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CONTINGENT LOAN REPAYMENT IN THE PHILIPPINES

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Contingent Loan Repayment in the Philippines[*]

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Abstract

Using data from the Philippines, this paper seeks to understand how households in the study area apparently manage to avoid falling in a debt trap in spite of frequent borrowing. Findings suggest this is achieved via three institutional features. First, most informal debt carries no interest. As we show in the conceptual section, charging zero interest makes a debt trap impossible. Second, for all debts, repayment is postponed in case of borrower's difficulty; this is the only insurance feature of debt repayment. Third, while debt principal is seldom forgiven or reduced, interest-bearing debt does not carry additional interest if debt repayment is delayed. This prevents interest charges from accumulating and debt from snowballing.

JEL classification code: G19, K12, O12

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1. Introduction

Risk is part of life. The way people and firms deal with risk therefore affects many aspects of economic activity. This is true everywhere, but is particularly marked in poor rural economies where the magnitude of risk is larger and individual capacity to deal with risk is less (Fafchamps 1999). Economic agents have devised a variety of strategies to cope with risk, such as transfers, precautionary savings, or risk pooling (e.g. Townsend 1994, Morduch 1995). We focus here on one of these strategies: borrowing.

It is increasingly recognized that credit plays an important role in the way people deal with risk By taking up a new loan, individuals can smooth their consumption in response to shocks. Firms can do the same to smooth their cash flow (e.g. Rosenzweig 1988, Imai 2000). Fafchamps and Lund (2003), for instance, show that rural Filipino households borrow from friends and relatives when affected by income or health shocks. In anticipation of this, individuals or firms may set up networks of people who can help them in times of trouble (e.g. Banerjee and Munshi 1999, Fafchamps and Gubert 2004). An alternative way of achieving the same outcome is for economic agents to open a line of credit beforehand. Overdraft facilities are examples of such lines of credit. Fafchamps, Pender and Robinson (1995) and Fafchamps (1994) show that overdraft finance is the dominant form of enterprise credit in Sub-Saharan Africa and that manufacturing firms rely on it to deal with changes in liquidity requirements.

Borrowing to deal with shocks is a double-edged sword. As individuals or firms borrow to meet immediate cash needs, they run the risk of falling into a spiral of debt – or debt trap.[1] In developed economies, the growing indebtedness of large segments of the population has begun to attract the attention of the press. Bissuel (2003), for instance, estimates that up

[1] The double-edged nature of credit is exemplified for instance by the work of Nkurunziza (2004) who shows that Kenyan manufacturing firms that had outstanding loans at the beginning of the 1990's were less likely to survive until the end of the decade, but also that surviving firms who had received credit managed to grow faster.

to 200,000 French households are so much in debt that they will never be able to repay what they owe (e.g. Banque de France 2001, DREES 2003). Similar trends have been noted in the US where debt relief is nevertheless available as individuals can file for personal bankruptcy (e.g. Maki 2000, Lawless 2002).[2] The advent of debt traps at the individual or household level has long been documented and discussed in the development literature, often in relation with patronage and labor bonding (e.g. Platteau 1995b, Platteau 1995a, Basu 1986, Bardhan 1984, de Janvry 1981, Srinivasan 1989, Genicot 2002).

It is now widely recognized that distress borrowing can push households into a situation of presistent poverty (e.g. Carter and Zimmerman 2000, Fafchamps 2003). What is less clear is how debt traps can be avoided without losing the risk coping benefits provided by credit. Using a first best general equilibrium argument, it has been shown that contingent credit repayment can eliminate the risk of debt trap (e.g. Udry 1994, Townsend 1993). This observation should not, however, be construed as implying that all forms of contingent debt repayment constitute evidence that a debt trap has been avoided. The role insurance plays in patronage relations is discussed in detail by Scott (1976) and Platteau (1991). Fafchamps (1999) shows that, in asymmetric mutual insurance relationships, it is in the interest of the rich to provide insurance in the form of quasi-credit (see also Platteau (1995b)).[3] Geertz (1963) provides further insights in his discussion of how lenders in Indonesia modulate debt repayment in response to shocks affecting their debtor.

Contingent loan repayment has been discussed extensively in the literature – most notably in the literature on sovereign debt where debt repayment is often renegotiated (e.g. Eaton and Gersovitz 1981, Eaton, Gersovitz and Stiglitz 1986, Kletzer 1984, Grossman and Van Huyck

[2] See also http://www.managementconsultancy.co.uk/News/1132570 and related news items.

[3] These issues have also been discussed in the context of sovereign debt (e.g. Eaton and Gersovitz 1981, Grossman and Van Huyck 1988). Fafchamps (1996b) shows how debt repayment and nominal debt get dissociated once a debtor falls in a debt trap.

1988). What remains unclear is how the contingent repayment of informal loans is organized. Is it through delay in repayment (debt rescheduling), reduction in repayment (partial or complete debt forgiveness), or issuance of new debt (debt roll-over)? Under what circumstances does payment in kind or in labor replace payment in cash? Do lenders take advantage of borrowers' difficulties to force them into a debt trap, sometimes called debt peonage or labor bonding in the literature (e.g. de Janvry 1981, Bardhan 1984, Srinivasan 1989, Genicot 2002)?

The purpose of this paper is to provide elements of answer to these questions by drawing on empirical evidence from Ifugao, a highland community of the Philippines. The data, collected over a period of 9 months, include detailed information relative to all loans and loan repayment. Data were also collected on shocks affecting respondents and their lenders. We find that most informal debt carries no interest rate – in spite of non-negligible inflation. As we show in the conceptual section of this paper, charging zero interest makes a debt trap impossible. Second, for all debts, repayment is postponed in case of borrower's difficulty – a result that is consistent with Udry (1990)'s description of informal lending in Northern Nigeria. Principal, however, is seldom forgiven or reduced, in contrast to what Udry seems to imply in his analysis. Third, interest-bearing debt does not carry additional interest if payment is postponed. The importance of the latter point has, we believe, not been recognized in the literature. Combined with debt postponement, it prevents interest charges from accumulating and debt from snowballing while providing debt relief for debtors in difficulty. In the conceptual section, we argue that these features cannot be understood as restrictions on the credit market but rather as consequences of access to alternative avenues of insurance. Finally, we find some evidence that debtors unable to repay in cash volunteer their labor as repayment. As far as we can judge, this practice does not seem to be associated with labor bonding in the survey area.

Taken together with the earlier results of Fafchamps and Lund (2003), these findings depict an economy in which informal credit is widely used as a way to deal with shocks but in which safeguards exist that make falling into a debt trap unlikely.[4] This is consistent with descriptions of the study area by social scientists (e.g. Barton 1969, Barton 1938, Conklin 1980, Russell 1987, Milgram 1999) who find it more egalitarian than surrounding rural communities in the Philippines and East Asia in general (e.g. Hayami and Otsuka 1991, Hayami and Kikuchi 2002, Kikuchi, Fujita and Hayami 2002, Floro and Yotopoulos 1991, Geertz 1963, Iqbal 1988, Scott 1976).

