Asset Transfer Programme for the Ultra Poor: A Randomized Control Trial Evaluation

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ABSTRACT

The world's poorest people lack both capital and skills and are trapped in low return occupations. Whether their economic lives can be transformed by programmes which attempt to tackle both constraints by providing assets and training to enable them to run small businesses is however unknown. To shed light on this issue we conduct a randomized evaluation of an entrepreneurship programme that provides assets and training to the poorest women in rural Bangladesh. We find that the programme transforms the occupational choices of the poor women who participated in the programme by inducing them to spend more time in self-employment, less in wage labour and increases their labour market participation, leading to a 36% increase in annual income on average. Moreover, the programme leads to an increase in wages at the village level and its effects spillover to other poor women who experience an increase in labour supply and income.

Key words: Entrepreneurship, poverty, asset transfer, skills, training, general equilibrium, spill-overs.

1. INTRODUCTION

The world's poor lack both capital and skills (Banerjee and Duflo 2007). They also tend to be employed in low return and often insecure occupations. This is true for both developed and developing countries. These simple observations have informed how we think about poverty. One strand of work examines mechanisms via which expanded access to capital can enable individuals to alter their occupational and production choices and exit poverty (Banerjee and Newman 1993, Besley 1995). Another strand focuses on human capital formation and on how limited education and skills constrain the occupational and production opportunities of the poor (Becker 1964, Schultz 1980, 1993).

Guided by these theoretical foundations, the worldwide poverty industry spends millions on government, NGO, multilateral, bilateral and private sector led antipoverty programmes. Banking, microfinance and asset transfer programmes figure prominently in efforts to tackle the capital constraint. Education, adult education, vocational training, conditional cash transfers and skill transfer programmes spearhead attempts to tackle the skills constraint. The amounts of money spent on poverty reduction are enormous in both developed and developing nations.

And yet whether these plethora of programmes are actually enabling the poor to permanently exit poverty by allowing them to move into higher productivity occupations is often called into question. One reason to be skeptical is that we do not really know what works and the results from credible evaluations often fall short of the expectations of the agencies that fund these programmes (Banerjee *et al.* 2010, Crepon *et al.* 2011). This understandably has led to calls for a stronger focus on evaluation to guide expenditures on anti-poverty programmes (Banerjee and Duflo 2011).

There are other, more fundamental, reasons to be skeptical. Transfers of various types may simply be consumed without altering the underlying productivity of poor individuals. In many instances, these transfers are sizable relative to baseline wealth levels, and hence wealth effects might dominate. In addition, the poor may have very limited demand for either capital or skills. This often makes them difficult to reach via anti-poverty programmes. It has been observed, for example, that even the most innovative finance programmes (e.g. microcredit) often fail to reach the poorest that may depend largely on low paid wage labour and hence have limited use for capital. Similarly if the returns to education are perceived to be very low then the poor are unlikely to participate in education or skills programmes (Jensen 2010). This suggests that transforming the economic lives of the poor may require tackling both capital and skill constraints simultaneously.

To shed light on these issues, we conduct a randomized evaluation of an entrepreneurship programme in Bangladesh – a programme that offers both training and assets to the poorest women in rural communities, typified by being largely asset less and low skilled, and generally stuck in low return and insecure occupations. The programme is operated by BRAC, one of the largest and fastest growing NGOs in the world, and aims to target over 800,000 ultra poor women in the poorest areas of the country by 2011. The scale of the programme in Bangladesh and the fact that it is now being replicated in a large number of countries imply that the results of the evaluation can be crucial for many of the world's poorest.[1]

The programme targets both the lack of assets and the lack of skills by transferring business assets –mostly livestock like cows and goats – and training and support in running small businesses, with the aim of moving them from

[1] As of November 2011, ten different pilots were active around the world, http://graduation.cgap.org/pilots/

low return occupations to entrepreneurship. The value of the asset transfer is large relative to the beneficiaries' wealth, half of whom own no assets at baseline. This has two implications. First, wealth effects are likely to be strong and might entirely drive the way programme participant households respond to the programme. Second, the programme is likely to have general equilibrium effects on wages and prices in the intervention communities, possibly creating spillovers on non-participant households.

Our evaluation strategy was designed explicitly to provide evidence on the occupational choices of the targeted poor, on general equilibrium effects and on the spillovers on other poor in intervention communities. Our research design has three key features. First, we collaborated with BRAC to randomize the roll-out of the programme across communities, half of which were treated in 2007 and the rest kept as controls until 2011. The programme selected potential beneficiaries, following the same selection criteria in both intervention and control communities; we thus identify the effect of the programme by comparing the outcome of the selected poor in intervention vs. control communities before and after programme implementation. Randomization at the community level, rather than at the individual household level, reduces the risk that the programme effects spillover to the control group. Our sampling strategy was designed to measure both the effect on the treated, general equilibrium effects through prices and spillover effects on the non-participant poor in intervention communities. To this aim we sampled all of the targeted poor and other poor households in intervention and control communities, as well as a random sample of the rest of the population in each community.

Second, we collect detailed information on occupational structure, and in particular on the time devoted to different income generating activities. This allows us to identify the effect of the programme on occupational choice, and to assess whether it succeeds into its stated aim of transforming the occupational structure and the economic lives of the poor. Third, the scale of the evaluation is large. We survey all eligibles, all poor households and a sample of households at other points of the income distribution for a total of 25,068 households across 1,409 communities. This allows us to quantify general equilibrium effects on wages and prices at the community level and to identify spillovers on non-participant households in intervention communities.

The analysis yields four main findings. First, two years into the programme, the participant women retain the assets they were given and change their occupational choices accordingly. On average, these women increase the hours devoted to self-employment by 135%, decrease the hours devoted to wage-labour by 14%, increase total hours worked by 38%, and increase labour force participation by 13 percentage points. Taken together, this change in occupational structure is associated with an increase in income of 36%, which results in an increase in standard welfare measures such as food security (42%), per capita expenditure on food (5%), price per calorie (3%) and per capita expenditure on non-food (22%). Most importantly, the findings suggest that the increase in welfare is due to the transformation of occupational structure rather than to a consumption boost due to the asset transfer.

Second, quintile treatment effects estimates show that both the effect on hours worked and earnings are positive and significantly different from zero at all points of the distribution. This suggests that the programme transformed the occupational structure of all participant individuals and rules out that any of the participant women suffered a loss of earnings as a result. While the effect on hours worked is constant throughout the distribution; the effect on earnings is about twice as strong for bottom and top deciles compared to the median. Under the assumption of stable rankings, this implies that the programme is most effective for individuals who would have had very low or very high income growth without the programme, probably a consequence of the fact that the two programme components – asset transfer and training – affect people at different point of the distribution of income.

Third, we provide evidence on the general equilibrium effects of the programme at the community level. We find that the programme causes a significant 10% increase in the wage level for female unskilled labour, but has no impact on the male wages, suggesting that the unskilled labour market in this setting is highly segmented by gender. Furthermore, we find that

the programme leads to a fall in the price of goats, but has no impact on the prices of other types of livestock or produce. This is consistent with the fact that the assets transferred by BRAC correspond to a much larger exogenous shock on the aggregate amount of goats within the community compared to other types of livestock.

