront × UltraPoor × LY3					179.13
					(18.1)
WithGrace × UltraPoor × LY3					−200.54
					(14.1)
InKind × UltraPoor × LY3					24.84
					(69.8)
GRSRhigh	114.97			85.39	85.39
	(0.0)			(0.0)	(0.0)
group shortfall$_{t-1}$	0.68			0.62	0.62
	(0.0)			(0.0)	(0.0)
GRSRhigh × group shortfall$_{t-1}$	−0.24			−0.23	−0.23
	(0.1)			(0.0)	(0.0)
Per member group net saving$_{t-1}$				−0.03	−0.03
				(0.1)	(0.1)
Per member cumulative group net saving (1000Tk)$_{t-1}$				−0.04	−0.04
				(12.5)	(12.5)
number of clusters	92	92	92	92	92
$\bar{R}^2$	0.213	0.077	0.077	0.24	0.24
N	4147	4173	4173	4147	4147

Source: Estimated with GUK administrative data.

Notes: 1. Group fixed effects estimates of repayment shortfall. Group fixed effects are controlled by differncing out respecive means from the data matrix. Intercept terms are omitted in estimating equations. Shortfall is (planned installment) - (actual repayment). OtherShortfall indicates mean shortfall of other members in a group. Group repayment shortfall rates (GRSR) is (shortfall)/(planned installment). GRSR is defined as high if the first six months' repayment shortfall rate is above median, low if otherwise. Median GRSR is -1.42.

2. ***, **, * indicate statistical significance at 1%, 5%, 10%, respetively. Standard errors are clustered at group (village) level.

TABLE D5: INDIVIDUAL LEVEL EFFECTS OF REPAYMENT SHORTFALL

covariates	(1)	(2)	(3)	(4)	(5)
(Intercept)	−0.42 (93.7)	1.84 (87.6)	144.89 (0.0)	11.03 (38.1)	11.03 (38.1)
Large		58.91 (0.0)		48.17 (0.0)	
LargeGrace		−140.65 (0.0)		−122.63 (0.0)	
Cow		−143.77 (0.0)		−130.87 (0.0)	
Upfront			−37.79 (0.1)		48.17 (0.0)
WithGrace			−60.86 (0.0)		−170.80 (0.0)
InKind			−0.32 (96.4)		−8.24 (56.0)
UltraPoor				3.29 (63.7)	3.29 (63.7)
Large × UltraPoor				−7.67 (33.4)	
LargeGrace × UltraPoor				3.63 (26.6)	
Cow × UltraPoor				10.84 (0.2)	
Upfront × UltraPoor					−10.96 (30.0)
WithGrace × UltraPoor					11.30 (19.1)
InKind × UltraPoor					7.21 (12.0)
LY2		13.25 (38.4)	103.10 (0.0)	12.31 (35.6)	12.31 (35.6)
Large × LY2		−40.90 (0.0)		−30.64 (1.1)	
LargeGrace × LY2		219.59 (0.0)		183.73 (0.0)	
Cow × LY2		235.19 (0.0)		199.03 (0.0)	
Upfront × LY2			−10.22 (44.5)		−42.95 (1.7)
WithGrace × LY2			45.66 (0.0)		214.36 (0.0)
InKind × LY2			−25.07 (10.5)		15.30 (41.1)
UltraPoor × LY2				−9.41 (22.0)	−9.41 (22.0)
Large × UltraPoor × LY2				2.39 (78.7)	
LargeGrace × UltraPoor × LY2				−1.54 (86.3)	
Cow × UltraPoor × LY2				−4.96 (57.6)	
Upfront × UltraPoor × LY2					11.80 (31.4)
WithGrace × UltraPoor × LY2					−3.93 (75.5)
InKind × UltraPoor × LY2					−3.42 (78.5)

TABLE D5: INDIVIDUAL LEVEL EFFECTS OF REPAYMENT SHORTFALL (CONTINUED)

covariates	(1)	(2)	(3)	(4)	(5)
LY3		−39.18 (3.6)	87.29 (0.0)	−22.74 (8.3)	−22.74 (8.3)
Large × LY3		−140.50 (0.0)		−112.75 (0.0)	
LargeGrace × LY3		206.36 (0.0)		158.69 (0.0)	
Cow × LY3		207.16 (0.0)		180.34 (0.0)	
Upfront × LY3			−101.72 (0.0)		−90.02 (0.0)
WithGrace × LY3			144.31 (0.0)		271.44 (0.0)
InKind × LY3			−22.12 (30.2)		21.65 (41.7)
UltraPoor × LY3				−7.67 (30.4)	−7.67 (30.4)
Large × UltraPoor × LY3				6.34 (69.5)	
LargeGrace × UltraPoor × LY3				13.87 (4.3)	
Cow × UltraPoor × LY3				−18.25 (39.4)	
Upfront × UltraPoor × LY3					14.01 (43.2)
WithGrace × UltraPoor × LY3					7.54 (66.8)
InKind × UltraPoor × LY3					−32.12 (15.3)
GRSRhigh	146.87 (0.0)			128.55 (0.0)	128.55 (0.0)
group shortfall$_{t-1}$	0.00 (89.7)			−0.05 (23.3)	−0.05 (23.3)
GRSRhigh × group shortfall$_{t-1}$	−0.65 (0.0)			−0.55 (0.0)	−0.55 (0.0)
shortfall$_{t-1}$	0.35 (0.0)			0.29 (0.0)	0.29 (0.0)
Per member group net saving$_{t-1}$				−0.04 (8.7)	−0.04 (8.7)
Per member cumulative group net saving (1000Tk)$_{t-1}$				−0.05 (0.3)	−0.05 (0.3)
number of clusters	92	92	92	92	92
$\bar{R}^2$	0.073	0.069	0.107	0.116	0.116
N	47213	47395	47395	47213	47213

Source: Estimated with GUK administrative data.

Notes: 1. Group fixed effects estimates of repayment shortfall. Group fixed effects are controlled by differncing out respecive means from the data matrix. Intercept terms are omitted in estimating equations. Shortfall is (planned installment) - (actual repayment). OtherShortfall indicates mean shortfall of other members in a group. Group repayment shortfall rates (GRSR) is (shortfall)/(planned installment). GRSR is defined as high if the first six months' repayment shortfall rate is above median, low if otherwise. Median GRSR is -1.42.

2. ***, **, * indicate statistical significance at 1%, 5%, 10%, respetively. Standard errors are clustered at group (village) level.

Finding D.2 TABLE D4 shows group level repayment shortfall has a positive autocorrelation hence is persistent. In (1), the coefficient is smaller in groups with high shortfall rates, hinting loan repayment discipline as a group at some intermediate level. In (2) and (3), group level shortfall gets smaller in the third year than in the second year for all arms, indicating stronger efforts in repayment in the final loan year. In (4) and (5), the UltraPoor is found to have no larger repayment shortfall than the moderately poor, except for the Large arm or Upfront attribute in the second loan year. TABLE D5 (1), (4) and (5) also show persistence for individuals, although the magnitude is much smaller. In (1), lagged shortfall of others decreases with own shortfall only in high GRSR group. This confirms the group level repayment discipline that is consistent with a steady state short fall rate at an intermediate level as a group. In (2), shortfall is larger in the second and third year for the arms with a grace period. This reflects that a grace period does not necessarily help the borrowers to prepare repayments, which is against

the intention to match the repayment with the cash flow. The ultra poor has smaller shortfall in all arms in year 2 except in the large grace arm in year 3. The results on the ultra poor may indicate the difference with the moderately poor is nominal.

D.2 Schooling

TABLE D6: ANCOVA ESTIMATION OF SCHOOL ENROLLMENT

covariates	mean/std	(1)	(2)	(3)	(4)	(5)	(6)
(Intercept)		0.91	0.69	0.75	0.89	0.73	0.86
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
Secondary	0.338			−0.11	−0.09	−0.11	−0.09
	(0.47)			(0.0)	(0.0)	(0.0)	(0.0)
College	0.172			−0.21	−0.18	−0.20	−0.18
	(0.38)			(0.0)	(0.0)	(0.0)	(0.0)
Large	0.272	−0.03	−0.04	−0.04	−0.04	−0.04	−0.04
	(0.44)	(38.5)	(20.0)	(15.0)	(13.6)	(16.8)	(14.3)
LargeGrace	0.247	−0.04	−0.05	−0.04	−0.05	−0.04	−0.04
	(0.43)	(21.6)	(12.1)	(12.5)	(9.7)	(13.4)	(11.3)
Cow	0.257	−0.05	−0.06	−0.06	−0.06	−0.06	−0.05
	(0.44)	(16.7)	(5.5)	(2.3)	(3.1)	(2.7)	(3.9)
Large × Secondary	0.085			−0.01	0.00	−0.00	0.01
	(0.28)			(90.6)	(92.5)	(95.1)	(89.4)
LargeGrace × Secondary	0.083			−0.07	−0.08	−0.07	−0.08
	(0.28)			(12.8)	(11.6)	(15.5)	(11.0)
Cow × Secondary	0.088			−0.01	−0.01	−0.01	−0.01
	(0.28)			(77.3)	(80.0)	(82.5)	(83.0)
Large × College	0.049			0.03	0.04	0.04	0.06
	(0.22)			(68.1)	(58.4)	(51.3)	(34.0)
LargeGrace × College	0.049			−0.02	−0.04	−0.02	−0.03
	(0.22)			(72.4)	(59.1)	(78.6)	(68.8)
Cow × College	0.035			−0.11	−0.13	−0.07	−0.09
	(0.18)			(16.2)	(8.3)	(28.4)	(19.7)
Female	0.450					0.05	0.05
	(0.50)					(2.9)	(4.9)
Secondary × Female	0.152					0.08	0.08
	(0.36)					(0.4)	(0.9)
College × Female	0.059					0.12	0.10
	(0.24)					(2.0)	(6.4)
Large × Female	0.121					0.01	0.03
	(0.33)					(92.1)	(64.1)
LargeGrace × Female	0.114					0.08	0.06
	(0.32)					(10.5)	(19.0)
Cow × Female	0.114					0.07	0.08
	(0.32)					(16.0)	(11.3)
Large × Secondary × Female	0.041					−0.09	−0.11
	(0.20)					(34.0)	(20.0)
LargeGrace × Secondary × Female	0.036					0.10	0.12
	(0.19)					(26.7)	(18.8)
Cow × Secondary × Female	0.037					0.05	0.06
	(0.19)					(58.0)	(52.9)
Large × College × Female	0.016					0.08	0.11
	(0.12)					(58.1)	(46.2)
LargeGrace × College × Female	0.018					−0.03	0.01
	(0.13)					(84.5)	(95.2)
Cow × College × Female	0.010					0.18	0.17
	(0.10)					(25.5)	(30.8)
FloodInRd1	0.464				−0.04		−0.05
	(0.50)				(4.8)		(3.6)
EldestSon	0.267				0.00		0.04
	(0.44)				(89.8)		(31.8)
EldestDaughter	0.188				0.04		0.01
	(0.39)				(23.9)		(77.2)
Head literate0	0.108				0.06		0.06
	(0.31)				(1.8)		(1.8)
Head age0	39.153				−0.00		−0.00
	(7.38)				(7.7)		(7.6)
Enrolled0	0.760		0.29	0.32	0.29	0.31	0.29
	(0.43)		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
ChildAgeOrderAtRd1	1.826				0.02		0.02
	(0.98)				(21.7)		(24.6)
HHsize0	4.974				−0.02		−0.01
	(1.15)				(21.5)		(32.9)
mean of initial value		1	1	1	1	1	1
mean of dependent variable		1	1	1	1	1	1
$T = 2$		75	75	75	63	75	63
$T = 3$		112	112	112	103	112	103
$T = 4$		539	539	539	500	539	500
$\bar{R}^2$		0.002	0.15	0.208	0.2	0.222	0.209
N		1976	1976	1976	1841	1976	1841

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. Interaction terms of dummy variables are demeaned before interacting. The first column gives mean and standard deviation (in parenthesises) of each covariates before demeaning.

Table D7: ANCOVA estimation of school enrollment by attributes

covariates	mean/std	(1)	(2)	(3)	(4)	(5)	(6)
(Intercept)		0.91 (0.0)	0.69 (0.0)	0.75 (0.0)	0.89 (0.0)	0.73 (0.0)	0.86 (0.0)
Secondary	0.338 (0.47)			−0.11 (0.0)	−0.09 (0.0)	−0.11 (0.0)	−0.09 (0.0)
College	0.172 (0.38)			−0.21 (0.0)	−0.18 (0.0)	−0.20 (0.0)	−0.18 (0.0)
Upfront	0.776 (0.42)	−0.03 (38.5)	−0.04 (20.0)	−0.04 (15.0)	−0.04 (13.6)	−0.04 (16.8)	−0.04 (14.3)
WithGrace	0.504 (0.50)	−0.01 (81.4)	−0.01 (76.5)	0.00 (99.6)	−0.00 (97.6)	−0.00 (96.0)	−0.00 (98.2)
InKind	0.257 (0.44)	−0.01 (86.0)	−0.01 (83.9)	−0.02 (53.1)	−0.01 (66.5)	−0.02 (62.8)	−0.01 (73.9)
WithGrace × Secondary	0.171 (0.38)			−0.07 (9.4)	−0.09 (6.1)	−0.07 (10.5)	−0.09 (5.9)
Upfront × Secondary	0.255 (0.44)			−0.01 (90.6)	0.00 (92.5)	−0.00 (95.1)	0.01 (89.4)
InKind × Secondary	0.088 (0.28)			0.06 (15.6)	0.07 (14.0)	0.06 (16.2)	0.07 (12.5)
WithGrace × College	0.084 (0.28)			−0.05 (40.1)	−0.07 (26.0)	−0.06 (34.4)	−0.09 (17.3)
Upfront × College	0.134 (0.34)			0.03 (68.1)	0.04 (58.4)	0.04 (51.3)	0.06 (34.0)
InKind × College	0.035 (0.18)			−0.08 (24.8)	−0.09 (21.2)	−0.05 (42.5)	−0.06 (39.7)
Female	0.450 (0.50)					0.05 (2.9)	0.05 (4.9)
Secondary × Female	0.152 (0.36)					0.08 (0.4)	0.08 (0.9)
College × Female	0.059 (0.24)					0.12 (2.0)	0.10 (6.4)
WithGrace × Female	0.228 (0.42)					0.08 (22.3)	0.04 (57.7)
Upfront × Female	0.349 (0.48)					0.01 (92.1)	0.03 (64.1)
InKind × Female	0.114 (0.32)					−0.01 (84.0)	0.02 (79.7)
WithGrace × Secondary × Female	0.074 (0.26)					0.19 (0.5)	0.23 (0.1)
Upfront × Secondary × Female	0.115 (0.32)					−0.09 (34.0)	−0.11 (20.0)
InKind × Secondary × Female	0.037 (0.19)					−0.05 (51.7)	−0.06 (45.0)
WithGrace × College × Female	0.028 (0.17)					−0.11 (40.6)	−0.10 (48.3)
Upfront × College × Female	0.044 (0.21)					0.08 (58.1)	0.11 (46.2)
InKind × College × Female	0.010 (0.10)					0.21 (15.9)	0.16 (32.2)
FloodInRd1	0.464 (0.50)				−0.04 (4.8)		−0.05 (3.6)
EldestSon	0.267 (0.44)				0.00 (89.8)		0.04 (31.8)
EldestDaughter	0.188 (0.39)				0.04 (23.9)		0.01 (77.2)
Head literate0	0.108 (0.31)				0.06 (1.8)		0.06 (1.8)
Head age0	39.153 (7.38)				−0.00 (7.7)		−0.00 (7.6)
Enrolled0	0.760 (0.43)		0.29 (0.0)	0.32 (0.0)	0.29 (0.0)	0.31 (0.0)	0.29 (0.0)
ChildAgeOrderAtRd1	1.826 (0.98)				0.02 (21.7)		0.02 (24.6)
HHsize0	4.974 (1.15)				−0.02 (21.5)		−0.01 (32.9)
mean of initial value mean of dependent variable		1 1	1 1	1 1	1 1	1 1	1 1
$T = 2$ $T = 3$		75 112	75 112	75 112	63 103	75 112	63 103
$T = 4$ $\bar{R}^2$		539 0.002	539 0.15	539 0.208	500 0.2	539 0.222	500 0.209
N		1976	1976	1976	1841	1976	1841

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. Interaction terms of dummy variables are demeaned before interacting. The first column gives mean and standard deviation (in parenthesises) of each covariates before demeaning.

2. P values in percentages in parenthesises. Standard errors are clustered at group (village) level.

TABLE D8: ANCOVA ESTIMATION OF SCHOOL ENROLLMENT BY POVERTY STATUS

covariates	mean/std	(1)	(2)	(3)	(4)	(5)	(6)
(Intercept)		0.93 (0.0)	0.70 (0.0)	0.76 (0.0)	0.90 (0.0)	0.74 (0.0)	0.86 (0.0)
Secondary	0.338 (0.47)			−0.11 (0.0)	−0.09 (0.0)	−0.11 (0.0)	−0.09 (0.0)
College	0.172 (0.38)			−0.21 (0.0)	−0.18 (0.0)	−0.19 (0.0)	−0.18 (0.0)
Upfront	0.776 (0.42)	−0.05 (17.7)	−0.04 (10.8)	−0.05 (8.2)	−0.05 (8.6)	−0.04 (10.5)	−0.05 (9.4)
WithGrace	0.504 (0.50)	−0.01 (81.7)	−0.01 (76.7)	−0.00 (98.7)	−0.00 (92.8)	−0.00 (91.9)	−0.00 (91.6)
InKind	0.257 (0.44)	−0.01 (81.2)	−0.01 (75.6)	−0.02 (47.5)	−0.02 (64.0)	−0.02 (54.6)	−0.01 (68.0)
UltraPoor	0.612 (0.49)	0.04 (10.6)	0.03 (22.0)	0.03 (21.2)	0.03 (22.9)	0.03 (21.2)	0.03 (20.4)
WithGrace × Secondary	0.171 (0.38)			−0.07 (9.3)	−0.09 (5.4)	−0.06 (11.4)	−0.08 (5.9)
Upfront × Secondary	0.255 (0.44)			−0.00 (99.2)	0.01 (84.5)	−0.00 (97.5)	0.01 (88.4)
InKind × Secondary	0.088 (0.28)			0.06 (14.5)	0.07 (11.8)	0.06 (13.2)	0.08 (9.1)
WithGrace × College	0.084 (0.28)			−0.05 (41.1)	−0.07 (26.0)	−0.05 (37.0)	−0.08 (18.0)
Upfront × College	0.134 (0.34)			0.01 (80.2)	0.03 (68.4)	0.02 (69.4)	0.05 (46.2)
InKind × College	0.035 (0.18)			−0.09 (23.0)	−0.10 (18.3)	−0.05 (40.2)	−0.06 (38.8)
Upfront × UltraPoor	0.038 (0.42)	−0.04 (69.1)	−0.02 (78.1)	−0.01 (91.1)	0.00 (99.2)	−0.01 (89.1)	−0.00 (97.8)
WithGrace × UltraPoor	0.041 (0.33)	−0.02 (79.2)	0.00 (97.6)	0.00 (96.9)	0.02 (74.1)	−0.01 (94.1)	0.01 (84.9)
InKind × UltraPoor	0.028 (0.23)	0.01 (80.0)	0.03 (58.3)	0.01 (77.4)	−0.02 (72.4)	0.03 (52.8)	0.01 (85.2)
Secondary × UltraPoor	0.007 (0.28)	−0.02 (59.5)	−0.04 (30.4)	−0.03 (36.1)	−0.03 (40.6)	−0.03 (32.4)	−0.03 (35.5)
College × UltraPoor	−0.003 (0.20)	0.09 (19.8)	0.04 (48.4)	0.04 (40.1)	0.05 (39.5)	0.06 (25.6)	0.05 (32.4)
Female	0.450 (0.50)					0.05 (2.7)	0.05 (4.9)
Secondary × Female	0.152 (0.36)					0.08 (0.6)	0.08 (1.3)
College × Female	0.059 (0.24)					0.12 (1.3)	0.11 (4.4)
Female × UltraPoor	−0.000 (0.33)					0.07 (7.3)	0.07 (7.2)
WithGrace × Female	0.228 (0.42)					0.07 (24.9)	0.03 (61.9)
Upfront × Female	0.349 (0.48)					−0.00 (96.2)	0.02 (74.8)
InKind × Female	0.114 (0.32)					−0.02 (76.0)	0.01 (87.5)
WithGrace × Secondary × Female	0.074 (0.26)					0.19 (0.6)	0.23 (0.1)
Upfront × Secondary × Female	0.115 (0.32)					−0.10 (27.1)	−0.12 (17.4)
InKind × Secondary × Female	0.037 (0.19)					−0.04 (61.7)	−0.04 (57.6)
WithGrace × College × Female	0.028 (0.17)					−0.09 (46.5)	−0.08 (57.4)
Upfront × College × Female	0.044 (0.21)					0.06 (63.9)	0.09 (53.4)
InKind × College × Female	0.010 (0.10)					0.22 (12.7)	0.18 (26.6)
FloodInRd1	0.464 (0.50)				−0.04 (4.4)		−0.05 (2.5)
EldestSon	0.267 (0.44)				0.00 (94.0)		0.04 (31.0)
EldestDaughter	0.188 (0.39)				0.04 (22.2)		0.01 (70.9)
Head literate0	0.108 (0.31)				0.06 (2.3)		0.05 (2.9)
Head age0	39.153 (7.38)				−0.00 (10.6)		−0.00 (11.2)
Enrolled0	0.760 (0.43)		0.29 (0.0)	0.32 (0.0)	0.29 (0.0)	0.31 (0.0)	0.29 (0.0)
ChildAgeOrderAtRd1	1.826 (0.98)				0.02 (22.9)		0.02 (27.4)
HHsize0	4.974 (1.15)				−0.02 (19.7)		−0.01 (36.0)
mean of initial value mean of dependent variable		1 1	1 1	1 1	1 1	1 1	1 1
$T = 2$ $T = 3$		75 112	75 112	75 112	63 103	75 112	63 103
$T = 4$ $\bar{R}^2$		539 0.008	539 0.151	539 0.209	500 0.201	539 0.225	500 0.212

