Microequity and Mutuality: Experimental Evidence on Credit with Performance-Contingent Repayment

Online Appendix

Francesco Cordaro* Marcel Fafchamps† Colin Mayer‡
Muhammad Meki§ Simon Quinn¶ Kate Roll‖

December 20, 2023

*francesco.cordaro@eom.org: Economics of Mutuality
†fafchamp@stanford.edu: Freeman Spogli Institute, Stanford University
‡colin.mayer@sbs.ox.ac.uk: Saïd Business School, University of Oxford
§muhammad.meki@qeh.ox.ac.uk: Department of International Development, University of Oxford
¶simon.quinn@imperial.ac.uk: Imperial College London
‖k.roll@ucl.ac.uk: Institute for Innovation and Public Purpose, University College London

Contents

A1 Further details on the theoretical model

A1.1 Optimal effort and the sharing ratio

As explained in the main paper, the monthly consumption (after accounting for the psychic costs of effort and the fixed repayment) is:

$$\omega \cdot \pi_0 + \omega \cdot \eta_t \cdot e \cdot k - 0.5e^2 - F,$$

where $\log(\eta_t) \sim \mathcal{N}(\mu, \sigma^2)$. Under exponential utility (that is, $u(x) \equiv -\exp(-rx)$) – and using a second-order Taylor approximation – the certainty equivalent for monthly consumption is:

$$CE \approx \mathbb{E}\left(\omega \cdot \pi_0 + \omega \cdot \eta_t \cdot e \cdot k - 0.5e^2 - F\right) - 0.5r \operatorname{Var}\left(\omega \cdot \pi_0 + \omega \cdot \eta_t \cdot e \cdot k - 0.5e^2 - F\right) \tag{A1}$$

$$= \omega \cdot \pi_0 + \omega \cdot e \cdot \kappa \cdot \mathbb{E}\left(\eta_t\right) - 0.5e^2 - F - 0.5r \cdot \omega^2 \cdot e^2 \cdot \kappa^2 \cdot \operatorname{Var}\left(\eta_t\right). \tag{A2}$$

Now, given the distributional assumption about η_t, we can substitute and say:

$$CE \approx \omega \cdot \pi_0 + \omega \cdot e \cdot \kappa \cdot \exp\left(\mu + \frac{\sigma^2}{2}\right) - 0.5e^2 - F - 0.5r \cdot \omega^2 \cdot e^2 \cdot \kappa^2 \cdot [\exp(\sigma^2) - 1] \cdot \exp(2\mu + \sigma^2). \tag{A3}$$

Differentiating, optimal effort is:

$$e^* \approx \frac{\omega \cdot \kappa \cdot \exp\left(\mu + \frac{\sigma^2}{2}\right)}{1 + r\omega^2 \cdot \kappa^2 \cdot [\exp(\sigma^2) - 1] \cdot \exp(2\mu + \sigma^2)}. \tag{A4}$$

Using this expression, it can be shown that e^* is increasing in ω unless:

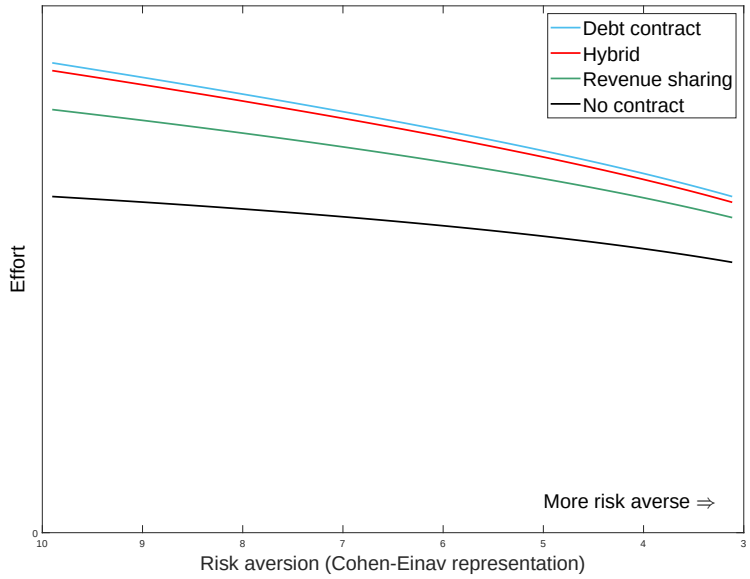
$$r \geq \frac{1}{\omega^2 \kappa^2 [\exp(\sigma^2) - 1] \exp(2\mu + \sigma^2)}. \tag{A5}$$

