

Lecture 19: Finance IV: Insurance

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14.73 Challenges of World Poverty

Insurance: Plan for Lecture

- ▶ Discussion of reading, “Microinsurance: The Next Revolution?”
 - ▶ What is informal insurance so unavailable in developing countries?
 - ▶ What types of insurance does Morduch think might work?
- ▶ How do households obtain informal insurance?
 - ▶ Udry (1990): Credit as Insurance.

Morduch: “Microinsurance: The Next Revolution?”

- ▶ Why doesn't insurance exist for the poor?
- ▶ 2 answers from fact that there is asymmetric information:
 1. ‘Moral hazard’: the insured will *behave* differently after having insurance
 2. ‘Adverse selection’:
 - ▶ If you offer insurance, the *inherently* high-risk people are the ones who will want the insurance the most.
 - ▶ But if the people who buy insurance are high-risk, the premium has to be high. This will drive out the low-risk people, making the pool of people left even more high-risk (on average).
 - ▶ Taking this logic to its extremes, you can't make any money offering insurance.
 - ▶ The problem is that the insurance company can't tell who is high- and low-risk, but the clients themselves know whether they're high/low (ie asymmetric information)
- ▶ plus, not efficient at these scales

Townsend (1994) I

- ▶ Very influential paper
- ▶ Key insight: if village economies behave *as if* there is perfect insurance within them, then:
 - ▶ The village will behave *as if* all income earned in the village were pooled together
 - ▶ So each member's consumption will depend on the *total village income*, and not at all on the member's own income (after controlling for the fact that his own income bumps up the village total)

Townsend (1994) II

- ▶ This is effectively what Townsend found
- ▶ If Townsend is right, what role is there for someone (government, firms, aid agencies) to help in providing insurance?
- ▶ Unfortunately, it's not this clear-cut. Morduch (1991, 2004) argues that:
 - ▶ Townsend's result is not robust to looking at it using different statistical techniques
 - ▶ Townsend's result is not existent within caste groups (within the village), which is strange.
 - ▶ Townsend later dug into the in-flows and out-flows of income for each household and finds that households are smoothing consumption primarily on their own (eg storing grain), not by using other village members.

But Temperature Shocks Matter, Big Time: India vs USA

Burgess, Deschenes, Donaldson and Greenstone (2009)

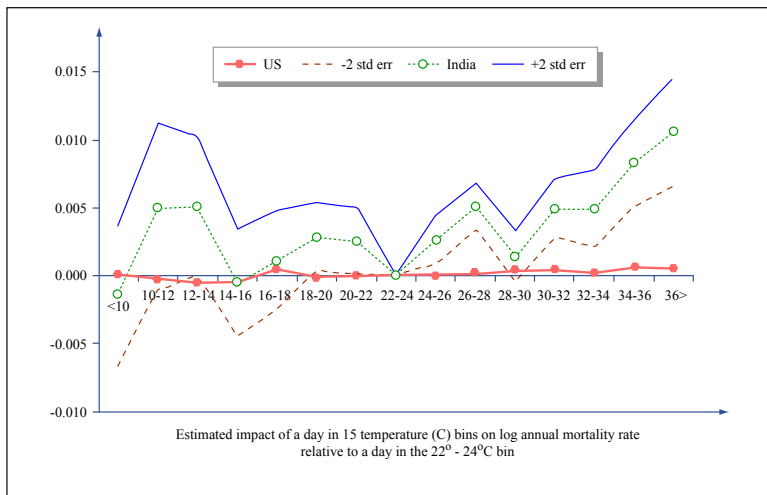


Figure by MIT OpenCourseWare.

Microinsurance

- ▶ Morduch is hopeful that 'microinsurance' will work.
- ▶ Why?
- ▶ Are you?

Life Insurance

- ▶ Life insurance (a policy that pays out, to your dependents, when you die) is very uncommon in developing countries.
- ▶ Why?

Health Insurance

- ▶ Moral hazard and adverse selection are big problems here
- ▶ What strategies do health insurance firms employ to get around this?
- ▶ Do these strategies square with (the limited amounts of) health insurance practice in developing countries?
- ▶ What might explain the differences?

Rainfall insurance

- ▶ Agricultural output (and price) risk is the major risk for many rural citizens
- ▶ Why not cut to the chase and offer agricultural output (rather than rainfall) insurance?
- ▶ Why isn't rainfall insurance being taken up?