TABLE D9: ANCOVA ESTIMATION OF SCHOOL ENROLLMENT BY ATTRIBUTES AND TIME

covariates	mean/std	(1)	(2)	(3)	(4)	(5)	(6)
(Intercept)		0.92 (0.0)	0.70 (0.0)	0.70 (0.0)	0.81 (0.0)	0.69 (0.0)	0.78 (0.0)
Secondary	0.338 (0.47)	−0.08 (0.1)	−0.15 (0.0)	−0.15 (0.0)	−0.12 (0.0)	−0.14 (0.0)	−0.12 (0.0)
College	0.172 (0.38)	−0.21 (0.0)	−0.24 (0.0)	−0.24 (0.0)	−0.21 (0.0)	−0.22 (0.0)	−0.20 (0.0)
Upfront	0.776 (0.42)	−0.03 (43.5)	−0.04 (18.4)	−0.04 (18.4)	−0.04 (20.4)	−0.04 (25.1)	−0.03 (36.5)
WithGrace	0.504 (0.50)	−0.01 (88.2)	−0.00 (91.3)	−0.00 (91.3)	−0.00 (90.4)	−0.00 (97.8)	−0.01 (87.4)
InKind	0.257 (0.44)	−0.02 (64.8)	−0.02 (55.5)	−0.02 (55.5)	−0.01 (63.7)	−0.02 (55.2)	−0.01 (60.9)
WithGrace × Secondary	0.171 (0.38)	−0.14 (3.2)	−0.11 (5.4)	−0.11 (5.4)	−0.13 (4.5)	−0.08 (13.6)	−0.11 (6.9)
Upfront × Secondary	0.255 (0.44)	0.06 (36.5)	0.03 (62.5)	0.03 (62.5)	0.05 (42.5)	0.04 (54.5)	0.06 (34.3)
InKind × Secondary	0.088 (0.28)	0.05 (50.8)	0.06 (31.6)	0.06 (31.6)	0.07 (31.8)	0.04 (54.6)	0.05 (41.8)
WithGrace × College	0.084 (0.28)	−0.06 (46.5)	−0.04 (53.7)	−0.04 (53.7)	−0.07 (31.0)	−0.06 (34.1)	−0.13 (4.6)
Upfront × College	0.134 (0.34)	0.05 (53.7)	0.04 (60.1)	0.04 (60.1)	0.06 (41.4)	0.07 (39.9)	0.15 (5.9)
InKind × College	0.035 (0.18)	−0.15 (14.9)	−0.09 (19.9)	−0.09 (19.9)	−0.10 (16.5)	−0.05 (51.8)	−0.06 (40.2)
Female	0.450 (0.50)					0.04 (5.3)	0.05 (5.1)
Secondary × Female	0.152 (0.36)					0.11 (0.4)	0.10 (0.6)
College × Female	0.059 (0.24)					0.07 (18.9)	0.08 (19.3)
WithGrace × Female	0.228 (0.42)					0.09 (19.5)	0.04 (58.3)
Upfront × Female	0.349 (0.48)					0.02 (76.4)	0.04 (44.3)
InKind × Female	0.114 (0.32)					−0.04 (57.7)	−0.01 (93.1)
WithGrace × Secondary × Female	0.074 (0.26)					0.23 (0.7)	0.28 (0.1)
Upfront × Secondary × Female	0.115 (0.32)					−0.14 (18.1)	−0.18 (4.9)
InKind × Secondary × Female	0.037 (0.19)					−0.14 (19.0)	−0.13 (21.6)
WithGrace × College × Female	0.028 (0.17)					−0.13 (36.5)	−0.20 (16.8)
Upfront × College × Female	0.044 (0.21)					0.10 (58.1)	0.26 (15.8)
InKind × College × Female	0.010 (0.10)					0.27 (10.0)	0.19 (26.7)

TABLE D10: ANCOVA ESTIMATION OF SCHOOL ENROLLMENT BY ATTRIBUTES AND TIME (CONTINUED)

covariates	mean/std	(1)	(2)	(3)	(4)	(5)	(6)
rd 3	0.344 (0.48)	0.06 (0.0)	0.06 (0.0)	0.06 (0.0)	0.04 (0.0)	0.06 (0.0)	0.04 (0.1)
Secondary × rd 3	0.117 (0.32)	0.01 (86.0)	−0.02 (47.1)	−0.02 (47.1)	−0.04 (21.8)	−0.03 (35.9)	−0.05 (15.2)
College × rd 3	0.055 (0.23)	0.04 (34.6)	−0.02 (69.2)	−0.02 (69.2)	−0.03 (43.1)	−0.01 (73.0)	−0.04 (36.9)
WithGrace × rd 3	0.175 (0.38)	0.01 (75.8)	0.00 (99.6)	0.00 (99.6)	−0.01 (80.2)	−0.02 (65.6)	−0.01 (68.9)
Upfront × rd 3	0.267 (0.44)	−0.06 (8.6)	−0.05 (9.8)	−0.05 (9.8)	−0.06 (6.7)	−0.05 (13.7)	−0.07 (2.1)
InKind × rd 3	0.090 (0.29)	0.02 (68.5)	0.02 (67.0)	0.02 (67.0)	0.03 (51.9)	0.02 (59.6)	0.03 (50.4)
WithGrace × Secondary × rd 3	0.059 (0.24)	0.13 (17.0)	0.11 (18.7)	0.11 (18.7)	0.11 (23.5)	0.06 (50.7)	0.07 (45.8)
Upfront × Secondary × rd 3	0.087 (0.28)	−0.05 (52.8)	−0.04 (63.4)	−0.04 (63.4)	−0.07 (36.0)	−0.04 (61.0)	−0.08 (32.9)
InKind × Secondary × rd 3	0.032 (0.17)	−0.00 (96.8)	−0.00 (98.7)	−0.00 (98.7)	0.01 (94.0)	0.06 (55.9)	0.06 (58.8)
WithGrace × College × rd 3	0.029 (0.17)	−0.04 (71.4)	0.01 (94.7)	0.01 (94.7)	0.06 (59.2)	−0.01 (93.6)	0.08 (31.6)
Upfront × College × rd 3	0.044 (0.21)	0.02 (84.8)	−0.01 (92.4)	−0.01 (92.4)	−0.07 (56.1)	0.01 (95.3)	−0.13 (22.3)
InKind × College × rd 3	0.012 (0.11)	0.12 (29.5)	0.03 (80.3)	0.03 (80.3)	0.01 (91.6)	−0.04 (72.6)	−0.04 (71.9)
Female × rd 3	0.156 (0.36)					−0.01 (67.2)	−0.00 (85.0)
WithGrace × Female × rd 3	0.080 (0.27)					−0.04 (45.8)	−0.01 (78.4)
Upfront × Female × rd 3	0.121 (0.33)					0.03 (60.9)	0.02 (64.2)
InKind × Female × rd 3	0.040 (0.20)					0.07 (35.2)	0.05 (47.7)
WithGrace × Secondary × Female × rd 3	0.025 (0.16)					0.02 (88.5)	0.05 (76.8)
Upfront × Secondary × Female × rd	0.039 (0.19)					0.08 (64.2)	0.10 (51.1)
InKind × Secondary × Female × rd 3	0.012 (0.11)					0.21 (23.0)	0.10 (57.4)
WithGrace × College × Female × rd	0.009 (0.09)					0.00 (97.9)	0.16 (33.2)
Upfront × College × Female × rd 3	0.012 (0.11)					0.17 (38.3)	−0.06 (75.2)
InKind × College × Female × rd 3	0.003 (0.06)					−0.39 (8.3)	−0.36 (14.7)
Secondary × Female × rd 3	0.052 (0.22)					−0.05 (42.7)	−0.02 (74.4)
College × Female × rd 3	0.016 (0.13)					0.03 (69.1)	0.00 (99.3)

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. Interaction terms of dummy variables are demeaned before interacting. The first column gives mean and standard deviation (in parenthesises) of each covariates before demeaning.

2. *P* values in percentages in parenthesises. Standard errors are clustered at group (village) level.

TABLE D11: ANCOVA ESTIMATION OF SCHOOL ENROLLMENT BY ATTRIBUTES AND TIME (CONTINUED 2)

covariates	mean/std	(1)	(2)	(3)	(4)	(5)	(6)
rd 4	0.294 (0.46)	0.10 (0.0)	0.13 (0.0)	0.13 (0.0)	0.12 (0.0)	0.13 (0.0)	0.12 (0.0)
Secondary × rd 4	0.150 (0.36)	0.07 (11.6)	−0.03 (41.3)	−0.03 (41.3)	−0.05 (26.8)	−0.05 (26.4)	−0.06 (17.8)
College × rd 4	0.062 (0.24)	0.12 (0.8)	−0.02 (71.0)	−0.02 (71.0)	−0.03 (48.0)	−0.02 (57.6)	−0.04 (33.0)
WithGrace × rd 4	0.147 (0.35)	0.01 (75.9)	0.01 (76.2)	0.01 (76.2)	0.01 (73.3)	−0.00 (94.1)	0.02 (62.8)
Upfront × rd 4	0.232 (0.42)	−0.05 (19.3)	−0.06 (16.2)	−0.06 (16.2)	−0.07 (11.1)	−0.07 (11.1)	−0.09 (2.2)
InKind × rd 4	0.073 (0.26)	0.04 (37.8)	0.02 (67.8)	0.02 (67.8)	0.02 (69.2)	0.02 (49.6)	0.02 (58.2)
WithGrace × Secondary × rd 4	0.076 (0.27)	0.18 (9.1)	0.15 (10.3)	0.15 (10.3)	0.15 (11.9)	0.10 (28.7)	0.11 (24.3)
Upfront × Secondary × rd 4	0.114 (0.32)	−0.04 (69.7)	−0.03 (74.4)	−0.03 (74.4)	−0.09 (38.5)	−0.03 (71.3)	−0.09 (33.5)
InKind × Secondary × rd 4	0.040 (0.20)	−0.09 (46.8)	−0.05 (60.8)	−0.05 (60.8)	−0.05 (67.4)	−0.01 (93.7)	−0.01 (93.5)
WithGrace × College × rd 4	0.029 (0.17)	−0.09 (33.7)	−0.05 (59.9)	−0.05 (59.9)	−0.01 (87.8)	−0.02 (83.4)	0.07 (41.4)
Upfront × College × rd 4	0.049 (0.22)	−0.05 (72.9)	−0.05 (70.1)	−0.05 (70.1)	−0.08 (49.6)	−0.09 (46.1)	−0.22 (5.7)
InKind × College × rd 4	0.012 (0.11)	0.08 (50.1)	0.02 (83.1)	0.02 (83.1)	0.03 (79.2)	−0.02 (84.1)	0.01 (94.7)
Female × rd 4	0.142 (0.35)					−0.04 (6.1)	−0.04 (3.3)
WithGrace × Female × rd 4	0.071 (0.26)					−0.06 (20.5)	−0.07 (15.8)
Upfront × Female × rd 4	0.112 (0.32)					0.13 (1.3)	0.12 (2.6)
InKind × Female × rd 4	0.034 (0.18)					0.08 (26.4)	0.10 (14.9)
WithGrace × Secondary × Female × rd 4	0.037 (0.19)					−0.17 (33.2)	−0.14 (37.3)
Upfront × Secondary × Female × rd	0.054 (0.23)					−0.10 (56.6)	−0.00 (99.5)
InKind × Secondary × Female × rd 4	0.019 (0.14)					0.31 (10.3)	0.17 (33.5)
WithGrace × College × Female × rd	0.012 (0.11)					0.35 (5.4)	0.55 (0.1)
Upfront × College × Female × rd 4	0.023 (0.15)					−0.19 (40.3)	−0.50 (4.0)
InKind × College × Female × rd 4	0.004 (0.07)					−0.19 (46.6)	−0.15 (57.6)
Secondary × Female × rd 4	0.070 (0.26)					−0.04 (47.7)	−0.02 (69.5)
College × Female × rd 4	0.032 (0.17)					0.14 (11.0)	0.13 (15.6)
FloodInRd1	0.464 (0.50)				−0.05 (4.2)		−0.05 (2.8)
EldestSon	0.267 (0.44)				0.02 (62.9)		0.04 (22.2)
EldestDaughter	0.188 (0.39)				0.04 (28.3)		0.01 (84.8)
Head literate0	0.108 (0.31)				0.06 (2.7)		0.05 (2.9)
Head age0	39.153 (7.38)				−0.00 (26.3)		−0.00 (21.8)
Enrolled0	0.760 (0.43)		0.33 (0.0)	0.33 (0.0)	0.30 (0.0)	0.32 (0.0)	0.30 (0.0)
ChildAgeOrderAtRd1	1.826 (0.98)				0.02 (23.0)		0.02 (25.3)
HHsize0	4.974 (1.15)				−0.01 (25.6)		−0.01 (39.6)
mean of initial value mean of dependent variable		1 1	1 1	1 1	1 1	1 1	1 1
$T = 2$ $T = 3$		75 112	75 112	75 112	63 103	75 112	63 103
$T = 4$ $\bar{R}^2$		539 0.056	539 0.226	539 0.226	500 0.215	539 0.235	500 0.221
N		1976	1976	1976	1841	1976	1841

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. Interaction terms of dummy variables are demeaned before interacting. The first column gives mean and standard deviation (in parenthesises) of each covariates before demeaning.

2. P values in percentages in parenthesises. Standard errors are clustered at group (village) level.

D.3 Assets

TABLE D12: ANCOVA ESTIMATION OF ASSETS

		Household asset amount (Tk)			Productive asset amount (Tk)		
covariates	mean/std	(1)	(2)	(3)	(4)	(5)	(6)
(Intercept)		13942.1 (0.0)	11544.0 (0.0)	6488.6 (4.6)	511.8 (0.0)	118.1 (38.7)	374.6 (23.2)
Large	0.271 (0.44)	5342.6 (15.4)	5142.6 (17.0)	5581.3 (13.0)	1260.1 (2.7)	1168.7 (3.4)	1260.0 (2.3)
LargeGrace	0.243 (0.43)	4196.8 (19.6)	3999.9 (20.8)	3647.3 (22.7)	836.7 (7.2)	666.9 (13.6)	609.9 (16.2)
Cow	0.262 (0.44)	4001.1 (37.0)	3795.1 (37.7)	3954.8 (34.2)	265.2 (13.2)	353.4 (6.7)	402.0 (5.9)
FloodInRd1	0.489 (0.50)			−4244.5 (2.2)			−601.5 (11.8)
Head literate0	0.117 (0.32)			1966.6 (60.5)			−618.4 (1.4)
household asset value$_1$	747.975 (872.21)		3.4 (1.7)	2.4 (9.0)			
HHsize0	4.187 (1.44)			1812.7 (0.6)			21.4 (82.6)
productive asset value$_1$	1107.650 (2422.86)					0.4 (0.1)	0.4 (0.2)
mean of initial value mean of dependent variable		763 17460	763 17460	763 17460	1094 1126	1094 1126	1094 1126
$T = 2$ $T = 3$		16 53	16 53	16 50	16 53	16 53	16 50
$T = 4$ $\bar{R}^2$		666 0.002	666 0.01	666 0.02	666 0.005	666 0.028	666 0.03
N		2120	2120	2114	2120	2120	2114

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. Interaction terms of dummy variables are demeaned before interacting. The first column gives mean and standard deviation (in parenthesises) of each covariates before demeaning.

2. P values in percentages in parenthesises. Standard errors are clustered at group (village) level.

Table D13: ANCOVA estimation of assets by poverty status

		Household asset amount (Tk)			Productive asset amount (Tk)		
covariates	mean/std	(1)	(2)	(3)	(4)	(5)	(6)
(Intercept)		14132.6 (0.0)	11829.4 (0.0)	6785.1 (3.3)	525.5 (0.0)	134.5 (34.3)	415.6 (20.4)
Unfront	0.776 (0.42)	5193.5 (14.0)	4871.2 (16.7)	5288.5 (12.3)	1250.6 (3.0)	1155.1 (3.8)	1228.0 (2.5)
WithGrace	0.505 (0.50)	−1650.0 (66.2)	−1653.0 (65.8)	−2614.3 (47.6)	−454.9 (53.7)	−537.3 (44.9)	−698.9 (32.6)
InKind	0.262 (0.44)	331.6 (94.4)	296.0 (94.9)	951.8 (83.3)	−538.6 (28.0)	−277.6 (56.3)	−155.7 (73.6)
UltraPoor	0.626 (0.48)	−1499.9 (51.5)	−1119.2 (63.8)	−942.4 (69.5)	−205.7 (63.0)	−189.4 (66.1)	−204.2 (64.0)
Unfront × UltraPoor	0.518 (0.50)	−11911.0 (10.9)	−12769.1 (8.5)	−14170.1 (5.8)	−1145.4 (45.0)	−1202.6 (43.6)	−1541.1 (35.6)
WithGrace × UltraPoor	0.349 (0.48)	15763.3 (2.3)	15818.4 (2.5)	17294.7 (1.6)	1355.0 (38.6)	1425.2 (36.5)	1594.2 (33.2)
InKind × UltraPoor	0.177 (0.38)	−6433.9 (20.4)	−5898.0 (24.5)	−6203.0 (21.7)	−412.8 (46.7)	−426.5 (42.7)	−508.2 (34.4)
FloodInRd1	0.489 (0.50)			−4818.0 (0.9)			−661.3 (11.6)
Head literate0	0.117 (0.32)			1268.7 (73.9)			−704.8 (2.0)
household asset value$_1$	747.975 (872.21)		3.4 (1.8)	2.4 (9.8)			
HHsize0	4.187 (1.44)			1921.6 (0.3)			30.5 (76.5)
productive asset value$_1$	1107.650 (2422.86)					0.4 (0.1)	0.4 (0.1)
mean of initial value mean of dependent variable		763 17460	763 17460	763 17460	1094 1126	1094 1126	1094 1126
$T = 2$ $T = 3$		16 53	16 53	16 50	16 53	16 53	16 50
$T = 4$ $\bar{R}^2$		666 0.008	666 0.017	666 0.027	666 0.005	666 0.028	666 0.031
N		2120	2120	2114	2120	2120	2114

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. Interaction terms of dummy variables are demeaned before interacting. The first column gives mean and standard deviation (in parenthesises) of each covariates before demeaning.

2. P values in percentages in parenthesises. Standard errors are clustered at group (village) level.

Table D14: ANCOVA estimation of assets by attributes

		Household asset amount (Tk)			Productive asset amount (Tk)		
covariates	mean/std	(1)	(2)	(3)	(4)	(5)	(6)
(Intercept)		13942.1 (0.0)	11544.0 (0.0)	6488.6 (4.6)	511.8 (0.0)	118.1 (38.7)	374.6 (23.2)
Unfront	0.776 (0.42)	5342.6 (15.4)	5142.6 (17.0)	5581.3 (13.0)	1260.1 (2.7)	1168.7 (3.4)	1260.0 (2.3)
WithGrace	0.505 (0.50)	−1145.8 (77.7)	−1142.7 (77.7)	−1933.9 (62.5)	−423.5 (56.2)	−501.8 (47.5)	−650.1 (35.3)
InKind	0.262 (0.44)	−195.7 (96.7)	−204.7 (96.4)	307.5 (94.6)	−571.5 (24.2)	−313.5 (50.3)	−207.9 (64.2)
FloodInRd1	0.489 (0.50)			−4244.5 (2.2)			−601.5 (11.8)
Head literate0	0.117 (0.32)			1966.6 (60.5)			−618.4 (1.4)
household asset value$_1$	747.975 (872.21)		3.4 (1.7)	2.4 (9.0)			
HHsize0	4.187 (1.44)			1812.7 (0.6)			21.4 (82.6)
productive asset value$_1$	1107.650 (2422.86)					0.4 (0.1)	0.4 (0.2)
mean of initial value mean of dependent variable		763 17460	763 17460	763 17460	1094 1126	1094 1126	1094 1126
$T = 2$ $T = 3$		16 53	16 53	16 50	16 53	16 53	16 50
$T = 4$ $\bar{R}^2$		666 0.002	666 0.01	666 0.02	666 0.005	666 0.028	666 0.03
N		2120	2120	2114	2120	2120	2114

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. Interaction terms of dummy variables are demeaned before interacting. The first column gives mean and standard deviation (in parenthesises) of each covariates before demeaning.