A1.2 Alternative calibrations

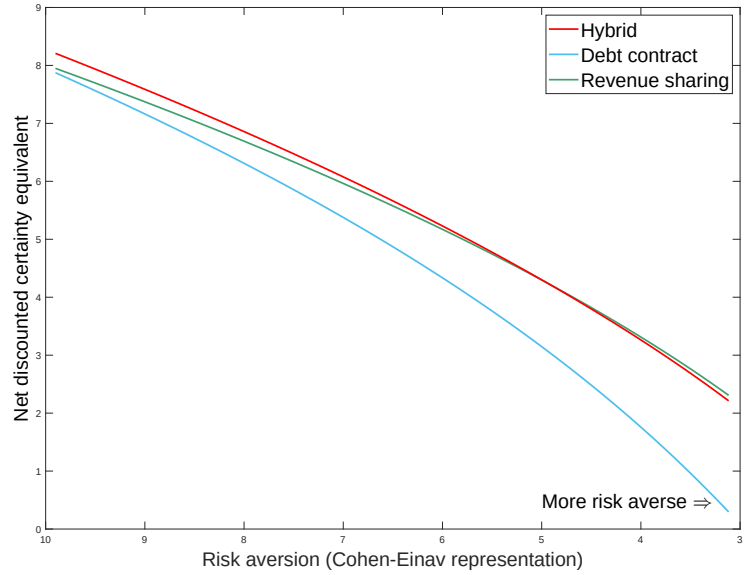
The following two figures consider alternative calibrations. In Figure A1, we shift from $\pi_0 = 20$ (in the main paper) to $\pi_0 = 0$. In Figure A2, we retain $\pi_0 = 0$ and shift from $\phi = 0$ to $\phi = 20$.

Appendix Figure A1: **Model predictions: Setting $\pi_0 = 0$**

PANEL A: EFFORT AS A FUNCTION OF RISK AVERSION



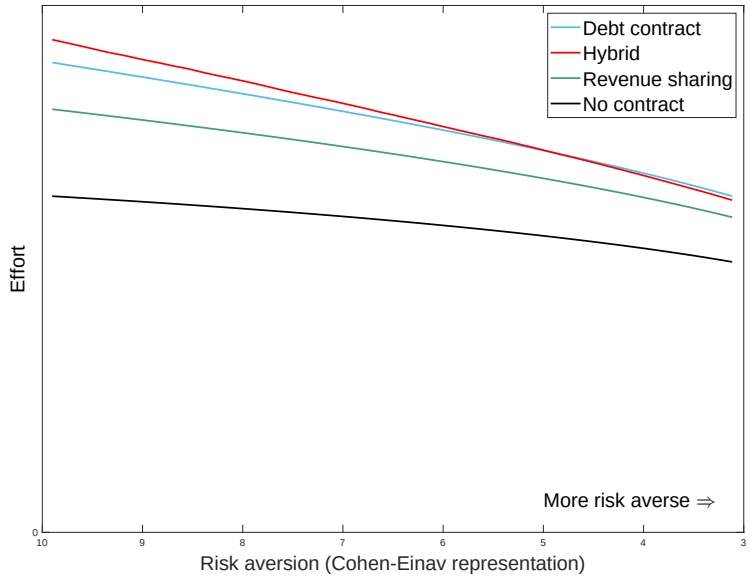
PANEL B: TAKE-UP AS A FUNCTION OF RISK AVERSION



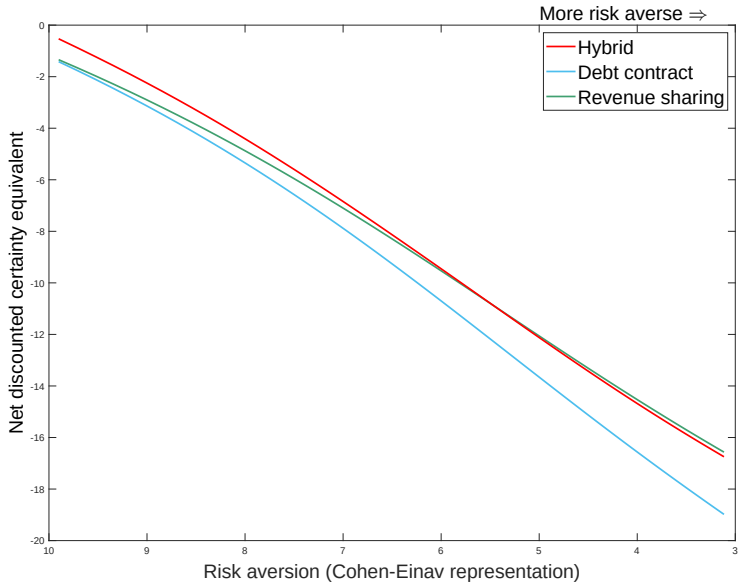
Note: *We illustrate numerically the theoretical predictions as to effort and take-up under no contract, the Debt contract, the RevShare contract and the Hybrid contract. For ease of interpretation, we use the representation of Cohen and Einav (2007); we imagine a 50-50 gamble where the gain is \$10 and the loss is x. For each given coefficient of absolute risk aversion, we solve for x so that the respondent is indifferent between taking the gamble and not; this is given by $x \equiv \log\left[2 - \exp(-10r)\right]/r$. The net discounted certainty equivalent is calculated as $\left[-\log(1-\beta) - \log(-V)\right]/r$.*