The paper is organized as follow. We begin in Section 2 by providing a conceptual framework for contingent loan repayment. We examine the conditions under which debt peonage or labor bonding are likely to arise. Forms of contingent repayment are contrasted with the help of a simple model. We show that debts based on the continued voluntary participation in long-term relationships are more likely to resort to debt rescheduling rather than debt roll-over. In a perfect risk sharing equilibrium, gifts and transfers should be made to help pay off debts. Section 3 discusses the data collection methodology. A simple test of contingent repayment is presented in Section 4. A more detailed analysis of the forms of contingent repayment appears in Section 5.

2. Conceptual Framework

In this section, we construct a general conceptual framework of contingent loan repayment. The emphasis is on informal lending, that is, on debt contracts for which the threat of court action is either infeasible or non-credible[5] although we do formally allow for court action as well. The literature on sovereign debt was first to develop lending models in which enforcement is not

[4] A few observations in the sample report having mortgaged their land in order to obtain consumption credit. This may be a prelude to distress land sale. Unfortunately, we do not have enough observations to draw inference regarding these isolated cases.

[5] Court action may be infeasible because courts are absent, unreliable or corrupt. It is non-credible when the loss from the contract is smaller than the cost of sueing, or when the debtor has no assets to foreclose upon.

based on the threat of court action. Eaton and Gersovitz (1981) and Grossman and Van Huyck (1988) proposed models of loans as self-enforcing contract (see also Eaton et al. (1986) and Kletzer and Wright (1990)). In these models, the debtor repays because he or she fears losing the risk smoothing mechanism that access to credit provides. As Bulow and Rogoff (1989b) pointed out, self-enforcement depends crucially on the absence of insurance alternatives.

The risk sharing literature has also focused on self-enforcing informal arrangements. Kimball (1988) and Coate and Ravallion (1993) were first to use a repeated game to model risk sharing. Subsequent theoretical work by Kocherlakota (1996) and Ligon, Thomas and Worrall (2001) uses a repeated principal-agent framework to characterize the equilibrium path of the risk sharing game (see also Ligon, Thomas and Worrall (2000) and Foster and Rosenzweig (2001)). Fafchamps (1999) shows that in the presence of limited commitment, risk sharing naturally takes the form of an informal debt contract with contingent repayment.

In this section we build on this literature to construct a model of informal lending as a repeated principal-agent model with uncertainty. The purpose of the model is to identify conditions under which informal lending does not lead to a debt trap and hence does not push households into persistent poverty. We start from an extreme situation in which the lender has so much power that debt trap is immediate. This case corresponds to a situation in which someone in desperate need of cash turns to a loan shark and, because of high interest rate and penalties, fall irremediably into debt. Such situations have been described in the literature either as debt peonage or as labor bonding. In the case of debt peonage, the borrower continues to work independently but is more or less permanently indebted (e.g. Geertz 1963, Fafchamps 2003, Edmonds and Sharma 2004). In the labor bonding case, the borrower is forced to work for the lender in a way that ressembles indenture contracts of the past (e.g. Srinivasan 1989, Genicot 2002). In this section we do not draw a sharp distinction between the two but in the empirical part we explicitly examine the data for evidence of labor bonding.

We then progressively impose constraints on the lender's behavior that reduce the probability of debt trap. These restrictions can originate in laws and regulations, such as laws and customs banning usury. We also examine restrictions coming from competition in credit and insurance markets and identify conditions under which the possibility of a debt trap vanishes.

To focus the attention on loan repayment, we consider a two-agent debt repayment game. Throughout, borrower and lender are denoted with the superscripts b and l, respectively. These subscripts correspond to their situation in the first period. In subsequent periods, they may switch roles, the lender becoming borrower and vice versa. The model is recursive. Assets are ignored. The stock of debt at the beginning of period t is denoted D_t. During period t, borrower and lender each incur an income shock s_t^i, $i = \{b, l\}$. Repayment is written R_t. The instantaneous utility of the borrower is written $U_b(c_t^b)$ with $c_t^b = y_t^b - R_t = \bar{y}^b + s_t^b - R_t$. The utility of the lender is $U_l(c_t^l)$ with $c_t^l = \bar{y}^l + s_t^l + R_t$.

In both cases, $\bar{y}^i$ denotes the expected income of agent i. For simplicity, we assume that incomes are iid. Negative consumption is not feasible, i.e., $\bar{y}^b + s_t^b \geq R_t$. This means that the borrower cannot repay in period t more than his current income.

In each period, borrower and lender renegotiate debt repayment. We begin by assuming that the lender has all the bargaining power. We weaken this assumption later. Repayment by the borrower is voluntary in the sense that agreeing to the lender's conditions must leave the borrower better off than breaking the relationship.[6] We call breaking the relationship a default. We assume that, in case of default, the lender can credibly inflict penalties denoted $P_t \geq 0$, which may be legal and extra-legal. Legal penalties primarily take the form of court action. Examples of extra-legal penalties include recourse to 'loan enforcers' and exclusion from other

[6] In this category of models, there is no action taken by the borrower and thus no incentive compatibility constraint. The only constraint is the voluntary participation constraints. See for instance Kocherlakota (1996).

social intercourse (Spagnolo 1999). In general, penalties depend on the stock of debt so that $P_t = P(D_{t+1})$ with $P' \geq 0$. If penalties are not credible, $P_t = 0$ (Fafchamps 1996a).

With these assumptions, the model takes the form of an agent-principal model:

$$\max_{R_t, D_{t+1}} U_l(\bar{y}^l + s_t^l + R_t) + \beta^l EV_l(D_{t+1}) \text{ subject to} \tag{2.1}$$

$$\begin{aligned} U_b(\bar{y}^b + s_t^b - R_t) + \beta^b EV_b(D_{t+1}) &\geq U_b(\bar{y}^b + s_t^b) + \beta^b EV_b(0) - P(D_{t+1}) \;\; \forall t \\ \bar{y}^b + s_t^b &\geq R_t \;\; \forall t \end{aligned}$$

where the first inequality is the voluntary participation constraint and the second is the feasibility constraint.[7] Parameters β^l and β^b are the discount factors of the lender and borrower, respectively. We assume that the borrower worries about starvation, i.e., $\lim_{c \to 0} U_b(c) = -\infty$. In this case, the second constraint is superfluous. Since the borrower's utility is monotonically decreasing in R_t and the penalty is monotonically non-decreasing in D_t, it is always in the lender's interest to choose R_t and D_{t+1} such that the voluntary repayment constraint is binding.

If $P(D) = 0$ for all D, repayment is still possible but only if the lender provides insurance. Eaton and Gersovitz (1981) derive a similar result for sovereign debt. In this case, the optimal debt contract becomes fully contingent and resembles an insurance contract (Grossman and Van Huyck 1988). If the lender is risk neutral, the optimal repayment schedule is such that the borrower's consumption is constant. The expected gain to the borrower is an increasing function of the borrower's willingness to pay for insurance, that is, of his risk aversion. Only if the borrower is risk neutral is expected repayment 0 (Fafchamps 1999). If the lender is risk

[7] Consumption shocks such as a sickness that requires health expenditures can be treated as utility shocks as in (e.g. Mace 1991, Cochrane 1991).

averse as well, the optimal debt contract resembles mutual insurance: when the lender receives a negative shock, repayment is higher and debt falls faster (Ligon et al. 2000).