2. P values in percentages in parenthesises. Standard errors are clustered at group (village) level.

Table D15: ANCOVA estimation of assets by period

		Household asset amount (Tk)			Productive asset amount (Tk)		
covariates	mean/std	(1)	(2)	(3)	(4)	(5)	(6)
(Intercept)		7084.6 (0.0)	4738.9 (2.1)	−340.1 (91.6)	796.0 (0.0)	402.2 (3.3)	656.8 (7.2)
Large	0.271 (0.44)	4204.1 (17.4)	4015.2 (19.3)	4430.3 (15.0)	1466.4 (2.8)	1373.7 (3.4)	1464.8 (2.4)
LargeGrace	0.243 (0.43)	3322.5 (25.3)	3152.0 (26.9)	2745.8 (31.3)	955.3 (8.8)	783.6 (14.4)	726.2 (16.6)
Cow	0.262 (0.44)	4271.5 (34.0)	4059.5 (34.8)	4183.0 (32.1)	264.0 (18.1)	349.6 (10.0)	401.7 (8.1)
rd 3	0.340 (0.47)	10171.0 (0.0)	10124.4 (0.0)	10187.9 (0.0)	−317.2 (16.3)	−315.1 (16.5)	−313.3 (16.7)
Large × rd 3	0.091 (0.29)	4771.8 (24.7)	4768.4 (24.8)	5004.5 (22.3)	−700.0 (32.5)	−689.3 (33.3)	−686.9 (33.4)
LargeGrace × rd 3	0.082 (0.27)	4994.2 (24.4)	4922.4 (25.4)	5276.5 (21.7)	−68.1 (87.6)	−52.4 (90.4)	−40.3 (92.6)
Cow × rd 3	0.089 (0.29)	−727.2 (85.6)	−659.8 (87.0)	−565.7 (88.8)	52.5 (86.5)	65.5 (83.2)	61.7 (84.3)
rd 4	0.322 (0.47)	11922.3 (0.0)	11887.1 (0.0)	12046.2 (0.0)	−795.8 (0.4)	−793.0 (0.5)	−791.8 (0.5)
Large × rd 4	0.090 (0.29)	4270.8 (41.9)	4175.7 (43.1)	4426.8 (40.1)	−1354.7 (8.7)	−1351.0 (8.8)	−1373.9 (8.4)
LargeGrace × rd 4	0.080 (0.27)	1454.0 (70.9)	1270.1 (74.6)	1581.3 (68.3)	−1084.9 (11.0)	−1080.0 (11.0)	−1102.4 (10.9)
Cow × rd 4	0.083 (0.28)	−3810.1 (36.8)	−3794.2 (37.2)	−3392.8 (40.5)	−27.4 (93.1)	−10.9 (97.3)	−53.0 (87.2)
FloodInRd1	0.489 (0.50)			−4295.6 (2.1)			−600.5 (11.9)
Head literate0	0.117 (0.32)			1998.8 (59.8)			−620.0 (1.5)
household asset value$_1$	747.975 (872.21)		3.3 (2.0)	2.4 (8.9)			
HHsize0	4.187 (1.44)			1805.7 (0.6)			21.2 (82.8)
productive asset value$_1$	1107.650 (2422.86)					0.4 (0.1)	0.4 (0.2)
mean of initial value mean of dependent variable		763 17460	763 17460	763 17460	1094 1126	1094 1126	1094 1126
$T = 2$ $T = 3$		16 53	16 53	16 50	16 53	16 53	16 50
$T = 4$ $\bar{R}^2$		666 0.026	666 0.034	666 0.044	666 0.006	666 0.029	666 0.031
N		2120	2120	2114	2120	2120	2114

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. LargeSize is an indicator function if the arm is of large size, WithGrace is an indicator function if the arm is with a grace period, InKind is an indicator function if the arm provides a cow. Interaction terms of dummy variables are demeaned before interacting. The first column gives mean and standard deviation (in parenthesises) of each covariates before demeaning.

2. P values in percentages in parenthesises. Standard errors are clustered at group (village) level.

Table D16: ANCOVA estimation of assets by period and attributes

		Household asset amount (Tk)			Productive asset amount (Tk)		
covariates	mean/std	(1)	(2)	(3)	(4)	(5)	(6)
(Intercept)		7084.6 (0.0)	4738.9 (2.1)	−340.1 (91.6)	796.0 (0.0)	402.2 (3.3)	656.8 (7.2)
Upfront	0.776 (0.42)	4204.1 (17.4)	4015.2 (19.3)	4430.3 (15.0)	1466.4 (2.8)	1373.7 (3.4)	1464.8 (2.4)
WithGrace	0.505 (0.50)	−881.6 (79.5)	−863.2 (79.9)	−1684.5 (61.2)	−511.1 (55.3)	−590.0 (47.8)	−738.6 (37.0)
InKind	0.262 (0.44)	949.0 (84.0)	907.4 (84.3)	1437.2 (75.0)	−691.3 (23.2)	−434.1 (43.1)	−324.5 (53.8)
rd 3	0.340 (0.47)	10171.0 (0.0)	10124.4 (0.0)	10187.9 (0.0)	−317.2 (16.3)	−315.1 (16.5)	−313.3 (16.7)
Upfront × rd 3	0.262 (0.44)	4771.8 (24.7)	4768.4 (24.8)	5004.5 (22.3)	−700.0 (32.5)	−689.3 (33.3)	−686.9 (33.4)
WithGrace × rd 3	0.171 (0.38)	222.3 (96.1)	154.0 (97.3)	271.9 (95.2)	631.9 (42.7)	636.9 (42.3)	646.7 (41.6)
InKind × rd 3	0.089 (0.29)	−5721.4 (19.1)	−5582.2 (20.8)	−5842.2 (18.6)	120.6 (79.8)	117.9 (80.2)	101.9 (82.6)
rd 4	0.322 (0.47)	11922.3 (0.0)	11887.1 (0.0)	12046.2 (0.0)	−795.8 (0.4)	−793.0 (0.5)	−791.8 (0.5)
Upfront × rd 4	0.254 (0.44)	4270.8 (41.9)	4175.7 (43.1)	4426.8 (40.1)	−1354.7 (8.7)	−1351.0 (8.8)	−1373.9 (8.4)
WithGrace × rd 4	0.164 (0.37)	−2816.9 (61.0)	−2905.6 (60.0)	−2845.5 (60.8)	269.8 (78.9)	271.0 (78.8)	271.5 (78.8)
InKind × rd 4	0.083 (0.28)	−5264.1 (24.6)	−5064.3 (26.9)	−4974.1 (26.4)	1057.5 (13.3)	1069.1 (12.8)	1049.4 (13.4)
FloodInRd1	0.489 (0.50)			−4295.6 (2.1)			−600.5 (11.9)
Head literate0	0.117 (0.32)			1998.8 (59.8)			−620.0 (1.5)
household asset value$_1$	747.975 (872.21)		3.3 (2.0)	2.4 (8.9)			
HHsize0	4.187 (1.44)			1805.7 (0.6)			21.2 (82.8)
productive asset value$_1$	1107.650 (2422.86)					0.4 (0.1)	0.4 (0.2)
mean of initial value mean of dependent variable		763 17460	763 17460	763 17460	1094 1126	1094 1126	1094 1126
$T = 2$ $T = 3$		16 53	16 53	16 50	16 53	16 53	16 50
$T = 4$ $\bar{R}^2$		666 0.026	666 0.034	666 0.044	666 0.006	666 0.029	666 0.031
N		2120	2120	2114	2120	2120	2114

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. LargeSize is an indicator function if the arm is of large size, WithGrace is an indicator function if the arm is with a grace period, InKind is an indicator function if the arm provides a cow. Interaction terms of dummy variables are demeaned before interacting. The first column gives mean and standard deviation (in parenthesises) of each covariates before demeaning.

2. P values in percentages in parenthesises. Standard errors are clustered at group (village) level.

Table D17: ANCOVA estimation of assets by period, arm, and poverty status

		Household asset amount (Tk)			Productive asset amount (Tk)		
covariates	mean/std	(1)	(2)	(3)	(4)	(5)	(6)
(Intercept)		7466.0 (0.0)	5211.5 (1.6)	156.6 (96.2)	818.2 (0.0)	426.3 (4.1)	708.4 (6.7)
Large	0.271 (0.44)	3974.8 (17.6)	3666.6 (21.1)	4061.7 (15.9)	1442.8 (3.3)	1346.3 (4.0)	1418.9 (2.8)
LargeGrace	0.243 (0.43)	2614.7 (35.7)	2312.8 (40.5)	1718.0 (51.0)	884.6 (11.6)	704.6 (19.5)	614.3 (24.3)
Cow	0.262 (0.44)	4132.0 (37.4)	3770.0 (40.2)	3844.0 (37.9)	240.1 (28.1)	320.9 (17.8)	357.0 (15.8)
UltraPoor	0.626 (0.48)	−1286.8 (55.4)	−909.5 (68.5)	−725.7 (74.9)	−130.4 (78.4)	−113.9 (81.3)	−128.8 (79.1)
Large × UltraPoor	0.169 (0.37)	−10468.3 (9.5)	−11274.8 (7.1)	−12680.1 (4.5)	−1151.3 (49.9)	−1205.7 (48.6)	−1546.0 (40.3)
LargeGrace × UltraPoor	0.172 (0.38)	3230.3 (44.6)	2513.8 (55.2)	2615.9 (49.5)	276.3 (55.0)	295.9 (47.3)	125.8 (77.5)
Cow × UltraPoor	0.177 (0.38)	−3942.6 (52.7)	−4223.6 (48.8)	−4354.5 (44.0)	−233.8 (61.2)	−233.1 (63.2)	−479.6 (34.3)
rd 3	0.340 (0.47)	9916.1 (0.0)	9877.6 (0.0)	9944.7 (0.0)	−317.8 (15.4)	−314.6 (15.8)	−313.4 (15.9)
Large × rd 3	0.091 (0.29)	5609.7 (17.4)	5596.5 (17.6)	5777.8 (16.1)	−638.3 (37.9)	−629.7 (38.6)	−628.9 (38.6)
LargeGrace × rd 3	0.082 (0.27)	5562.6 (19.3)	5505.2 (19.9)	5844.5 (16.9)	5.8 (98.9)	21.2 (96.0)	35.6 (93.3)
Cow × rd 3	0.089 (0.29)	−289.3 (94.7)	−230.6 (95.8)	−154.2 (97.2)	114.2 (73.1)	125.3 (70.6)	122.3 (71.5)
UltraPoor × rd 3	0.210 (0.41)	−1808.5 (52.3)	−1813.2 (52.4)	−1700.9 (55.3)	−327.0 (37.2)	−326.5 (37.2)	−328.4 (36.9)
Large × UltraPoor × rd 3	0.057 (0.23)	−5625.6 (40.0)	−5798.2 (38.4)	−5796.0 (38.6)	−250.2 (84.3)	−265.1 (83.3)	−270.2 (83.0)
LargeGrace × UltraPoor × rd 3	0.058 (0.23)	7328.6 (28.8)	6978.6 (31.6)	6887.6 (31.9)	193.3 (76.8)	161.7 (80.5)	162.8 (80.2)
Cow × UltraPoor × rd 3	0.059 (0.24)	10414.8 (25.9)	10542.0 (25.6)	10159.8 (27.9)	116.9 (82.4)	103.1 (84.4)	81.5 (87.6)
rd 4	0.322 (0.47)	11699.2 (0.0)	11660.3 (0.0)	11830.8 (0.0)	−774.2 (0.4)	−770.7 (0.4)	−771.3 (0.5)
Large × rd 4	0.090 (0.29)	4853.5 (35.7)	4781.3 (36.6)	4988.1 (34.3)	−1291.7 (10.9)	−1288.4 (11.0)	−1304.0 (10.7)
LargeGrace × rd 4	0.080 (0.27)	1841.8 (63.5)	1708.8 (66.1)	2019.1 (60.0)	−906.8 (15.7)	−899.5 (15.9)	−912.4 (15.9)
Cow × rd 4	0.083 (0.28)	−3650.5 (43.6)	−3632.2 (44.1)	−3215.1 (47.8)	41.5 (90.2)	56.6 (86.7)	24.7 (94.3)
UltraPoor × rd 4	0.206 (0.40)	−985.1 (79.6)	−979.2 (79.8)	−1043.1 (78.3)	−459.5 (30.9)	−460.0 (30.8)	−471.3 (29.8)
Large × UltraPoor × rd 4	0.056 (0.23)	−6027.5 (59.5)	−6328.7 (57.5)	−6318.1 (57.7)	360.7 (81.2)	341.0 (82.2)	349.3 (81.9)
LargeGrace × UltraPoor × rd 4	0.056 (0.23)	5595.7 (37.9)	5090.3 (42.5)	4920.0 (43.6)	−903.6 (30.1)	−944.5 (27.9)	−947.5 (27.9)
Cow × UltraPoor × rd 4	0.058 (0.23)	9366.5 (32.8)	9401.1 (32.8)	8187.8 (37.8)	260.9 (61.7)	254.8 (62.3)	234.2 (65.1)
FloodInRd1	0.489 (0.50)			−4841.1 (0.9)			−661.4 (11.7)
Head literate0	0.117 (0.32)			1300.7 (73.1)			−705.7 (2.1)
household asset value$_1$	747.975 (872.21)		3.4 (2.0)	2.4 (9.6)			
HHsize0	4.187 (1.44)			1906.5 (0.3)			30.0 (77.0)
productive asset value$_1$	1107.650 (2422.86)					0.4 (0.1)	0.4 (0.1)
mean of initial value mean of dependent variable		763 17460	763 17460	763 17460	1094 1126	1094 1126	1094 1126
$T = 2$ $T = 3$		16 53	16 53	16 50	16 53	16 53	16 50
$T = 4$ $\bar{R}^2$		666 0.031	666 0.039	666 0.05	666 0.003	666 0.026	666 0.028
N		2120	2120	2114	2120	2120	2114

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. LargeSize is an indicator function if the arm is of large size, WithGrace is an indicator function if the arm is with a grace period, InKind is an indicator function if the arm provides a cow. Interaction terms of dummy variables are demeaned before interacting. The first column gives mean and standard deviation (in parenthesises) of each covariates before demeaning.

2. P values in percentages in parenthesises. Standard errors are clustered at group (village) level.

Table D18: ANCOVA estimation of assets by period, attributes, and poverty status

		Household asset amount (Tk)			Productive asset amount (Tk)		
covariates	mean/std	(1)	(2)	(3)	(4)	(5)	(6)
(Intercept)		7466.0 (0.0)	5211.5 (1.6)	156.6 (96.2)	818.2 (0.0)	426.3 (4.1)	708.4 (6.7)
Upfront	0.776 (0.42)	3974.8 (17.6)	3666.6 (21.1)	4061.7 (15.9)	1442.8 (3.3)	1346.3 (4.0)	1418.9 (2.8)
WithGrace	0.505 (0.50)	−1360.0 (66.4)	−1353.7 (66.4)	−2343.7 (44.3)	−558.2 (51.7)	−641.7 (44.1)	−804.6 (33.3)
InKind	0.262 (0.44)	1517.3 (75.0)	1457.2 (75.5)	2126.0 (64.3)	−644.5 (26.6)	−383.7 (49.0)	−257.3 (62.9)
UltraPoor	0.626 (0.48)	−1286.8 (55.4)	−909.5 (68.5)	−725.7 (74.9)	−130.4 (78.4)	−113.9 (81.3)	−128.8 (79.1)
Upfront × UltraPoor	0.518 (0.50)	−10468.3 (9.5)	−11274.8 (7.1)	−12680.1 (4.5)	−1151.3 (49.9)	−1205.7 (48.6)	−1546.0 (40.3)
WithGrace × UltraPoor	0.349 (0.48)	13698.6 (1.8)	13788.6 (1.9)	15296.0 (1.2)	1427.7 (41.2)	1501.6 (39.1)	1671.8 (35.7)
InKind × UltraPoor	0.177 (0.38)	−7172.9 (21.2)	−6737.4 (23.9)	−6970.4 (22.1)	−510.1 (38.5)	−528.9 (33.3)	−605.4 (27.4)
rd 3	0.340 (0.47)	9916.1 (0.0)	9877.6 (0.0)	9944.7 (0.0)	−317.8 (15.4)	−314.6 (15.8)	−313.4 (15.9)
UltraPoor × rd 3	0.210 (0.41)	−1808.5 (52.3)	−1813.2 (52.4)	−1700.9 (55.3)	−327.0 (37.2)	−326.5 (37.2)	−328.4 (36.9)
Upfront × rd 3	0.262 (0.44)	5609.7 (17.4)	5596.5 (17.6)	5777.8 (16.1)	−638.3 (37.9)	−629.7 (38.6)	−628.9 (38.6)
WithGrace × rd 3	0.171 (0.38)	−47.1 (99.1)	−91.3 (98.3)	66.6 (98.7)	644.1 (40.6)	650.9 (40.0)	664.5 (39.0)
InKind × rd 3	0.089 (0.29)	−5851.9 (19.5)	−5735.8 (20.9)	−5998.7 (18.8)	108.3 (80.0)	104.0 (80.6)	86.7 (83.7)
Upfront × UltraPoor × rd 3	0.174 (0.38)	−5625.6 (40.0)	−5798.2 (38.4)	−5796.0 (38.6)	−250.2 (84.3)	−265.1 (83.3)	−270.2 (83.0)
WithGrace × UltraPoor × rd 3	0.117 (0.32)	12954.1 (4.3)	12776.9 (4.7)	12683.6 (4.8)	443.5 (73.5)	426.8 (74.4)	433.0 (74.0)
InKind × UltraPoor × rd 3	0.059 (0.24)	3086.2 (73.2)	3563.4 (69.5)	3272.2 (72.3)	−76.4 (90.4)	−58.6 (92.6)	−81.3 (89.7)
rd 4	0.322 (0.47)	11699.2 (0.0)	11660.3 (0.0)	11830.8 (0.0)	−774.2 (0.4)	−770.7 (0.4)	−771.3 (0.5)
UltraPoor × rd 4	0.206 (0.40)	−985.1 (79.6)	−979.2 (79.8)	−1043.1 (78.3)	−459.5 (30.9)	−460.0 (30.8)	−471.3 (29.8)
Upfront × rd 4	0.254 (0.44)	4853.5 (35.7)	4781.3 (36.6)	4988.1 (34.3)	−1291.7 (10.9)	−1288.4 (11.0)	−1304.0 (10.7)
WithGrace × rd 4	0.164 (0.37)	−3011.6 (57.2)	−3072.5 (56.6)	−2968.9 (57.8)	384.9 (69.2)	388.9 (68.9)	391.6 (68.8)
InKind × rd 4	0.083 (0.28)	−5492.3 (24.8)	−5341.0 (26.6)	−5234.2 (26.0)	948.3 (14.0)	956.1 (13.6)	937.0 (14.3)
Upfront × UltraPoor × rd 4	0.170 (0.38)	−6027.5 (59.5)	−6328.7 (57.5)	−6318.1 (57.7)	360.7 (81.2)	341.0 (82.2)	349.3 (81.9)
WithGrace × UltraPoor × rd 4	0.114 (0.32)	11623.2 (30.2)	11419.0 (31.3)	11238.2 (32.2)	−1264.3 (44.7)	−1285.5 (43.9)	−1296.8 (43.6)
InKind × UltraPoor × rd 4	0.058 (0.23)	3770.8 (69.1)	4310.8 (65.0)	3267.8 (72.4)	1164.6 (17.2)	1199.3 (15.8)	1181.7 (16.7)
FloodInRd1	0.489 (0.50)			−4841.1 (0.9)			−661.4 (11.7)
Head literate0	0.117 (0.32)			1300.7 (73.1)			−705.7 (2.1)
household asset value$_1$	747.975 (872.21)		3.4 (2.0)	2.4 (9.6)			
HHsize0	4.187 (1.44)			1906.5 (0.3)			30.0 (77.0)
productive asset value$_1$	1107.650 (2422.86)					0.4 (0.1)	0.4 (0.1)
mean of initial value mean of dependent variable		763 17460	763 17460	763 17460	1094 1126	1094 1126	1094 1126
$T = 2$ $T = 3$		16 53	16 53	16 50	16 53	16 53	16 50
$T = 4$ $\bar{R}^2$		666 0.031	666 0.039	666 0.05	666 0.003	666 0.026	666 0.028
N		2120	2120	2114	2120	2120	2114

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. LargeSize is an indicator function if the arm is of large size, WithGrace is an indicator function if the arm is with a grace period, InKind is an indicator function if the arm provides a cow. Interaction terms of dummy variables are demeaned before interacting. The first column gives mean and standard deviation (in parenthesises) of each covariates before demeaning.