Fourth, we test for spillover effects on the occupational choices of non-participant women who live in intervention communities. We find that – consistent with there being significant general equilibrium effects on female wages – non-participant poor women in intervention communities increase labour force participation by 4 percentage points and spend 12% more hours in wage-labour. Taken together, this change in occupational structure is associated with an increase in income of 11%. Finally, we find no impact on the labour supply or income of men from non-participant poor households, which lines up with our finding that there were no general equilibrium effects of the programme on the male labour market.

Our paper contributes to a growing literature that tries to identify ways of shifting poor individuals into higher return economic activities as a means of permanently lifting them out of poverty. Much of the literature has focused on expanding access to capital (e.g. Banerjee *et al.* 2010; Crepon *et al.* 2011) or upgrading skills (e.g. Schultz 2004). What is novel about the entrepreneurship programme we examine here is the simultaneous provision of both capital and skills.[2] Our results suggest that targeting capital and skills shortages which constrain entrepreneurship may be keys to enabling poor individuals to take up higher return economic activities.

Finally the scale of our evaluation which covers both participant and non-participant individuals in both intervention and control communities has revealed how important it is when examining the impact of a programme to think about both general equilibrium and spillover effects. This is in line with a growing literature on programme evaluation in both developed and developing countries, which is beginning to document the importance of spillovers and externalities in different settings (see Angelucci and De Giorgi 2009, Angelucci *et al.* 2010, Bobonis and Finan 2009, Cattaneo and Lalive 2009, Gertler *et al.* 2006, Kremer and Miguel 2004, Ludwig *et al.* 2011). Fuller evaluations which attempt to trace general equilibrium and spillover effects beyond the direct effects on the participants are going to be necessary to make them more informative for policy making.

The rest of the paper is organized as follows: In section 2 we describe the details of BRAC's ultra poor programme and our evaluation strategy; section 3 describes lives of the targeted poor households relative to the rest of the community at baseline; section 4 presents empirical results on the effect of the programme on treated households; section 5 presents results on the general equilibrium effects of the programme and on spillover effects on poor households that are not supported by the programme, and section 6 conclusion.

[2] 0ur results are also in line with the non-randomized evaluations of the earlier phase of BRAC ultra poor programme, see e.g. Ahmed *et al.* 2009, Das and Misha 2010, Matin *et al.* 2009.

2. PROGRAMME DESCRIPTIONS AND EVALUATION STRATEGY

Programme description

BRAC's ultra poor programme targets the poorest women in rural Bangladesh. The programme started in 2007 and has two main components. First, targeted women receive productive assets, such as cows, goats, poultry or seeds for vegetable cultivation. The average asset value is Tk. 9,500 (USD 140), which is a sizable fraction of the targeted poor's wealth at baseline. In principle, participants commit to retain the asset for two years with the exception that they are allowed to sell it or exchange it for another income generating asset within that period. In practice, however, the commitment cannot be enforced, thus whether the asset is retained or liquidated is itself an outcome of interest that ultimately determines whether the programme has the desired effect to transform the lives of the poor or merely increases their welfare in the short run.

Second, the asset transfer is accompanied by skills training; specific to the type of asset provided.[3] The training component is both intensive and long lived. Indeed, besides initial classroom training at BRAC branch offices, households receive regular support by an asset specialist who visits them every 1-2 months for the first year of the programme and by BRAC programme offers who visit them weekly for the first two years.[4]

Targeting proceeds in three stages. First, the BRAC central office selects the most vulnerable sub-districts based on the food security maps by the World Food Programme. Second, BRAC employees from local branch offices within those districts select the poorest communities within their branch. Communities or "spots" are self-contained within-village clusters of approximately 100 households.

Third, programme officers use a combination of participatory wealth ranking methods (Atlas *et al.* 2011) and survey methods to identify the ultra poor women who will be targeted in each community. Through a participatory rural appraisal (PRA) households are allocated to one of five community-defined wealth groups.[5] The lowest ranking households are then visited by BRAC officers to determine whether they meet the programmes selection criteria to become Specially Targeted Ultra poor (STUP) households, or STUPs for brevity.[6]

Evaluation strategy

We collaborate with the programme management to randomize the roll-out of intervention across 40 BRAC office branches in the poorest areas of the country. To reduce unobservable heterogeneity between treatment and control units, we stratify by sub-district and use pair wise randomization between branches in each sub-district. An average sub-district (*Upazila*) has an area of

[3] To compensate for the short run fall in income due to the occupational change, a subsistence allowance is provided until the targeted women learn to manage the assets well enough to generate a regular flow of income.

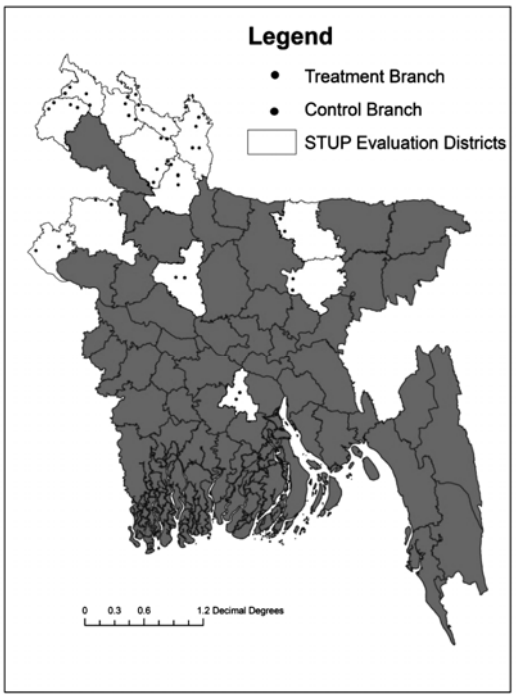
[4] After 24 months into the programme, the targeted women receive training in microfinance and are enrolled in village-level microfinance organizations. 0ur follow-up survey is fielded before the treated women have access to microfinance, hence we do not evaluate the effect of this component.

[5] In a randomized evaluation of different targeting methods, Atlas *et al.* (2011) show that, compared to proxy means tests, community appraisal methods resulted in higher satisfaction and greater legitimacy. Their distinctive characteristic was that community methods put a larger weight on earnings potential.

[6] There are three exclusion criteria, all of which are binding: (i) already borrowing from an NG0 providing microfinance, (ii) receiving of government anti-poverty programmes, (iii) having no adult women in their members. Furthermore, to be selected a household has to satisfy three of the following five inclusion criteria: (i) total land owned including homestead is not more than 10 decimals; (ii) there is no adult male income earner in the household; (iii) adult women in the household work outside the homestead; (iv) school-going-aged children have to work; and (v) the household has no productive assets.

approximately 250 square kilometers (97 square miles). As such, communities within the same *Upazila* are subject to the same local governance structures, experience similar local policies and are likely to have similar characteristics that affect the outcome of interest. Stratifying at the sub-district level can therefore lead to better balance between treatment and control groups (Bruhn and Mackenzie, 2009).

