50 YEARS OF IFPRI
LOOKING TOWARD 2050

CGIAR

Livestock Financing and Risk-sharing Contracts

Addressing Financial Exclusion through Contract Innovation

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A credit access puzzle

24%

of LMIC adults borrowed formally in the past year

Findex 2025

27%

of eligible households in India took up microcredit when actively offered

Banerjee, Karlan & Zinman 2015

20–30%

6-month returns to cattle fattening in our study setting

BAU, 2022

Why don't people borrow when profitable opportunities exist?



Setting: Rural Northwest Bangladesh

Four districts: Joypurhat, Bogura, Gaibandha, Rangpur.

7.6%

of Bangladesh's agricultural value-added comes from livestock

90%

of cattle are smallholder-owned yet credit penetration is <30%

<5%

of agricultural lending goes to livestock investment

Sources: Department of Livestock Services (2022); Microcredit Regulatory Authority (2023); Bangladesh Bureau of Statistics (2022).

Why is credit not reaching this sector?

1

Loans not well designed for farmers' needs

Bank loans are not widely available. Microfinance fills a gap, but weekly repayments and joint liability fit poorly with the production cycle.

2

Access to market and logistics

Farmers may not receive a fair price for their final product in the local market. Quality inputs are expensive and not easily accessible.

3

Demand vs. supply of credit

Risk-averse farmers may not take up credit even when it is available, because of uncertainty over returns.



Two contracts designed to mitigate these issues

CONVENTIONAL LOAN

Principal Equal to cattle purchase price (avg 83,000 BDT)

WeGro buys cattle Farmer provides labor, shelter, feed, insurance co-pay

Interest

10% total (flat, over fattening cycle)

Repayment timing

At cattle sale — no earlier payments

Risk allocation

Farmer owes full amount regardless of outcome, potential for higher payouts

PROFIT-SHARING

Principal Equal to cattle purchase price (avg 83,000 BDT)

WeGro buys cattle Farmer provides labor, shelter, feed, insurance co-pay

Profit split (sales – cost)

2/3 farmer · 1/3 WeGro

Repayment timing

At cattle sale — no earlier payments

Risk allocation

Farmer owes nothing if no profit, risk is spread

IDENTICAL ACROSS ARMS

Repayment timing (only at sale) · Insurance requirements · WeGro monitoring, vet access, cattle selection support

Experimental design

105 villages

15 blocks × 7 villages

PROFIT-SHARING	CONTROL	CONVENTIONAL LOAN
45 villages	**45 villages**	**15 villages**
3 villages/block	*3 villages/block*	*1 village/block*
n = 652	n = 653	n = 212

WITHIN TREATMENT VILLAGES · SECOND RANDOMIZATION

50% of households assigned the offer to the **male household head** · **50%** assigned to the **female household head**

Contract holder owns the bank account for profit disbursement and serves as WeGro's primary contact.

What we will learn

CONTROL VS. BOTH FINANCING GROUPS

Tests the impact of offering a contract with sector-appropriate timing, support with market access, and technical assistance.

LOAN VS. PROFIT-SHARING

Tests the impact of reducing the risk borne by the farmer, which may be especially relevant for risk-averse farmers.