2. P values in percentages in parenthesises. Standard errors are clustered at group (village) level.

Table D19: ANCOVA estimation of assets, loan recipients vs. pure control

		Household asset amount (Tk)			Productive asset amount (Tk)			
covariates	mean/std	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(Intercept)		15325.5 (0.0)	12875.9 (0.0)	7600.4 (3.7)	605.1 (0.0)	189.4 (37.4)	445.0 (22.7)	447.9 (22.7)
Large	0.271 (0.44)	4388.7 (36.8)	4235.7 (38.8)	4907.7 (31.4)	1195.8 (3.3)	1120.0 (4.0)	1217.6 (2.8)	1218.6 (2.6)
LargeGrace	0.243 (0.43)	2990.3 (42.3)	2852.5 (44.0)	2809.5 (43.0)	755.3 (10.5)	605.4 (17.9)	557.2 (20.5)	556.9 (20.7)
Cow	0.262 (0.44)	3194.1 (46.2)	3028.2 (47.3)	3388.5 (41.3)	210.8 (25.8)	312.0 (12.5)	366.3 (7.8)	367.4 (7.6)
PureControl	0.211 (0.41)	−2940.6 (54.2)	−2799.5 (56.2)	−2065.1 (66.9)	−198.3 (53.0)	−150.5 (63.7)	−130.1 (67.8)	−129.6 (67.8)
FloodInRd1	0.489 (0.50)			−4163.4 (2.2)			−596.8 (11.7)	−601.5 (8.4)
Head literate0	0.117 (0.32)			1878.0 (61.6)			−623.5 (1.4)	−618.8 (3.2)
HAssetAmount0	747.975 (872.21)		3.3 (1.7)	2.4 (9.0)				−0.0 (93.8)
HHsize0	4.187 (1.44)			1768.9 (0.7)			18.8 (84.5)	20.4 (82.4)
PAssetAmount0	1107.650 (2422.86)					0.4 (0.1)	0.4 (0.2)	0.4 (0.2)
mean of initial value mean of dependent variable		763 17460	763 17460	763 17460	1094 1126	1094 1126	1094 1126	1094 1126
$T = 2$ $T = 3$		16 53	16 53	16 50	16 53	16 53	16 50	16 50
$T = 4$ $\bar{R}^2$		666 0.003	666 0.011	666 0.02	666 0.005	666 0.027	666 0.029	666 0.029
N		2120	2120	2114	2120	2120	2114	2114

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates. Pure control is members not receiving loans while they were put on a wait list. Sample is continuing members and replacing members of early rejecters. Household assets do not include livestock. Regressions (1)-(2), (4)-(5) use only arm and calendar information. (3) and (6) information if the household was exposed to the flood in round 1. Pure controls are households who rejected to receive a loan.

2. *P* values in percentages in parenthesises. Standard errors are clustered at group (village) level.

Table D20: ANCOVA estimation of assets, loan recipients vs. pure control by attributes

		Household asset amount (Tk)			Productive asset amount (Tk)			
covariates	mean/std	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(Intercept)		15325.5 (0.0)	12875.9 (0.0)	7600.4 (3.7)	605.1 (0.0)	189.4 (37.4)	445.0 (22.7)	447.9 (22.7)
Upfront	0.776 (0.42)	4388.7 (36.8)	4235.7 (38.8)	4907.7 (31.4)	1195.8 (3.3)	1120.0 (4.0)	1217.6 (2.8)	1218.6 (2.6)
WithGrace	0.505 (0.50)	−1398.4 (72.2)	−1383.2 (72.3)	−2098.2 (58.2)	−440.5 (54.9)	−514.7 (46.6)	−660.5 (34.6)	−661.7 (34.2)
InKind	0.262 (0.44)	203.8 (96.6)	175.6 (97.0)	579.0 (90.0)	−544.5 (26.3)	−293.3 (52.9)	−190.8 (67.1)	−189.5 (67.7)
PureControl	0.211 (0.41)	−2940.6 (54.2)	−2799.5 (56.2)	−2065.1 (66.9)	−198.3 (53.0)	−150.5 (63.7)	−130.1 (67.8)	−129.6 (67.8)
FloodInRd1	0.489 (0.50)			−4163.4 (2.2)			−596.8 (11.7)	−601.5 (8.4)
Head literate0	0.117 (0.32)			1878.0 (61.6)			−623.5 (1.4)	−618.8 (3.2)
HAssetAmount0	747.975 (872.21)		3.3 (1.7)	2.4 (9.0)				−0.0 (93.8)
HHsize0	4.187 (1.44)			1768.9 (0.7)			18.8 (84.5)	20.4 (82.4)
PAssetAmount0	1107.650 (2422.86)					0.4 (0.1)	0.4 (0.2)	0.4 (0.2)
mean of initial value mean of dependent variable		763 17460	763 17460	763 17460	1094 1126	1094 1126	1094 1126	1094 1126
$T = 2$ $T = 3$		16 53	16 53	16 50	16 53	16 53	16 50	16 50
$T = 4$ $\bar{R}^2$		666 0.003	666 0.011	666 0.02	666 0.005	666 0.027	666 0.029	666 0.029
N		2120	2120	2114	2120	2120	2114	2114

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates. Pure control is members not receiving loans while they were put on a wait list. Sample is continuing members and replacing members of early rejecters. Household assets do not include livestock. Regressions (1)-(2), (4)-(5) use only arm and calendar information. (3) and (6) information if the household was exposed to the flood in round 1. Pure controls are households who rejected to receive a loan.

2. *P* values in percentages in parenthesises. Standard errors are clustered at group (village) level.

Table D21: ANCOVA estimation of assets, loan recipients vs. pure control

		Household asset amount (Tk)			Productive asset amount (Tk)			
covariates	mean/std	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(Intercept)		7357.0 (0.0)	4995.8 (1.9)	−113.3 (97.2)	809.4 (0.0)	409.9 (3.3)	662.6 (7.2)	665.9 (7.0)
Upfront	0.776 (0.42)	3865.8 (29.7)	3706.2 (31.9)	4229.9 (25.7)	1451.0 (2.9)	1365.3 (3.4)	1459.5 (2.4)	1460.4 (2.3)
WithGrace	0.505 (0.50)	−966.3 (76.9)	−939.8 (77.5)	−1727.7 (59.0)	−516.1 (55.0)	−593.1 (47.7)	−740.3 (36.9)	−741.7 (36.6)
InKind	0.262 (0.44)	1094.4 (81.7)	1041.9 (82.1)	1526.2 (73.6)	−686.2 (23.5)	−431.8 (43.3)	−323.6 (53.9)	−322.2 (54.5)
rd 3	0.340 (0.47)	10921.4 (0.0)	10842.2 (0.0)	10759.7 (0.0)	−319.7 (17.7)	−327.7 (16.6)	−328.9 (16.6)	−329.1 (16.6)
Upfront × rd 3	0.147 (0.35)	3521.6 (46.3)	3572.8 (46.0)	4055.6 (39.8)	−695.7 (34.1)	−668.2 (36.1)	−661.1 (36.3)	−661.0 (36.4)
WithGrace × rd 3	0.171 (0.38)	−106.1 (98.1)	−159.8 (97.2)	20.6 (99.6)	633.1 (42.7)	642.4 (42.0)	653.5 (41.2)	653.6 (41.2)
InKind × rd 3	0.089 (0.29)	−5208.4 (23.6)	−5092.1 (25.3)	−5450.7 (22.1)	118.9 (80.5)	109.3 (81.9)	91.2 (84.7)	91.0 (84.8)
PureControl × rd 3	0.075 (0.26)	−3724.3 (43.2)	−3561.6 (45.3)	−2829.7 (55.4)	12.8 (97.4)	62.8 (87.3)	77.2 (84.4)	77.7 (84.3)
rd 4	0.322 (0.47)	12055.6 (0.0)	11976.0 (0.0)	11989.7 (0.0)	−749.9 (0.7)	−755.9 (0.6)	−760.5 (0.6)	−760.6 (0.6)
Upfront × rd 4	0.156 (0.36)	4125.8 (57.1)	4097.2 (57.5)	4558.1 (53.0)	−1426.0 (7.5)	−1409.4 (7.8)	−1423.4 (7.6)	−1423.0 (7.6)
WithGrace × rd 4	0.164 (0.37)	−2836.9 (57.4)	−2905.3 (56.7)	−2783.6 (58.1)	247.0 (80.6)	251.9 (80.2)	255.1 (80.0)	255.3 (80.0)
InKind × rd 4	0.083 (0.28)	−5176.1 (26.3)	−5001.4 (28.5)	−4992.9 (27.4)	1081.7 (12.6)	1088.4 (12.2)	1065.6 (12.9)	1065.4 (12.9)
PureControl × rd 4	0.058 (0.23)	−501.9 (95.7)	−263.3 (97.7)	500.4 (95.7)	−258.3 (7.3)	−212.2 (15.5)	−180.0 (19.1)	−179.6 (19.9)
FloodInRd1	0.489 (0.50)			−4271.1 (2.0)			−598.6 (11.9)	−603.5 (8.7)
Head literate0	0.117 (0.32)			1963.2 (60.0)			−621.6 (1.5)	−616.7 (3.4)
HAssetAmount0	747.975 (872.21)		3.3 (1.8)	2.4 (9.0)				−0.0 (93.5)
HHsize0	4.187 (1.44)			1785.9 (0.6)			20.8 (83.1)	22.5 (80.8)
PAssetAmount0	1107.650 (2422.86)					0.4 (0.1)	0.4 (0.2)	0.4 (0.2)
mean of initial value mean of dependent variable		763 17460	763 17460	763 17460	1094 1126	1094 1126	1094 1126	1094 1126
$T = 2$ $T = 3$		16 53	16 53	16 50	16 53	16 53	16 50	16 50
$T = 4$ $\bar{R}^2$		666 0.026	666 0.034	666 0.043	666 0.005	666 0.028	666 0.03	666 0.029
N		2120	2120	2114	2120	2120	2114	2114

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates. Pure control is members not receiving loans while they were put on a wait list. Sample is continuing members and replacing members of early rejecters. Household assets do not include livestock. Regressions (1)-(2), (4)-(5) use only arm and calendar information. (3) and (6) information if the household was exposed to the flood in round 1. Pure controls are households who rejected to receive a loan.

2. P values in percentages in parenthesises. Standard errors are clustered at group (village) level.

D.4 Land

TABLE D22: ANCOVA ESTIMATION OF LAND HOLDING

covariates	mean/std	(1)	(2)	(3)
(Intercept)		18342.3	7289.2	5295.4
		(0.0)	(0.0)	(14.6)
Large	0.296	1182.1	4798.0	4980.0
	(0.46)	(71.2)	(4.7)	(3.6)
LargeGrace	0.249	715.6	2302.3	2200.5
	(0.43)	(79.7)	(24.6)	(24.5)
Cow	0.228	9411.3	4301.2	4582.5
	(0.42)	(10.9)	(10.6)	(7.8)
FloodInRd1	0.384			−2517.6
	(0.49)			(5.6)
Head literate0	0.117			−1165.8
	(0.32)			(67.3)
AmountFilled0	14467.781		0.7	0.7
	(27727.33)		(0.0)	(0.0)
HHsize0	4.392			709.5
	(1.36)			(34.7)
mean of initial value		14832	14832	14832
mean of dependent variable		20975	20975	20975
$T = 2$		8	8	8
$T = 3$		110	110	108
$T = 4$		229	223	223
$\bar{R}^2$		0.014	0.554	0.556
N		941	898	894

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. Interaction terms of dummy variables are demeaned before interacting. The first column gives mean and standard deviation (in parenthesises) of each covariates before demeaning.

2. *P* values in percentages in parenthesises. Standard errors are clustered at group (village) level.

TABLE D23: ANCOVA ESTIMATION OF LAND HOLDING BY ATTRIBUTES

covariates	mean/std	(1)	(2)	(3)
(Intercept)		18342.3	7289.2	5295.4
		(0.0)	(0.0)	(14.6)
Unfront	0.773	1182.1	4798.0	4980.0
	(0.42)	(71.2)	(4.7)	(3.6)
WithGrace	0.477	−466.5	−2495.7	−2779.4
	(0.50)	(88.6)	(27.4)	(20.4)
InKind	0.228	8695.6	1999.0	2381.9
	(0.42)	(14.1)	(40.2)	(32.0)
FloodInRd1	0.384			−2517.6
	(0.49)			(5.6)
Head literate0	0.117			−1165.8
	(0.32)			(67.3)
AmountFilled0	14467.781		0.7	0.7
	(27727.33)		(0.0)	(0.0)
HHsize0	4.392			709.5
	(1.36)			(34.7)
mean of initial value		14832	14832	14832
mean of dependent variable		20975	20975	20975
$T = 2$		8	8	8
$T = 3$		110	110	108
$T = 4$		229	223	223
$\bar{R}^2$		0.014	0.554	0.556
N		941	898	894

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. Interaction terms of dummy variables are demeaned before interacting. The first column gives mean and standard deviation (in parenthesises) of each covariates before demeaning.

2. *P* values in percentages in parenthesises. Standard errors are clustered at group (village) level.

Table D24: ANCOVA estimation of land holding by period, arm

covariates	mean/std	(1)	(2)	(3)
(Intercept)		12241.1 (0.0)	1526.1 (23.2)	−472.0 (90.0)
Large	0.296 (0.46)	−162.2 (95.6)	3287.9 (7.1)	3480.8 (5.2)
LargeGrace	0.249 (0.43)	11.0 (99.7)	1548.2 (28.3)	1448.0 (29.2)
Cow	0.228 (0.42)	8862.3 (13.8)	3626.8 (9.2)	3934.5 (6.3)
rd 3	0.338 (0.47)	7099.7 (0.0)	6621.6 (0.0)	6922.0 (0.0)
Large × rd 3	0.099 (0.30)	10331.1 (7.8)	11880.3 (3.1)	12032.5 (2.7)
LargeGrace × rd 3	0.083 (0.28)	796.9 (86.8)	3770.5 (39.3)	3754.9 (39.1)
Cow × rd 3	0.077 (0.27)	5290.7 (46.1)	5309.6 (42.2)	5857.5 (37.0)
rd 4	0.324 (0.47)	13066.2 (0.0)	13045.6 (0.0)	13145.7 (0.0)
Large × rd 4	0.098 (0.30)	5223.3 (19.1)	5906.4 (12.8)	5796.4 (13.7)
LargeGrace × rd 4	0.081 (0.27)	2918.3 (50.1)	3360.4 (43.2)	3400.4 (42.6)
Cow × rd 4	0.076 (0.27)	1168.2 (81.0)	1705.8 (71.5)	1830.5 (69.4)
FloodInRd1	0.384 (0.49)			−2697.3 (3.3)
Head literate0	0.117 (0.32)			−1366.6 (62.0)
AmountFilled0	14467.781 (27727.33)		0.7 (0.0)	0.7 (0.0)
HHsize0	4.392 (1.36)			707.5 (35.5)
mean of initial value mean of dependent variable		14832 20975	14832 20975	14832 20975
$T = 2$ $T = 3$		8 110	8 110	8 108
$T = 4$ $\bar{R}^2$		229 0.049	223 0.593	223 0.595
N		941	898	894

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. LargeSize is an indicator function if the arm is of large size, WithGrace is an indicator function if the arm is with a grace period, InKind is an indicator function if the arm provides a cow. Interaction terms of dummy variables are demeaned before interacting. The first column gives mean and standard deviation (in parenthesises) of each covariates before demeaning.

2. P values in percentages in parenthesises. Standard errors are clustered at group (village) level.

TABLE D25: ANCOVA ESTIMATION OF LAND HOLDING BY PERIOD, ARM, AND POVERTY STATUS

covariates	mean/std	(1)	(2)	(3)
(Intercept)		12628.7 (0.0)	1407.5 (28.7)	−860.0 (81.8)
Large	0.296 (0.46)	−431.7 (88.8)	3525.5 (4.9)	3626.8 (4.6)
LargeGrace	0.249 (0.43)	−604.5 (82.6)	1633.4 (23.1)	1437.2 (28.5)
Cow	0.228 (0.42)	8668.8 (12.6)	3823.6 (7.5)	4088.9 (5.9)
UltraPoor	0.617 (0.49)	1334.3 (61.8)	155.5 (88.3)	−6.1 (99.5)
Large × UltraPoor	0.168 (0.37)	−2122.9 (70.5)	1593.7 (50.0)	135.1 (95.0)
LargeGrace × UltraPoor	0.178 (0.38)	4624.5 (39.2)	5400.3 (4.6)	5464.9 (3.7)
Cow × UltraPoor	0.160 (0.37)	−842.2 (93.0)	4680.2 (14.3)	4101.9 (17.9)
rd 3	0.338 (0.47)	6603.4 (0.1)	6124.1 (0.2)	6437.4 (0.1)
Large × rd 3	0.099 (0.30)	11571.5 (3.9)	12942.7 (2.5)	13061.0 (2.3)
LargeGrace × rd 3	0.083 (0.28)	2697.4 (55.2)	5376.4 (26.5)	5338.9 (26.8)
Cow × rd 3	0.077 (0.27)	5963.4 (41.4)	6218.7 (39.1)	6761.1 (35.4)
UltraPoor × rd 3	0.208 (0.41)	−2133.9 (50.6)	−2441.1 (44.2)	−2589.2 (40.8)
Large × UltraPoor × rd 3	0.057 (0.23)	7846.5 (35.6)	5862.1 (46.9)	5889.1 (47.1)
LargeGrace × UltraPoor × rd 3	0.060 (0.24)	7112.0 (42.1)	8302.0 (32.7)	8194.2 (33.6)
Cow × UltraPoor × rd 3	0.054 (0.23)	19055.3 (11.1)	16362.4 (16.8)	15389.9 (18.9)
rd 4	0.324 (0.47)	12721.8 (0.0)	12619.6 (0.0)	12723.5 (0.0)
Large × rd 4	0.098 (0.30)	6180.7 (13.3)	6680.5 (9.4)	6586.5 (9.9)
LargeGrace × rd 4	0.081 (0.27)	3767.9 (37.5)	3468.6 (39.9)	3536.1 (39.0)
Cow × rd 4	0.076 (0.27)	1755.9 (73.7)	2201.7 (65.6)	2363.5 (63.2)
UltraPoor × rd 4	0.202 (0.40)	336.3 (92.1)	1166.4 (72.8)	1046.2 (75.2)
Large × UltraPoor × rd 4	0.056 (0.23)	6730.2 (27.8)	6623.4 (28.9)	6671.0 (28.8)
LargeGrace × UltraPoor × rd 4	0.058 (0.23)	11055.3 (15.7)	14118.8 (8.1)	14331.5 (7.6)
Cow × UltraPoor × rd 4	0.053 (0.22)	11213.6 (33.4)	11314.6 (32.1)	10699.2 (33.8)
FloodInRd1	0.384 (0.49)			−2877.1 (2.1)
Head literate0	0.117 (0.32)			−1155.1 (65.1)
AmountFilled0	14467.781 (27727.33)		0.7 (0.0)	0.7 (0.0)
HHsize0	4.392 (1.36)			790.6 (29.8)
mean of initial value mean of dependent variable		14832 20975	14832 20975	14832 20975
$T = 2$ $T = 3$		8 110	8 110	8 108
$T = 4$ $\bar{R}^2$		229 0.043	223 0.593	223 0.595
N		941	898	894

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. LargeSize is an indicator function if the arm is of large size, WithGrace is an indicator function if the arm is with a grace period, InKind is an indicator function if the arm provides a cow. Interaction terms of dummy variables are demeaned before interacting. The first column gives mean and standard deviation (in parenthesises) of each covariates before demeaning.

2. *P* values in percentages in parenthesises. Standard errors are clustered at group (village) level.

TABLE D26: ANCOVA ESTIMATION OF LAND HOLDING BY PERIOD AND ATTRIBUTES

covariates	mean/std	(1)	(2)	(3)
(Intercept)		12241.1 (0.0)	1526.1 (23.2)	−472.0 (90.0)
Upfront	0.773 (0.42)	−162.2 (95.6)	3287.9 (7.1)	3480.8 (5.2)
WithGrace	0.477 (0.50)	173.2 (95.0)	−1739.7 (29.7)	−2032.8 (21.3)
InKind	0.228 (0.42)	8851.3 (13.4)	2078.6 (26.6)	2486.5 (20.3)
rd 3	0.338 (0.47)	7099.7 (0.0)	6621.6 (0.0)	6922.0 (0.0)
Upfront × rd 3	0.259 (0.44)	10331.1 (7.8)	11880.3 (3.1)	12032.5 (2.7)
WithGrace × rd 3	0.160 (0.37)	−9534.2 (1.1)	−8109.8 (1.8)	−8277.5 (2.0)
InKind × rd 3	0.077 (0.27)	4493.8 (42.1)	1539.1 (75.3)	2102.6 (66.2)
rd 4	0.324 (0.47)	13066.2 (0.0)	13045.6 (0.0)	13145.7 (0.0)
Upfront × rd 4	0.255 (0.44)	5223.3 (19.1)	5906.4 (12.8)	5796.4 (13.7)
WithGrace × rd 4	0.157 (0.36)	−2305.0 (56.7)	−2546.0 (51.6)	−2396.0 (54.4)
InKind × rd 4	0.076 (0.27)	−1750.1 (72.1)	−1654.6 (72.4)	−1569.9 (73.9)
FloodInRd1	0.384 (0.49)			−2697.3 (3.3)
Head literate0	0.117 (0.32)			−1366.6 (62.0)
AmountFilled0	14467.781 (27727.33)		0.7 (0.0)	0.7 (0.0)
HHsize0	4.392 (1.36)			707.5 (35.5)
mean of initial value mean of dependent variable		14832 20975	14832 20975	14832 20975
$T = 2$ $T = 3$		8 110	8 110	8 108
$T = 4$ $\bar{R}^2$		229 0.049	223 0.593	223 0.595
N		941	898	894

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. LargeSize is an indicator function if the arm is of large size, WithGrace is an indicator function if the arm is with a grace period, InKind is an indicator function if the arm provides a cow. Interaction terms of dummy variables are demeaned before interacting. The first column gives mean and standard deviation (in parenthesises) of each covariates before demeaning.