Figure 1. Evaluation Map



The randomization was carried out remotely by the research team. We first randomly selected two branches in each sub-district and then we randomly allocated one to treatment and one to control.[7] Figure 1 shows the location of treatment and control branch offices within Bangladesh, each of which covers 35 communities on average. The randomization design implies that all communities within the 20 treatment branches are treated in 2007 and all communities within the 20 control branches are kept as controls until 2011. We use BRAC branch offices instead of communities as the unit of randomization to minimize the risk of contamination between treatment and control units, both because communities within the same branch office are closer to each other and because, most importantly, this minimizes the risk that programme officers, who are based at the branch, do not comply with the randomization.

Four features of the randomization design are of note. First, BRAC officers carried through the selection process outlined above both in treatment and control communities, so that STUPs are identified in both but treated only in treatment communities. STUPs in control communities are not informed of their status or told that they will be treated in 2011. This allows us to estimate the effect of the programme by comparing the outcomes of STUPs in treated communities to those of STUPs in control communities before and after the introduction of the programme, thus differencing out baseline differences in outcomes between treatment and control communities and common time trends.

Second, the fact that all STUPs within a community are either treated or kept as controls eliminates possible confounding effects due to control contamination by ensuring that control STUPs do not know and hence cannot respond to not having been treated. The average distance between a treatment and a control branch office is approximately 12 kilometers.

Third, to ensure that the estimates are not contaminated by anticipation effects, households are only told about the programme when this is actually implemented. Hence, neither treatment nor control STUPs know about the programme at baseline, treated households find out in 2007 and control households in 2011. As BRAC already operates in all selected communities, the participatory wealth ranking exercise is justified as part of BRAC's regular activities.

Fourth, we survey all STUPs, all poor households and a random sample of non-poor households within each community to evaluate both the direct effect of the programme on the treated and its spillover effects on non-treated households in treated communities.

The sample covers 1409 communities and 25,068 households. The cost of the evaluation is

[7] For each district located in the poorer Northern region we randomly select 2 sub-districts, and for each district located in the rest of the country we randomly select 1 sub-district, restricting the draw to sub-districts containing more than one BRAC branch office. For the one district (Kishoreganj) that did not have sub-districts with more than one BRAC branch offices, we randomly choose on treatment and one control branch without stratifying by sub-district.

estimated at USD 1.95 million. Households in treatment and control communities were surveyed before the programme reached their sub-district and then again two years later. The average number of days between the baseline and the first follow-up is 800. This implies that follow-up outcomes are measured after the end of the most intensive part of the programme with weekly visits, and that treated households were free to liquidate their assets.[8]

The survey questionnaire collects a rich set of individual outcomes, and particularly detailed information on income generating activities. For each activity the survey measure hours worked, earnings and whether employed or self-employed. This allows us to measure occupational choice, labour supply and labour income to shed light on whether the programme had the desired effect of transforming the economic lives of the poor.

[8] The baseline survey was carried out between April-December 2007. The first follow-up survey was carried out on the same households between April-December 2009; a second follow-up survey is currently on the field.

3. THE LIVES OF THE ULTRA POOR AT BASELINE

The participatory rural appraisal exercise yields a complete classification of households by wealth. Table 1 provides summary statistics on the characteristics of targeted poor households and other households belonging to other wealth classes as ranked by the communities at baseline.[9] The first row lists the number of households in each class. We sampled all the selected ultra poor, all the other poor, and 10% from the other classes. That corresponds to a sample of 6,817 targeted poor, 8,576 other poor, 7,241 middle class and 2,428 upper class households.

The second row shows that, in line with the programme targeting strategy, the targeted poor households are more likely to be female headed. The share of male headed households is 58% for the ultra poor, 79% for the other poor, and close to 100% for all other classes. Household size (row three) is increasing in wealth, ranging from 3.3 for the ultra poor to 5 for the upper class.

The next two rows show basic indicators of human capital, self-reported literacy as a measure of education and BMI as a measure of health. In both cases we report measures for the survey respondent, that is the main female in the household, who is the person targeted by the programme in the lowest wealth class. Measures for household heads are correlated. Only 7% of ultra poor women are literate and the share increases rapidly with wealth from 27% among leading women in the middle classes to 52% in the upper class. This gives a clear illustration of the low levels of human capital in these villages. The next row shows that BMI of the main female respondent is also increasing in wealth, with the ultra poor being at the bottom of the lowest class with an 18.4 average, up to 20.3 in the upper class.[10]

The next three rows report measures of food security, expenditure and wealth among the sampled households. We define a household to have food security if its members can afford at least two meals a day on most days. According to this measure, only 41% of the ultra poor households have food security, compared to 53% of other poor, 81% of middle and 96% of upper class households. Average per capita expenditure[11] by ultra poor households is just over 2/3 of average per capita expenditure by households in the middle class and just under 1/3 of average per capita expenditure in the upper class. Differences in wealth are much starker. The corresponding figures are 4% and 0.7%. These are mostly driven by the fact that 45% of ultra poor households have no assets at baseline. The average Gini coefficient for wealth is 0.77 in both treated and control communities.

The average ultra poor in our sample receives an asset valued 9500 Tk. (140 USD). In the context of the distribution of business assets described in Table 1, the value of the assets BRAC transferred to ultra poor households is roughly twice the mean value of their wealth at baseline. For the 45% of ultra poor households who had no assets at baseline, the transfer obviously entails an even more significant change in wealth. The size of the transfers relative to the value of existing assets in the community implies that the programme has a nontrivial impact on the distribution of wealth, pushing the ultra poor out of the bottom class and possibly above some of the lowest classes. This in turn implies that programme might affect occupational choice through a wealth effect.

[9] We divide the poor classes (ranks 4 and 5) into those who were selected by the programme (the ultra-poor) and those who were not (other poor), the middle class comprises households that were ranked 2 or 3, and the upper class those that were ranked 1.

[10] In this setting, the relationship between BMI and health status is likely to be positive throughout, as the heaviest among the wealthiest individuals (i.e. those weighing 2 standard deviations above the mean) are just on the overweight threshold (25).

[11] All monetary values are in real terms, in 2007 prices. Values recorded during the 2009 survey have been defeated to 2007 prices using the Bangladesh Bureau of Statistics rural CPI index as of December 2009 (http://www.bbs.gov.bd/).

The differences in business assets translate into differences in occupational structure. Panel B reports the annual hours devoted to wage and self-employment as well as total hours worked by the respondent. Three patterns are notable. First, ultra poor women spend considerably more time selling labour outside the household compared to all other classes. Further decomposition (not shown for reasons of space) shows that maid and agricultural daily jobs account for 65% of hours devoted to wage labour. The hours devoted to these activities fall rapidly as we move up along the class structure and women in the middle and upper classes are very rarely involved in these activities.

Second, in line with the skewed distribution of assets, and in particular livestock and land, ultra poor respondents spend less time in self-employment activities. The average for the main female in an ultra poor household is 414 hours per year, compared to 700 for the main female in a middle class household and 770 in an upper class household.

