# Can a $100 loan change a life?

Why a bank says no to a poor borrower, how a moneylender's debt grows month after month, how a group loan replaces collateral, what six randomized trials of microloans found, and what a loan cannot do.

## 1 No collateral

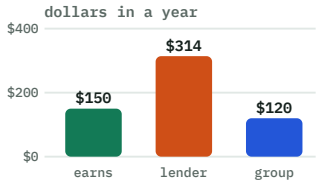
why the bank says no

- Amara · sewing machine **$100** · earns **$3 a week × 50 weeks = $150** a year → pays for itself, $50 over
- **Collateral** = something the lender can take if the loan is not repaid (land, a house)
- Bank cannot tell who will repay → wants collateral → Amara has none → **no loan**, even with a good plan

## 2 The moneylender

compound interest

- **Interest** = the price of borrowing · 10% a month = $10 per $100 owed, each month
- **Compound interest** = interest added to the debt → next interest charged on the interest too (Finance Lesson 2)
- 10% a month · $100 → $110 → $121 → $133 … × 12 · `$100 × 1.10¹² ≈ $314` (≈ 3.14 times)
- ≠ **simple interest** (only on the $100): 12 × 10% = 120% → $220 · owes $314 vs earns $150 → **never**
- **Rule of 72** · at r% a period → doubles in ≈ `72 ÷ r` periods · practice: Tano $200 at 6% a month → 12 months → ≈ **$400**, not $344 simple




## 3 The group loan

microfinance

- **Microfinance** = small loans and other money services for poor families, often with **no collateral**
- $100 at 20% a year → `$100 + $20 = $120` · keeps `150 − 120 = $30` (moneylender: 150 − 314 = −$164)
- Replaces collateral · **five neighbors**, weekly meetings, each backs the others → a member cannot pay → the group helps
- **Muhammad Yunus**, Bangladeshi economist · first loans in the village of Jobra **1976** · **Grameen Bank** ("village bank") **1983** · borrowers nearly all women · Nobel Peace Prize with the bank **2006**
- Practice · Lina's oven $100 → $160 · break-even **60%** a year · 20% → keeps **$40** · 5% a month (× 1.8 = $180) → **$20 short**

## 4 Six trials

what the evidence says

- Why test · women who **choose** a loan may do well anyway → **randomized controlled trial**: a coin picks who is offered a loan: villages or neighborhoods (5 trials), applicants (Bosnia) (Lesson 4)
- Bosnia and Herzegovina, Ethiopia, India, Mexico, Mongolia, Morocco · economists Banerjee (Indian-American, Nobel 2019), Karlan & Zinman (American), 2015
- **Take-up** = share of those offered who accept · **17 to 31 in 100** (four trials) · 200 offered × 20 in 100 → 40
- Found · **more small businesses**, small gains, **no big rise** in average income or spending → **a tool, not a miracle**
- Practice · savings accounts by lottery · 30% before · offered **50%**, control **35%** → effect **15 percentage points** (5 came anyway) · compare the whole groups, not only the 40 who opened one

## 5 Other tools, two views

no verdict

- Also needed · a safe place to **save** · **insurance** = a payment now that pays out when bad luck strikes (a flood) → Lessons 6 and 9
- **For** · a loan at a fair price lets a family start a business with no collateral; more businesses in the trials
- **Careful** · the loan is owed even if the business fails; rates can be high; no big change in average income
- "98 in 100 repay, so it works" → repaying ≠ better off · compare with a **control group**

**Watch out:** 10% a month ≠ 120% a year → compound ≈ **× 3.14** · a loan pays only if the machine earns more than the loan costs · repayment ≠ a better life · a few borrowers' stories ≠ the average · microloans: neither a cure nor a trap