When computing $EV_l(D_{t+1})$, the lender takes into account the possibility of future default. But in the model 2.1, it is never in the lender's interest to force the borrower into actual default. This is because we have implicitly assumed that the lender does not benefit from imposing the penalty. The lender's payoff is thus highest if he continues extracting regular debt repayment R_t from the borrower. This situation is what some have described as debt peonage: the borrower is 'prisoner' of the lender and obligated to permanently repay a never-extinguished debt. Note, however, that if $P(D)$ is 0 or close to 0 for all D, the lender must provide insurance to the borrower otherwise $EV_b(D_{t+1}) < EV_b(0)$ and default occurs. Only if $P(D)$ is high enough can positive payments be extracted in all states of the world (Bulow and Rogoff 1989a).

If the lender directly benefits from imposing the penalty, default eventually occurs. Let $Q(D_t)$ be the lender's payoff if the penalty is imposed. Suppose that there exists a high enough D_{t+1} such that $EV_l(D_{t+1}) < EV_l(0) + Q(D_{t+1})$. Then it is always in the lender's interest to set D_{t+1} such that:

$$EV_l(D_{t+1}) < EV_l(0) + Q(D_{t+1}) \tag{2.2}$$

For any finite $P(D_{t+1})$, default is ensured by setting R_t at the highest possible level – so that $U_b(\bar{y}^b + s_t^b - R_t)$ tends to $-\infty$. In this case, the voluntary repayment constraint is violated and default occurs. Labor bonding – i.e., a defaulting borrower becomes the slave of his lender – and loss of land to the mortgagee are examples of such situation (Genicot 2002). The lender may also perceive a high utility from punishing the borrower out of anger or spite (Becker and Madrigal 1994).

What the above discussion has made clear is that, without additional restrictions on the relationship between D_t, R_t, and D_{t+1}, the model instantaneously results in either debt peonage or labor bonding. This is because the lender has too much power. Restrictions on the relationship between D_t, R_t, and D_{t+1} may come from various sources. Laws regarding usury and admissible contractual penalties for late payment set a cap on the speed with which the debt can rise. The lending contract may also specify beforehand what fees and interest charges are assessed in case of non-payment. For instance, if the maximum admissible interest rate is $r^{\max}$, then the lender faces an additional constraint:

$$D_{t+1} \leq (D_t - R_t)(1 + r^{\max}) \tag{2.3}$$

If such a constraint is present, it is always in the interest of the lender to set $D_{t+1} = (D_t - R_t)(1 + r^{\max})$ since this maximizes future repayments. If $r^{\max}$ is high and D_t is large relative to what the borrower can pay, the nominal debt increases exponentially and eventually exceeds the value of all future payments the borrower can ever make.[8] When this happens, debt peonage or labor bonding again obtain.

Societies may seek to prevent this occurrence by forbidding usury. Indeed, if $r^{\max} \leq 0$, the debt can never snowball and a debt trap is impossible. This is because, no matter how large the amount due D_t is, it can be paid in finite time even by a very poor debtor.[9]

Competition in the credit market also imposes limits on the speed at which debt can accumulate. If the borrower can borrow from other sources at a rate $r < r^{\max}$, any attempt by the lender to impose $r^{\max}$ leads the borrower to borrow D_t elsewhere at rate r to pay off his debt to the lender. This ensures that the borrower does not incur the default penalty $P(D_t)$. In the perfect competition case, r is equal to the riskless interest rate plus a risk premium (e.g.

[8] Examples of this kind of situation can be found in sovereign debt contracts when nominal debt is sold at a discount on secondary markets.

[9] This follows from a straightforward martingale argument combined with the fact that it is not in the interest of a creditor to extend debt if the return is zero or negative unless the lender expects to secure insurance in the future (Fafchamps 1999). Of course, repayment may take a very long time if repayment in each period R_t is very small.

Kletzer 1984, Grossman and Van Huyck 1988). As the borrower's debt increases relative to his ability to pay, the risk premium increases as well so that, even in a perfect competitive economy, an unlucky borrower eventually ends up as a debt peon – not to a particular lender but to the collectivity of lenders. To prevent this occurrence, many societies have bankruptcy laws for corporations. Except for the US, however, most societies do not recognize individual bankruptcy, in which case past debts are never extinguished and debt peonage is legally possible.[10] In this case, debt is only extinguished by the death of the debtor.[11]

Having clarified the factors that affect the path of debt repayment, we turn to the debt contract proper. For a lender and a borrower to voluntarily enter in a debt contract, they must both benefit from it. For the lender, this means that $V_l(D_0) \geq V_l(0)$: lending yields more utility. If the lender is risk neutral, this boils down to:

$$\begin{aligned} \sum_{t=1}^{\infty} \beta_l^t E[R_t] &\geq D_0 \text{ or} \\ \frac{E_0[R]}{D_0} &\geq \frac{1-\beta_l}{\beta_l} \end{aligned} \tag{2.4}$$

The borrower must also agree to the contract. This requires that

$$V_b(0) \leq V_b(D_0) \tag{2.5}$$

where $V_b(D_0)$ internalizes the fact that, in some future state of the world, the borrower may want to default and incur the penalty (Fafchamps 1996a). If repayment is too high, the borrower prefers not to borrow. The same occurs if repayment is insufficiently flexible so that default is likely, and if the penalty for default is high. By the same token, a contract with rigid repayment

[10] To our knowledge, the Philippines do not have personal bankruptcy laws.
[11] In some societies, e.g., the ancient Romans, debt is inherited.

is not attractive to a borrower who faces a lot of income risk. A borrower may nevertheless accept a disadvantageous contract if he is very impatient (e.g., drug addict, compulsive gambler) or if he is on the brink of starvation, so that money today is worth much more than money tomorrow. For this reason, we expect poor people facing a lot of uninsured risk to voluntarily enter in debt contracts leading to debt peonage or labor bonding.

There is, however, one last important wrinkle on the story. If the default penalty $P(D_t)$ is small or zero, the borrower may avoid a debt trap if insurance is available from sources other than the lender. Voluntary debt peonage or labor bonding require that alternative sources of protection against risk be absent. To see why, suppose that an unlucky borrower can instantly find another person who can and is willing to provide the same level of mutual insurance. Further suppose that this person does not inherit the lender's claim on the borrower, so that the relationship with this new partner starts with a 'clean slate'.[12] In this case, the unlucky borrower receives the same level of insurance as with the old lender but does not incur the cost – debt peonage. This point was initially made by Bulow and Rogoff (1989b) regarding sovereign lending but applies equally well to our case.

Let us recap the conditions that make debt peonage impossible or unlikely. First, the new partner must be able to provide insurance that is comparable to that offered by the initial lender. Because there is a cost associated with debt peonage, insurance need not be exactly as good for the borrower to switch allegiance. But it has to be good enough. An immediately corollary is that if the lender is the only person capable of offering the needed insurance, then voluntary debt peonage is self-enforcing. This is precisely the patronage situation described by Platteau (1995b) and Platteau (1995a), except that here it takes the form of a debt trap.