Udry (1990): Credit as Insurance in Nigeria

- ▶ Survey of 198 households in 4 villages in northern, rural Nigeria (1988-89)
- ▶ Detailed information on the loans that households make and receive

Loan Contracts in a Muslim Area

- ▶ Complicates study of credit
- ▶ Shari'a law:
 - ▶ Prohibits fixed interest charges on loans unless lender is taking a stake in the risk
 - ▶ Fixed repayment periods also illegal: "And if the debtor is in difficulty, then [there should be] postponement to a time of ease." (*Koran* 2:280)
 - ▶ But households accept loans from banks at fixed nominal interest rates and repayment dates

The loans

- ▶ Very few formal loans (7.5 %, and most of these from Nigerian Tobacco)
- ▶ But 90 % of hhds borrowed or loaned during the year. 50 % did both.
- ▶ Average loan magnitude roughly equal to household wealth.
- ▶ Loans are informal:
 - ▶ occur in private, no witnesses
 - ▶ no written record
 - ▶ made and repaid in cash
 - ▶ negotiate over size, but not interest rate.
 - ▶ if interest rate set, usually zero
- ▶ punishment if default:
 - ▶ explicitly acknowledged that these are loans, not gifts
 - ▶ excluded from future loans
 - ▶ village leaders brought in

Information:

- ▶ Households know a lot about the households they loan to. (82 % can explicitly tell about shocks that their borrowers face)
- ▶ Lend to households they have long history of exchange with
- ▶ Collateral rarely used to secure loans
- ▶ Loans more likely to occur within villages, and within kinship groups

Risk-Pooling With Credit

- ▶ Natural that credit can be used to smooth risk; I borrow when I get a bad shock and lend when I get a good shock
- ▶ Udry finds this.
- ▶ Udry also finds that the *amount owed* changes after the loan has been written, in response to shocks
 - ▶ clearly the amount *repaid* will respond to shocks if people with a bad shock are unable to repay the whole thing.
 - ▶ But here we are talking about the amount *owed*.
 - ▶ Idea is that if both the lender and the village leaders know the borrower was shocked, then the lender is willing to lower the interest rate and extend the repayment date

Those Shocked Are Less Likely to Default

Loan	Realized monthly nominal return, r			
	$r < 0$	$r = 0$	$0 < r < 0.05$	$r > 0.05$
Total loans (number)	108	194	147	140
Of this total, those in default (number) (Percent)	16 (15)	20 (11)	6 (4)	2 (1)
Loans (number) for which borrower subject to an adverse shock	38	118	19	41
Of this total, those in default (number) (Percent)	1 (2)	2 (2)	0 (0)	0 (0)
Loans (number) for which borrower not subject to an adverse shock	70	76	127	99
Of this total, those in default (number) (Percent)	15 (22)	18 (24)	6 (5)	2 (2)

Defaults by and Shocks to Borrowers

Figure by MIT OpenCourseWare.

Interest Rates Adjust to Favor the Shocked

Adverse shock to	Sample means		
	Monthly interest rate (percent)	Simple interest rate (percent)	Repayment period (days)
Borrower			
No shock	0.5	20.4	67
Shock	-4.0	-0.6	72
Impact of shock on mean	Lower	Lower	Longer
t-Statistic	(1.58)	(2.20)	(1.03)
Lender			
No shock	-7.5	-5.0	89
Shock	2.6	11.8	80
Impact of shock on mean	Higher	Higher	shorter
t-Statistic	(4.56)	(3.06)	(1.89)

Realized Terms versus Borrower and Lender Shocks Received

Figure by MIT OpenCourseWare.

Idiosyncratic vs Aggregate Risk

- ▶ Loans tend to occur within village only
- ▶ So only the risks that are imperfectly correlated within the village can possibly be insured (if whole village hit by flood, who will pay out to the shocked?)
- ▶ Analysis of variance of yields: 58 % of variation is common to entire village ('aggregate')
- ▶ But Udry conjectures that much aggregate village risk is shared between villages through merchant traders (who know each other and are in long-term relationships)
 - ▶ One of these traders per village in his sample.
 - ▶ All traders were wealthy, and accounted for 37-17 % of within-village loans
 - ▶ One trader reported owing lots of money (equal to 11 % of village's loans) to another trader in another village

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