Third, hours devoted to income generating activities decrease with wealth, and ultra poor women spend roughly 50% more hours than women belonging to the upper classes. This implies that even in the poorest classes women are not underemployed, rather they are employed in activities (paid labour) that are likely to be less attractive to wealthier women. The average time spent on household chores is 1440, implying the average woman in our sample works 8 hours in a 6 day week.[12]

The last part of Table 1 gives the proportion of households in each wealth class that fall in one of four occupational groups: (i) those who work in wage employment alone, (ii) those who are engaged in self-employed income generating activities and in wage labour, (iii) those who work in self-employment only, and (iv) those out of the labour force. Among the ultra poor households, 28% were working in wage employment only at baseline, 27% worked in both self-employment and wage labour, 29% specialized in self-employment alone and 16% were out of the labour force. Note that, consistent with the distribution of labour hours between self and wage employment, as we go up along the wealth groups, women are more likely to be specialized in self-employment only - 87% of upper class women work only in self-employed business activities.

Table A1 in the Appendix reports means in treatment and control groups separately, by wealth class. Following Imbens and Wooldridge (2009) the table also reports the normalized difference for each variable, computed as the difference in means divided by the square root of the sum of the variances. This is a scale-free measure and, contrary to the t-statistics for the null hypothesis of equal means, does not increase mechanically with sample size. Three points are of note. First, all normalized differences are quite small and even the largest (.13) are well below .25; the rule of thumb value below which linear regression methods are not sensitive to specification changes (Imbens and Wooldridge 2009). Second, the signs of the differences are consistent across wealth classes, especially between ultra poor and other poor households, suggesting these are due to common unobservable at the community level rather than different selection criteria of ultra poor households in treatment and control communities. For instance, women in treatment villages are between 2 and 5 percentage points less likely to participate in the labour force and consequently have lower average income in all wealth classes. Third, our research design allow to evaluate the effect of the programme independently of baseline differences, by comparing changes in outcomes for the same household across treated and control communities.

[12] For brevity we only report the occupational choices of women, but the pattern of self-employment versus wage work across wealth classes is similar for men, with poorer men devoting more time to wage work and less time to self-employed activities. Among wage employment, casual agricultural labour is the most common form, followed by a miscellany of activities such as construction works, rickshaw driving, shop vendors etc. The time devoted to business activities is similar across classes. For all classes, women devote much less time to income generating activities than men do. The women's share of total hours worked is highest for the ultra poor 40% and declines with wealth.

Table 1. Descriptive statistics at baseline

	Targeted poor	Other poor	Middle class	Upper class
Number of households	6,817	8,576	7,241	2,428
HH head male	0.58	0.79	0.94	0.95
	(0.49)	(0.41)	(0.23)	(0.22)
HH size	3.26	3.70	4.43	5.03
	(1.69)	(1.65)	(1.66)	(2.02)
Female respondent is literate	0.07	0.16	0.27	0.52
	(0.26)	(0.37)	(0.44)	(0.50)
Female respondent BMI	18.36	18.87	19.33	20.27
	(2.24)	(2.37)	(2.46)	(2.90)
Food Security	0.41	0.53	0.81	0.96
	(0.49)	(0.50)	(0.40)	(0.19)
Total per capita expenditure	9,825.6	10,128.0	12,171.1	20,845.7
	(4,451.7)	(4,750.0)	(7,032.1)	(35,388.9)
Wealth	5620.9	13,991.2	153,359.5	853,426.6
	(29,931.2)	(69,828.1)	(325,057.5)	(971,623.6)
Livestock value	870.18	2,553.3	12,879.7	31,304.6
	(3,207.7)	(6,786.0)	(26,172.3)	(39,186.4)
Durables value	429.1	713.0	2,263.5	7,892.0
	(509.7)	(1005.2)	(3,252.6)	(8,900.4)
Female respondent, hours spent in:				
Self-employment	413.4	502.8	700.4	769.5
	(580.9)	(575.4)	(559.3)	(512.9)
Wage employment	723.5	435.3	110.9	42.6
	(847.8)	(712.4)	(398.3)	(279.1)
All income generating activities	1136.8	938.3	811.3	812.1
	(886.2)	(827.3)	(643.1)	(554.3)
Female respondent, total earnings	5001.4	4182.9	4806.8	9687.2
	(5,394.1)	(6,165.1)	(11,611.3)	(24,279.9)
Occupation at baseline (% of respondents):				
Wage employment only	28.2	14.6	2.5	0.7
Both self-employment and wage labour	26.8	21.9	7.2	2.1
Self-employment only	29.3	44.3	76.2	87.1
Out of the labour force	15.6	19.2	14.4	10.1

4. THE EFFECT OF THE PROGRAMME ON THE TREATED

Occupational choice

To evaluate the effect of the programme on the treated ultra poor, we estimate the following difference in difference specification:

$$(y_{i1} \quad y_{i0}) = \alpha + \beta Ti + \eta_d + \varepsilon_{id} \qquad (1)$$

Where $(y_{i1} - y_{i0})$ is the difference in outcome of interest for individual i between follow-up and baseline, Ti =1 if individual i lives in a treated community and 0 otherwise and η_d are sub-district fixed effects. We estimate (1) on the entire sample of selected ultra poor individuals, hence β identifies the intent to treat, which in this context coincides with the average treatment on the treated as all selected individuals accepted to participate.

The effect of the programme is thus identified by comparing changes in outcomes within the same individual before and after the programme in treatment communities to the same changes in control communities within the same sub-district. We thus control for all time-varying factors common to individuals in treatment and control communities, and for all time-invariant individual heterogeneity. While randomization ensures that individual heterogeneity is orthogonal to treatment in expectation; random differences in individual characteristics at baseline can nevertheless contaminate cross-sectional estimates while they are fully accounted for in specification (1).

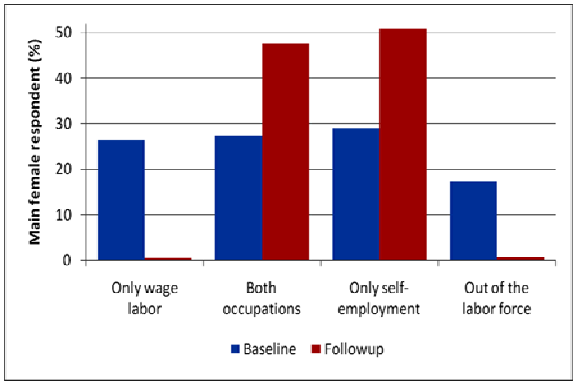
The coefficient β identifies the causal effect of the programme on the treated under the assumption that underlying trends in the out-comes of interest are the same for individuals in treatment and control communities within the same sub-district.

Standard errors are clustered at the community level throughout to account for the fact that outcomes are unlikely to be indepen-dently distributed within the same community. As discussed above, treatment is randomized at the level of the BRAC branch office to minimize the risk of contamination among communities served by the same office. Results are generally robust to clustering by BRAC branch office area but this is less appropriate than village level clustering because the geographical coverage of a single office reflects BRAC's capacity rather than any feature common to all communities in the area.