[12] Whether or not this is the case depends on the way society regards the initial lender's claim. If it is viewed as legitimate, new partners may refuse to assist the unlucky borrower to escape the consequences of his actions. Social norms and ethical values are thus likely to affect whether or not escape from debt peonage is possible. By the same token, if lenders collude not to undermine each other, escape will also not be possible. Of course, this begs the question of how collusion can be sustained over time, but this is another story.

Second, access to insurance from the new partner must be fast enough. Suppose that time is required to form a trust bond with a new partner before full mutual insurance can take place. Further suppose that the borrower has not already formed such bonds. Then securing an alternative source of insurance by forming a new bond is not instantaneous. In this case, the delay may be sufficient to deter switching. An immediate corollary is that individuals with few bonds are more likely to fall into a debt trap – a prediction that appears in line with what we know of destitution in rich countries, for instance. Put differently, transition into permanent poverty and destitution is more likely for individuals with little or no social network capital, an issue examined more in detail for instance by (Fafchamps and Gubert 2004).

This rapid overview of contingent debt contracting has taught us a number of lessons. If borrowers are risk averse, debt repayment should be contingent on shocks affecting the borrower. If penalties can be inflicted upon defaulting borrowers, free debt contracting leads to permanent indebtedness (debt peonage) or to labor bonding for unlucky borrowers (Fafchamps 2003). Borrowers fall faster into permanent indebtedness if there is little competition between lenders or if there are few legal or customary restrictions on interest rates (prohibition of usury). If penalties for default are low, reversals of financial flows should be observed: fresh money should flow from lenders to borrowers when borrowers are faced with large negative shocks. If penalties are high enough, it is possible to observe unidirectional flows but contingent repayment is still optimal. For debt traps not to arise, either the interest rate must be 0 or alternative sources of insurance must be accessible under short notice.[13]

[13] These predictions all rest on the assumption that borrower and lender can observe shocks s_t^b and s_t^l. If shocks are not observable, lenders cannot condition repayment on s_t^b. Leaving repayment at the discretion of the borrower creates moral hazard, since it is in the interest of the borrower to falsely report shocks to abscond from repaying the debt. In this case, rigid repayment may be optimal. Another possibility is to give the borrower some limited discretion regarding the timing of repayment, e.g., to let arrears accumulate up a given ceiling or to allow delays of up to 60 days – provided the borrower is in 'good standing', that is, has not abused this flexibility in the past. This discretion works like a line of credit or overdraft facility. It can improve upon a rigid repayment schedule by providing limited insurance to the borrower. Banks often operate in this manner. They typically combine a loan with an overdraft facility. The loan has a rigid repayment schedule, but the overdraft facility gives the borrower

Armed with the conceptual framework, we now examine debt repayment practices among rural households. Our main objective is first to assess whether debt repayment depends on shocks affecting lender and borrower. We then examine what form contingent repayment takes. Do borrowers delay repayment or is the amount repaid affected as well? In what form do they repay the debt? Is there evidence of debt roll-over? We pay special attention to any possible evidence of debt peonage and labor bonding.

3. The Data

Having presented the conceptual framework, we now describe the data. A survey was conducted in four villages in the Cordillera mountains of northern Philippines between July, 1994 and March, 1995 (Lund 1996). A random sample of 206 rural household was drawn after taking a census of all households in selected rural districts. These households are dispersed over a wide area; most can only be reached by foot. Three interviews were conducted with each household at three month intervals between July 1994, just after the annual rice harvest, and March 1995, after the new rice crop had been transplanted. The data contain detailed information on debt and shocks.

Data were collected on the characteristics of each household. Respondents were also asked to list all loans taking place within the last three months of each survey round. Great care was taken to collect data on all possible in-kind loan payments, including crops, meals, and labor services. The characteristics of each transaction were recorded.

Information was also gathered on a variety of income and consumption shocks, such as crop failure, unemployment, sickness, and funerals. Events, such as sickness, that require the organization of traditional religious ceremonies are included as well. In addition, we collected an

certain discretion in the timing of repayments. We have no information on shock observability and do not discuss this issue further in this paper.

aggregate subjective measure based on respondents' own assessment of their financial situation. This measure combines many simultaneous shocks and allows respondents to attach their own weight to particular events.[14] Responses range from -2 for very good to +2 for very bad. A similar ranking was obtained for a large proportion of partners in loan contracts. Data are available on each of 206 households for three survey rounds (see Lund (1996) for details).

Sample households derive most of their income from non-farm activities (Table 1). There are many skilled artisans in this area, and their wood carvings, woven blankets, and rattan baskets supply a growing tourist and export trade. Unearned income – mostly land rentals – is not negligible but very unevenly distributed across households, as is often the case with asset income. Although nearly all households operate their own farm, the majority do not produce enough grain to meet annual consumption needs. Sales of crops and livestock account for a minute fraction of total income.

The vast majority of rural credit transactions are composed of consumption loans between relatives and neighbors. Borrowing from formal credit institutions is rare: only 3.8% of loans in the study are from credit cooperatives, banks, or government organizations.[15] Because these loans are larger, however, they account for 21.1% of new loans in value terms. Formal loans are mostly disbursed for production purposes. Credit from shopkeepers and advances from middlemen account for 28.2% of all new loans and another 11.5% of new loan value. These two categories of loans are likely to have a profit-seeking motive. Together they constitute what, in this paper, we call formal loans. The remainder, which we call informal loans, take place between

[14] For example, one respondent whose spouse had been very sick paradoxically ranked herself better during the survey period than during the preceding one. When questioned, the respondent explained that a child got a new job, and that this happy event far outweighed the costs of her husband's sickness.

[15] The small percentage of formal sector loans in the study is consistent with other studies of rural credit. Udry (1990) and Udry (1994) finds that only 7% of loans in northern Nigeria are from the formal sector. Rosenzweig (1988) reports that 13% of loans in the ICRISAT dataset are from formal institutions. In a study of informal credit in Asia, Ghate (1992) suggests that up to 1/2 of all loans are informal in Thailand, up to 2/3 are informal in Bangladesh, and over 2/3 are from informal sources in the Philippines.

people who know each other well. In value terms, loans from friends and relatives represent 67.4% of new borrowing (Table 2). Borrowers and lenders are well-acquainted: in nearly all cases, they describe each other as relatives or friends and in more than 85% of the cases, respondents were able to provide a complete accounting of the wealth holdings and demographic characteristics of all their loan partners.

As seen in Table 1, surveyed households are net recipients of gifts and informal loans. We suspect this is due to two main reasons. First, gifts include remittances from relatives living in local towns and distant cities. The study area is thus a net gift recipient. Regarding loans, most formal loans come from the nearby town of Banaue which is not covered by our survey (Table 3). Around 70 percent of informal lending occurs between households in the same village but about a quarter of informal loans also originate from elsewhere in the same district, principally from Banaue. This is probably because Banaue residents are slightly better off than people in nearby villages and therefore can afford to lend money to relatives in need. This explains why the survey area is on aggregate a net borrower.