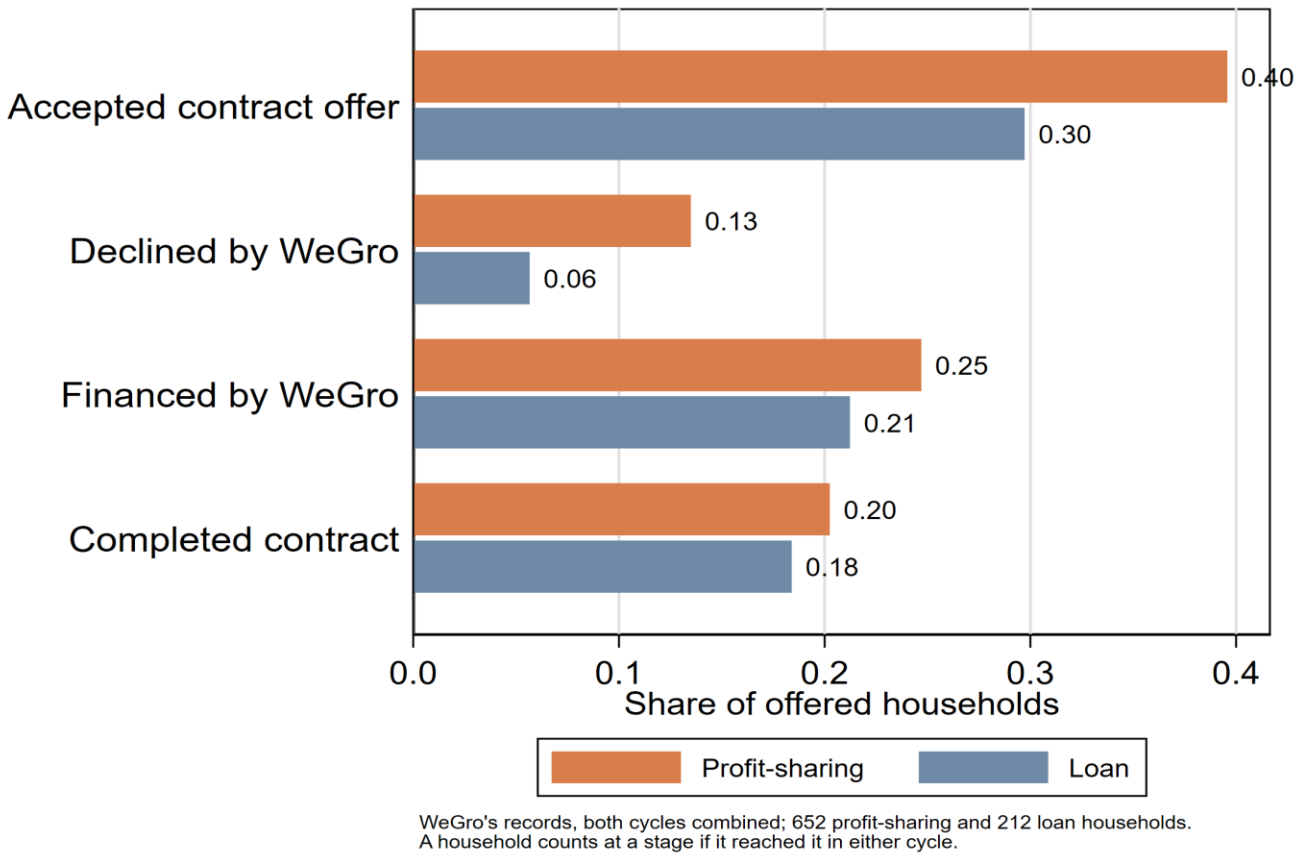
63% of men

66% of women

are classified as risk averse in our study



Take-up of loan product

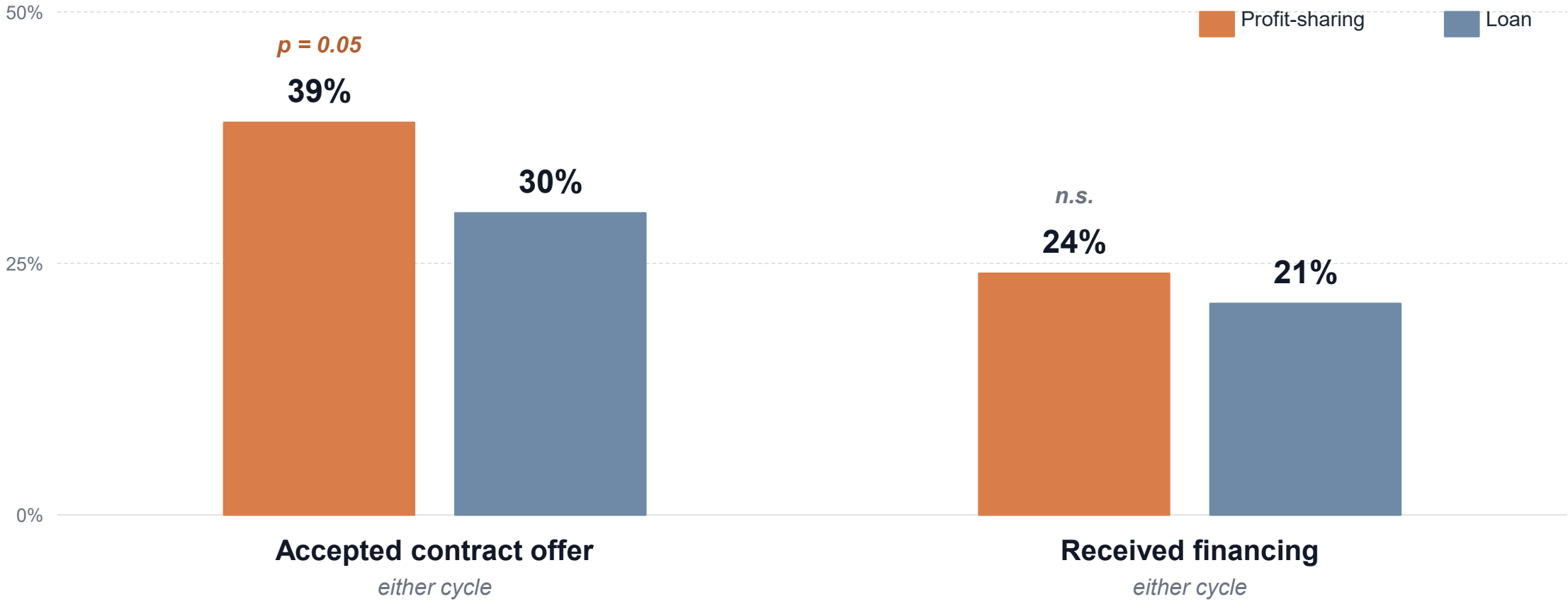


WeGro's records, both cycles combined; 652 profit-sharing and 212 loan households.
A household counts at a stage if it reached it in either cycle.