2. P values in percentages in parenthesises. Standard errors are clustered at group (village) level.

TABLE D27: ANCOVA ESTIMATION OF LAND HOLDING BY PERIOD, ATTRIBUTES, AND POVERTY STATUS

covariates	mean/std	(1)	(2)	(3)
(Intercept)		12628.7 (0.0)	1407.5 (28.7)	−860.0 (81.8)
Upfront	0.773 (0.42)	−431.7 (88.8)	3525.5 (4.9)	3626.8 (4.6)
WithGrace	0.477 (0.50)	−172.8 (94.8)	−1892.0 (23.6)	−2189.6 (17.2)
InKind	0.228 (0.42)	9273.3 (9.0)	2190.2 (23.0)	2651.7 (17.4)
UltraPoor	0.617 (0.49)	1334.3 (61.8)	155.5 (88.3)	−6.1 (99.5)
Upfront × UltraPoor	0.507 (0.50)	−2122.9 (70.5)	1593.7 (50.0)	135.1 (95.0)
WithGrace × UltraPoor	0.338 (0.47)	6747.4 (12.3)	3806.6 (13.3)	5329.8 (2.9)
InKind × UltraPoor	0.160 (0.37)	−5466.7 (54.0)	−720.1 (82.9)	−1363.0 (67.0)
rd 3	0.338 (0.47)	6603.4 (0.1)	6124.1 (0.2)	6437.4 (0.1)
UltraPoor × rd 3	0.208 (0.41)	−2133.9 (50.6)	−2441.1 (44.2)	−2589.2 (40.8)
Upfront × rd 3	0.259 (0.44)	11571.5 (3.9)	12942.7 (2.5)	13061.0 (2.3)
WithGrace × rd 3	0.160 (0.37)	−8874.1 (1.6)	−7566.3 (2.6)	−7722.1 (2.8)
InKind × rd 3	0.077 (0.27)	3266.1 (58.3)	842.3 (87.6)	1422.2 (79.3)
Upfront × UltraPoor × rd 3	0.170 (0.38)	7846.5 (35.6)	5862.1 (46.9)	5889.1 (47.1)
WithGrace × UltraPoor × rd 3	0.113 (0.32)	−734.6 (88.4)	2439.9 (62.2)	2305.0 (63.9)
InKind × UltraPoor × rd 3	0.054 (0.23)	11943.3 (22.2)	8060.4 (41.7)	7195.7 (46.5)
rd 4	0.324 (0.47)	12721.8 (0.0)	12619.6 (0.0)	12723.5 (0.0)
UltraPoor × rd 4	0.202 (0.40)	336.3 (92.1)	1166.4 (72.8)	1046.2 (75.2)
Upfront × rd 4	0.255 (0.44)	6180.7 (13.3)	6680.5 (9.4)	6586.5 (9.9)
WithGrace × rd 4	0.157 (0.36)	−2412.8 (52.9)	−3212.0 (36.9)	−3050.4 (40.0)
InKind × rd 4	0.076 (0.27)	−2012.0 (68.8)	−1266.9 (78.3)	−1172.6 (80.0)
Upfront × UltraPoor × rd 4	0.166 (0.37)	6730.2 (27.8)	6623.4 (28.9)	6671.0 (28.8)
WithGrace × UltraPoor × rd 4	0.110 (0.31)	4325.0 (51.5)	7495.4 (27.8)	7660.5 (26.8)
InKind × UltraPoor × rd 4	0.053 (0.22)	158.4 (98.9)	−2804.3 (81.2)	−3632.3 (75.4)
FloodInRd1	0.384 (0.49)			−2877.1 (2.1)
Head literate0	0.117 (0.32)			−1155.1 (65.1)
AmountFilled0	14467.781 (27727.33)		0.7 (0.0)	0.7 (0.0)
HHsize0	4.392 (1.36)			790.6 (29.8)
mean of initial value mean of dependent variable		14832 20975	14832 20975	14832 20975
$T = 2$ $T = 3$		8 110	8 110	8 108
$T = 4$ $\bar{R}^2$		229 0.043	223 0.593	223 0.595
N		941	898	894

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. LargeSize is an indicator function if the arm is of large size, WithGrace is an indicator function if the arm is with a grace period, InKind is an indicator function if the arm provides a cow. Interaction terms of dummy variables are demeaned before interacting. The first column gives mean and standard deviation (in parenthesises) of each covariates before demeaning.

2. *P* values in percentages in parenthesises. Standard errors are clustered at group (village) level.

D.5 Livestock

TABLE D28: ANCOVA ESTIMATION OF LIVESTOCK HOLDING VALUES

covariates	mean/std	(1)	(2)	(3)	(4)	(5)
(Intercept)		19058.4 (0.0)	17016.4 (0.0)	11054.5 (0.0)	11561.6 (0.0)	10972.8 (0.0)
Large	0.270 (0.44)	10192.6 (0.2)	9221.3 (0.1)	8952.5 (0.1)	8711.5 (0.1)	8973.4 (0.1)
LargeGrace	0.247 (0.43)	5350.3 (3.1)	4836.4 (3.6)	4857.9 (3.1)	5048.5 (2.7)	4952.4 (2.8)
Cow	0.260 (0.44)	5176.1 (0.4)	5174.2 (0.4)	5250.2 (0.4)	5277.1 (0.3)	5352.8 (0.3)
HadCows	0.185 (0.39)				3850.9 (45.3)	
FloodInRd1	0.492 (0.50)			710.4 (66.1)	945.0 (55.8)	804.6 (61.7)
Head literate0	0.116 (0.32)			−1069.9 (60.0)	−1066.9 (59.6)	−1146.9 (57.1)
livestock value1	5809.440 (12269.47)		0.4 (0.0)	0.4 (0.0)	0.2 (21.0)	0.2 (34.8)
HHsize0	4.188 (1.44)			1410.8 (0.6)	1370.8 (0.8)	1437.9 (0.5)
HadCows × Large	0.060 (0.24)				12228.5 (13.2)	
HadCows × LargeGrace	0.047 (0.21)				990.1 (83.8)	
HadCows × Cow	0.042 (0.20)				1158.1 (78.7)	
NumCows0	0.253 (0.61)					4702.3 (27.1)
mean of initial value mean of dependent variable		5855 24480	5855 24480	5855 24480	5855 24480	5855 24480
$T = 2$ $T = 3$		28 53	28 53	27 51	27 51	27 51
$T = 4$ $\bar{R}^2$		665 0.027	665 0.084	665 0.093	665 0.107	665 0.094
N		2129	2129	2124	2124	2124

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. Saving and repayment information is taken from administrative data. Time invariant household characteristics are taken from household survey data. Administrative data are merged with survey data by the dating the survey rounds in administrative data. Net saving is saving - withdrawal. Excess repayment is repayment - due amount. LY2, LY3, LY4 are dummy variables for second, third, and fourth year into borrowing. Sample is continuing members and replacing members of early rejecters and received loans prior to 2015 Janunary. Regressand is TotalImputedValue, a sum of all livestock holding values evaluated at respective median market prices in the same year.

2. *P* values in percentages in parenthesises. Standard errors are clustered at group (village) level.*P* values in parenthesises. Standard errors are clustered at group (village) level.

TABLE D29: ANCOVA ESTIMATION OF LIVESTOCK HOLDING VALUES BY ATTRIBUTES

covariates	mean/std	(1)	(2)	(3)	(4)	(5)
(Intercept)		19058.4 (0.0)	17016.4 (0.0)	11054.5 (0.0)	11561.6 (0.0)	10972.8 (0.0)
Unfront	0.777 (0.42)	10192.6 (0.2)	9221.3 (0.1)	8952.5 (0.1)	8711.5 (0.1)	8973.4 (0.1)
WithGrace	0.507 (0.50)	−4842.2 (16.4)	−4384.9 (14.7)	−4094.6 (18.9)	−3663.0 (21.1)	−4021.0 (19.6)
InKind	0.260 (0.44)	−174.2 (93.8)	337.9 (88.0)	392.3 (85.7)	228.6 (91.7)	400.4 (85.6)
HadCows	0.185 (0.39)				3850.9 (45.3)	
FloodInRd1	0.492 (0.50)			710.4 (66.1)	945.0 (55.8)	804.6 (61.7)
Head literate0	0.116 (0.32)			−1069.9 (60.0)	−1066.9 (59.6)	−1146.9 (57.1)
livestock value1	5809.440 (12269.47)		0.4 (0.0)	0.4 (0.0)	0.2 (21.0)	0.2 (34.8)
HHsize0	4.188 (1.44)			1410.8 (0.6)	1370.8 (0.8)	1437.9 (0.5)
HadCows × Unfront	0.149 (0.36)				12228.5 (13.2)	
HadCows × WithGrace	0.089 (0.28)				−11238.4 (17.1)	
HadCows × InKind	0.042 (0.20)				167.9 (96.9)	
NumCows0	0.253 (0.61)					4702.3 (27.1)
mean of initial value mean of dependent variable		5855 24480	5855 24480	5855 24480	5855 24480	5855 24480
$T = 2$ $T = 3$		28 53	28 53	27 51	27 51	27 51
$T = 4$ $\bar{R}^2$		665 0.027	665 0.084	665 0.093	665 0.107	665 0.094
N		2129	2129	2124	2124	2124

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. LargeSize is an indicator function if the arm is of large size, WithGrace is an indicator function if the arm is with a grace period, InKind is an indicator function if the arm provides a cow. Saving and repayment information is taken from administrative data. Time invariant household characteristics are taken from household survey data. Administrative data are merged with survey data by the dating the survey rounds in administrative data. Net saving is saving - withdrawal. Excess repayment is repayment - due amount. LY2, LY3, LY4 are dummy variables for second, third, and fourth year into borrowing. Sample is continuing members and replacing members of early rejecters and received loans prior to 2015 Janunary. Regressand is TotalImputedValue, a sum of all livestock holding values evaluated at respective median market prices in the same year.

2. *P* values in percentages in parenthesises. Standard errors are clustered at group (village) level.

TABLE D30: ANCOVA ESTIMATION OF LIVESTOCK HOLDING VALUES, ULTRA VS. MODERATELY POOR

covariates	mean/std	(1)	(2)	(3)	(4)	(5)
(Intercept)		18948.9 (0.0)	16672.7 (0.0)	10574.8 (0.0)	11032.8 (0.0)	10510.7 (0.0)
Unfront	0.777 (0.42)	10331.6 (0.1)	9546.8 (0.0)	9281.6 (0.0)	9033.7 (0.0)	9300.7 (0.0)
WithGrace	0.507 (0.50)	−4952.1 (15.1)	−4545.5 (12.5)	−4291.5 (16.2)	−3868.3 (18.0)	−4214.4 (16.8)
InKind	0.260 (0.44)	−130.0 (95.4)	413.5 (85.2)	512.5 (81.5)	360.6 (87.0)	518.1 (81.5)
UltraPoor	0.623 (0.48)	−1139.1 (39.4)	−1217.8 (35.5)	−1216.5 (36.8)	−1112.1 (40.1)	−1280.3 (34.7)
Unfront × UltraPoor	0.515 (0.50)	−4326.3 (29.1)	−3255.3 (38.2)	−3467.4 (36.3)	−2882.1 (45.1)	−3388.2 (37.0)
WithGrace × UltraPoor	0.347 (0.48)	6209.5 (12.4)	7366.1 (6.5)	7902.6 (5.4)	7229.4 (7.4)	7675.6 (6.3)
InKind × UltraPoor	0.176 (0.38)	−422.1 (89.7)	−572.6 (87.2)	−978.7 (78.2)	−1246.2 (71.8)	−1000.8 (78.0)
HadCows	0.185 (0.39)				4220.1 (41.3)	
FloodInRd1	0.492 (0.50)			613.0 (70.3)	859.3 (59.4)	699.4 (66.2)
Head literate0	0.116 (0.32)			−1240.7 (54.3)	−1221.5 (54.3)	−1315.2 (51.7)
livestock value1	5809.440 (12269.47)		0.4 (0.0)	0.4 (0.0)	0.2 (19.6)	0.2 (27.6)
HHsize0	4.188 (1.44)			1460.1 (0.4)	1414.1 (0.6)	1482.1 (0.3)
HadCows × Unfront	0.149 (0.36)				11373.2 (17.0)	
HadCows × WithGrace	0.089 (0.28)				−10752.8 (19.6)	
HadCows × InKind	0.042 (0.20)				−24.9 (99.5)	
NumCows0	0.253 (0.61)					4176.7 (33.1)
mean of initial value mean of dependent variable		5855 24480	5855 24480	5855 24480	5855 24480	5855 24480
$T = 2$ $T = 3$		28 53	28 53	27 51	27 51	27 51
$T = 4$ $\bar{R}^2$		665 0.029	665 0.088	665 0.097	665 0.11	665 0.098
N		2129	2129	2124	2124	2124

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. UltraPoor is an indicator function if the household is classified as the ultra poor. Sample is continuing members and replacing members of early rejecters and received loans prior to 2015 Janunary. Regressand is TotalImputedValue, a sum of all livestock holding values evaluated at respective median market prices in the same year.

2. P values in percentages in parenthesises. Standard errors are clustered at group (village) level.

TABLE D31: ANCOVA ESTIMATION OF LIVESTOCK HOLDING VALUES BY ATTRIBUTES AND PERIOD

covariates	mean/std	(1)	(2)	(3)	(4)	(5)
(Intercept)		15423.0 (0.0)	13434.7 (0.0)	7383.9 (0.3)	7681.7 (0.4)	7297.4 (0.4)
Upfront	0.777 (0.42)	10180.0 (0.1)	9203.8 (0.1)	8897.4 (0.1)	8579.5 (0.1)	8915.6 (0.1)
WithGrace	0.507 (0.50)	−5239.7 (12.7)	−4775.6 (11.1)	−4474.9 (14.3)	−3988.2 (16.4)	−4399.8 (14.9)
InKind	0.260 (0.44)	324.9 (88.3)	772.8 (72.5)	797.9 (70.8)	620.2 (77.1)	806.4 (70.8)
rd 3	0.338 (0.47)	4294.2 (0.0)	4217.0 (0.0)	4332.3 (0.0)	4357.6 (0.0)	4337.2 (0.0)
Upfront × rd 3	0.261 (0.44)	−2074.0 (45.8)	−2049.5 (45.9)	−1670.9 (55.0)	−1380.9 (61.9)	−1658.6 (55.3)
WithGrace × rd 3	0.170 (0.38)	2673.7 (31.6)	2657.8 (30.9)	2415.8 (36.8)	2297.2 (38.0)	2417.8 (36.8)
InKind × rd 3	0.089 (0.28)	−3150.5 (11.3)	−3011.9 (12.3)	−2888.9 (14.3)	−2911.3 (13.2)	−2899.7 (14.4)
rd 4	0.321 (0.47)	7043.6 (0.0)	7019.2 (0.0)	7070.9 (0.0)	7075.5 (0.0)	7080.7 (0.0)
Upfront × rd 4	0.253 (0.43)	869.5 (79.6)	952.2 (77.3)	969.2 (76.7)	1241.4 (70.2)	993.3 (76.2)
WithGrace × rd 4	0.163 (0.37)	2561.9 (43.7)	2483.5 (44.4)	2755.9 (40.2)	2676.8 (41.1)	2761.5 (40.2)
InKind × rd 4	0.083 (0.28)	−2321.0 (36.2)	−1748.4 (50.1)	−1630.9 (53.4)	−1771.1 (50.6)	−1621.3 (53.8)
HadCows	0.185 (0.39)				5097.5 (33.0)	
HadCows × rd 3	0.063 (0.24)				−6812.9 (1.4)	
HadCows × rd 4	0.059 (0.24)				−8074.1 (1.9)	
FloodInRd1	0.492 (0.50)			752.2 (64.3)	979.0 (54.5)	849.2 (59.8)
Head literate0	0.116 (0.32)			−1022.6 (61.7)	−1028.8 (61.1)	−1101.4 (58.7)
livestock value1	5809.440 (12269.47)		0.4 (0.0)	0.4 (0.0)	0.2 (21.0)	0.2 (36.5)
HHsize0	4.188 (1.44)			1420.5 (0.5)	1385.1 (0.8)	1448.5 (0.5)
HadCows × Upfront	0.149 (0.36)				11275.2 (14.0)	
HadCows × Upfront × rd 3	0.050 (0.22)				5251.6 (33.4)	
HadCows × Upfront × rd 4	0.048 (0.21)				6613.3 (35.4)	
HadCows × WithGrace	0.089 (0.28)				−8886.6 (23.8)	
HadCows × WithGrace × rd 3	0.031 (0.17)				−13247.7 (3.8)	
HadCows × WithGrace × rd 4	0.028 (0.16)				−13331.3 (10.9)	
HadCows × InKind	0.042 (0.20)				−2403.7 (55.8)	
HadCows × InKind × rd 3	0.015 (0.12)				15710.3 (0.4)	
HadCows × InKind × rd 4	0.012 (0.11)				15039.7 (3.2)	
NumCows0	0.253 (0.61)					4831.0 (25.8)
mean of initial value mean of dependent variable		5855 24480	5855 24480	5855 24480	5855 24480	5855 24480
$T = 2$ $T = 3$		28 53	28 53	27 51	27 51	27 51
$T = 4$ $\bar{R}^2$		665 0.043	665 0.1	665 0.109	665 0.125	665 0.11
N		2129	2129	2124	2124	2124

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. LargeSize is an indicator function if the arm is of large size, WithGrace is an indicator function if the arm is with a grace period, InKind is an indicator function if the arm provides a cow. Saving and repayment information is taken from administrative data. Time invariant household characteristics are taken from household survey data. Administrative data are merged with survey data by the dating the survey rounds in administrative data. Net saving is saving - withdrawal. Excess repayment is repayment - due amount. LY2, LY3, LY4 are dummy variables for second, third, and fourth year into borrowing. Sample is continuing members and replacing members of early rejecters and received loans prior to 2015 Janunary. Regressand is TotalImputedValue, a sum of all livestock holding values evaluated at respective median market prices in the same year.

2. P values in percentages in parenthesises. Standard errors are clustered at group (village) level.

D.6 Cattle holding

TABLE D32: ANCOVA ESTIMATION OF CATTLE HOLDING BY ATTRIBUTES

covariates	mean/std	(1)	(2)	(3)	(4)	(5)
(Intercept)		0.96 (0.0)	0.86 (0.0)	0.54 (0.0)	0.57 (0.0)	0.54 (0.0)
Upfront	0.777 (0.42)	0.55 (0.1)	0.50 (0.0)	0.49 (0.0)	0.48 (0.0)	0.49 (0.0)
WithGrace	0.507 (0.50)	−0.22 (22.1)	−0.18 (23.4)	−0.17 (26.9)	−0.16 (28.7)	−0.18 (25.8)
InKind	0.260 (0.44)	−0.04 (71.3)	−0.02 (84.7)	−0.01 (90.3)	−0.02 (85.5)	−0.01 (90.2)
HadCows	0.185 (0.39)				0.14 (60.9)	
FloodInRd1	0.492 (0.50)			0.01 (88.3)	0.02 (82.6)	0.01 (92.9)
Head literate0	0.116 (0.32)			−0.07 (52.2)	−0.06 (54.5)	−0.06 (53.9)
NumCows0	0.253 (0.61)		0.43 (0.0)	0.42 (0.0)	0.21 (18.2)	0.21 (31.2)
HHsize0	4.188 (1.44)			0.08 (0.3)	0.08 (0.4)	0.08 (0.3)
HadCows × Upfront	0.149 (0.36)				0.60 (13.5)	
HadCows × WithGrace	0.089 (0.28)				−0.49 (22.4)	
HadCows × InKind	0.042 (0.20)				−0.07 (72.6)	
livestock value$_1$	5809.440 (12269.47)					0.00 (23.7)
mean of initial value mean of dependent variable		0.26 1.26	0.26 1.26	0.26 1.26	0.26 1.26	0.26 1.26
$T = 2$ $T = 3$		26 77	26 77	25 75	25 75	25 75
$T = 4$ $\bar{R}^2$		604 0.032	604 0.093	604 0.104	604 0.115	604 0.105
N		2060	2060	2055	2055	2055

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. LargeSize is an indicator function if the arm is of large size, WithGrace is an indicator function if the arm is with a grace period, InKind is an indicator function if the arm provides a cow. Saving and repayment information is taken from administrative data. Time invariant household characteristics are taken from household survey data. Administrative data are merged with survey data by the dating the survey rounds in administrative data. Net saving is saving - withdrawal. Excess repayment is repayment - due amount. LY2, LY3, LY4 are dummy variables for second, third, and fourth year into borrowing. Sample is continuing members and replacing members of early rejecters and received loans prior to 2015 Janunary. Regressand is NumCows, number of cattle holding.