We begin by identifying the impact of the programme on occupational choices. Figure 2 presents a graphic illustration of the striking change in the occupational structure of the ultra poor in treated communities relative to their counterparts in control communities. At baseline, the distribution across activities was similar in treatment and control communities: 28% in wage-work only, 27% in both wage and self-employment, 29% in self-employment only and 17% out of the labour force. At follow-up, all the women in treated communities were in the labour force, and almost all of them were engaged in self-employment, whereas women in control communities experienced no noticeable change relative to baseline.

Figure 2. Occupational choice of main female respondent in targeted households

A. Targeted ultra poor in treatment communities



B. Targeted ultra poor in CONTROL communities

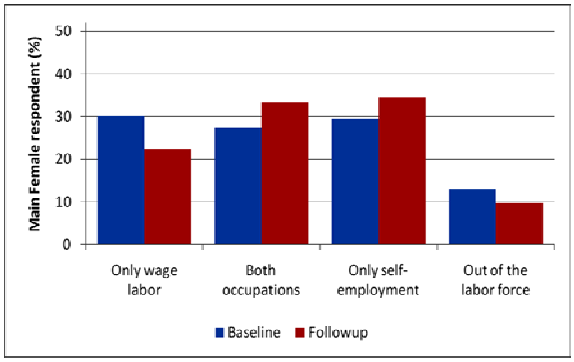


Table 2 estimates (1) on occupational choices and earnings. For all income generating activities we ask respondents to report the number of hours worked in a typical day and the number of days worked in a year. We multiply these and sum within categories (wage labour and self-employment) to obtain a measure of total hours devoted to each category during the last year. We use annual data since several of these activities, e.g. casual labour in agriculture exhibit strong seasonality. An individual is defined to participate in the labour force if she devotes positive time to at least one income generating activity. To measure total earnings we sum all earnings from all income generating activities the respondent engages in. Earnings are also measured at the yearly level.

Column (1) shows that the difference-in-difference estimate for time devoted to self-employment is 557 hours that is a 135% increase relative to baseline. Column (2) shows hours devoted to wage-employment fall by 80, which is 11% decrease relative to baseline. The increase in self-employment hours dominates the fall in labour hours and total hours worked increase by 487 as shown in Column (3). Column (4) shows that this is partly due to changes on the extensive margin: the labour force participation of targeted women increases as a result of the programme - treated women are 13 percentage points more likely to be working in an income-generating activity after the programme relative to the control group. Finally, column (5) shows that the effects on the occupational choices of treated women correspond to an increase in their overall earnings from income-generating activities by 1755 Tk. that is a 36% increase relative to baseline.[13]

Table 2. Average treatment effects on occupational choice and earnings of targeted poor women

	Hours spent in self-employment	Hours spent in wage-employment	Hours worked	Labour force participation	Total earnings
Treatment community (=1 if yes)	557.19*** (22.590)	-80.34*** (25.81)	476.8*** (32.31)	0.13*** (0.01)	1755.79*** (245.65)
Observations	6817	6817	6817	6817	6817
Adjusted R-squared	0.18	0.03	0.08	0.04	0.04

Difference in difference estimates. *** (**) (*) indicates the hypothesis that the coefficient equal zero can be rejected at the 1% (5%) (10%) level. Standard errors are clustered at the community level. All regressions include sub-district fixed effects. All variables are measured on an annual basis. Total earnings equals earnings from all income generating activities the woman is involved in.

[13] A possible cause for concern is that the estimated treatment effect on the income of the treated women overstates the programme effect on overall household income to the extent that other household members devote time to the new income generating activities at the expense of other income generating activities. To shed light on this issue we estimate the effect of the programme on other household member's time use and income. We find that on average, the total time devoted to self-employment by other household members increases by 288 hours (144 per capita in the average 3 person household), but this is not accompanied by a reduction in labour hours or labour earnings.

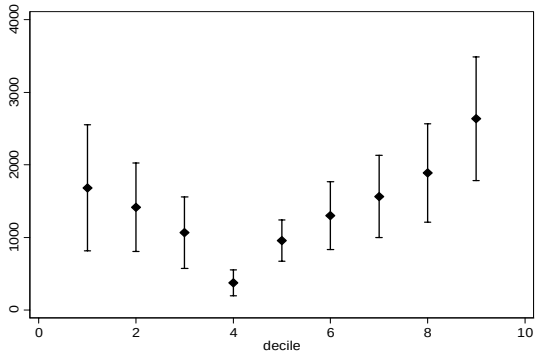
Next we allow the treatment to have heterogeneous effects at different points of the distribution of earnings and hours worked. Figure 3 reports quartile treatment effects on earnings and hours worked using the estimator suggested by Firpo (2007) at each decile and 95% confidence bands using bootstrapped standard errors clustered at the community level. The findings suggest that the effect of the programme on earnings is indeed heterogeneous but always positive and significantly different from zero at all deciles. The effect is larger at the bottom and top deciles, and smallest at the fourth. The differences are sizeable: the largest effect is Tk. 2635, the smallest Tk. 374; ignoring the extremes, the ratio between the 8th decile (the second largest) and the median (the second smallest) is 2. If there is no churning in the distribution, the findings suggest that the programme has the strongest impact on individuals who would have experienced the slowest and the fastest income growth. This is possibly a reflection of the fact that the different components, asset transfer and training, might have different impacts according to individual initial conditions, an issue we return to in the next subsection.

Two further points are of note. First, the fact that the programme effect on earnings is largest at the top of the distribution resonates with the findings of Fafchamps *et al.* (2011), who find that asset transfers to female-owned enterprises in Ghana increase profits only for individuals whose baseline profits were above the median. However, in contrast to their findings, the programme also has a strong impact on individuals at the bottom of the distribution. A key difference between their programme and the one we evaluate here is that ours has a sizeable training component, which might be necessary to lift the earnings of the very poorest individuals. Second, that the treatment effect is positive at all deciles rules out the possibility that either because of endowment effects or because of pressure by BRAC, treated individuals kept the assets even if this resulted in a loss of earnings.

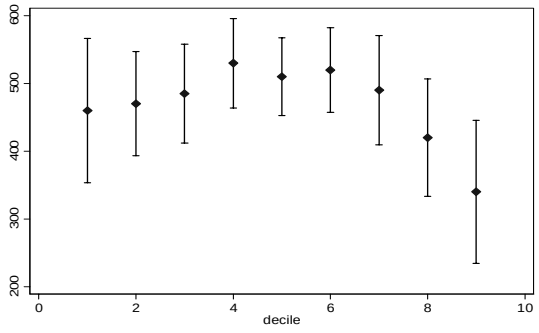
The second panel of figure 3 reports quartile treatment effects on hours worked, which exhibit much less heterogeneity, as all but the top decile are close to the average treatment effect (487). This is consistent with the fact that all treated individuals received a similar set of animals that require a similar level of care. Combined with the earlier results on earnings, this suggests the programme has heterogeneous effects on earnings per hour, a measure of productivity.