Appendix Figure A2: **Model predictions: Setting $\pi_0 = 0$ and $\phi = 20$**

PANEL A: EFFORT AS A FUNCTION OF RISK AVERSION



PANEL B: TAKE-UP AS A FUNCTION OF RISK AVERSION



Note: *We illustrate numerically the theoretical predictions as to effort and take-up under no contract, the Debt contract, the RevShare contract and the Hybrid contract. For ease of interpretation, we use the representation of Cohen and Einav (2007); we imagine a 50-50 gamble where the gain is \$10 and the loss is x. For each given coefficient of absolute risk aversion, we solve for x so that the respondent is indifferent between taking the gamble and not; this is given by $x \equiv \log\left[2 - \exp(-10r)\right]/r$. The net discounted certainty equivalent is calculated as $\left[-\log(1-\beta) - \log(-V)\right]/r$.*

A2 Spillover effects

To test for spillover effects, we exploit the fact that (i) we have administrative data on the universe of micro-distributors in FoodCo's program (regardless of whether they participated in our project) and (ii) we have detailed baseline data for most of our experimental respondents, asking about a series of different kinds of dyadic relationship with micro-distributors at their stockpoint.

For this analysis, we index by i the participants in our experiment; we index by j other micro-distributors at the relevant stockpoints. Denote by y_{jt} the FoodCo income of non-participant j in period t. Denote by D_{ij} a dummy variable for whether, at baseline, respondent i reported a particular form of dyadic relationship between i and j (for example, whether i reported at baseline that (s)he knew j).

To test for spillovers, we estimate:

$$\begin{aligned} y_{jt} = \beta_0 &+ \sum_{k\in\{1,\ldots,4\}} \sum_{i} \beta_k \cdot D_{ij} \cdot \texttt{Post\_Offered}_{itk} \\ &+ \sum_{k\in\{1,\ldots,4\}} \sum_{i} \gamma_k \cdot D_{ij} \cdot \texttt{Ever\_Offered}_{ik} + \sum_{i} \delta \cdot D_{ij} \cdot \texttt{Post}_{it} + \delta_t + \varepsilon_{jt}, \end{aligned}$$

where $\texttt{Ever\_Offered}_{ik}$ is a dummy for whether respondent i was ever offered contract type k, $\texttt{Post\_Offered}_{itk}$ is a dummy for whether respondent i had been offered contract k by period t, and $\texttt{Post}_{it}$ is a dummy for whether respondent i had entered the project (that is, been eligible for treatment) by period t.

This estimation thus provides a 'triple differences-in-differences' test; we interpret the estimated coefficients $\hat{\beta}_k$ as reflecting the causal impact upon non-participants of the treatment status of participants, operating through the dyadic channel defined by D_{ij}. Table A1 shows the results: Panel A aggregates across treatments, and Panel B estimates for each treatment separately. We conclude that there are no meaningful peer effects: we find no significant effects in Panel A, and just one significant effect in Panel B (out of 32 relevant coefficients).

Appendix Table A1: Spillover analysis

Panel A: Aggregating across treatments

Dyadic relationship:	(1) Knows	(2) Knew before	(3) Spoke in last week	(4) Spoke in last month	(5) Socialised	(6) Other helped with work	(7) Would ask to serve customers	(8) Had lent or borrowed
Any treatment × Connected × Post	-65	150	-63	-91	-64	-105	-162	132
	(130)	(160)	(206)	(147)	(151)	(183)	(205)	(247)
Connected × Post	11	-128	10	19	-4	76	214	-149
	(112)	(116)	(179)	(128)	(131)	(171)	(193)	(208)
Dyadic observations	16900	16900	16900	16900	16900	16900	16900	16900
Non-project micro-distributors	325	325	325	325	325	325	325	325
Project micro-distributors								
Connection proportion	0.49	0.22	0.33	0.40	0.36	0.29	0.22	0.16
Baseline mean	203	203	203	203	203	203	203	203