2. P values in percentages in parenthesises. Standard errors are clustered at group (village) level.

TABLE D33: ANCOVA ESTIMATION OF CATTLE HOLDING, ULTRA VS. MODERATELY POOR

covariates	mean/std	(1)	(2)	(3)	(4)	(5)
(Intercept)		0.95 (0.0)	0.84 (0.0)	0.52 (0.0)	0.55 (0.0)	0.52 (0.0)
Unfront	0.777 (0.42)	0.56 (0.0)	0.52 (0.0)	0.51 (0.0)	0.49 (0.0)	0.51 (0.0)
WithGrace	0.507 (0.50)	−0.23 (20.1)	−0.19 (20.4)	−0.18 (23.5)	−0.17 (24.7)	−0.19 (21.9)
InKind	0.260 (0.44)	−0.04 (74.7)	−0.02 (89.2)	−0.01 (96.1)	−0.01 (91.6)	−0.01 (96.2)
UltraPoor	0.623 (0.48)	−0.04 (57.7)	−0.05 (47.2)	−0.05 (49.4)	−0.04 (56.5)	−0.04 (53.4)
Unfront × UltraPoor	0.515 (0.50)	−0.18 (36.7)	−0.13 (48.1)	−0.15 (43.3)	−0.13 (49.4)	−0.15 (42.9)
WithGrace × UltraPoor	0.347 (0.48)	0.35 (8.2)	0.39 (4.5)	0.42 (3.7)	0.40 (4.2)	0.44 (3.1)
InKind × UltraPoor	0.176 (0.38)	−0.08 (61.5)	−0.09 (60.9)	−0.11 (54.7)	−0.12 (48.3)	−0.11 (54.3)
HadCows	0.185 (0.39)				0.17 (55.2)	
FloodInRd1	0.492 (0.50)			0.01 (92.0)	0.01 (86.0)	0.00 (97.6)
Head literate0	0.116 (0.32)			−0.07 (47.6)	−0.07 (49.8)	−0.07 (49.9)
NumCows0	0.253 (0.61)		0.44 (0.0)	0.43 (0.0)	0.21 (18.9)	0.18 (40.5)
HHsize0	4.188 (1.44)			0.08 (0.2)	0.08 (0.3)	0.08 (0.2)
HadCows × Unfront	0.149 (0.36)				0.56 (17.3)	
HadCows × WithGrace	0.089 (0.28)				−0.46 (25.6)	
HadCows × InKind	0.042 (0.20)				−0.09 (65.7)	
livestock value$_1$	5809.440 (12269.47)					0.00 (16.4)
mean of initial value mean of dependent variable		0.26 1.26	0.26 1.26	0.26 1.26	0.26 1.26	0.26 1.26
$T = 2$ $T = 3$		26 77	26 77	25 75	25 75	25 75
$T = 4$ $\bar{R}^2$		604 0.034	604 0.097	604 0.108	604 0.118	604 0.109
N		2060	2060	2055	2055	2055

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. LargeSize is an indicator function if the arm is of large size, WithGrace is an indicator function if the arm is with a grace period, InKind is an indicator function if the arm provides a cow. Saving and repayment information is taken from administrative data. Time invariant household characteristics are taken from household survey data. Administrative data are merged with survey data by the dating the survey rounds in administrative data. Net saving is saving - withdrawal. Excess repayment is repayment - due amount. LY2, LY3, LY4 are dummy variables for second, third, and fourth year into borrowing. Sample is continuing members and replacing members of early rejecters and received loans prior to 2015 Janunary. Regressand is NumCows, number of cattle holding.

2. *P* values in percentages in parenthesises. Standard errors are clustered at group (village) level.

TABLE D34: ANCOVA ESTIMATION OF CATTLE HOLDING BY ARM AND PERIOD

covariates	mean/std	(1)	(2)	(3)	(4)	(5)
(Intercept)		0.79 (0.0)	0.69 (0.0)	0.37 (0.5)	0.39 (0.5)	0.37 (0.4)
Large	0.270 (0.44)	0.55 (0.1)	0.50 (0.0)	0.49 (0.0)	0.47 (0.0)	0.49 (0.0)
LargeGrace	0.247 (0.43)	0.32 (1.3)	0.30 (1.0)	0.30 (0.9)	0.30 (0.8)	0.29 (0.9)
Cow	0.260 (0.44)	0.30 (0.1)	0.30 (0.1)	0.31 (0.1)	0.30 (0.1)	0.30 (0.1)
rd 3	0.338 (0.47)	0.21 (0.0)	0.22 (0.0)	0.22 (0.0)	0.22 (0.0)	0.22 (0.0)
Large × rd 3	0.090 (0.29)	−0.06 (68.1)	−0.06 (68.8)	−0.04 (81.0)	−0.02 (87.9)	−0.04 (80.5)
LargeGrace × rd 3	0.081 (0.27)	0.02 (89.0)	0.05 (72.3)	0.06 (65.9)	0.06 (63.4)	0.06 (66.8)
Cow × rd 3	0.089 (0.28)	−0.16 (13.5)	−0.16 (15.4)	−0.14 (19.5)	−0.13 (21.6)	−0.14 (19.6)
rd 4	0.321 (0.47)	0.30 (0.0)	0.30 (0.0)	0.31 (0.0)	0.31 (0.0)	0.31 (0.0)
Large × rd 4	0.090 (0.29)	0.02 (91.7)	0.03 (87.5)	0.03 (86.5)	0.04 (80.5)	0.03 (86.8)
LargeGrace × rd 4	0.080 (0.27)	0.12 (38.7)	0.13 (36.5)	0.14 (29.4)	0.16 (25.8)	0.14 (29.4)
Cow × rd 4	0.083 (0.28)	0.02 (87.5)	0.05 (69.6)	0.07 (59.0)	0.07 (59.8)	0.07 (59.2)
HadCows	0.185 (0.39)				0.20 (48.1)	
HadCows × rd 3	0.063 (0.24)				−0.34 (2.0)	
HadCows × rd 4	0.059 (0.24)				−0.38 (3.2)	
FloodInRd1	0.492 (0.50)			0.02 (83.9)	0.02 (78.1)	0.01 (88.4)
Head literate0	0.116 (0.32)			−0.06 (54.5)	−0.06 (56.4)	−0.06 (56.3)
NumCows0	0.253 (0.61)		0.43 (0.0)	0.42 (0.0)	0.21 (17.2)	0.21 (30.5)
HHsize0	4.188 (1.44)			0.08 (0.2)	0.08 (0.4)	0.08 (0.3)
HadCows × Large	0.060 (0.24)				0.54 (15.2)	
HadCows × Large × rd 3	0.020 (0.14)				0.34 (21.4)	
HadCows × Large × rd 4	0.020 (0.14)				0.36 (32.1)	
HadCows × LargeGrace	0.047 (0.21)				0.17 (46.3)	
HadCows × LargeGrace × rd 3	0.016 (0.12)				−0.06 (83.6)	
HadCows × LargeGrace × rd 4	0.016 (0.12)				−0.37 (29.1)	
HadCows × Cow	0.042 (0.20)				−0.02 (94.4)	
HadCows × Cow × rd 3	0.015 (0.12)				0.38 (8.9)	
HadCows × Cow × rd 4	0.012 (0.11)				0.41 (12.8)	
livestock value$_1$	5809.440 (12269.47)					0.00 (23.8)
mean of initial value mean of dependent variable		0.26 1.26	0.26 1.26	0.26 1.26	0.26 1.26	0.26 1.26
$T = 2$ $T = 3$		26 77	26 77	25 75	25 75	25 75
$T = 4$ $\bar{R}^2$		604 0.043	604 0.105	604 0.117	604 0.128	604 0.117
N		2060	2060	2055	2055	2055

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. LargeSize is an indicator function if the arm is of large size, WithGrace is an indicator function if the arm is with a grace period, InKind is an indicator function if the arm provides a cow. Saving and repayment information is taken from administrative data. Time invariant household characteristics are taken from household survey data. Administrative data are merged with survey data by the dating the survey rounds in administrative data. Net saving is saving - withdrawal. Excess repayment is repayment - due amount. LY2, LY3, LY4 are dummy variables for second, third, and fourth year into borrowing. Sample is continuing members and replacing members of early rejecters and received loans prior to 2015 Janunary. Regressand is NumCows, number of cattle holding.

2. P values in percentages in parenthesises. Standard errors are clustered at group (village) level.

TABLE D35: ANCOVA ESTIMATION OF CATTLE HOLDING BY ATTRIBUTES AND PERIOD

covariates	mean/std	(1)	(2)	(3)	(4)	(5)
(Intercept)		0.79 (0.0)	0.69 (0.0)	0.37 (0.5)	0.39 (0.5)	0.37 (0.4)
Upfront	0.777 (0.42)	0.55 (0.1)	0.50 (0.0)	0.49 (0.0)	0.47 (0.0)	0.49 (0.0)
WithGrace	0.507 (0.50)	−0.23 (18.4)	−0.20 (18.8)	−0.19 (21.7)	−0.17 (23.2)	−0.19 (20.8)
InKind	0.260 (0.44)	−0.02 (89.3)	0.00 (97.1)	0.01 (91.6)	0.01 (95.4)	0.01 (91.6)
rd 3	0.338 (0.47)	0.21 (0.0)	0.22 (0.0)	0.22 (0.0)	0.22 (0.0)	0.22 (0.0)
Upfront × rd 3	0.261 (0.44)	−0.06 (68.1)	−0.06 (68.8)	−0.04 (81.0)	−0.02 (87.9)	−0.04 (80.5)
WithGrace × rd 3	0.170 (0.38)	0.08 (58.4)	0.10 (46.3)	0.09 (52.6)	0.08 (56.3)	0.09 (52.9)
InKind × rd 3	0.089 (0.28)	−0.18 (8.0)	−0.20 (5.9)	−0.20 (6.7)	−0.20 (7.2)	−0.20 (6.9)
rd 4	0.321 (0.47)	0.30 (0.0)	0.30 (0.0)	0.31 (0.0)	0.31 (0.0)	0.31 (0.0)
Upfront × rd 4	0.253 (0.43)	0.02 (91.7)	0.03 (87.5)	0.03 (86.5)	0.04 (80.5)	0.03 (86.8)
WithGrace × rd 4	0.163 (0.37)	0.10 (52.7)	0.10 (54.7)	0.12 (48.4)	0.12 (47.4)	0.12 (48.5)
InKind × rd 4	0.083 (0.28)	−0.10 (42.9)	−0.07 (59.1)	−0.07 (59.3)	−0.09 (51.8)	−0.07 (59.4)
HadCows	0.185 (0.39)				0.20 (48.1)	
HadCows × rd 3	0.063 (0.24)				−0.34 (2.0)	
HadCows × rd 4	0.059 (0.24)				−0.38 (3.2)	
FloodInRd1	0.492 (0.50)			0.02 (83.9)	0.02 (78.1)	0.01 (88.4)
Head literate0	0.116 (0.32)			−0.06 (54.5)	−0.06 (56.4)	−0.06 (56.3)
NumCows0	0.253 (0.61)		0.43 (0.0)	0.42 (0.0)	0.21 (17.2)	0.21 (30.5)
HHsize0	4.188 (1.44)			0.08 (0.2)	0.08 (0.4)	0.08 (0.3)
HadCows × Upfront	0.149 (0.36)				0.54 (15.2)	
HadCows × Upfront × rd 3	0.050 (0.22)				0.34 (21.4)	
HadCows × Upfront × rd 4	0.048 (0.21)				0.36 (32.1)	
HadCows × WithGrace	0.089 (0.28)				−0.37 (30.7)	
HadCows × WithGrace × rd 3	0.031 (0.17)				−0.40 (23.3)	
HadCows × WithGrace × rd 4	0.028 (0.16)				−0.72 (9.5)	
HadCows × InKind	0.042 (0.20)				−0.18 (33.3)	
HadCows × InKind × rd 3	0.015 (0.12)				0.44 (15.3)	
HadCows × InKind × rd 4	0.012 (0.11)				0.77 (3.5)	
livestock value$_1$	5809.440 (12269.47)					0.00 (23.8)
mean of initial value mean of dependent variable		0.26 1.26	0.26 1.26	0.26 1.26	0.26 1.26	0.26 1.26
$T = 2$ $T = 3$		26 77	26 77	25 75	25 75	25 75
$T = 4$ $\bar{R}^2$		604 0.043	604 0.105	604 0.117	604 0.128	604 0.117
N		2060	2060	2055	2055	2055

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. LargeSize is an indicator function if the arm is of large size, WithGrace is an indicator function if the arm is with a grace period, InKind is an indicator function if the arm provides a cow. Saving and repayment information is taken from administrative data. Time invariant household characteristics are taken from household survey data. Administrative data are merged with survey data by the dating the survey rounds in administrative data. Net saving is saving - withdrawal. Excess repayment is repayment - due amount. LY2, LY3, LY4 are dummy variables for second, third, and fourth year into borrowing. Sample is continuing members and replacing members of early rejecters and received loans prior to 2015 Janunary. Regressand is NumCows, number of cattle holding.

2. P values in percentages in parenthesises. Standard errors are clustered at group (village) level.

D.7 Net assets

TABLE D36: ANCOVA ESTIMATION OF NET ASSETS

covariates	mean/std	(1)	(2)	(3)	(4)	(5)
(Intercept)		33512.4 (0.0)	29408.9 (0.0)	18153.4 (0.0)	19384.6 (0.0)	18188.1 (0.0)
Large	0.271 (0.44)	16795.3 (0.0)	15166.1 (0.1)	15506.3 (0.0)	15197.8 (0.1)	15434.1 (0.1)
LargeGrace	0.243 (0.43)	10889.3 (0.5)	9793.3 (0.7)	9294.1 (0.7)	9468.3 (0.6)	9057.0 (0.8)
Cow	0.261 (0.44)	9000.6 (5.6)	9093.6 (5.6)	9306.0 (4.4)	9269.2 (4.1)	9212.3 (4.6)
HadCows	0.186 (0.39)				−3698.3 (61.8)	
FloodInRd1	0.490 (0.50)			−4447.2 (10.0)	−4396.9 (10.7)	−4451.4 (10.1)
Head literate0	0.117 (0.32)			695.9 (87.0)	975.0 (81.7)	711.4 (86.7)
net asset value1	7689.030 (12982.33)		0.6 (0.0)	0.6 (0.0)	0.5 (1.0)	0.9 (0.2)
HHsize0	4.188 (1.44)			3271.1 (0.0)	3168.3 (0.0)	3140.7 (0.1)
HadCows × Large	0.060 (0.24)				16914.4 (8.6)	
HadCows × LargeGrace	0.046 (0.21)				177.6 (98.2)	
HadCows × Cow	0.043 (0.20)				−718.8 (92.7)	
NumCows0	0.254 (0.61)					−6635.7 (30.8)
mean of initial value mean of dependent variable		7750 43073	7750 43073	7750 43073	7750 43073	7750 43073
$T = 2$ $T = 3$		16 52	16 52	16 50	16 50	16 50
$T = 4$ $\bar{R}^2$		665 0.02	665 0.058	665 0.074	665 0.078	665 0.074
N		2115	2115	2111	2111	2111

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. Sample is continuing members and replacing members of early rejecters and received loans prior to 2015 Janunary. Household assets do not include livestock. Regressions (1)-(3), (5)-(6) use only arm and calendar information. (4) and (7) use previous six month repayment and saving information which is lacking in rd 1, hence starts from rd 2.

2. P values in percentages in parenthesises. Standard errors are clustered at group (village) level.

Table D37: ANCOVA estimation of net assets by attributes

covariates	mean/std	(1)	(2)	(3)	(4)	(5)
(Intercept)		33512.4 (0.0)	29408.9 (0.0)	18153.4 (0.0)	19384.6 (0.0)	18188.1 (0.0)
Upfront	0.775 (0.42)	16795.3 (0.0)	15166.1 (0.1)	15506.3 (0.0)	15197.8 (0.1)	15434.1 (0.1)
WithGrace	0.504 (0.50)	−5906.0 (26.1)	−5372.7 (26.7)	−6212.2 (20.1)	−5729.5 (23.7)	−6377.1 (18.8)
InKind	0.261 (0.44)	−1888.7 (71.4)	−699.8 (89.1)	11.9 (99.8)	−199.0 (96.8)	155.3 (97.5)
HadCows	0.186 (0.39)				−3698.3 (61.8)	
FloodInRd1	0.490 (0.50)			−4447.2 (10.0)	−4396.9 (10.7)	−4451.4 (10.1)
Head literate0	0.117 (0.32)			695.9 (87.0)	975.0 (81.7)	711.4 (86.7)
net asset value1	7689.030 (12982.33)		0.6 (0.0)	0.6 (0.0)	0.5 (1.0)	0.9 (0.2)
HHsize0	4.188 (1.44)			3271.1 (0.0)	3168.3 (0.0)	3140.7 (0.1)
HadCows × Upfront	0.149 (0.36)				16914.4 (8.6)	
HadCows × WithGrace	0.089 (0.28)				−16736.8 (11.2)	
HadCows × InKind	0.043 (0.20)				−896.4 (91.7)	
NumCows0	0.254 (0.61)					−6635.7 (30.8)
mean of initial value mean of dependent variable		7750 43073	7750 43073	7750 43073	7750 43073	7750 43073
$T = 2$ $T = 3$		16 52	16 52	16 50	16 50	16 50
$T = 4$ $\bar{R}^2$		665 0.02	665 0.058	665 0.074	665 0.078	665 0.074
N		2115	2115	2111	2111	2111

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. LargeSize is an indicator function if the arm is of large size, WithGrace is an indicator function if the arm is with a grace period, InKind is an indicator function if the arm provides a cow. Sample is continuing members and replacing members of early rejecters and received loans prior to 2015 Janunary. Household assets do not include livestock. Regressions (1)-(3), (5)-(6) use only arm and calendar information. (4) and (7) use previous six month repayment and saving information which is lacking in rd 1, hence starts from rd 2.

2. P values in percentages in parenthesises. Standard errors are clustered at group (village) level.

Table D38: ANCOVA estimation of net assets by period

covariates	mean/std	(1)	(2)	(3)	(4)	(5)
(Intercept)		23447.6 (0.0)	19408.5 (0.0)	8131.6 (7.3)	9323.7 (3.5)	8165.2 (7.0)
Large	0.271 (0.44)	15850.0 (0.0)	14214.0 (0.1)	14497.4 (0.1)	14260.4 (0.1)	14431.7 (0.1)
LargeGrace	0.243 (0.43)	9849.4 (0.5)	8720.7 (0.7)	8160.9 (0.7)	8333.2 (0.7)	7929.6 (0.9)
Cow	0.261 (0.44)	9384.9 (4.8)	9382.1 (5.2)	9516.2 (4.3)	9505.0 (3.8)	9430.9 (4.4)
rd 3	0.340 (0.47)	13861.2 (0.0)	13783.2 (0.0)	13905.2 (0.0)	13835.8 (0.0)	13906.5 (0.0)
Large × rd 3	0.091 (0.29)	1997.9 (61.8)	2050.5 (60.9)	2699.7 (49.5)	2212.8 (55.6)	2682.8 (49.8)
LargeGrace × rd 3	0.082 (0.27)	4444.2 (31.7)	4652.8 (29.0)	4927.7 (25.8)	4939.5 (27.1)	4929.6 (25.8)
Cow × rd 3	0.089 (0.28)	−3272.8 (42.2)	−3037.5 (45.3)	−2701.9 (49.7)	−2591.3 (51.4)	−2705.9 (49.7)
rd 4	0.322 (0.47)	17851.8 (0.0)	17869.1 (0.0)	18013.9 (0.0)	18058.0 (0.0)	18004.7 (0.0)
Large × rd 4	0.090 (0.29)	3785.7 (47.8)	3897.1 (46.1)	4145.5 (43.3)	3905.0 (45.6)	4096.2 (43.9)
LargeGrace × rd 4	0.081 (0.27)	2730.1 (55.2)	2944.2 (51.6)	3213.1 (47.5)	3316.2 (48.1)	3174.3 (47.8)
Cow × rd 4	0.083 (0.28)	−2908.5 (50.8)	−2033.8 (65.0)	−1312.0 (75.9)	−1085.1 (79.5)	−1396.0 (74.3)
HadCows	0.186 (0.39)				−3818.4 (59.8)	
HadCows × rd 3	0.063 (0.24)				−384.0 (93.6)	
HadCows × rd 4	0.060 (0.24)				−3778.1 (63.0)	
FloodInRd1	0.490 (0.50)			−4518.5 (9.7)	−4461.0 (10.5)	−4522.9 (9.8)
Head literate0	0.117 (0.32)			798.9 (85.1)	1066.7 (80.1)	813.3 (84.8)
net asset value1	7689.030 (12982.33)		0.6 (0.0)	0.6 (0.0)	0.5 (0.9)	0.9 (0.2)
HHsize0	4.188 (1.44)			3270.6 (0.0)	3176.8 (0.0)	3141.7 (0.1)
HadCows × Large	0.060 (0.24)				15031.8 (10.1)	
HadCows × Large × rd 3	0.020 (0.14)				15066.5 (6.2)	
HadCows × Large × rd 4	0.020 (0.14)				10985.3 (39.8)	
HadCows × LargeGrace	0.046 (0.21)				2718.5 (69.9)	
HadCows × LargeGrace × rd 3	0.016 (0.12)				−9706.9 (29.0)	
HadCows × LargeGrace × rd 4	0.016 (0.12)				−13387.7 (20.8)	
HadCows × Cow	0.043 (0.20)				−2396.2 (76.1)	
HadCows × Cow × rd 3	0.015 (0.12)				10251.9 (15.3)	
HadCows × Cow × rd 4	0.012 (0.11)				18827.7 (9.8)	
NumCows0	0.254 (0.61)					−6553.8 (31.4)
mean of initial value mean of dependent variable		7750 43073	7750 43073	7750 43073	7750 43073	7750 43073
$T = 2$ $T = 3$		16 52	16 52	16 50	16 50	16 50
$T = 4$ $\bar{R}^2$		665 0.052	665 0.09	665 0.107	665 0.11	665 0.107
N		2115	2115	2111	2111	2111

Source: Estimated with GUK administrative and survey data.