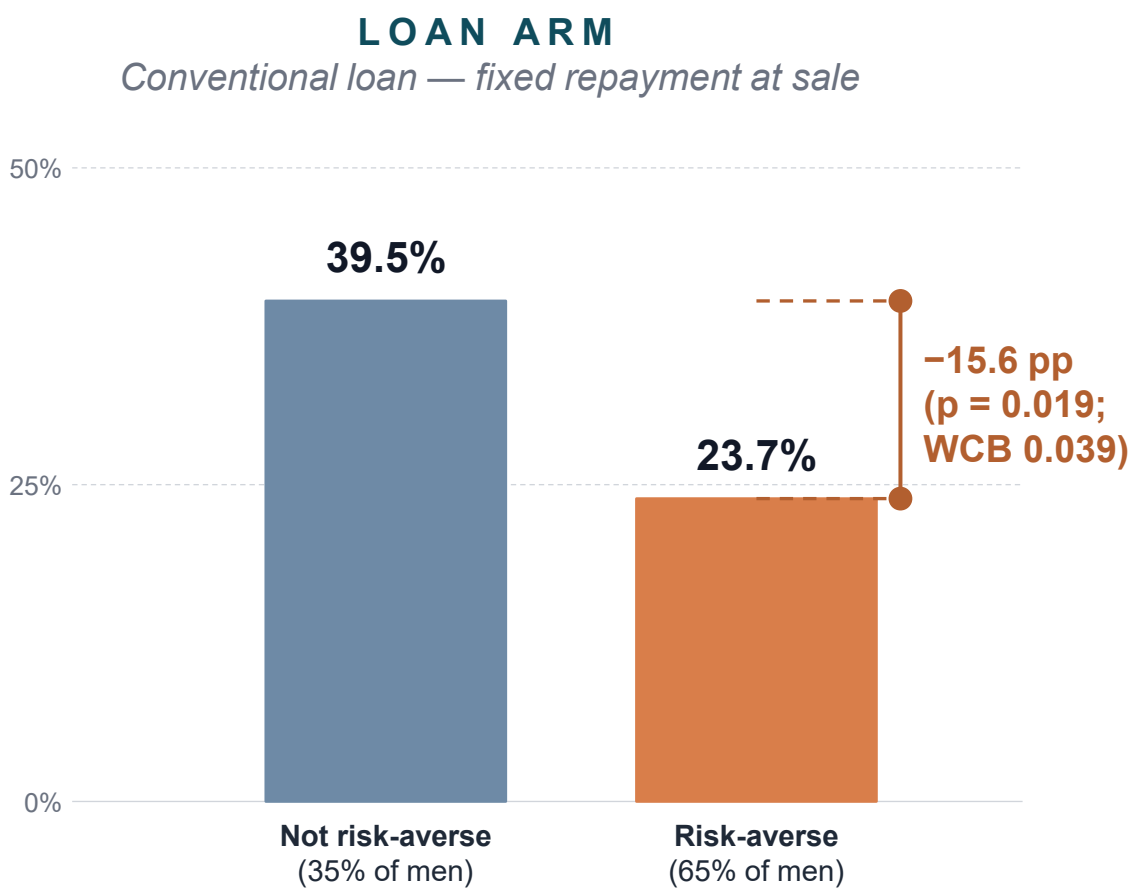


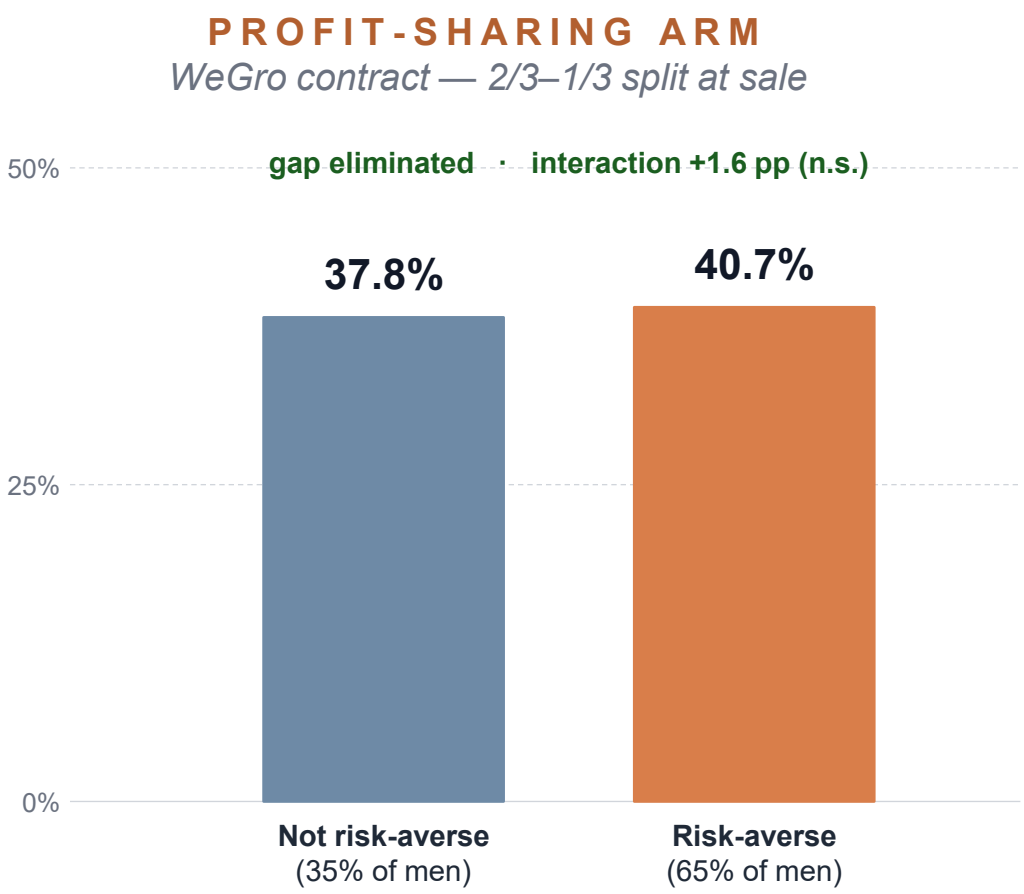
Of 321 accepters: 64% financed, 26% declined by WeGro, 10% accepted only in cycle 2 and never served · 256 cattle reached 206 of 864 households.