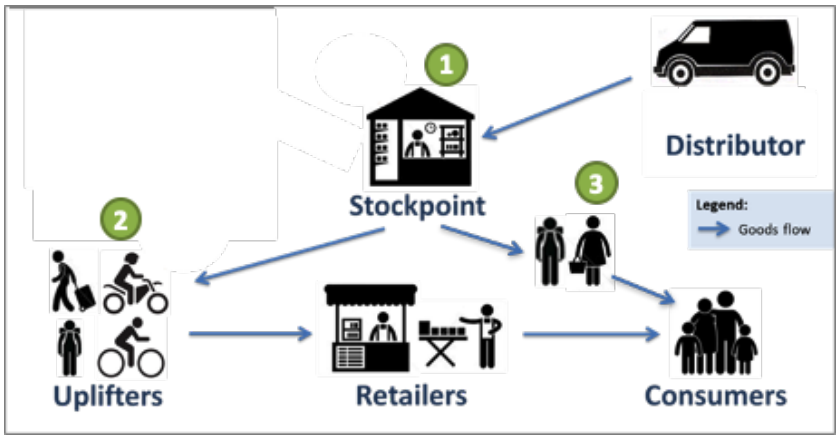
Panel B: Disaggregating treatments

Dyadic relationship:	(1) Knows	(2) Knew before	(3) Spoke in last week	(4) Spoke in last month	(5) Socialised	(6) Other helped with work	(7) Would ask to serve customers	(8) Had lent or borrowed
Debt × Connected × Post	-203	-185	-268	-245	-226	-339	-513**	-197
	(140)	(197)	(211)	(169)	(192)	(221)	(247)	(244)
RevShare × Connected × Post	48	109	10	39	36	90	235	463
	(155)	(194)	(245)	(170)	(193)	(235)	(251)	(303)
Hybrid × Connected × Post	50	294	9	35	-39	-145	-225	431
	(174)	(220)	(239)	(184)	(209)	(230)	(231)	(351)
IndexShare × Connected × Post	-155	30	-125	-208	-114	-65	-229	60
	(138)	(204)	(183)	(156)	(155)	(184)	(204)	(286)
Connected × Post	-16	-82	7	-8	-23	51	211	-258
	(109)	(121)	(168)	(121)	(134)	(167)	(169)	(214)
Dyadic observations	16900	16900	16900	16900	16900	16900	16900	16900
Non-project micro-distributors	325	325	325	325	325	325	325	325
Connection proportion	0.49	0.22	0.33	0.40	0.36	0.29	0.22	0.16
Baseline mean	203	203	203	203	203	203	203	203

This table reports the 'Post' interaction terms from a triple differences-in-differences regression, testing for any causal effect of treatment upon non-project micro-distributors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

A3 Additional figures and tables

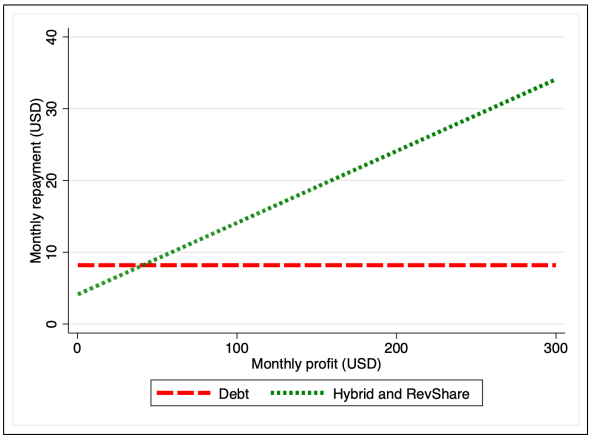
Appendix Figure A3: **Route-to market: product flowchart**



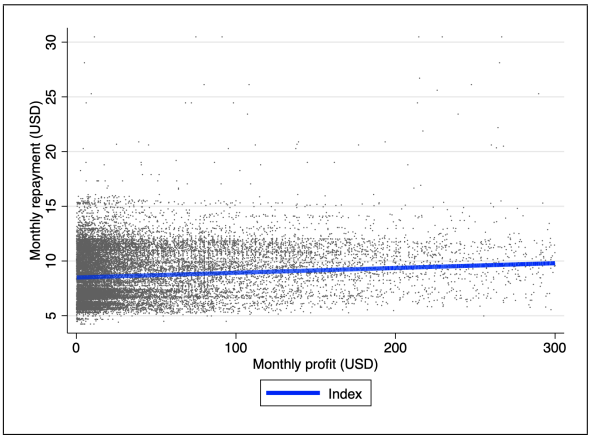
Notes: *Stockpoints receive gum from FoodCo and supply it to two types of micro-distributor: (ii) uplifters, who sell door-to-door to retailers (kiosks, small outlets, table shops); (iii) hawkers, who sell directly to end consumers.*

Appendix Figure A4: **Micro-distributor performance and contract payments**

PANEL A: Debt, Hybrid and RevShare contracts



PANEL B: IndexShare contract



Notes: *We plot required contract payments against micro-distributor performance (monthly profit in US$). Contract payments are based on the average bike price of US$95. Panel A illustrates payments under the 'deterministic' contracts, where payment amounts due are either completely unrelated to performance (debt contract, illustrated by the red line) or related only to one's own performance (hybrid and revenue-sharing contracts, the monthly payments for both being represented by the green line). In contrast, Panel B illustrates payments under the index contract, which are a realisation of a stochastic outcome (the sales of other micro-distributors in one's region), with the blue line representing the predicted payments following a regression of index payments on individual performance controlling for individual fixed effects.*