Notes: 1. First-difference estimates between round 2 and 4. A first-difference is defined as $\Delta x_{t+k} \equiv x_{t+k} - x_t$ for $k = 1, 2, \ldots$. Saving and repayment misses are taken from administrative data and merged with survey data at Year-Month of survey interviews. Intercept terms are omitted in estimating equations. Sample is continuing members and replacing members of early rejecters and received loans prior to 2015 Janunary. Household assets do not include livestock. Regressions (1)-(3), (5)-(6) use only arm and calendar information. (4) and (7) use previous six month repayment and saving information which is lacking in rd 1, hence starts from rd 2.

2. P values in percentages in parenthesises. Standard errors are clustered at group (village) level.

Table D39: ANCOVA estimation of net assets by attrbutes and period

covariates	mean/std	(1)	(2)	(3)	(4)	(5)
(Intercept)		23447.6 (0.0)	19408.5 (0.0)	8131.6 (7.3)	9323.7 (3.5)	8165.2 (7.0)
Upfront	0.775 (0.42)	15850.0 (0.0)	14214.0 (0.1)	14497.4 (0.1)	14260.4 (0.1)	14431.7 (0.1)
WithGrace	0.504 (0.50)	−6000.6 (20.9)	−5493.3 (21.4)	−6336.4 (15.6)	−5927.2 (18.2)	−6502.2 (14.6)
InKind	0.261 (0.44)	−464.4 (92.6)	661.4 (89.6)	1355.3 (78.6)	1171.8 (81.1)	1501.4 (76.3)
rd 3	0.340 (0.47)	13861.2 (0.0)	13783.2 (0.0)	13905.2 (0.0)	13835.8 (0.0)	13906.5 (0.0)
Upfront × rd 3	0.262 (0.44)	1997.9 (61.8)	2050.5 (60.9)	2699.7 (49.5)	2212.8 (55.6)	2682.8 (49.8)
WithGrace × rd 3	0.171 (0.38)	2446.4 (57.9)	2602.3 (55.8)	2228.0 (61.2)	2726.8 (52.7)	2246.8 (60.9)
InKind × rd 3	0.089 (0.28)	−7717.0 (8.5)	−7690.3 (8.6)	−7629.6 (8.5)	−7530.8 (9.4)	−7635.6 (8.4)
rd 4	0.322 (0.47)	17851.8 (0.0)	17869.1 (0.0)	18013.9 (0.0)	18058.0 (0.0)	18004.7 (0.0)
Upfront × rd 4	0.254 (0.44)	3785.7 (47.8)	3897.1 (46.1)	4145.5 (43.3)	3905.0 (45.6)	4096.2 (43.9)
WithGrace × rd 4	0.163 (0.37)	−1055.6 (85.4)	−952.9 (86.8)	−932.4 (87.1)	−588.8 (91.9)	−921.9 (87.3)
InKind × rd 4	0.083 (0.28)	−5638.6 (24.6)	−4978.1 (32.1)	−4525.0 (35.4)	−4401.3 (36.8)	−4570.3 (34.8)
HadCows	0.186 (0.39)				−3818.4 (59.8)	
HadCows × rd 3	0.063 (0.24)				−384.0 (93.6)	
HadCows × rd 4	0.060 (0.24)				−3778.1 (63.0)	
FloodInRd1	0.490 (0.50)			−4518.5 (9.7)	−4461.0 (10.5)	−4522.9 (9.8)
Head literate0	0.117 (0.32)			798.9 (85.1)	1066.7 (80.1)	813.3 (84.8)
net asset value0	7689.030 (12982.33)		0.6 (0.0)	0.6 (0.0)	0.5 (0.9)	0.9 (0.2)
HHsize0	4.188 (1.44)			3270.6 (0.0)	3176.8 (0.0)	3141.7 (0.1)
HadCows × Upfront	0.149 (0.36)				15031.8 (10.1)	
HadCows × Upfront × rd 3	0.051 (0.22)				15066.5 (6.2)	
HadCows × Upfront × rd 4	0.048 (0.21)				10985.3 (39.8)	
HadCows × WithGrace	0.089 (0.28)				−12313.3 (19.7)	
HadCows × WithGrace × rd 3	0.031 (0.17)				−24773.5 (1.5)	
HadCows × WithGrace × rd 4	0.028 (0.16)				−24373.0 (5.4)	
HadCows × InKind	0.043 (0.20)				−5114.7 (53.3)	
HadCows × InKind × rd 3	0.015 (0.12)				19958.8 (3.5)	
HadCows × InKind × rd 4	0.012 (0.11)				32215.4 (0.3)	
NumCows0	0.254 (0.61)					−6553.8 (31.4)
mean of initial value mean of dependent variable		7750 43073	7750 43073	7750 43073	7750 43073	7750 43073
$T = 2$ $T = 3$		16 52	16 52	16 50	16 50	16 50
$T = 4$ $\bar{R}^2$		665 0.052	665 0.09	665 0.107	665 0.11	665 0.107
N		2115	2115	2111	2111	2111

Source: Estimated with GUK administrative and survey data.

Notes: 1. First-difference estimates between round 2 and 4. A first-difference is defined as $\Delta x_{t+k} \equiv x_{t+k} - x_t$ for $k = 1, 2, \ldots$. Saving and repayment misses are taken from administrative data and merged with survey data at Year-Month of survey interviews. Intercept terms are omitted in estimating equations. Sample is continuing members and replacing members of early rejecters and received loans prior to 2015 Janunary. Household assets do not include livestock. Regressions (1)-(3), (5)-(6) use only arm and calendar information. (4) and (7) use previous six month repayment and saving information which is lacking in rd 1, hence starts from rd 2.

2. P values in percentages in parenthesises. Standard errors are clustered at group (village) level.

TABLE D40: ANCOVA ESTIMATION OF NET ASSETS BY ARM, POVERTY STATUS, AND PERIOD

covariates	mean/std	(1)	(2)	(3)	(4)	(5)
(Intercept)		24354.6 (0.0)	19884.5 (0.0)	8490.5 (5.4)	9994.8 (1.8)	8528.2 (5.2)
Large	0.271 (0.44)	15170.3 (0.0)	13825.0 (0.0)	14077.0 (0.0)	13790.7 (0.0)	13994.5 (0.0)
LargeGrace	0.243 (0.43)	8332.0 (1.5)	7376.1 (2.2)	6590.8 (2.6)	6687.9 (2.4)	6293.1 (3.3)
Cow	0.261 (0.44)	8655.6 (6.7)	8919.8 (6.6)	8972.5 (5.4)	8917.4 (5.0)	8857.1 (5.7)
Large × UltraPoor	0.169 (0.37)	−16726.5 (4.6)	−15207.3 (7.8)	−17446.0 (4.8)	−18093.6 (4.7)	−17766.2 (4.6)
LargeGrace × UltraPoor	0.172 (0.38)	4373.7 (44.5)	7970.6 (17.7)	7674.7 (15.2)	6545.0 (21.0)	7767.6 (14.9)
Cow × UltraPoor	0.176 (0.38)	−4107.3 (57.6)	−807.0 (91.8)	−1270.7 (86.5)	−2598.1 (72.1)	−1160.9 (87.7)
rd 3	0.340 (0.47)	13501.3 (0.0)	13455.6 (0.0)	13589.1 (0.0)	13529.6 (0.0)	13593.5 (0.0)
Large × rd 3	0.091 (0.29)	3189.3 (43.5)	3153.3 (44.3)	3740.7 (35.9)	3238.2 (40.2)	3720.2 (36.1)
LargeGrace × rd 3	0.082 (0.27)	5394.3 (22.2)	5527.0 (20.8)	5816.2 (18.2)	5883.6 (18.9)	5827.0 (18.1)
Cow × rd 3	0.089 (0.28)	−2654.2 (52.5)	−2477.4 (55.3)	−2168.9 (60.0)	−2093.4 (60.9)	−2175.7 (59.9)
Large × UltraPoor × rd 3	0.057 (0.23)	−626.5 (92.8)	−1497.3 (82.7)	−1120.5 (87.0)	−400.2 (95.5)	−1112.8 (87.1)
LargeGrace × UltraPoor × rd 3	0.058 (0.23)	9678.9 (21.2)	9160.7 (23.4)	8491.9 (26.9)	8014.2 (31.3)	8396.2 (27.6)
Cow × UltraPoor × rd 3	0.059 (0.24)	17786.2 (8.1)	17161.6 (9.0)	16289.1 (10.5)	17111.0 (9.7)	16332.2 (10.5)
rd 4	0.322 (0.47)	17429.9 (0.0)	17525.9 (0.0)	17688.6 (0.0)	17750.9 (0.0)	17678.3 (0.0)
Large × rd 4	0.090 (0.29)	5161.5 (32.8)	4999.1 (34.1)	5171.8 (32.5)	4882.2 (34.6)	5112.1 (33.0)
LargeGrace × rd 4	0.081 (0.27)	4007.8 (38.5)	3941.0 (38.9)	4168.5 (35.8)	4326.3 (36.1)	4137.8 (36.0)
Cow × rd 4	0.083 (0.28)	−2151.4 (63.8)	−1457.9 (75.6)	−753.8 (86.7)	−608.8 (89.0)	−871.0 (84.6)
Large × UltraPoor × rd 4	0.056 (0.23)	4334.0 (70.9)	3062.3 (78.9)	2806.1 (80.6)	2944.6 (80.0)	2735.2 (81.1)
LargeGrace × UltraPoor × rd 4	0.056 (0.23)	10791.4 (14.3)	9874.4 (17.6)	9242.3 (20.0)	7819.1 (25.4)	9047.5 (20.7)
Cow × UltraPoor × rd 4	0.057 (0.23)	17725.3 (10.5)	14976.8 (19.1)	13173.3 (22.9)	13640.9 (20.4)	13342.6 (21.8)
HadCows	0.186 (0.39)				−5925.2 (41.4)	
HadCows × rd 3	0.063 (0.24)				1609.1 (75.0)	
HadCows × rd 4	0.060 (0.24)				−1733.8 (81.6)	
FloodInRd1	0.490 (0.50)			−5216.1 (4.8)	−5171.4 (5.3)	−5234.0 (4.8)
Head literate0	0.117 (0.32)			122.3 (97.7)	298.8 (94.3)	131.7 (97.5)
net asset value$_1$	7689.030 (12982.33)		0.6 (0.0)	0.6 (0.0)	0.6 (0.7)	0.9 (0.1)
HHsize0	4.188 (1.44)			3425.1 (0.0)	3334.0 (0.0)	3272.7 (0.0)
HadCows × Large	0.060 (0.24)				15598.9 (8.9)	
HadCows × Large × rd 3	0.020 (0.14)				12953.2 (12.5)	
HadCows × Large × rd 4	0.020 (0.14)				8983.6 (48.5)	
HadCows × LargeGrace	0.046 (0.21)				5263.7 (45.9)	
HadCows × LargeGrace × rd 3	0.016 (0.12)				−11442.1 (22.8)	
HadCows × LargeGrace × rd 4	0.016 (0.12)				−15259.6 (14.6)	
HadCows × Cow	0.043 (0.20)				−1093.9 (89.1)	
HadCows × Cow × rd 3	0.015 (0.12)				8763.8 (24.5)	
HadCows × Cow × rd 4	0.012 (0.11)				16633.7 (13.7)	
NumCows0	0.254 (0.61)					−7902.3 (23.1)
mean of initial value mean of dependent variable		7750 43073	7750 43073	7750 43073	7750 43073	7750 43073
$T = 2$ $T = 3$		16 52	16 52	16 50	16 50	16 50
$T = 4$ $\bar{R}^2$		665 0.059	665 0.099	665 0.117	665 0.12	665 0.118
N		2115	2115	2111	2111	2111

TABLE D41: ANCOVA ESTIMATION OF NET ASSETS BY ATTRBUTES, POVERTY STATUS, AND PERIOD

covariates	mean/std	(1)	(2)	(3)	(4)	(5)
(Intercept)		24354.6 (0.0)	19884.5 (0.0)	8490.5 (5.4)	9994.8 (1.8)	8528.2 (5.2)
Upfront	0.775 (0.42)	15170.3 (0.0)	13825.0 (0.0)	14077.0 (0.0)	13790.7 (0.0)	13994.5 (0.0)
WithGrace	0.504 (0.50)	−6838.3 (13.3)	−6448.9 (11.8)	−7486.1 (7.5)	−7102.8 (9.0)	−7701.4 (6.8)
InKind	0.261 (0.44)	323.6 (95.0)	1543.7 (76.7)	2381.7 (64.3)	2229.5 (66.0)	2563.9 (61.7)
Upfront × UltraPoor	0.517 (0.50)	−16726.5 (4.6)	−15207.3 (7.8)	−17446.0 (4.8)	−18093.6 (4.7)	−17766.2 (4.6)
WithGrace × UltraPoor	0.348 (0.48)	21100.2 (1.0)	23177.9 (0.7)	25120.8 (0.5)	24638.6 (0.8)	25533.8 (0.5)
InKind × UltraPoor	0.176 (0.38)	−8481.0 (22.0)	−8777.6 (24.4)	−8945.4 (24.2)	−9143.1 (22.1)	−8928.5 (24.5)
rd 3	0.340 (0.47)	13501.3 (0.0)	13455.6 (0.0)	13589.1 (0.0)	13529.6 (0.0)	13593.5 (0.0)
Upfront × rd 3	0.262 (0.44)	3189.3 (43.5)	3153.3 (44.3)	3740.7 (35.9)	3238.2 (40.2)	3720.2 (36.1)
WithGrace × rd 3	0.171 (0.38)	2205.0 (61.1)	2373.7 (58.5)	2075.5 (63.0)	2645.4 (53.1)	2106.8 (62.4)
InKind × rd 3	0.089 (0.28)	−8048.5 (9.1)	−8004.4 (9.3)	−7985.1 (9.0)	−7977.1 (9.3)	−8002.7 (8.9)
Upfront × UltraPoor × rd 3	0.173 (0.38)	−626.5 (92.8)	−1497.3 (82.7)	−1120.5 (87.0)	−400.2 (95.5)	−1112.8 (87.1)
WithGrace × UltraPoor × rd 3	0.117 (0.32)	10305.3 (14.9)	10658.0 (13.8)	9612.4 (18.5)	8414.4 (25.3)	9509.0 (19.1)
InKind × UltraPoor × rd 3	0.059 (0.24)	8107.3 (45.5)	8000.9 (46.1)	7797.1 (47.3)	9096.8 (40.7)	7936.0 (46.5)
rd 4	0.322 (0.47)	17429.9 (0.0)	17525.9 (0.0)	17688.6 (0.0)	17750.9 (0.0)	17678.3 (0.0)
Upfront × rd 4	0.254 (0.44)	5161.5 (32.8)	4999.1 (34.1)	5171.8 (32.5)	4882.2 (34.6)	5112.1 (33.0)
WithGrace × rd 4	0.163 (0.37)	−1153.8 (84.2)	−1058.1 (85.5)	−1003.4 (86.3)	−555.9 (92.5)	−974.3 (86.7)
InKind × rd 4	0.083 (0.28)	−6159.1 (23.5)	−5398.9 (31.7)	−4922.2 (34.5)	−4935.1 (34.5)	−5008.7 (33.5)
Upfront × UltraPoor × rd 4	0.170 (0.38)	4334.0 (70.9)	3062.3 (78.9)	2806.1 (80.6)	2944.6 (80.0)	2735.2 (81.1)
WithGrace × UltraPoor × rd 4	0.114 (0.32)	6457.4 (58.9)	6812.1 (56.6)	6436.2 (59.1)	4874.5 (68.5)	6312.3 (59.8)
InKind × UltraPoor × rd 4	0.057 (0.23)	6933.9 (54.3)	5102.4 (67.3)	3931.0 (73.7)	5821.8 (60.7)	4295.1 (71.0)
HadCows	0.186 (0.39)				−5925.2 (41.4)	
HadCows × rd 3	0.063 (0.24)				1609.1 (75.0)	
HadCows × rd 4	0.060 (0.24)				−1733.8 (81.6)	
FloodInRd1	0.490 (0.50)			−5216.1 (4.8)	−5171.4 (5.3)	−5234.0 (4.8)
Head literate0	0.117 (0.32)			122.3 (97.7)	298.8 (94.3)	131.7 (97.5)
net asset value$_1$	7689.030 (12982.33)		0.6 (0.0)	0.6 (0.0)	0.6 (0.7)	0.9 (0.1)
HHsize0	4.188 (1.44)			3425.1 (0.0)	3334.0 (0.0)	3272.7 (0.0)
HadCows × Upfront	0.149 (0.36)				15598.9 (8.9)	
HadCows × Upfront × rd 3	0.051 (0.22)				12953.2 (12.5)	
HadCows × Upfront × rd 4	0.048 (0.21)				8983.6 (48.5)	
HadCows × WithGrace	0.089 (0.28)				−10335.1 (28.2)	
HadCows × WithGrace × rd 3	0.031 (0.17)				−24395.3 (2.0)	
HadCows × WithGrace × rd 4	0.028 (0.16)				−24243.2 (5.5)	
HadCows × InKind	0.043 (0.20)				−6357.6 (44.0)	
HadCows × InKind × rd 3	0.015 (0.12)				20206.0 (5.0)	
HadCows × InKind × rd 4	0.012 (0.11)				31893.2 (0.5)	
NumCows0	0.254 (0.61)					−7902.3 (23.1)
mean of initial value mean of dependent variable		7750 43073	7750 43073	7750 43073	7750 43073	7750 43073
$T = 2$ $T = 3$		16 52	16 52	16 50	16 50	16 50
$T = 4$ $\bar{R}^2$		665 0.059	665 0.099	665 0.117	665 0.12	665 0.118
N		2115	2115	2111	2111	2111

D.8 Consumption

TABLE D42: ANCOVA ESTIMATION OF CONSUMPTION

		Per capita consumption (Tk)			Total consumption (Tk)		
covariates	mean/std	(1)	(2)	(3)	(4)	(5)	(6)
(Intercept)		2704.4 (0.0)	2044.7 (0.0)	3180.1 (0.0)	10731.9 (0.0)	5275.5 (0.0)	3409.4 (0.0)
Large	0.273 (0.45)	50.7 (45.6)	72.7 (25.2)	104.9 (9.6)	673.1 (14.1)	558.1 (7.4)	372.7 (14.4)
LargeGrace	0.244 (0.43)	26.7 (67.4)	17.5 (75.2)	36.2 (57.1)	324.3 (53.5)	65.7 (82.8)	112.7 (64.3)
Cow	0.261 (0.44)	56.9 (34.2)	75.4 (16.9)	44.4 (44.0)	92.5 (81.3)	350.4 (20.1)	201.9 (39.8)
FloodInRd1	0.489 (0.50)			−49.9 (19.4)			27.6 (86.9)
Head literate0	0.117 (0.32)			118.2 (1.5)			564.5 (2.7)
per capita consumption$_2$	2177.074 (646.33)		0.3 (0.0)	0.1 (0.1)			
HHsize0	4.354 (1.47)			−180.8 (0.0)			1155.9 (0.0)
household consumption$_2$	9065.617 (3143.64)					0.6 (0.0)	0.3 (0.0)
mean of initial value mean of dependent variable		2179 2740	2179 2740	2179 2740	9054 11019	9054 11019	9054 11019
$T = 2$ $T = 3$		50 668	50 668	50 665	50 668	50 668	50 665
$\bar{R}^2$ N		−0.001 1386	0.068 1386	0.196 1380	0.004 1386	0.328 1386	0.482 1380

Source: Estimated with GUK administrative and survey data of round 2 - 4.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. Sample is continuing members and replacing members of early rejecters and received loans prior to 2015 Janunary. Consumption is annualised values.

2. *P* values in percentages in parenthesises. Standard errors are clustered at group (village) level.