Participation in informal lending is widespread (Table 4). Only three households in the sample of 206 were not involved in any informal credit transactions over the three survey rounds, while 92% of the households borrowed and 61% lent. Over half of the sample households participated in both borrowing and lending. Informal loans are not exchanged on an anonymous basis within a large community or market but rather through a network of personalized relationships. 92% of households have had credit transactions with their current loan partners in the past, and the same proportion expect to transact again in the future. Over half the households have reversed roles with their loan partners: current borrowers have given loans to their lender in the past and current lenders have received loans from borrowers. Obtaining credit in the future may thus be a motivation for extending loans today. Furthermore, repeated interaction seems required to build trust between network partners: during the interviews, many respondents stressed the role of trust building before loans can take place. These observations suggest that access to mutual insurance is widespread among studied villages, a feature that in the conceptual section we have associated with a decreased likelihood of debt trap.

Loan amounts are shown on Table 5. There is little difference in the average size of loans received or given to friends or relatives, but the coefficient of variation is very large, suggesting large differences within the sample. In all, the survey has recorded 854 different informal loans. Loans from shopkeepers are the next most common category with 329 observations, but these loans are in average smaller in size. In contrast, few loans from formal institutions are recorded in the survey but the magnitude of the amounts lent is much larger – more than 7 times the average size of informal loans. As reflected by the very high coefficient of variation, loans from formal institutions are also extremely varied in size, with a very small number of households receiving the bulk of formal lending.

Most informal loans are taken for consumption rather than investment purposes.[16] Table 6 shows that the most common reason for borrowing is to meet immediate consumption needs. Only 17.2% of informal loans are used for investment purposes, mostly schooling. This raises the possibility that the primary motivation behind informal loans is to smooth consumption. Some gifts are motivated by the desire to repay for a previous loan. In addition, respondents explicitly reported that 5.9% of the loans were taken so that the borrower could give or lend the money to someone else. The fact that households act as intermediaries in transferring loans from one friend to another indicates that informal credit is not exchanged through a market system but rather through a network of personal contacts. The small proportion of re-lending nevertheless suggests that loan intermediation is not frictionless.

[16] Loans from banks and credit cooperatives, in contrast, are given for investment purposes only. Kochar (1997) reports similar restrictions on formal lending in India.

As illustrated in Table 7, informal loans appear quite flexible. None have written contracts, less than 4% specify repayment schedules, and only 0.7% require collateral. The majority of informal loans, nearly 86%, charge no interest. This is a common feature of loans between friends and relatives (e.g. Ben-Porath 1980, Zeller, Schrieder, von Braun and Heidhues 1993). Since inflation is present in the study area, this de facto means that the real rate of interest on most loans is negative. Loans from shopkeepers almost never carry an interest charge.[17] In the conceptual section we have seen that loans that carry a zero or negative real interest cannot lead to debt trap. This finding alone could therefore account for the apparent absence of debt peonage in the study area.

An interest payment is specified in 14.2% of all informal loans, which represent 30% of the value lent. This suggests that an interest is more likely to be charged if the amount borrowed is large. Interest is calculated monthly without compounding. So, a 5% loan of 1000 pesos carries a constant 50 pesos monthly interest charge. We also see that the use of collateral and set repayment date increases with the size of informal loans, while remaining very low. This suggests that the threat of legal sanction $P(D_{t+1})$ is negligible except for a few large loans. In contrast, many loans from formal institutions carry an interest and require collateral.

Although 18% of the informal loans repaid during the survey period were not repaid in full, and 6% actually earned a negative return, in only one instance did a lender claim that a default had taken place. In the other cases both lenders and borrowers agreed to forgive part of the loan. By the same token, in 10% of all loans the borrower repaid more than the amount owed.[18] Similar evidence has been reported by Udry (1994) and Platteau and Abraham (1987).[19]

[17] Of course, shopkeepers may build an implicit interest charge in their prices. Unless this implicit interest charge increases with the debt to the shopkeeper – but there is no evidence of this – the zero interest on the debt ensures that the debt does not grow out of control.

[18] This occurs either because the loan is repaid ahead of schedule – including interest charges for the full duration of the loan – or because part of the loan is repaid in kind and the value of in kind appears to exceed the amount due. We revisit these issues later in the paper.

[19] Given these features, one may wonder whether such transactions should be called loans or something else

4. Testing contingent repayment

As discussed in Section 2, current theoretical thinking about informal debt contracts revolves around the concept of contingent repayment. The work of Udry (1994) on Northern Nigeria rural lending is usually cited as evidence for it. Udry's work, however, does not distinguish between various forms of contingency, e.g., delaying repaying vs. partial debt forgiveness. In this section, we test whether contingent repayment occurs and, if so, what form it takes. We examine four dimensions of repayment: timing; amount paid; form; and amount remaining due.

Factors influencing repayment are the amount of the loan still due and shocks affecting borrower and lender. The amount due D_t is decomposed as follows:

$$\begin{aligned} D_t &= L_0(1+rt) - \sum_{\tau=0}^{t-1} R_\tau \\ &= L_0(1+rt)S_t \end{aligned} \tag{4.1}$$

where L_0 is the loan amount given at time 0, r is the monthly interest rate, t is the time elapsed since the loan, R_τ is repayment at time τ, and:

$$S_t \equiv 1 - \frac{\sum_{\tau=0}^{t-1} R_\tau}{L_0(1+rt)}$$

The appeal of equation (4.1) is that it lends itself easily to logarithmic transformation. As is clear from (4.1), D_t can be decomposed into three components: the original loan amount L_0; an interest factor $1+rt$, which is 1 for zero-interest loans; and S_t, the share of the total amount due that remains to be paid. In our analysis, we enter these three components separately and in log form. If repayment is proportional to D_t without difference across loan size and interest

entirely, such as quasi-credit as in Platteau and Abraham (1987). What is important for our purpose is that respondents draw a sharp distinction between the two in that the obligation to repay an informal loan is regarded as much stronger than the diffuse obligation to reciprocate a gift. Quasi-credit is formalized in Fafchamps (1999).

rate, all three terms should have the same coefficient of unity. A loan is assumed fully repaid if $D_t \leq 0$; observations with $D_t \leq 0$ are thus dropped from the sample.

Regressors for shocks s_t^b (if the respondent is borrower) or s_t^l (if the respondent is lender) are constructed as follows. Information on shocks affecting the respondent is available for each of the three survey rounds. Respondents were asked to rank their current situation relative to normal. They were also asked about a variety of specific shocks, such as disease, loss of employment, and death in the family. To reduce measurement error in the subjective ranking variable, we instrument it using specific shock information as well as village-time dummies. The instrumenting equation is presented in Appendix A1. We see that subjective shock measures are most strongly influenced by sickness and by the need to pay for a funeral or illness ritual. Unemployment does not matter.[20]

To prevent the estimations being affected by omitted variable bias, we include additional controls related to the characteristics of the responding household. The vector of household characteristics includes the age in years of household head, the number of years of schooling completed by household head, a dummy indicating the male household head has craft or carpentry skills, a dummy indicating the head or spouse has a permanent job, the size of the household in adult male equivalents and the value of household wealth evaluated at the start of the survey. For informal loans, we also have information on the partner to the loan transaction, such as the age of household head and the level of income. This latter variable takes the form of a ranking from 1 (poor) to 4 (rich).[21]

[20] There is a single harvest season in the survey area, so that households are subject to a single crop shock which happened a few months before the first survey round. The crop shock is not significant and is ignored here.