A3.1 Summary statistics and balance

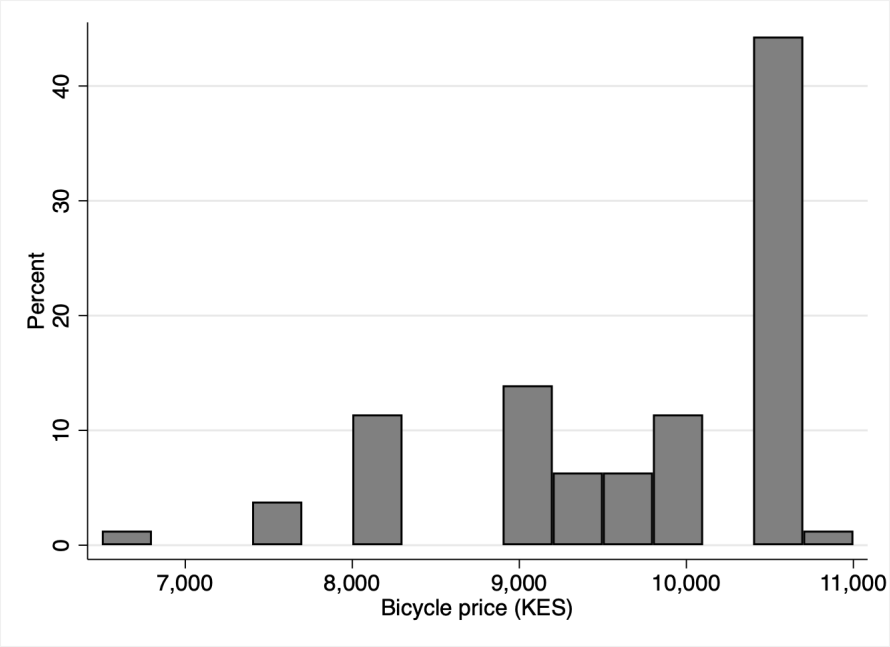
Appendix Table A2: SUMMARY STATISTICS AND BALANCE

	Control	Debt	Hybrid	RevShare	Index	Equality test (p-val)
Age	30.29	31.32	31.62	29.41	32.31	0.219
Married	0.71	0.76	0.85	0.63	0.78	0.241
Female	0.14	0.12	0.08	0.20	0.19	0.431
Household size	3.21	3.38	3.27	3.17	3.81	0.486
Number of earners	1.43	1.44	1.35	1.34	1.56	0.256
Education (post-secondary)	0.18	0.15	0.27	0.27	0.09	0.145
Number of employees	0.46	0.12	0.15	0.02	0.16	0.109
Profits from selling FoodCo products	2,747.89	3,145.39	3,227.11	2,419.66	2,992.38	0.477
Business profit (all sources)	13,154.05	12,351.37	13,843.97	10,143.72	15,136.25	0.101
Has wage job	0.29	0.18	0.35	0.22	0.28	0.473
Wage earnings	1,753.57	1,447.06	1,461.54	1,329.27	2,578.12	0.675
Total household income	20,407.14	18,175.00	16,265.38	16,600.85	22,477.38	0.369
Consumption expenditure	17,306.79	20,714.12	22,172.31	17,950.49	20,075.62	0.584
Management practices	0.73	0.72	0.83	0.77	0.78	0.198
Maths score	0.61	0.66	0.65	0.63	0.66	0.798
Time preferences index	7.32	6.44	6.23	6.98	6.84	0.942
Risk aversion index	4.04	3.71	4.08	4.08	3.84	0.472
Loss aversion index	5.64	5.32	6.35	5.56	6.72	0.308
Number of individuals	28	34	26	41	32	

Note: We present baseline summary statistics by treatment assignment. All flow variables are for the previous month. All currency amounts are in Kenyan Shillings (The USD-KES exchange rate at baseline was approximately equal to 102). An omnibus balance test, assessing the equality of coefficients for each treatment across all variables, also comfortably passes ($p = 0.980$). * p < 0.10, ** p < 0.05, *** p < 0.01.

A3.2 Financed amount

Appendix Figure A5: DISTRIBUTION OF AMOUNT FINANCED

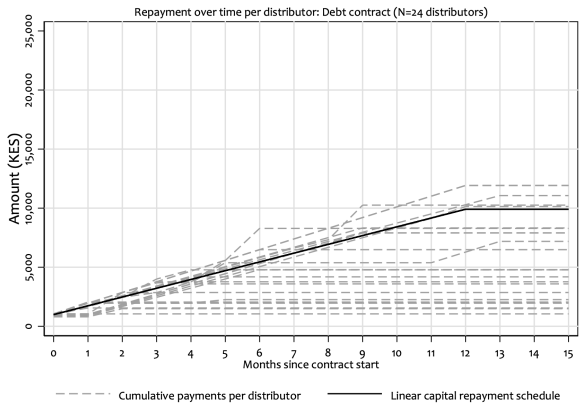


Note: We display the distribution of bicycle prices. For each individual, a 10% deposit was provided, and 90% of the bicycle price represents the financed amount. The USD-KES exchange rate at baseline was approximately equal to 102