Figure 3. Quartile treatment effects on targeted women

Panel A. Total earnings



Panel B. Hours worked



Taken together the results on occupational choice indicate that the effect of the training component and/or the effect of relaxing binding asset constraints prevail over the wealth effect of the asset transfer, as all treated women work more rather than less. In line with this, we find that the ultra poor retained the assets instead of liquidating them. Table 3 shows that the average treated household has more livestock, in particular they have one more cow, 0.75 more goat and 2.6 more poultry on average. Total livestock value has increased by 11,306 Tk. which corresponds to an additional 19% increase over and above the value of average asset transferred by the programme (Tk. 9,500). The difference is significant at conventional levels (test of equality of the coefficient to 9,500 is rejected at

99% confidence level).[14] This additional increase might be due to the production of springs, animals growing in size or the purchase of additional assets, an issue we will discuss further in the concluding section.

Welfare

Before delving into general equilibrium and spillover effects, we document the effect of the programme on the welfare of the treated. Table 4 provides evidence that the change in occupational structure and resulting increase in income correspond to significant welfare improvements for the ultra poor households. We begin by analyzing food security, which is a key welfare target for the programme. Households are defined to have food security if members can afford two meals per day on most days. Table 4 shows that this measure of food security increases by 0.15 points as a result of the programme, corresponding to a 42% increase relative to its baseline level (0.41). Per-capita food expenditure increased by Tk. 604 (7% relative to its baseline level) and the price per calorie increased by 3%, suggesting that food quality improved as a result of the programme. Annual per capita expenditure on non-food items increased by Tk. 231, which is 22% relative to baseline. Finally, total annual per capita expenditure increased by Tk. 806 (8% relative to baseline).

Table 3. Average treatment effect on livestock assets of targeted poor women

	Number of cows	Number of goats	Number of poultry	Livestock value
Treatment community	1.22***	0.75***	2.57***	11306.49***
(=1 if yes)	(0.02)	(0.04)	(0.16)	(230.29)
Observations	6817	6817	6817	6817
Adjusted R-squared	0.47	0.12	0.08	0.31

Difference in difference estimates. *** (**) (*) indicates the hypothesis that the coefficient equal zero can be rejected at the 1% (5%) (10%) level. Standard errors are clustered at the community level. All regressions include sub-district fixed effects.

Table 4. Average treatment effect on the welfare of targeted women's households

	Food security	PCE food	Price per calorie	PCE non-food	Total PCE
Treatment community	0.15***	603.81***	0.03**	231.49***	805.97***
(=1 if yes)	(0.03)	(174.58)	(0.01)	(61.84)	(197.18)
Observations	6817	6303	6294	6500	6294
Adjusted R-squared	0.137	0.030	0.033	0.014	0.029

Difference in difference estimates. *** (**) (*) indicates the hypothesis that the coefficient equal zero can be rejected at the 1% (5%) (10%) level. Standard errors are clustered at the community level. All regressions include sub-district fixed effects. PCE stands for per capita expenditure. All variables are measured at the household level. Food security equals one if the household could afford two meals per day most of the time over the previous year, 0 otherwise. Per capita food expenditure is imputed at the yearly level on the basis of reported food expenditure in the last three days. Price per calorie is computed as the ratio of total food expenditure over total calories purchased. Per capita non-food expenditure includes all expenditures other than food over the previous year.

[14] We cannot say whether these are exactly the same animals they were given at the beginning of the programme or whether they have been replaced with others. What is key for the interpretation of the results is that two years later the treated poor hold livestock assets of higher value than those they received which rules out the possibility that they liquidated them to increase short-run consumption.

5. GENERAL EQUILIBRIUM EFFECTS AND SPILLOVERS

General equilibrium effects

The programme affects the hours that the treated poor devote to wage labour and self-employment, and brings new livestock assets in these communities. The programme thus generates an exogenous shock to the supply of unskilled labour, self-employment output (e.g. milk, eggs) and the stock of livestock assets in the community. These can have general equilibrium effects through changes in wages, output prices and livestock prices, which affect both treated and non-treated households in the community.

The strength of these effects varies depending on the magnitude of the treatment compared to the size of the local economy and on the level of integration between local and regional markets. The programme directly affects the labour supply of 45% of potential unskilled female workers on average (as middle and upper class women do not engage in unskilled wage labour) and local labour markets for unskilled female labour are likely to be isolated as poor women mostly work as domestic servants or casual agricultural labourers in the local community. In comparison, the programme affects the hours devoted to self-employment by 10% of the local women engaged in this activity and local product markets (e.g. milk) are well integrated with regional markets.

Table 5 explores the general equilibrium effects of the programme. On average we survey 18 households in each community, which represent about 20% of a community of average size. We are thus able to compute prices at the community level by taking means from our individual survey data. We calculate average unskilled wages, the average prices of assets and programme-relevant products (such as milk and eggs). Of these, the wage figures are likely to be less noisy as we survey all the households (STUPs and other poor) who engage in unskilled labour.

We first evaluate the effects of the programme on the wages of women and men in unskilled occupations. We find that the unskilled wage for women increases by 10% in treated communities relative to control communities and this effect is estimated precisely at conventional levels. In contrast, the increase in men's wages is small (2%) and not significantly different from zero. This is consistent with the fact that the programme targets women, and that we find a significant drop in the total labour supply of women but not of men at the community level. The fact that a drop in the labour supply of women does not affect men's wages indicates that the labour market for unskilled labour is segmented by gender. This is in line with findings of Foster and Rosenzweig (1996) in rural India, where they show that male and female labourers are specialize in different agricultural tasks, according to comparative advantage.

Columns (3) to (5) evaluate the effect of the programme on the prices of livestock. To do so, we calculate the mean resale unit values of cows, goats and poultry at the community level. We find that the average value of one chicken falls by 9% in treatment communities relative to control communities, while the average value of cows and goats are not significantly affected. This could be due to the fact that the gestation period is much shorter for chicken, and hence several cycles of offspring could have been sold in local markets by the time of the follow-up survey.

Columns (6) and (7) evaluate the effect of the programme on the prices of the main livestock produce-milk and eggs. While the difference-in-difference estimates are negative for both goods neither is precisely estimated at conventional levels. This is consistent with the fact that the total size of the asset transfer, and hence the additional output generated by the programme, is small compared to existing stocks. It might also reflect the fact that the local product markets are well-integrated with markets outside the community.

Spillover effects on other poor

The changes in wages and prices documented above might affect the occupational choices of other households in the community. To shed light on this, Table 6 reports the estimate of equation (1) for the occupational choice and labour supply of the main female respondent in other poor households. The coefficient estimate corresponds to the difference-in-difference estimate for the change in the outcomes of interests among other poor households in treated communities, relative to the change of other poor households in control communities. The findings indicate that the average non-treated poor woman devotes 51 more hours to wage employment, a 12% increase relative to baseline and 30 more hours to self-employment, a 6% increase, but only the former is significantly different from zero at conventional levels. The table also shows that other poor women are 4 percentage points more likely to be participating in the labour market (relative to a baseline of 81 pp) and their total earnings increase by Tk. 479, a 11% increase relative to baseline. Overall, the findings are consistent with the earlier findings that unskilled wages increase and at least some asset prices (goats) decrease in treated communities.