Modest acceptance gap between credit products



Acceptance by risk type

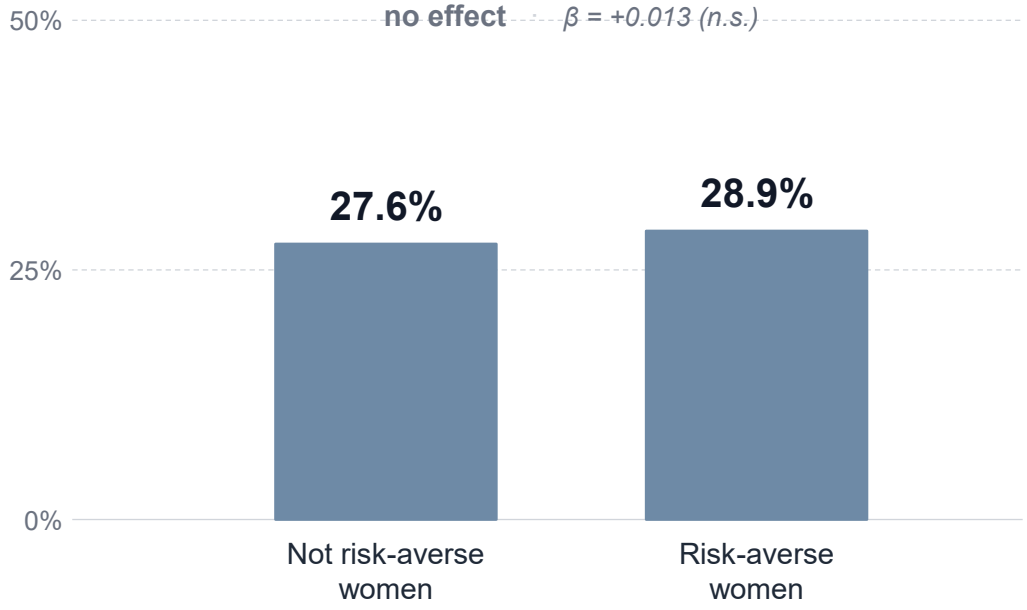




Men decide — even when women are targeted

FEMALE RISK AVERSION

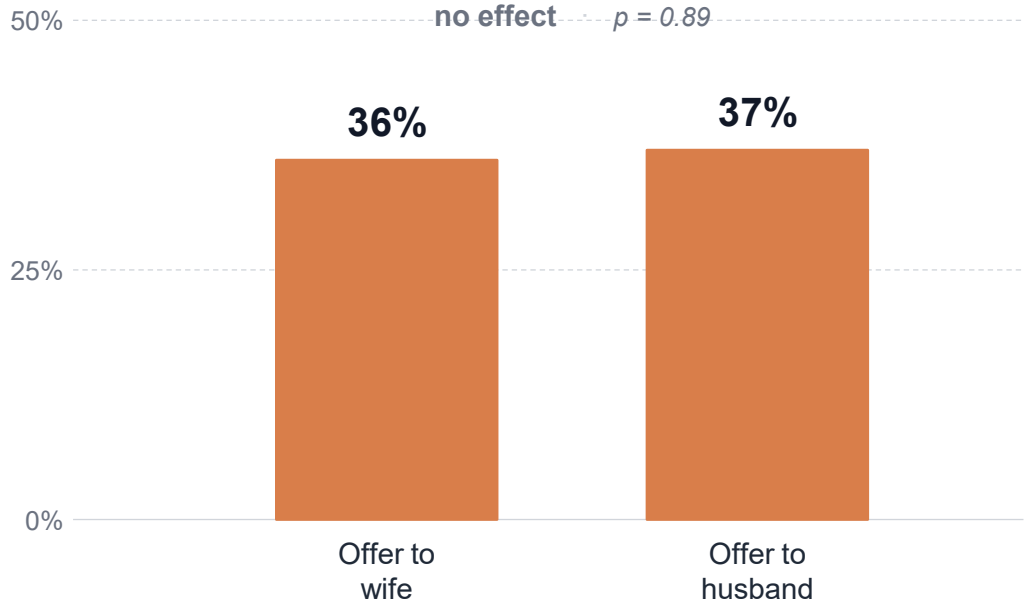
Does women's risk aversion predict uptake?