TABLE D43: ANCOVA ESTIMATION OF CONSUMPTION BY ATTRIBUTES

		Per capita consumption (Tk)			Total consumption (Tk)		
covariates	mean/std	(1)	(2)	(3)	(4)	(5)	(6)
(Intercept)		2704.4 (0.0)	2044.7 (0.0)	3180.1 (0.0)	10731.9 (0.0)	5275.5 (0.0)	3409.4 (0.0)
Upfront	0.778 (0.42)	50.7 (45.6)	72.7 (25.2)	104.9 (9.6)	673.1 (14.1)	558.1 (7.4)	372.7 (14.4)
WithGrace	0.505 (0.50)	−24.1 (74.2)	−55.2 (40.0)	−68.7 (26.1)	−348.8 (51.1)	−492.4 (13.4)	−260.0 (36.0)
InKind	0.261 (0.44)	30.2 (64.5)	57.8 (31.2)	8.2 (88.2)	−231.9 (62.5)	284.7 (34.2)	89.2 (73.9)
FloodInRd1	0.489 (0.50)			−49.9 (19.4)			27.6 (86.9)
Head literate0	0.117 (0.32)			118.2 (1.5)			564.5 (2.7)
per capita consumption$_2$	2177.074 (646.33)		0.3 (0.0)	0.1 (0.1)			
HHsize0	4.354 (1.47)			−180.8 (0.0)			1155.9 (0.0)
household consumption$_2$	9065.617 (3143.64)					0.6 (0.0)	0.3 (0.0)
mean of initial value mean of dependent variable		2179 2740	2179 2740	2179 2740	9054 11019	9054 11019	9054 11019
$T = 2$ $T = 3$		50 668	50 668	50 665	50 668	50 668	50 665
$\bar{R}^2$ N		−0.001 1386	0.068 1386	0.196 1380	0.004 1386	0.328 1386	0.482 1380

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. LargeSize is an indicator function if the arm is of large size, WithGrace is an indicator function if the arm is with a grace period, InKind is an indicator function if the arm provides a cow. Sample is continuing members and replacing members of early rejecters and received loans prior to 2015 Janunary. Consumption is annualised values.

2. *P* values in percentages in parenthesises. Standard errors are clustered at group (village) level.

Table D44: ANCOVA estimation of consumption, moderately poor vs. ultra poor

		Per capita consumption (Tk)			Total consumption (Tk)		
covariates	mean/std	(1)	(2)	(3)	(4)	(5)	(6)
(Intercept)		2699.5 (0.0)	2044.4 (0.0)	3187.2 (0.0)	10780.4 (0.0)	5353.1 (0.0)	3475.1 (0.0)
Unfront	0.778 (0.42)	55.6 (40.8)	69.5 (26.0)	103.8 (10.1)	624.4 (19.6)	462.9 (13.9)	325.0 (21.0)
WithGrace	0.505 (0.50)	−27.1 (70.6)	−60.3 (35.3)	−70.6 (24.8)	−281.2 (59.5)	−453.7 (16.6)	−228.4 (41.8)
InKind	0.261 (0.44)	40.6 (53.4)	70.3 (21.4)	16.3 (77.0)	−281.5 (55.3)	257.5 (39.9)	56.0 (83.7)
UltraPoor	0.008 (0.48)	−30.7 (47.5)	−21.0 (60.3)	−13.7 (67.1)	−193.9 (44.6)	−101.1 (59.6)	−88.7 (62.2)
Unfront × UltraPoor	0.030 (0.21)	49.5 (70.9)	−41.2 (74.0)	16.1 (88.3)	−318.2 (64.9)	−1015.1 (2.7)	−587.7 (25.6)
WithGrace × UltraPoor	0.032 (0.24)	25.1 (81.7)	70.9 (49.1)	−2.4 (98.0)	−843.3 (20.4)	−197.3 (71.5)	−272.0 (60.9)
InKind × UltraPoor	0.013 (0.21)	−169.6 (13.2)	−193.7 (7.2)	−128.7 (11.3)	457.5 (52.0)	261.8 (65.2)	455.3 (33.6)
FloodInRd1	0.489 (0.50)			−49.8 (20.8)			5.1 (97.6)
Head literate0	0.117 (0.32)			114.0 (2.0)			535.6 (3.0)
per capita consumption$_2$	2177.074 (646.33)		0.3 (0.0)	0.1 (0.2)			
HHsize0	4.354 (1.47)			−181.6 (0.0)			1151.2 (0.0)
household consumption$_2$	9065.617 (3143.64)					0.6 (0.0)	0.3 (0.0)
mean of initial value mean of dependent variable		2179 2740	2179 2740	2179 2740	9054 11019	9054 11019	9054 11019
$T = 2$ $T = 3$		50 668	50 668	50 665	50 668	50 668	50 665
$\bar{R}^2$ N		−0.002 1386	0.068 1386	0.195 1380	0.005 1386	0.33 1386	0.483 1380

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. UltraPoor is an indicator function if the household is classified as the ultra poor. Sample is continuing members and replacing members of early rejecters and received loans prior to 2015 Janunary. Consumption is annualised values.

2. P values in percentages in parenthesises. Standard errors are clustered at group (village) level.

Table D45: ANCOVA estimation of consumption by attributes and period

		Per capita consumption (Tk)			Total consumption (Tk)		
covariates	mean/std	(1)	(2)	(3)	(4)	(5)	(6)
(Intercept)		2662.3 (0.0)	2004.0 (0.0)	3136.5 (0.0)	10733.1 (0.0)	5292.3 (0.0)	3415.6 (0.0)
Upfront	0.778 (0.42)	42.6 (58.0)	65.6 (36.0)	97.3 (18.3)	669.3 (17.5)	549.4 (11.9)	356.1 (22.9)
WithGrace	0.505 (0.50)	−32.5 (70.1)	−63.3 (41.3)	−75.4 (32.1)	−358.1 (53.7)	−511.3 (17.4)	−281.8 (39.5)
InKind	0.261 (0.44)	61.3 (43.2)	90.9 (20.0)	37.1 (59.9)	−110.8 (83.3)	408.5 (24.0)	197.6 (53.3)
rd 4	0.493 (0.50)	90.0 (3.2)	84.6 (4.6)	94.1 (2.4)	−53.5 (74.0)	−67.9 (67.4)	−15.2 (92.2)
Upfront × rd 4	0.001 (0.22)	28.9 (78.9)	22.6 (83.0)	24.2 (81.9)	1.1 (99.8)	41.2 (92.5)	90.7 (83.7)
WithGrace × rd 4	−0.001 (0.26)	45.9 (71.6)	44.4 (72.6)	35.4 (78.0)	50.9 (91.2)	103.4 (82.3)	116.6 (80.0)
InKind × rd 4	−0.002 (0.23)	−171.2 (18.1)	−183.7 (15.4)	−158.2 (21.0)	−712.3 (13.2)	−726.2 (12.2)	−627.2 (15.4)
FloodInRd1	0.489 (0.50)			−50.7 (18.8)			26.8 (87.3)
Head literate0	0.117 (0.32)			117.8 (1.5)			559.5 (2.8)
per capita consumption$_2$	2177.074 (646.33)		0.3 (0.0)	0.1 (0.1)			
HHsize0	4.354 (1.47)			−180.9 (0.0)			1154.2 (0.0)
household consumption$_2$	9065.617 (3143.64)					0.6 (0.0)	0.3 (0.0)
mean of initial value mean of dependent variable		2179 2740	2179 2740	2179 2740	9054 11019	9054 11019	9054 11019
$T = 2$ $T = 3$		50 668	50 668	50 665	50 668	50 668	50 665
$\bar{R}^2$ N		0.001 1386	0.071 1386	0.199 1380	0.003 1386	0.328 1386	0.482 1380

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. LargeSize is an indicator function if the arm is of large size, WithGrace is an indicator function if the arm is with a grace period, InKind is an indicator function if the arm provides a cow. Sample is continuing members and replacing members of early rejecters and received loans prior to 2015 Janunary. Consumption is annualised values.

2. *P* values in percentages in parenthesises. Standard errors are clustered at group (village) level.

D.9 Income

TABLE D46: ANCOVA ESTIMATION OF LABOUR INCOMES

covariates	mean/std	(1)	(2)	(3)
(Intercept)		70.06 (0.0)	64.34 (0.0)	60.80 (0.0)
Large	0.278 (0.45)	1.54 (85.9)	1.12 (89.6)	0.33 (96.9)
LargeGrace	0.248 (0.43)	−1.10 (90.5)	−5.85 (47.9)	−4.80 (54.3)
Cow	0.254 (0.44)	−5.46 (52.5)	−6.39 (44.8)	−6.22 (45.0)
FloodInRd1	0.488 (0.50)			8.27 (12.2)
Head literate0	0.113 (0.32)			−4.67 (47.1)
household labour income$_1$	68.994 (172.39)		0.11 (0.0)	0.11 (0.0)
mean of initial value mean of dependent variable		68 69	68 69	68 69
$T = 2$ $T = 3$		106 83	106 83	105 83
$T = 4$ $\bar{R}^2$		660 0	660 0.051	658 0.053
N		2566	2566	2557

covariates	mean/std	(1)	(2)	(3)
(Intercept)		21.30 (0.0)	−8.30 (51.2)	−6.75 (59.7)
Large	0.468 (0.50)	−3.66 (42.6)	11.57 (25.6)	5.94 (55.8)
LargeGrace	0.273 (0.45)	21.70 (30.0)	31.00 (11.5)	29.37 (9.0)
Cow	0.182 (0.39)	−8.55 (1.7)	9.26 (39.5)	4.37 (68.2)
FloodInRd1	0.532 (0.50)			13.22 (17.8)
Head literate0	0.156 (0.37)			−0.36 (94.5)
farm revenue$_1$	20.285 (15.29)		0.82 (0.6)	0.60 (4.1)
mean of initial value mean of dependent variable		20 24	20 24	20 24
$T = 2$ $T = 3$		30 22	30 22	30 22
$T = 4$ $\bar{R}^2$		1 0.031	1 0.087	1 0.078
N		77	77	77

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. Sample is continuing members and replacing members of early rejecters and received loans prior to 2015 Janunary. Labour income is in 1000 Tk unit andis sum of all earned labour incomes. Farm revenue is total of agricultural produce sales.

2. P values in percentages in parenthesises. Standard errors are clustered at group (village) level.

Table D47: ANCOVA estimation of labour incomes by attributes

covariates	mean/std	(1)	(2)	(3)
(Intercept)		70.06 (0.0)	64.34 (0.0)	60.80 (0.0)
Upfront	0.779 (0.41)	1.54 (85.9)	1.12 (89.6)	0.33 (96.9)
WithGrace	0.502 (0.50)	−2.64 (75.2)	−6.97 (33.6)	−5.13 (47.7)
InKind	0.254 (0.44)	−4.36 (59.6)	−0.54 (94.0)	−1.43 (83.6)
FloodInRd1	0.488 (0.50)			8.27 (12.2)
Head literate0	0.113 (0.32)			−4.67 (47.1)
household labour income$_1$	68.994 (172.39)		0.11 (0.0)	0.11 (0.0)
mean of initial value mean of dependent variable		68 69	68 69	68 69
$T = 2$ $T = 3$		106 83	106 83	105 83
$T = 4$ $\bar{R}^2$		660 0	660 0.051	658 0.053
N		2566	2566	2557

covariates	mean/std	(1)	(2)	(3)
(Intercept)		21.30 (0.0)	−8.30 (51.2)	−6.75 (59.7)
Upfront	0.922 (0.27)	−3.66 (42.6)	11.57 (25.6)	5.94 (55.8)
WithGrace	0.455 (0.50)	25.36 (22.6)	19.42 (19.4)	23.43 (15.4)
InKind	0.182 (0.39)	−30.25 (14.6)	−21.74 (14.3)	−25.00 (12.0)
FloodInRd1	0.532 (0.50)			13.22 (17.8)
Head literate0	0.156 (0.37)			−0.36 (94.5)
farm revenue$_1$	20.285 (15.29)		0.82 (0.6)	0.60 (4.1)
mean of initial value mean of dependent variable		20 24	20 24	20 24
$T = 2$ $T = 3$		30 22	30 22	30 22
$T = 4$ $\bar{R}^2$		1 0.031	1 0.087	1 0.078
N		77	77	77

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. LargeSize is an indicator function if the arm is of large size, WithGrace is an indicator function if the arm is with a grace period, InKind is an indicator function if the arm provides a cow. Sample is continuing members and replacing members of early rejecters and received loans prior to 2015 Janunary. Labour income is in 1000 Tk unit andis sum of all earned labour incomes. Farm revenue is total of agricultural produce sales.

2. P values in percentages in parenthesises. Standard errors are clustered at group (village) level.

Table D48: ANCOVA estimation of labour incomes by period

covariates	mean/std	(1)	(2)	(3)
(Intercept)		57.75 (0.0)	52.13 (0.0)	48.70 (0.0)
Large	0.278 (0.45)	0.04 (99.6)	−0.45 (95.1)	−1.14 (87.7)
LargeGrace	0.248 (0.43)	−1.64 (83.3)	−6.06 (39.2)	−5.10 (44.6)
Cow	0.254 (0.44)	−2.56 (73.2)	−3.66 (60.9)	−3.49 (61.7)
rd 3	0.343 (0.47)	12.89 (0.0)	12.78 (0.0)	12.81 (0.0)
Large × rd 3	0.094 (0.29)	−5.83 (35.6)	−5.63 (36.7)	−5.93 (34.4)
LargeGrace × rd 3	0.085 (0.28)	0.94 (88.8)	0.24 (97.1)	0.27 (96.7)
Cow × rd 3	0.086 (0.28)	−8.80 (27.0)	−8.04 (29.7)	−8.15 (29.4)
rd 4	0.326 (0.47)	23.39 (0.0)	23.15 (0.0)	23.14 (0.0)
Large × rd 4	0.095 (0.29)	10.21 (43.8)	10.32 (43.3)	10.35 (43.2)
LargeGrace × rd 4	0.082 (0.27)	−0.03 (99.7)	−1.00 (89.4)	−0.64 (93.2)
Cow × rd 4	0.081 (0.27)	−6.84 (49.5)	−6.70 (50.2)	−6.56 (51.5)
FloodInRd1	0.488 (0.50)			8.02 (13.1)
Head literate0	0.113 (0.32)			−4.52 (48.7)
household labour income$_1$	68.994 (172.39)		0.11 (0.0)	0.11 (0.0)
mean of initial value mean of dependent variable		68 69	68 69	68 69
$T = 2$ $T = 3$		106 83	106 83	105 83
$T = 4$ $\bar{R}^2$		660 0.013	660 0.065	658 0.066
N		2566	2566	2557

covariates	mean/std	(1)	(2)	(3)
(Intercept)		33.51 (0.0)	7.77 (62.0)	9.81 (52.2)
Large	0.468 (0.50)	−12.05 (0.7)	1.50 (90.0)	−5.23 (65.9)
LargeGrace	0.273 (0.45)	−2.27 (89.8)	9.34 (62.2)	7.69 (66.0)
Cow	0.182 (0.39)	−10.95 (1.5)	8.25 (54.6)	4.42 (74.6)
rd 3	0.468 (0.50)	0.28 (97.9)	−4.09 (62.8)	−4.26 (60.6)
Large × rd 3	0.234 (0.43)	6.79 (50.2)	28.97 (3.1)	34.20 (1.7)
LargeGrace × rd 3	0.130 (0.34)	86.38 (4.1)	96.24 (1.0)	93.52 (1.0)
Cow × rd 3	0.078 (0.27)	−0.34 (96.6)	7.51 (28.7)	3.39 (52.9)
rd 4	0.481 (0.50)	−4.32 (34.4)	−11.51 (1.0)	−11.11 (1.0)
Large × rd 4	0.208 (0.41)	22.94 (2.5)	29.82 (0.2)	36.13 (0.1)
LargeGrace × rd 4	0.130 (0.34)	55.95 (0.0)	50.48 (0.0)	51.76 (0.0)
FloodInRd1	0.532 (0.50)			10.09 (21.0)
Head literate0	0.156 (0.37)			0.42 (93.8)
farm revenue$_1$	20.285 (15.29)		0.89 (1.6)	0.72 (3.8)
mean of initial value mean of dependent variable		20 24	20 24	20 24
$T = 2$ $T = 3$		30 22	30 22	30 22
$T = 4$ $\bar{R}^2$		1 0.003	1 0.071	1 0.052
N		77	77	77

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. LargeSize is an indicator function if the arm is of large size, WithGrace is an indicator function if the arm is with a grace period, InKind is an indicator function if the arm provides a cow. Sample is continuing members and replacing members of early rejecters and received loans prior to 2015 Janunary. Labour income is in 1000 Tk unit andis sum of all earned labour incomes. Farm revenue is total of agricultural produce sales.

Table D49: ANCOVA estimation of labour incomes by attributes and period

covariates	mean/std	(1)	(2)	(3)
(Intercept)		57.75 (0.0)	52.13 (0.0)	48.70 (0.0)
Upfront	0.779 (0.41)	0.04 (99.6)	−0.45 (95.1)	−1.14 (87.7)
WithGrace	0.502 (0.50)	−1.68 (81.7)	−5.61 (37.5)	−3.95 (54.8)
InKind	0.254 (0.44)	−0.91 (90.0)	2.40 (70.3)	1.61 (79.3)
rd 3	0.343 (0.47)	12.89 (0.0)	12.78 (0.0)	12.81 (0.0)
Upfront × rd 3	0.266 (0.44)	−5.83 (35.6)	−5.63 (36.7)	−5.93 (34.4)
WithGrace × rd 3	0.172 (0.38)	6.77 (20.2)	5.87 (25.0)	6.20 (22.3)
InKind × rd 3	0.086 (0.28)	−9.74 (17.7)	−8.28 (22.6)	−8.42 (21.9)
rd 4	0.326 (0.47)	23.39 (0.0)	23.15 (0.0)	23.14 (0.0)
Upfront × rd 4	0.258 (0.44)	10.21 (43.8)	10.32 (43.3)	10.35 (43.2)
WithGrace × rd 4	0.163 (0.37)	−10.24 (41.8)	−11.31 (36.4)	−10.99 (37.7)
InKind × rd 4	0.081 (0.27)	−6.81 (46.4)	−5.70 (53.0)	−5.92 (51.5)
FloodInRd1	0.488 (0.50)			8.02 (13.1)
Head literate0	0.113 (0.32)			−4.52 (48.7)
household labour income$_1$	68.994 (172.39)		0.11 (0.0)	0.11 (0.0)
mean of initial value mean of dependent variable		68 69	68 69	68 69
$T = 2$ $T = 3$		106 83	106 83	105 83
$T = 4$ $\bar{R}^2$		660 0.013	660 0.065	658 0.066
N		2566	2566	2557

covariates	mean/std	(1)	(2)	(3)
(Intercept)		23.41 (0.5)	−5.35 (74.7)	−6.09 (72.3)
Upfront	0.922 (0.27)	−2.94 (52.5)	13.34 (26.0)	9.12 (44.0)
WithGrace	0.455 (0.50)	9.78 (57.6)	7.84 (56.0)	12.92 (40.4)
InKind	0.182 (0.39)	−8.68 (61.8)	−1.10 (93.3)	−3.28 (81.6)
rd 3	0.468 (0.50)	1.91 (85.7)	−1.97 (81.9)	−1.69 (84.3)
Upfront × rd 3	0.442 (0.50)	−16.16 (7.3)	−0.85 (92.9)	−1.93 (81.6)
WithGrace × rd 3	0.208 (0.41)	79.60 (5.7)	67.27 (4.5)	59.32 (5.6)
InKind × rd 3	0.078 (0.27)	−86.72 (3.7)	−88.73 (1.2)	−90.13 (1.0)
rd 4	0.481 (0.50)	−2.69 (60.0)	−9.39 (4.3)	−8.54 (4.8)
WithGrace × rd 4	0.221 (0.42)	33.01 (0.5)	20.66 (2.2)	15.62 (14.5)
InKind × rd 4	0.091 (0.29)	−55.95 (0.0)	−50.48 (0.0)	−51.76 (0.0)
FloodInRd1	0.532 (0.50)			10.09 (21.0)
Head literate0	0.156 (0.37)			0.42 (93.8)
farm revenue$_1$	20.285 (15.29)		0.89 (1.6)	0.72 (3.8)
mean of initial value mean of dependent variable		20 24	20 24	20 24
$T = 2$ $T = 3$		30 22	30 22	30 22
$T = 4$ $\bar{R}^2$		1 0.003	1 0.071	1 0.052
N		77	77	77

Source: Estimated with GUK administrative and survey data.

Notes: 1. ANCOVA estimates using administrative and survey data. Post treatment regressands are regressed on categorical variables, pre-treatment regressand and other covariates. Head age and literacy are from baseline survey data. LargeSize is an indicator function if the arm is of large size, WithGrace is an indicator function if the arm is with a grace period, InKind is an indicator function if the arm provides a cow. Sample is continuing members and replacing members of early rejecters and received loans prior to 2015 Janunary. Labour income is in 1000 Tk unit andis sum of all earned labour incomes. Farm revenue is total of agricultural produce sales.