[21] We run more parcimonious regressions without control variables in the vector of regressors and got very similar results.

4.1. Timing

We begin by examining the number of months elapsed between the time at which the loan was granted and the time in which it was repaid. The timing of repayment is analyzed via a duration model. The hazard repayment function describes the borrower's conditional propensity to repay. One way of making repayment contingent on shocks is simply to let the borrower repay late. Four sets of regressions are computed. We first distinguish whether the respondent is the lender or borrower. If the respondent is a lender, s_t^l is the shock to the respondent; if the respondent is the borrower, the shock variable is s_t^b. We therefore expect the sign on the shock variable to switch when the respondent is lender.

When the respondent is a borrower, we further distinguish between loans from friends and relatives (informal loans), loans from shopkeepers (shop loans), and loans from financial institutions (formal loans). It is fair to assume that formal loans are primarily granted for commercial reasons. Consequently, we expect formal lenders to display less flexibility and to insist on timely payment. In contrast, we expect contingent repayment to be present in informal loans, as predicted by the model presented in Section 2.

Results are presented in Table 8 using a Weibull hazard function. Regarding the effect of shocks, results by and large conform with expectations when the respondent is the borrower: shocks affecting borrowers s_t^b delay repayment except that, for formal loans, the effect is not significant at the 10% level. In contrast, shocks affecting informal lenders s_t^l do not appear to speed up repayment, contrary to what Udry (1994) found in Northern Nigeria.

We find that large loans and interest bearing loans tend to be paid more slowly. This is true for all categories of loans, although the effect is not always significant. At the same time, informal borrowers are more likely to pay when S_t is large, that is, when the loan is still due in full. Other results of interest show that certain categories of borrowers (older, better educated and wealthier) tend to repay faster.

The fact that loans bearing interest are repaid more slowly is a priori puzzling: if delaying increases the interest charge, it would be in the borrower's interest to speed up repayment. As we shall see below, interest charges often are renegotiated *ex post* so that delaying need not carry much penalty. By itself, this does not, however, explain why small, non-interest bearing loans are paid faster. One possible explanation, suggested by a referee, is that, in an insurance perspective, borrower should keep as many channels of consumption credit as possible. This point was already made in the conceptual section. As we will see in Section 4.5, lenders tend to refrain from lending again to borrowers who are in arrears. If they anticipate this, it makes sense for borrowers to first clear as many debts as possible to keep open as many cheap lines of credit as possible. The best way to achieve this is to pay small, non-interest bearing debts first.

To check the robustness of our results, we reestimated the model using first repayment only, in case the hazard function driving repayment is different for subsequent installments. Since the overwhelming majority of loans is paid in one installment, the results are very similar and are not reported here to save space. We also reestimated the model using a semi-parametric Cox model. Unlike the Weibull model, the Cox model does not impose a parametric functional form on the hazard. The magnitude of estimated coefficients is broadly similar across the Weibull and Cox models, but certain variables – such as shock variables – are not significant in the Cox model, probably because there is not enough information in the data to estimate coefficients precisely without making a parametric assumption on the hazard rate.

We also worry that the results presented in Table 8 may be affected by unobservable individual effects. This is particularly true for amount due and interest rate: if unreliable borrowers are also those that accumulate large, interest-bearing debt, the negative effect of loan size and interest charges could be due to an omitted individual effect. To investigate this possibility, we estimate two alternative models: a shared frailty model, and a 'fixed effect' model. The shared frailty model is roughly equivalent to an individual random effect model. We assume a Gamma distribution for frailty. The fixed effect model is estimated by adding individual fixed effects to the Weibull duration model.[22]

Results are summarized in Table 9. Controlling for individual unobservables basically does not affect our earlier results, although some coefficients lose in significance when we include individual fixed effects. Coefficients on loan size and interest charge effects are least sensitive to the inclusion of fixed effects: given a choice, borrowers first repay small, non interest-bearing loans. Our earlier finding that borrowers choose to repay zero interest loans faster is therefore confirmed. As we shall see later in the paper, additional interest charges do not appear to be added when a loan is paid late. The rationale therefore seems to be that, since the lender is charging interest, he has already been 'compensated' in some sense and the borrower is entitled to delay repayment. We revisit this issue later.

4.2. Amount paid

Next we turn to the amount paid conditional on repaying using a maximum likelihood selection model. The regressors entering the amount paid equation are the same as in the duration model. In the selection equation, we control for duration effects by including round dummies and a regressor measuring the time elapsed between the loan and the beginning of the survey round. Both round dummies and time elapsed are non significant in the amount paid equation but jointly significant in the selection equation. They can therefore serve as identifying restrictions.

Results are presented in Table 10. The selection equation simply confirms earlier results: the propensity to repay a loan decreases with loan amount and interest rate. In contrast, the amount

[22] The fixed effect model cannot be estimated for formal credit because of the insufficient number of observations with multiple formal loans.

paid equation contains some surprises. First, we find that shocks to the borrower never have a significant effect on the amount repaid, conditional on repaying. In two of the four regressions, the regressor even has the wrong sign. What these results suggest is that, contrary to what Udry (1994) finds in Nigeria, reducing the amount repaid when the borrower faces a shock is not the manner by which loan repayment is made contingent on shocks. As shown in Tables 8 and 9, borrowers pay late instead.

Second, we find that the amount paid is roughly proportional to the loan amount L_t and the share due S_t, as could be expected. But the coefficient on L_t is significantly smaller than 1 in three of the four cases, indicating that loan repayment does not increase proportionally with the size of the loan. We also find that, in the informal loan regression, the coefficient on the interest factor is significantly smaller than 1, suggesting that interest charges are not paid in full. This again suggests that debt repayment does not follow contractual interest charges.

4.3. Form of repayment

Next we turn to the form of repayment. In the area studied, repayment takes essentially two forms: cash and labor. To allow comparison, labor values were imputed by respondents.[23] Some 17% of all loan repayments take the form of labor. In all cases except 2, repayment within a specific survey round is either in cash or in labor. We therefore estimate a logit model of whether repayment takes the form of labor or not, conditional on repaying. The determinants are the same as before, except that we include round dummies to capture possible seasonal effects. Time elapsed since the loan was granted is also included to check whether payment in labor is more likely for old unpaid loans, a finding that would support the labor bonding story.

[23] This is a fair question since all loans are stipulated in monetary terms and respondents must have agreed with the lender by how much of the loan is reduced when they work for them. In a few cases when labor value is missing, we impute a value using the median wage rate.

Results are presented in Table 11. The estimator is logit.[24] Only observations with a repayment are used for estimation. The regression therefore captures the probability of repayment in labor, conditional on repayment taking place. For shop loans, shocks are not significant. In contrast, for informal loans, a shock to the borrower has a positive sign. This means that, conditional on repayment occurring, a borrower experiencing a bad shock is more likely to repay in labor. The evidence therefore suggests that payment in labor is substituted for cash payment by borrowers in difficulty. This result is at prima facie consistent with the labor bonding model which predicts that a debtor in difficulty would eventually be forced to work for the lender. We also find that payment in labor is more likely for large shop loans but inexistent for formal loans carrying interest. Again, this is consistent with labor bonding, i.e., highly indebted individuals providing labor payments. However, we do not find that labor payment increases over time, as would be suggested by the labor bonding model.