Share accepting the contract offer (loan arm)

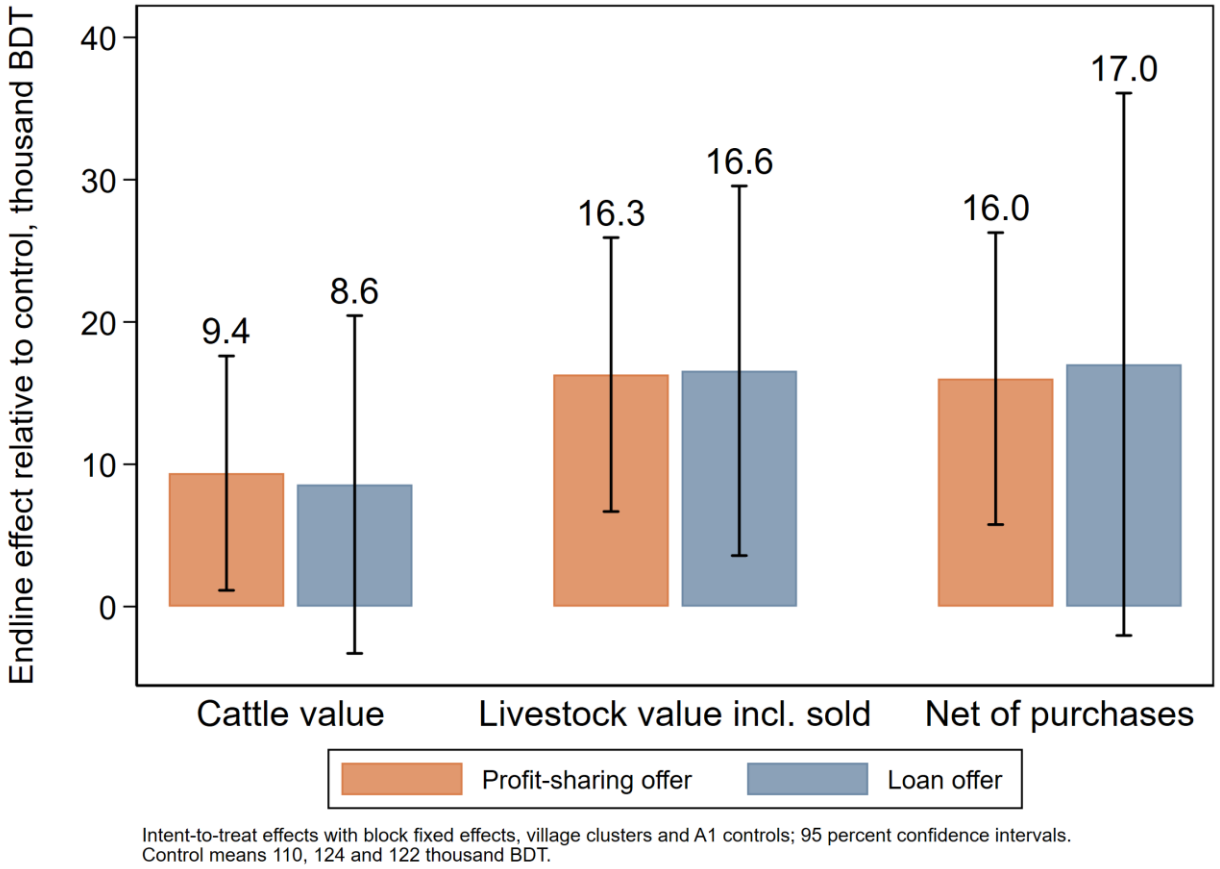
GENDER OF RECIPIENT

Does it matter if the offer targets her or him?



