TABLE I

Realized terms vs. borrower and lender shocks received

Adverse shock received by	Sample means: Monthly interest rates[a]	Simple interest rates[b]	Repayment period in days
(A) Borrower			
—no shock	0·5%	20·4%	67
—adverse shock	−4·0%	−0·6%	72
Impact of shock			
—on mean:	lower	lower	longer
—(t)	(1·58)	(2·20)	(1·03)
(B) Lender			
—no shock	−7·5%	−5·0%	89
—adverse shock	2·6%	11·8%	80
Impact of shock			
—on mean:	higher	higher	shorter
—(t)	(4·56)	(3·06)	(1·89)

Notes. The impact of the shocks is judged by a two-sided t-test for equal means ($\mu_{noshock} - \mu_{shock}$). The absolute value of the t-statistic is in parentheses.
The definition of 'adverse shock' is:
1. A respondent (borrower or lender) is judged to have received an adverse shock if he reported an unexpected adverse event on any of the fields he farms during the term of the loan. Common events were flooding, wind damage, or infestation by insects.
2. The other party (borrower or lender) is judged to have received an adverse shock if the respondent reported an unexpected, serious event that occurred in the other household during the term of the loan. Common events were farming events as in (1), and medical problems, rain damage to houses, and other 'household emergencies'.
[a] This is a standard monthly compound interest rate.
[b] This is the simple ratio of the amount repaid minus the amount borrowed to the amount borrowed.

evidence of any important deviation from the complete information assumption of the standard competitive framework. This simple framework, therefore, serves as the benchmark for the analysis of these loan transactions. This competitive general equilibrium model is developed in Section 2. An econometric model based on the general equilibrium results is presented in Section 3. Section 4 provides a brief description of the data. In Section 5, I present estimates which confirm the quantitative importance (as well as statistical significance) of state-contingent payments that flow toward households which receive unexpected adverse shocks.[6]

The apparent importance of direct risk pooling through state-contingent loan repayments raises the possibility that the allocation of risk within these villages approximates Pareto efficiency. A number of studies have recently explored this possibility in other contexts.[7] If these loan transactions mimic a complete set of competitive insurance markets,

6. See Kochar (1991), and Bell, Srinivasan and Udry (1991) for recent empirical models of credit transactions in developing countries.

7. Townsend (forthcoming) shows that there is a high degree of co-movement in individual (age-sex adjusted) consumption across households within villages covered by the ICRISAT Indian survey. He presents evidence, however, that a fully Pareto efficient allocation is not achieved in the Indian villages. Lim (1991), using the same data, tests the hypothesis of Pareto efficiency against the alternative that each household separately smooths its income shocks over time. He concludes that the data correspond more closely to full Pareto efficiency than to the permanent income hypothesis. The complete markets hypothesis has also been tested with data from the U.S. Hayashi, Altonji and Kotilkoff (1991), Altug and Miller (1990), Mace (1991), Zeldes (1989) and Cochrane (1991) provide examples of empirical tests of implications of Pareto efficiency. Only Altug and Miller are unable to reject the (stringent) standard that a complete risk pooling, Pareto-efficient allocation of risk is achieved in the U.S.