A different picture emerges for informal loans. In this case, payment in labor is less likely for large loans. Payment in labor thus appears to be a friendly way of reciprocating for small financial assistance. When the amount is larger, repayment in cash is expected. Also, payment in labor is less likely for old loans. What this suggests is that borrowers unable to pay on time volunteer their labor, possibly to demonstrate good faith. This explains why payment in labor takes place early on, not later as would be the case for labor bonding.

Other results of interest in the informal loan regressions show that the wealth of borrower and lender affect the probability of repayment in labor in opposite direction. Conditional on repayment taking place, repayment in labor is less likely for rich borrowers, while rich lenders are more likely to be repaid in labor. These results are not inconsistent with the labor bonding

[24] We also estimated a multinomial logit model with three choices: (1) not paying; (2) repaying in labor; and (3) repaying in cash. Identical conclusions obtain. We also estimated a fixed-effect logit model, but the number of remaining observations is too small for inference purposes (i.e., none of the regressors is significant).

model.

Taken together, the evidence therefore suggests that labor bonding is not a feature of informal lending. We cannot, however, entirely rule out the possibility of some mild form of labor bonding for loans from shopkeepers. This finding is in close agreement with the description of labor bonding and debt peonage made by Geertz (1963) in neighboring Indonesia: it is a feature of the emerging market economy, not of 'traditional' rural society.

4.4. Debt forgiveness

So far we have examined actual debt repayment. There remains the possibility that borrowers who face a bad shock are simply dispensed from repaying a loan or from repaying it in full. To examine this possibility, we make use of information collected at the end of the survey in round 3. Respondents were asked the amount remaining due on each individual loan. We call the amount the implicit debt and denote it Ω. For 42% of the loans, $\Omega = 0$. Other loans have remaining balances. The debt forgiveness ratio ϕ can then be computed as:

$$\phi = \frac{D_3 - \Omega}{L_0}$$

where L_0 is the loan principal and D_3 is the amount due in round 3 as stipulated in the contract – the 'contractual debt' – obtained from equation (4.1).

In 3.7% of the cases, ϕ is negative: the borrower paid more than was stipulated in the contract. In 72.2% of the loans, $D_3 = \Omega$ so that the contractual debt matches exactly the amount considered due by respondents at the end of round 3. In the remaining 24.1% of cases, the contractual debt is higher than what respondent thinks has to be paid. In most cases the difference is a small proportion of the principal. But for 7% of the loans, the difference exceeds 50% of the principal. The reader may worry that the discrepancy between our estimate of the contractual debt and the amount respondents consider due may be driven by error of measurement, for instance due to a wrong imputation of repayment in labor. To investigate this possibility, we look whether the distribution of ϕ differs between loans repaid (in full or in part) in labor, and loans repaid exclusively in cash. No significant difference emerges. The average values of ϕ for loans repaid (at least in part) in labor and loans repaid exclusively in cash are 0.07 and 0.11, respectively, a difference that is not statistically significant. From this we conclude that high values of ϕ are not due to wrong imputation of labor. Still, our measure of ϕ is noisy which is why we need a statistical approach.

We investigate whether ϕ responds to shocks by regressing it on shocks and the three components of D_3. Regression results are presented in Table 12. Shock variables are not significant in any of the regressions. Except in the formal loan regression, the interest factor $1 + rt$ dominates the results: the higher the interest factor, the higher debt forgiveness is. In all regressions, the time elapsed since the loan was granted is significant as well, suggesting that unpaid loans become 'forgiven' as time passes – at least in the eyes of respondents. To ensure that these results are not driven by misunderstandings regarding contract terms, we repeat the analysis using only the 42% of all loans that are considered fully repaid. Virtually identical results obtain. We omit these results here for lack of space.

What the evidence therefore suggests is that for informal loans debt forgiveness is primarily driven by the renegotiation of interest charges. This is further confirmed by conducting a simple t-test on ϕ between zero-interest loans and interest-bearing loans. The average ϕ is 0.04 and 0.29 without and with interest, respectively. The difference is strongly significant, with a t-statistic of 13.8 and a p-value of 0.0000. Put differently, while borrowers pay zero-interest loan with only very minor debt forgiveness on average, in most cases they fail to pay contractual interest. If we limit our analysis to zero-interest loans only, one variable is significant across all regressions: the time elapsed since the loan was granted, meaning that old unpaid loans are considered forgiven.

These findings contradict the debt peonage model presented in Section 2: if lenders were using accumulated interest to push borrowers further into debt, they would not systematically reduce interest charges ex post. On the contrary, they would add to those charges in the hope of making debt peonage irreversible.

4.5. Future lending

Before concluding, we examine the data for evidence of debt roll-over and over-accumulation of debt. If debt were used to gain economic power over others, the analysis presented in Section 2 would lead us to expect heavily indebted individuals to borrow ever more, hence falling into a debt trap. In contrast, if debt peonage is not part of lenders' strategy, we expect them to refrain from lending to individuals who already owe them a lot of money. By the same token, they should be reluctant to lend to individuals who have taken a long time to pay previous debt and who have already been charged high interest rates in the past.

For each loan received, respondents were asked at the end of round 3 whether the lender would be willing to lend them more. For each loan given, on the other hand, respondents were asked whether they would be willing to lend more to the borrower. Overall, some 61% said they would be able to borrow more from the same lender if they wanted to and 63% said they would agree to lend more to the same borrower if they were asked to.

To investigate whether loans tend to snowball, we regress respondents' expectations of future lending on the amount they still owe, the contractual interest rate in their current loan, and the time elapsed since the current loan was granted. Fafchamps and Lund (2003) show that lending often plays an insurance role. To allow for this possibility, we also control for shocks. Loan forgiveness ϕ is included as regressor as well. If lending is driven by a profit motive, we expect lenders to refrain from lending to individuals who fail to pay their debt in full. In contrast, if lending follows primarily an insurance motive, those who needed debt forgiveness in the past may continue to need assistance in the future.

Results are presented in Table 13. Contrary to the debt peonage model, we find that the amount still due, the interest rate on the current loan, and the time elapsed since the loan was granted all have a negative effect on the expectation of future lending. This is true across all loan categories and whether the respondent is the lender or the borrower, but coefficients are not all significant. Put differently, this means that borrowers who owe a lot, are paying interest on their current debt, and are behind in their repayment are less likely to receive a new loan. These findings constitute fairly convincing evidence that forcing borrowers into high debt is not the strategy pursued by lenders in our sample. It is consistent with the earlier finding that interest charges often are reduced ex post.

Finally, the amount forgiven on the current loan does not have a significant effect on expectations of future lending. The variable even has a positive coefficient in one of the regressions. If anything, this demonstrates that lenders are not 'angry' at delinquent borrowers. We find no evidence that shocks raise expectations of future lending.

5. Conclusion

In this paper, we have examined the loan repayment practices of rural Filipino households. Our results complement the existing literature in several ways. Udry (1994), for instance, demonstrates that the repayment of informal loans is contingent upon shocks affecting lender and borrower. But he does not show which aspect of repayment is contingent, as we do here. In a survey of manufacturing firms reported by Fafchamps et al. (1995), firms were asked how they deal with liquidity crises. One of the most often cited response was to delay payment to suppliers. The authors further document the fact that interest charges for late payment by Zimbabwean manufacturers are nearly never paid, even when they are stipulated in the sales contract. These findings make sense when compared with the results reported here.