Accepted contract offer, pooled across contracts

Investment and Productivity



Intent-to-treat effects with block fixed effects, village clusters and A1 controls; 95 percent confidence intervals.
Control means 110, 124 and 122 thousand BDT.

INVESTMENT

Both contracts lead to similar increases in investment.

PRODUCTIVITY

Profit sharing does not lead to a reduction in productivity.



Conclusions

1

Take-up was modest under both contracts

Acceptance: 40% profit-sharing vs. 30% loan (p = 0.05). Financing received: 25% vs. 21%, not significantly different.

2

Profit-sharing mitigates effect of risk aversion

Risk-averse men were 15.6 pp less likely to accept the loan (24% vs. 40%); no comparable gap under profit-sharing.

3

Men’s risk preferences dominate

Acceptance was similar when offered to wife or husband (p = 0.89); women’s risk aversion did not predict take-up.

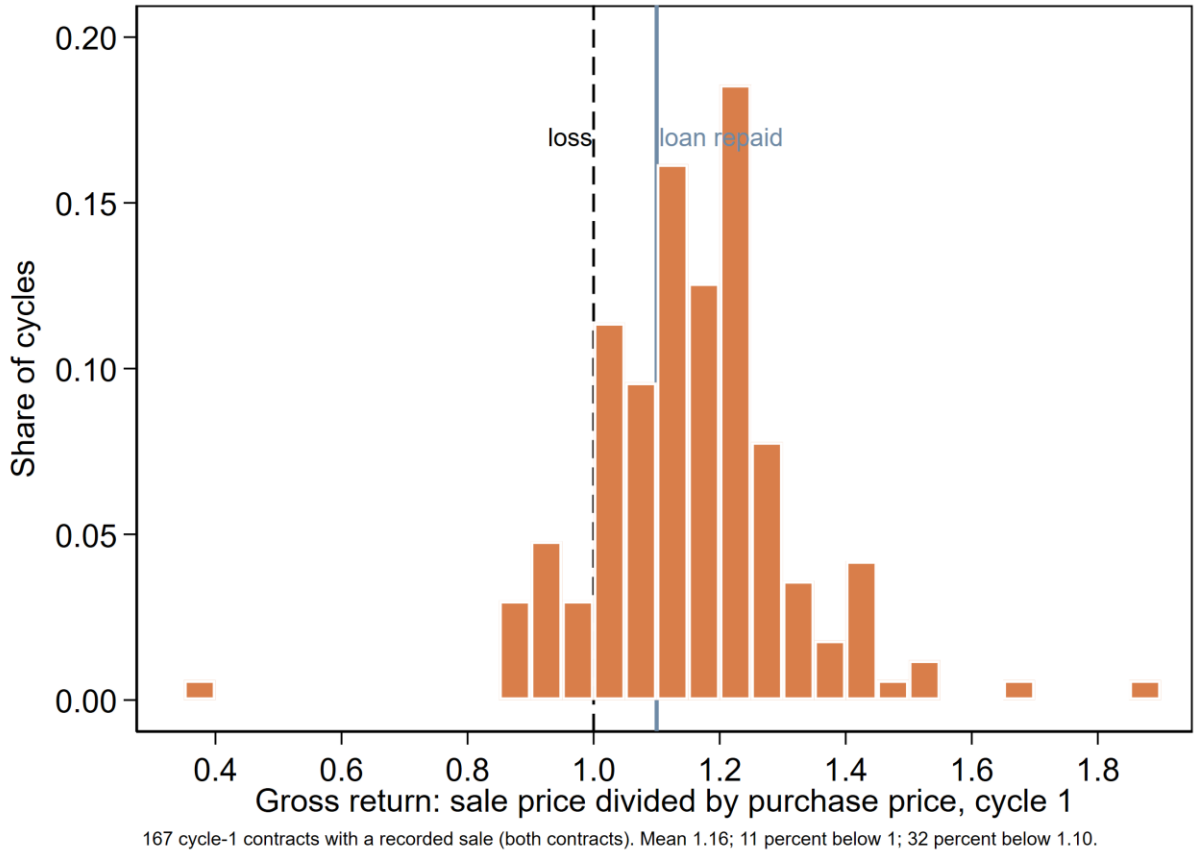
4

Similar investment, no productivity loss

Both contracts led to similar increases in investment; profit-sharing did not reduce productivity.