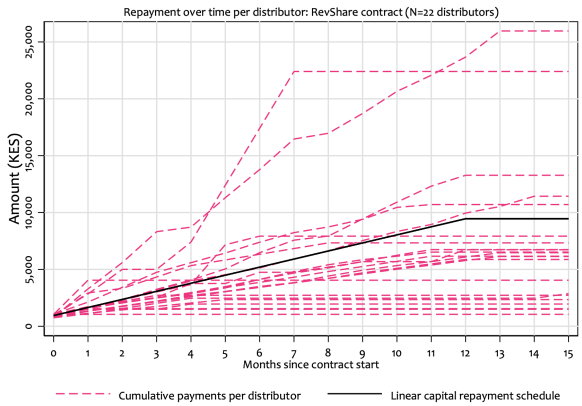
A3.3 Repayment amounts

Appendix Figure A6: Cumulative repayment, by contract

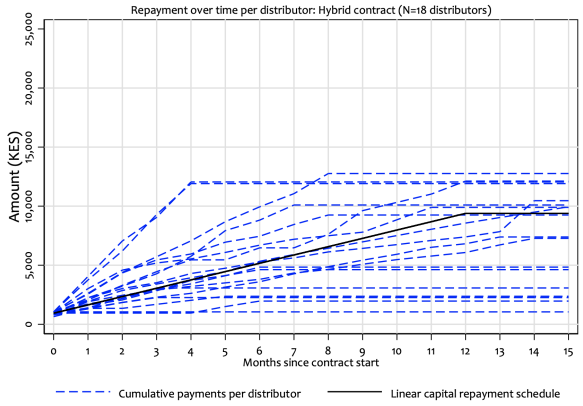
(a) Debt



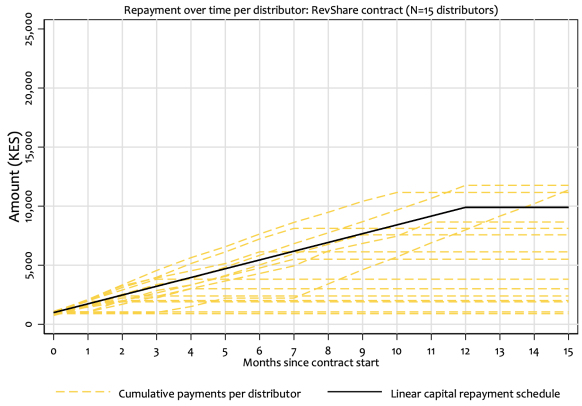
(b) RevShare



(c) Hybrid



(d) IndexShare



Note: The solid black line represents the amount due under a hypothetical linear repayment schedule requiring the return of the nominal amount of the capital disbursed by the 12-month mark. In the four panels, each line represents the actual repayment made per month for each distinct individual who took that contract.

A3.4 Poisson regressions

The results on business profits in the main paper use administrative data on profits that are winsorized at the 10% level. Here, we show that these conclusions are robust to using a Poisson specificatio – we find similarly large and significant effects, particularly for the Hybrid contract.

Appendix Table A3: Business profits: poisson regressions

	(1) Poisson regression	(2) Poisson regression	(3) Poisson regression	(4) Poisson regression
Debt	0.09	0.50	0.16	0.28
	(0.305)	(0.483)	(0.813)	(0.423)
Hybrid	0.89***	1.30***	1.10*	1.10***
	(0.261)	(0.436)	(0.567)	(0.354)
RevShare	0.28	0.78*	0.77	0.69*
	(0.291)	(0.443)	(0.587)	(0.366)
Index	0.17	0.57	0.12	0.43
	(0.297)	(0.484)	(0.654)	(0.357)
Observations	785	817	910	2,888
Individuals	160	145	119	161
Timeframe	1m-6m	7m-12m	13m-24m	1m-36m
Control mean	1,389	940	806	897
Test: Hybrid = Debt	0.049	0.012	0.080	0.121
Test: Hybrid = RevShare	0.456	0.368	0.281	0.633
Test: RevShare = Debt	0.019	0.056	0.375	0.227

Note: In all columns, the outcome is a continuous variable for profits from selling FoodCo products (using administrative data). Standard errors, clustered at the individual level, are reported in brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. All amounts are in Kenyan Shillings.

In Table A4, we see a significanty increase in the precision of our poisson estimates when controlling for de-meaned baseline measures of profits, risk aversion and loss aversion, as well as the interaction of the de-meaned variables with each treatment indicator. This provides reassurance that our effects are not simply reflecting any heterogeneity induced by differential take-up.

Appendix Table A4: Poisson regressions controlling for heterogeneity

	(1) Profits: Foodco	(2) Profits: Foodco	(3) Profits: Foodco	(4) Profits: Foodco
Debt	0.34	2.10*	1.43	0.61
	(0.396)	(1.237)	(1.526)	(0.516)
Hybrid	1.30***	2.93**	2.32*	1.66***
	(0.346)	(1.196)	(1.297)	(0.476)
RevShare	0.75**	2.60**	2.38*	1.44***
	(0.374)	(1.214)	(1.378)	(0.477)
IndexShare	0.60	2.27*	0.95	1.05**
	(0.378)	(1.204)	(1.369)	(0.471)
Estimation	ITT	ITT	ITT	ITT
Observations	785	817	910	2888
Individuals	160	145	119	161
Timeframe	1m-6m	7m-12m	13m-24m	1m-36m
Control mean	1389	940	806	897
Test: Hybrid = Debt	0.001	0.005	0.165	0.003
Test: Hybrid = RevShare	0.016	0.183	0.880	0.460
Test: RevShare = Debt	0.207	0.090	0.116	0.024

Note: In all columns, the outcome is a continuous variable for profits from selling FoodCo products (using administrative data). We control for de-meaned baseline measures of total profits, risk aversion and loss aversion, as well as the interaction of the de-meaned variables with each treatment indicator. Standard errors, clustered at the individual level, are reported in brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. All amounts are in Kenyan Shillings.