Finally, Table A2 in the Data Appendix presents results on the spillover effects of the programme on male heads from other poor households. In line with the earlier finding that male wages are not affected by the programme, we find no changes in their labour force participation and occupational choice.

Table 5. General equilibrium effects on wages and prices at the community level

	Log (wages)		Asset prices			Product prices	
	Women	Men	Cows	Goats	Poultry	Milk	Eggs
Treatment community (=1 if yes)	0.10*** (0.03)	0.01 (0.02)	0.10 (0.07)	0.04 (0.09)	-0.09*** (0.02)	-0.02 (0.05)	-0.02 (0.03)
Observations	1288	1380	1402	1291	1406	1224	1238
Adjusted R-squared	0.08	0.05	0.05	0.05	0.16	0.08	0.10

Difference in difference estimates. *** (**) (*) indicates the hypothesis that the coefficient equal zero can be rejected at the 1% (5%) (10%) level. Standard errors are clustered at the community level. All regressions include sub-district fixed effects. All variables are computed as community level averages. The number of observations differs across columns because of missing values. The return to self-employment is computed as earnings from self-employment over hours devoted to self-employment.

Table 6. Average treatment effects on occupational choice and earnings of other poor women

	Hours spent in self-employment	Hours spent in wage-employment	Labour force participation	Total earnings
Treatment community (=1 if yes)	30.32 (20.99)	51.36*** (18.37)	0.04*** (0.01)	478.68** (204.36)
Observations	8576	8576	8576	8576
Adjusted R-squared	0.03	0.03	0.03	0.03

Difference in difference estimates. *** (**) (*) indicates the hypothesis that the coefficient equal zero can be rejected at the 1% (5%) (10%) level. Standard errors are clustered at the community level. All regressions include sub-district fixed effects. All variables are measured on an annual basis. Total earnings equals earnings from all income generating activities the woman is involved in.

6. CONCLUSION

The question of what keeps people mired in poverty is one of the oldest in economics. What we do know is that the world's poor typically lack both capital and skills and different strands of the academic and policy literatures have emphasized inadequate capital or inadequate skills as the root cause of poverty.

A fundamental question then is whether transfers of capital and skills aimed at enabling the poor to operate their own businesses will allow them to permanently exit poverty. This is akin to asking whether one can create successful entrepreneurs -who acquire skills and make productive use of capital -out of poor people who started out without either. Key to this question is whether these transfers allow the poor to alter their occupational and production choices so that they come to resemble non-poor people in their communities, as opposed to merely increasing consumption in the short run. And the question becomes more salient as the world is littered with numerous examples of anti-poverty programmes which, despite their best intentions, failed to have any appreciable impact on their intended beneficiaries.

We provide evidence on the matter from an innovative entrepreneurship programme in Bangladesh that targets the poorest women in rural communities and transfers them assets and skills to run their own businesses. Our findings are striking. Two years after the programme, treated women have higher labour force participation, and they allocate more time to self-employment and less to wage-labour. This change in their labour supply and occupational choice corresponds to significant welfare improvements for the treated poor households. More specifically, they have higher income, higher per-capita expenditure, and improved food security. The programme has significant general equilibrium effects on the female labour market in the treated communities -the wage rate for unskilled female labour is higher. Correspondingly, there are spillover effects on the occupational choices of non-treated poor women: they increase their labour-force participation, spending more time in wage-labour and receive higher earnings.

Our results have important policy implications. First, our results imply that constraints on entering into self-employment are driving occupational choices of poor women in rural Bangladesh. This suggests that programmes – such as the ultra poor programme – that improve self-employment opportunities of very poor households can lead to significant welfare gains. Second, we contribute to a growing body of literature those finds large spillover effects of large-scale welfare programmes -such as conditional cash transfer programmes or the ultra poor programme. Moreover, we show that these effects are likely to be heterogeneous, depending on the underlying market structures in this case, due to the presence of highly segmented labour markets along gender dimensions, we observe general equilibrium and spillover effects on the female, but not on the male labour market. It is important to take into account these spillover effects while analyzing the cost-effectiveness of welfare programmes.

A key question is whether the programme benefits exceed those that would accrue from an unconditional cash transfer equal in cost to the programme. The programme costs Tk. 20,700 (roughly USD 300) per household per year. We find that as a result of the programme, the yearly income of the treated individuals increases on average by TK. 1,755, which corresponds approximately to 10% of the initial cost of the treatment.[15] Comparing this to a cash transfer requires assumption on the counterfactual, namely on how the treated would have spent the

[15] The long-run benefit might be higher as the animals produce offspring.

cash. The return might have been higher if treated individuals would have been able to invest the cash transfer into an enterprise for which they were better suited or, at the other extreme, zero if the cash transfer were consumed immediately either by the recipient or members of their social network. Comparing cash to in-kind transfers, Fafchamps *et al.* (2011) find that the latter are more effective at increasing profits as self-control issues prevent cash transfers to be invested in small businesses.

One option that is available to all, self-control issues aside, is to deposit the cash transfer in a savings account. At the going interest rates (6%), this would have yielded Tk. 1242 per year, which is significantly different from the average treatment effect on earnings at the 3% level.[16] It is important to note that, however, because the effect of the programme on earnings is heterogeneous, several individuals -e.g. those solely engaged in wage labour at baseline-would have been better off with the cash transfer. Our quartile treatment effects estimates suggest that the programme yields higher return than a cash transfer at the top and bottom of the income distribution. The median treated individual would have been better off with a cash transfer. While it does not necessarily increase inequality, the programme has redistributive effects that must be taken into account in a cost-benefit analysis. General equilibrium effect of the programme on wages redistribute resources from employers to other poor women, whose annual earnings increase by 479 Tks. Whether this is accounted for as a net benefit depends on the relative weight of employers and employees in the welfare function.

We are in the process of gathering 2011 data on this programme. This will allow us to look at the longer term effects of the programme and in particular at whether the treated ultra poor are on a stable path out of poverty. One gauge of this will be whether they have diversified their business activities outside of those for which they received assets and training from the BRAC ultra poor programme. Table 7 shows some preliminarily evidence on this issue. In it we see evidence that treated ultra poor households have started to invest in other, non-programme productive assets. The average treated poor household is 2 percentage points more likely to own land (compared to 6% at baseline) and 8 percentage points more likely to rent in land (compared to 6% at baseline). The average targeted ultra poor household is also significantly more likely to own a shop. These are activities which the middle classes in these rural communities engage in. This is therefore preliminary evidence that ultra poor in these communities are graduating into higher return economic activities outside of those which they receive assistance for within the BRAC programme. The fact that this is happening just two years after the treatment suggests that the treated ultra poor have taken a significant step up the ladder out of poverty.