A third of cycles would have lost money at loan terms

Gross return = sale price / purchase price · 167 cycle-1 contracts with a recorded sale.

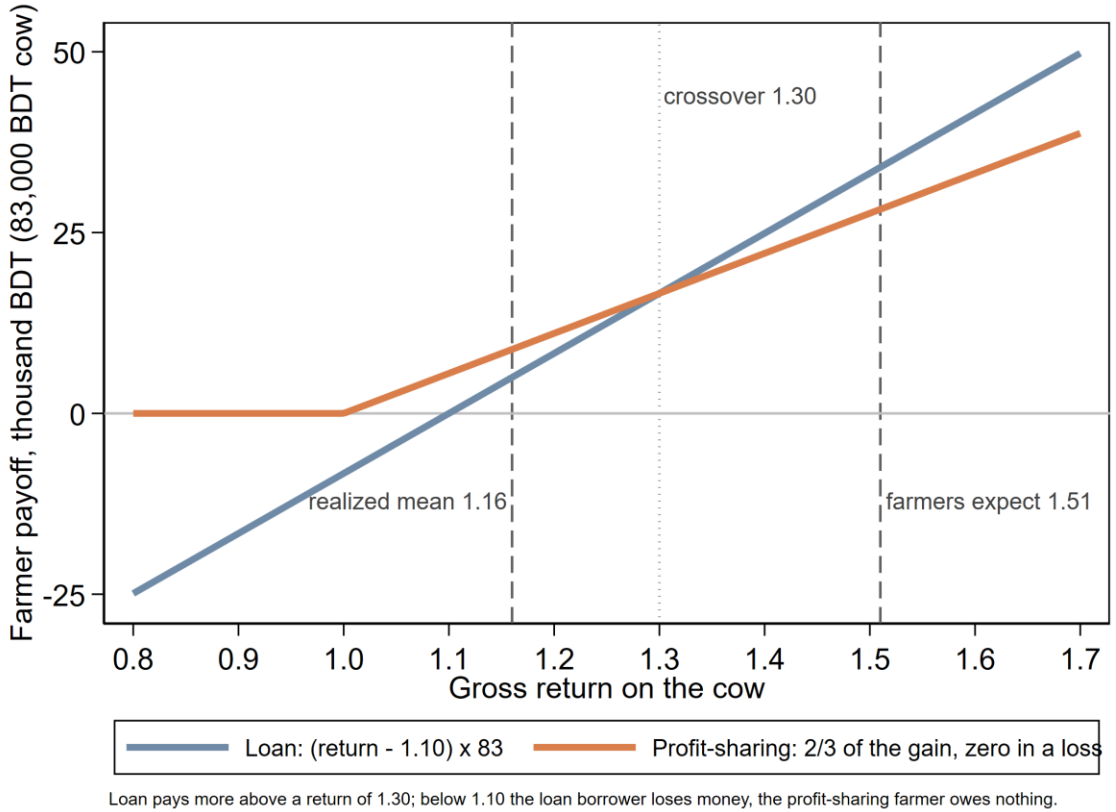


167 cycle-1 contracts with a recorded sale (both contracts). Mean 1.16; 11 percent below 1; 32 percent below 1.10.

Mean 1.16 · 11% of cycles below 1 · 32% below 1.10, where a loan borrower loses money · takers: profit-sharing 1.14, loan 1.20.

At the returns farmers expect, the loan pays more

Farmer's payoff by gross return: loan = (return - 1.10) x 83,000 BDT; profit-sharing = two thirds of the gain, zero in a loss.



The lines cross at 1.30. Farmers expect 1.51: the loan pays 34,000 BDT, profit-sharing 28,000. Realized returns came in at 1.16: the insurance paid.