A3.5 Randomisation inference

Appendix Table A5: Business outcomes

	(1) Stockpoint visits	(2) Sales expansion	(3) FoodCo profits	(4) Other earnings
Debt	1.44	0.10	588.73	1186.87
	(0.204)	(0.240)	(0.175)	(0.379)
	[0.240]	[0.200]	[0.230]	[0.410]
Hybrid	2.89	0.19	1489.30	-289.87
	(0.057)*	(0.035)**	(0.016)**	(0.807)
	[0.050]*	[0.030]**	[0.000]**	[0.800]
RevShare	1.33	0.13	791.09	362.49
	(0.184)	(0.128)	(0.076)*	(0.742)
	[0.310]	[0.050]	[0.160]*	[0.840]
IndexShare	0.32	0.22	283.28	562.28
	(0.777)	(0.004)***	(0.519)	(0.674)
	[0.780]	[0.000]***	[0.690]	[0.640]
Observations	2918	468	2918	468

Note: We repeat the ITT analysis on the main business effort and performance variables using randomisation inference (with 1,000 replications). Standard p-values are reported in parentheses, and randomization inference p-values in square brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Appendix Table A6: Business management practices

	(1) Management practices	(2) Record keeping	(3) Credit extension
Debt	0.00	-0.02	0.01
	(0.963)	(0.759)	(0.564)
	[0.940]	[0.770]	[0.610]
Hybrid	0.10	0.14	0.05
	(0.074)*	(0.036)**	(0.049)**
	[0.090]*	[0.010]**	[0.050]**
RevShare	0.03	0.01	0.01
	(0.627)	(0.897)	(0.551)
	[0.650]	[0.900]	[0.670]
IndexShare	0.11	0.11	-0.00
	(0.036)**	(0.097)*	(0.907)
	[0.070]**	[0.130]*	[0.950]
Observations	468	468	468

Note: We repeat the ITT analysis on business management practices using randomisation inference (with 1,000 replications). Standard p-values are reported in parentheses, and randomization inference p-values in square brackets. * p < 0.10, ** p < 0.05, *** p < 0.01.

Appendix Table A7: Consumption expenditure

	(1) Expenditure: food	(2) Expenditure: clothing	(3) Expenditure: schooling
Debt	879.55	89.26	-323.38
	(0.075)*	(0.572)	(0.198)
	[0.070]*	[0.670]	[0.310]
Hybrid	945.27	393.68	324.85
	(0.064)*	(0.029)**	(0.333)
	[0.070]*	[0.010]**	[0.220]
RevShare	122.80	29.50	-13.07
	(0.767)	(0.860)	(0.962)
	[0.840]	[0.920]	[0.960]
IndexShare	753.59	-161.08	43.98
	(0.071)*	(0.301)	(0.862)
	[0.060]*	[0.360]	[0.870]
Observations	468	468	468

Note: We repeat the ITT analysis on household consumption expenditure using randomisation inference (with 1,000 replications). Standard p-values are reported in parentheses, and randomization inference p-values in square brackets. * p < 0.10, ** p < 0.05, *** p < 0.01.

A4 Health

We explore the impact on participant health, which was expected to improve after the provision of bicycles (to replace distributors having to manually carry large amounts of stock). A negative coefficient implies that respondents are *less* likely to report health problems; all coefficients point to health improvements, though not statistically significant.

Appendix Table A8: Health

	(1) Health impedes work	(2) Work caused pain
Debt	-0.09	-0.10
	(0.070)	(0.062)
Hybrid	-0.06	-0.03
	(0.078)	(0.073)
RevShare	-0.07	-0.02
	(0.072)	(0.067)
Index	-0.03	0.02
	(0.079)	(0.078)
Estimation	ITT	ITT
Observations	468	468
Individuals	160	160
Timeframe	1m-12m	1m-12m
Control mean	0.26	0.19
Test: Hybrid = Debt	0.644	0.204
Test: Hybrid = RevShare	0.792	0.883
Test: RevShare = Debt	0.827	0.084

Note: Standard errors, clustered at the individual level, are reported in brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. All currency amounts are in Kenyan Shillings.

A5 Inputs for cost-benefit analysis

Figure A7 (on the following page) provides a summary of the inputs for the cost-benefit analysis.