Table 7. Average treatment effects on other income generating activities of targeted women

	Owns land (=1 if yes)	Rents land (=1 if yes)	Number of shops
Treatment community (=1 if yes)	0.02***	0.08***	0.01*
	(0.006)	(0.01)	(0.005)
Observations	6817	6817	6817
Adjusted R-squared	0.01	0.04	0.00

Difference in difference estimates. *** (**) (*) indicates the hypothesis that the coefficient equal zero can be rejected at the 1% (5%) (10%) level. Standard errors are clustered at the community level. All regressions include sub-district fixed effects

[16] We implicitly assume that livestock assets and cash are equally long-lived. While this is not literally true, livestock produces offspring, thus although the life of a given animal is finite, reproduction ensures a replacement.

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ANNEXURE

Table A1. Normalised differences

Panel A: Individual level variables												
	Targeted poor			Other poor			Middle class			Upper class		
Household level variables	Treat	Control	Difference	Treat	Control	Difference	Treat	Control	Difference	Treat	Control	Difference
Male household head	0.63	0.52	0.15	0.77	0.80	-0.05	0.94	0.94	0.00	0.95	0.95	-0.01
Household size	3.38	3.11	0.11	3.67	3.73	-0.02	4.46	4.40	0.03	4.97	5.08	-0.04
Main female respondent literate	0.08	0.07	0.03	0.15	0.17	-0.05	0.26	0.28	-0.02	0.50	0.54	-0.06
Main female respondent's BMI	18.27	18.47	-0.06	18.77	18.95	-0.05	19.21	19.44	-0.07	20.20	20.33	-0.03
Food Security	0.45	0.36	0.13	0.58	0.49	0.12	0.82	0.79	0.06	0.97	0.96	0.01
Total per capita expenditure	9,938.60	9,628.23	0.05	10,201.34	10,146.71	0.01	12,122.22	12,331.16	-0.02	13,625.08	13,246.29	0.04
Per capita non-food expenditure	1,024.48	1,034.28	0.00	1,309.93	1,304.15	0.00	2,133.50	2,368.00	-0.03	6,330.70	8,723.13	-0.05
Per capita food expenditure	8,909.84	8,602.29	0.06	8,923.13	8,790.66	0.02	9,989.38	9,962.37	0.00	20,018.32	21,895.70	-0.04
Price per calorie	0.91	0.89	0.06	0.92	0.91	0.01	0.99	0.99	0.00	1.21	1.21	-0.01
Wealth	4,907.04	6,585.65	-0.04	13,564.29	14,369.12	-0.01	144,761.50	162,254.70	-0.04	827,596.30	878,337.30	-0.04
Livestock Value	882.40	853.66	0.01	2,562.86	2,544.91	0.00	12,724.35	13,040.51	-0.01	30,874.50	31,719.36	-0.02
Number of cows	0.08	0.06	0.02	0.26	0.24	0.02	1.13	1.18	-0.02	2.65	2.78	-0.03
Number of goats	0.15	0.18	-0.03	0.23	0.28	-0.04	0.71	0.75	-0.02	1.32	1.15	0.06
Number of poultry	1.74	1.75	0.00	2.35	2.74	-0.03	5.64	5.16	0.02	11.83	9.32	0.06
Value of durables	419.09	442.68	-0.03	668.54	752.33	-0.06	2,143.01	2,388.12	-0.05	7,578.33	8,135.49	-0.04
Value of savings	113.60	180.84	-0.06	340.35	433.79	-0.05	1,353.37	1,891.77	-0.04	8,677.25	9,894.96	-0.03
Business activities of the main female respondent												
Hours spent in IGA	1,065.94	1,231.97	-0.13	897.94	973.96	-0.07	822.36	799.99	0.02	814.37	809.95	0.01
Hours spent in self-employment	405.97	423.64	-0.02	483.66	519.96	-0.04	711.27	689.25	0.03	773.64	765.53	0.01
Hours spent in wage employment	659.97	808.33	-0.12	414.28	454.00	-0.04	111.08	110.74	0.00	40.72	44.42	-0.01
Wage employment only	0.26	0.31	-0.07	0.15	0.14	0.03	0.03	0.03	0.00	0.01	0.01	-0.02
Both wage and self employment	0.27	0.27	0.00	0.21	0.23	-0.03	0.08	0.07	0.03	0.02	0.02	-0.03
Self employment only	0.29	0.29	0.00	0.42	0.46	-0.05	0.75	0.78	-0.06	0.85	0.89	-0.10
Out of the labour force	0.18	0.13	0.09	0.21	0.17	0.07	0.15	0.13	0.05	0.13	0.07	0.14
Labour force participation	0.82	0.87	-0.09	0.79	0.83	-0.07	0.85	0.87	-0.05	0.87	0.93	-0.14
Total income of the main female	4,607.81	5,533.27	-0.12	3,890.46	4,441.85	-0.06	4,453.39	5,172.37	-0.04	8,398.25	10,930.32	-0.07
Business activities of the male household head												
Hours spent in self-employment	527.65	549.83	-0.02	699.51	740.00	-0.03	1,206.61	1,232.83	-0.02	1,584.46	1,461.99	0.07
Hours spent in wage employment	1,081.47	1,096.08	-0.01	974.16	1,048.62	-0.05	643.76	608.85	0.03	230.20	256.78	-0.03
Labour force participation	0.84	0.86	-0.04	0.81	0.84	-0.06	0.81	0.81	-0.01	0.83	0.80	0.06
Total income of the male HH head	11,472.87	11,002.85	0.04	13,844.45	15,332.41	-0.08	22,172.42	25,220.34	-0.08	54,042.31	61,933.85	-0.08

Panel B. Community level variables

	Treat	Control	Difference
Price of milk	2.32	2.80	-0.07
Price of egg	11.70	11.55	0.01
Log female wage	1.66	1.67	-0.01
Log male wage	2.25	2.26	-0.05
Cow value	9,507.08	9,627.50	-0.04
Goat value	941.13	1,029.01	-0.20
Poultry value	90.43	89.59	0.04
Women's return to self-employment	1.04	1.06	-0.02
Men's return to self-employment	2.56	2.69	-0.16
Total livestock value	138,396.80	141,375.70	-0.02
Total number of cows	12.31	12.61	-0.03
Total number of poultry	8.10	8.31	-0.02
Total number of goats	72.66	67.30	0.05

Table A2. Average treatment effects on occupational choice and earnings of other poor men

	Hours spent in self-employment	Hours spent in wage-employment	Labour force participation	Total income
Treatment community (=1 if yes)	-33.98	-10.48	-0.02	-431.862
	(27.86)	(28.81)	(0.013)	(437.06)
Observations	8576	8576	8576	8576
Adjusted R-squared	0.02	0.04	0.04	0.06

Difference in difference estimates. *** (**) (*) indicates the hypothesis that the coefficient equal zero can be rejected at the 1% (5%) (10%) level. Standard errors are clustered at the community level. All regressions include sub-district fixed effects. All variables are measured on an annual basis. Total earnings equals earnings from all income generating activities the man is involved in.