

Estimating lending impacts using original 1600 households

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I Summary

I.1 Definitions

Traditional A cash loan of Tk. 560 with one year maturity.

Large A cash loan of Tk. 16800 with three year maturity.

Large Grace A cash loan of Tk. 16800 with a one year grace period and three year maturity.

Cow An in-kind loan of a cow worth Tk. 16800 with a one year grace period and three year maturity.


LargeSize An indicator variable takes the value of 1 if the arm is Large, Large Grace, or Cow.

WithGrace An indicator variable takes the value of 1 if the arm is Large Grace or Cow.

InKind Same as Cow.

When one uses covariates Large, Large Grace, Cow in estimation, their estimates represent each arm's characteristics relative to Traditional. When one uses covariates LargeSize, WithGrace, InKind, their estimates represent their labeled names.

I.2 Inference

- First-difference estimators are used. This can be seen as an extension of DID to multi-periods (although historically the latter precedes the former). FD is used also for a binary indicator such as schooling.
- All the standard errors are clustered at the group (char) level.
- To aid the understanding if the data is more suited to the assumption of first-difference rather than fixed-effects, I used a check suggested by Wooldridge 10.71. It is an AR(1) regression of FD residuals. Most of results show low autocorrelations which is consistent with the assumption of FD estimator.
- I rely more on the formulation using LargeSize, WithGrace, InKind than Large, LargeGrace, Cow due to an ease in interpretation. Numerically, both are equivalent.
- A caution on reading the estimates: **All are estimates on increments**  LargeSize has an estimate of 10, then it is a 10 unit larger change than the baseline (traditional). If the interaction of LargeSize with rd 2-3 is 10, then it is a 10 unit larger change than rd 2-3 change of baseline. If the estimated value of intercept is 10 and rd 2-3 is 10, then rd 2-3 change is 20 for baseline, 30 for LargeSize.

I.3 Findings

Overall, the intervention reveals that larger sized loans accerelate the asset growth without adversely affecting the repayments. This applies to both the ultra poor and the moderately poor. A loan amount seems to have convex returns at a low level of assets. Higher growths come at a cost of slower school progression of older girls and smaller increases in consumption for arms with a grace period, so the welfare implication is mixed. In addition, loan repayment was poor for unknown reasons so, in the hindsight, the risks required a higher margin for this type of lending to the target population.

Net saving and repayments Sample uses all administrative records available. Smaller net saving increments for traditional arm. Period of rd 2-3 saw a decline in net saving, even further for LargeGrace, but remain in positive values (TABLE 4). TABLE 5 reveals LargeSize have larger net saving changes while both WithGrace and NonCash have smaller changes. Repayment changes are larger with LargeSize and WithGrace but smaller with NonCash in (4). Repayment is positively autocorrelated and is negatively correlated with previous net saving. Repayment is also positively correlated with other member's previous repayment, which can be explained by common shocks and/or strategic cooperative behaviours. The ultra poor repaid just as much as the moderately poor (TABLE 6). This is evidence against the popular belief that the ultra poor are riskier.

Schooling Enrollment changes are larger for primary school girls in Large and Cow arms for primary but smaller for junior in rd 1 vs rd 4 comparisons (TABLE 10). When seen by attributes in TABLE 11, LargeSize shows smaller changes especially for primary school boys. Primary school girls in LargeSize and NonCash show larger changes, while junior and high school girls in LargeSize show smaller changes than boys. This indicates that large sized arms have detrimental impacts on older girls' schooling but promotional impacts on primary school aged girls. No decline in enrollment changes when repaying for the arms of WithGrace, despite the larger installments.

Assets Household assets increased in all arms. Initially increased then decreased. There might have been liquidation of assets to repay the loans. Productive assets declined consecutively. Flood in rd 1 makes the increase in household assets smaller. Productive assets see a major decline among Large during rd 3-4 period (TABLE 12). Comparison by attributes (TABLE 13) or of rd 2 and rd 4 gives the same picture (TABLE 15). Comparison against the loan non-recipients shows that they also experience a similar, increase-increase-decrease pattern. This indicates that the pattern observed among the loan recipients may be a systemic pattern of the area, not necessarily reflecting the repayment burden (TABLE 16).

Livestock Larger increases in holding values in rd 1-2, smaller increases in rd 2-3, no change in rd 3-4. Previous cow owners show a smaller increase in rd 1-2 while not rd 3-4 or rd 2-3 in the Cow arm (TABLE 17). Figures show that cow ownership increased for all arms but the traditional arm. TABLE 18 shows baseline trend is a large increase in rd 1-2, a small increase in rd 2-3, a small decline in rd 3-4, while LargeSize sees an even larger increase in rd 1-2 and similar trend as baseline afterwards. This shows that member who received a larger sized disbursement could hold on to its level of livestock accumulation. TABLE 19 shows, albeit at p values around 10%, the ultra poor has a larger increase relative to the moderately poor, which is another manifestation against the popular notion that the ultra poor are riskier.

Total asset values Similar results as assets.

Labour incomes Small sample. Increased during rd 2-3 in all arms (TABLE 24).

Consumption Increased during rd 2-3 in all arms, a decrease in rd 3-4 (TABLE 27). Another notable result is that NonCash reduced the consumption in rd 3-4 even further than the baseline loan (TABLE 28).

IGAs Multiple IGAs for Traditional arm. Everyone else chose to invest in cows, suggesting entrepreneurship does not seem to matter in the uptake of loans. It is consistent with the presence of a poverty trap induced by a liquidity constraint and convexity in livestock production technology.

One sees changes in investment choices when one compares traditional and all other arms. However, consumption does not seem to differ. Repayments and asset holding are greater in all other arms. These are consistent with households enforcing the repayment disciplines and reinvesting the proceeds rather than increasing consumption.