Appendix Figure A7: **Inputs for cost-benefit analysis**

Costs

	Project total	Debt	Hybrid	RevShare	Index
Capital disbursed for initial purchase of assets	763,000	9,908	9,456	9,386	9,900
Total capital recovered from clients	-520,945	5,846	7,659	7,321	5,742
Total capital disbursed minus capital recovered (discounted to year 0)	289,414	4,062	1,797	2,065	4,158
Staff salaries (calculated as if all incurred at start of year 0)	198,996	8,292	8,292	8,292	8,292
Implementation costs: including survey company salaries, venue hire, and participant compensation.	464,000	5,873	5,873	5,873	5,873
Other implementation costs (calculated as if all incurred at start of year 0)	1,810	23	23	23	23
Total cost (calculated as of year 0)	954,219	18,250	15,984	16,253	18,346
Total costs compounded **to year 2 at 10% social discount rate**		**22,083**	**19,341**	**19,666**	**22,198**

Benefits

		Debt	Hybrid	RevShare	Index
Years 1 to 3: return to distributors (annualising from monthly LATE estimate)		27,756	69,120	47,304	19,152
Years 1 to 3: return to FoodCo (annualising from monthly LATE estimate)		78,336	239,760	154,584	92,376
Years 1 to 3: return to Stockpoints (annualising from monthly LATE estimate)		14,220	41,976	28,908	15,516
Total benefits at year 3		**120,312**	**350,856**	**230,796**	**127,044**
Total benefits year 3 onwards, assuming benefits last:					
	1 year	36,458	106,320	69,938	38,498
	2 years	69,602	202,975	133,518	73,497
	3 years	99,733	290,842	191,318	105,313
	5 years	152,026	443,340	291,633	160,532
	10 years	246,422	718,619	472,714	260,210
	15 years	305,034	889,546	585,151	322,102
	20 years	341,428	995,678	654,965	360,532

Notes: We conduct an overall cost-benefit analysis of the intervention. The costs comprise: (i) the capital disbursed for the initial asset purchases for take-up clients, subtracted from the total recovered capital (factoring in the small overall loss to the MFI); (ii) staff salaries; and (iii) other implementation expenses like venue rentals for workshops. The total costs are then compounded up to the two-year mark using a conservative 10% social discount rate. This falls within the range recommended by the World Bank (Lopez, 2008). We divide the total costs by the number of take-up clients in each contract and then incorporate the benefits from each contract. We employ the estimated treatment effects derived from our LATE regressions, as well as an estimate of future benefits extending beyond the project period. For benefits during the project period, we sum up the treatment effects calculated on business profits for all four market participants, as depicted in the total return analysis. Additionally, we incorporate the estimated net present value of future benefits from the fourth year onwards, using the LATE estimates as the annual value of these future benefits.

A6 Baseline workshop elicitation procedure

Micro-distributors who expressed their interest in the purchase of a bicycle were invited to a workshop, where they completed a baseline survey and several activities to measure risk preferences and loss aversion. There were two risk preference elicitation activities; the first was a self-reported measure, using a series of questions that asked individuals about their risk-taking in their occupation, in financial matters, in their faith in others, and a general question on overall risk taking. Responses were given on a scale of 1 to 10, with 0 representing 'risk-averse' and 10 representing 'fully prepared to take risks'. The questions were adapted from Dohmen et al. (2011), and have been used by other researchers in several settings, and often demonstrated a reasonably strong correlation with important 'real-world' outcomes. The second measure of risk preferences was incentivised. Respondents were asked 30 questions that required them to choose between a certain amount of money and an uncertain prospect, which had two possible outcomes: (i) a 'bad' outcome, with a payoff of zero; or (ii) a 'good' outcome, with a payoff of KES 1,000. We adapted the measures used by Barr and Packard (2002) and Vieider et al. (2015). We also measured loss aversion by adapting the measure used by Bartling, Fehr, and Herz (2014). Respondents had to choose between a series of binary-outcome prospects that involved a large positive outcome or a (gradually increasing) negative outcome, which they could accept or reject. If they accepted the investments and the loss aversion activity was chosen for payment at the end of the workshop, a realised loss was taken out of their guaranteed workshop participation fee; as such, this represented a potential real loss.

For the incentivised activities, participants were informed that, at the end of the behavioural games session, one of the activities would be selected for payment by physically drawing a ball from a bag. Within the selected activity, balls would be drawn to select the one final question that would be used for payment. As such, participants were required to answer all questions attentively, because any question could have been selected. This method also allowed the use of payment amounts that were relatively large, with the average payment being approximately three times as large as median daily business profits for micro-distributors.

References

Barr, A., & Packard, T. G. (2002). Revealed Preference and Self-insurance: Can we learn from the Self-employed in Chile? *Working paper*.

Bartling, B., Fehr, E., & Herz, H. (2014). The intrinsic value of decision rights. *Econometrica*, *82*(6), 2005–2039.

Cohen, A., & Einav, L. (2007). Estimating risk preferences from deductible choice. *American Economic Review*, *97*(3), 745–788.

Dohmen, T., Falk, A., Huffman, D., Sunde, U., Schupp, J., & Wagner, G. G. (2011). Individual risk attitudes: Measurement, determinants, and behavioral consequences. *Journal of the European Economic Association*, *9*(3), 522–550.

Lopez, H. (2008). The social discount rate: Estimates for nine Latin American countries. *World Bank Policy Research Working Paper*(4639).

Vieider, F. M., Lefebvre, M., Bouchouicha, R., Chmura, T., Hakimov, R., Krawczyk, M., & Martinsson, P. (2015). Common components of risk and uncertainty attitudes across contexts and domains: Evidence from 30 countries. *Journal of the European Economic Association*, *13*(3), 421–452.