The literature on rural lending has often worried about debt peonage and labor bonding, although there is little hard evidence that it is a widespread phenomenon.[25] Poor people facing bad shocks are seen as easy prey for moneylenders because they can easily be forced to accept a very disadvantageous loan contract. These practices are typically associated with usurious interest rates, repayment in labor, debt roll-over, and ex post renegotiation of payment terms. We already know that households in our study area borrow to deal with shocks (Fafchamps and Lund 2003). Furthermore, some of the practices associated with debt peonage, such as repayment of debt in labor, are present in our data. We may thus worry that debt traps are a reality in the study area. The anthropological evidence, however, suggests that few households in the Ifugao region fall victim of debt traps and that the distribution of assets has remained remarkably egalitarian compared to surrounding areas (e.g. Barton 1969, Barton 1938, Conklin 1980). One objective of this paper was therefore to identify which features of the credit market preclude a high incidence of debt peonage in such a fertile environment.

We find little or no support for debt peonage in our study area. The only piece of evidence consistent with the existence of labor bonding concerns the repayment of shop credit in labor, but shop loans seldom carry interest and we find no evidence of debt roll-over and increased indebtedness over time. Our results suggest that the major avenue by which the risk of debt trap is minimized in the study area is that interest is nearly never charged and, when it is, contractual interest charges are seldom paid in full. In this context, it is hardly surprising

[25] For instance, concerns about debt traps have often been voiced with respect to South Asia in general and India in particular. Yet neither Bliss and Stern (1982) in their detailed study of the Palanpur village in Uttar Pradesh (India) nor Platteau, Murickan and Delbar (1985) in their investigation of three fishing villages in Kerala (India) find any evidence of debt peonage and labor bonding. Edmonds and Sharma (2004) discuss debt bonding in Nepal but do not provide direct empirical evidence of it.

that lenders refrain from granting new loans to borrowers who have failed to repay old loans or taken a long time to repay them. Taken together, these findings make it unlikely that surveyed households would fall in a debt trap.[26]

Our results also put Udry's finding in perspective. By unpacking loan repayment into various components – timing, amount paid, form of payment, and debt forgiveness – we were able to clarify the extent to which debt repayment is contingent upon shocks. Contrary to Udry's claim, we do not find that shocks affect the amount repaid or the extent of debt forgiveness. The effect of shocks is primarily through payment delays and repayment in labor: borrowers in difficulty are given more time to pay and allowed to pay part of the loan in labor, usually in the form of an 'advance payment'. The two go together: borrowers work for the lender when they cannot pay, then pay the remainder in cash at a later date. Debt forgiveness is present in the survey area, but it concerns primarily a reduction in interest charges. This is a far cry from general equilibrium models of contingent credit in which all insurance takes place through contingent repayment (e.g. Townsend 1993, Udry 1992).

Debt repayment practices in rural Philippines are not enormously different from what we would observe in other parts of the world: borrowers in difficulty are given more time to repay but are requested to demonstrate their good faith in exchange for leniency. What distinguishes informal credit from formal credit is the widespread of zero-interest consumption loans. We also find that, when an interest is charged, lenders accept a reduction of interest charges ex post rather than force a borrower into bankruptcy or debt peonage by accumulating interest charges. These features of informal credit that we have documented for Ifugao may be present elsewhere as well (see for instance Platteau and Abraham (1987)).

The evidence provided here does not explain why lenders display such restraint. If the model

[26] The fact that lenders in the study area do not compound interest is another piece of evidence in the same direction.

presented in Section 2 is the right one, the most likely explanation for this leniency is that households have access to alternative sources of insurance. Fafchamps and Lund (2003) indeed show that surveyed households partly insure through gifts and loans channelled through their social network. Combining the two sets of findings suggests a way of testing whether access to alternative insurance is the reason why lenders cannot push borrowers into a debt trap. Borrowers with smaller or weaker network would have less access to insurance and therefore should be more easily forced into long-term debt dependency, and thus more likely to actually pay interest charge. An alternative (and perhaps complementary) interpretation of our results is that lenders and borrowers follow redistributive norms of behavior (Platteau 1996). Moral condemnation and other social pressure may prevent lenders from abusing their power, hence forcing them to consent ex post debt reduction. In this case, the size of someone's network would not affect their likelihood of paying interest charges. Testing these predictions is the object of future research.

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Table 1. Income, Gifts, and Loans
(over a nine months period)

	Mean (pesos)	Coefficient of variation
Sources of Income		
Non-farm earned income	15,178	1.77
Unearned income (1)	1,818	8.80
Value of annual rice harvest	5,596	2.49
of which, crop sales	226	3.45
Net livestock sales	254	11.22
Gifts and Loans		
Gifts received	5,394	1.71
Gifts given	2,569	2.56
Net gifts	2,825	3.72
Net informal borrowing	2,124	2.73
Net gifts and informal borrowing	4,949	2.40
Number of observations	206	

(1) Includes rental income, pensions, and sale of some assets. (2) In terms of number of animals, fowl counts for 68%, pigs for 16%, cattle and goats for 1%, and other animals for 14%. The total average value of livestock is 2,605 Pesos and the corresponding coefficient of variation is 1.85.

Table 2. New Loans
(in Pesos per household over the nine months covered by the three survey rounds)

	Money flowing in	%	out	%
Total, in value	5383	100.0%	1159	100.0%
Breakdown by source or destination, in value				
With close relatives	323	6.0%	78	6.7%
With distant relatives	2293	42.6%	753	65.0%
With friends and neighbors	1013	18.8%	289	25.0%
With shopkeepers	360	6.7%	39	3.4%
With formal institutions (credit coop., banks, etc.)	1133	21.1%	0	0.0%
With others (moneylenders, etc.)	260	4.8%	0	0.0%

Note. A loan partner is a close relative when he is a son/daughter, a son/daughter in law, a grandchild, a parent or a brother/sister. He is a distant relative when he is a nephew/niece or a cousin/aunt/uncle

Table 3. Distribution of Loans by Residence of Loan Partner
(computed on the basis of loans taken or given over the three survey rounds; weighted by loan value)

Relationship of Borrower/Lender	Same barangay	Barangay in Banaue	Other Ifugao	Other CAR	Lowland	Manila	Abroad
Close relatives	55.9%	22.4%	1.2%	8.9%	11.0%	0.6%	0.0%
Distant relatives	74.2%	19.9%	2.1%	0.6%	1.0%	0.0%	2.2%
Friends and neighbors	65.7%	32.2%	2.0%	0.0%	0.0%	0.0%	0.1%
All informal	69.8%	23.9%	2.0%	1.3%	1.7%	0.1%	1.3%
Shopkeepers	30.1%	59.0%	0.1%	5.5%	5.4%	0.0%	0.0%
Formal institutions	46.2%	52.5%	0.0%	0.0%	0.0%	0.0%	1.3%
All formal	38.7%	55.5%	0.1%	2.5%	2.5%	0.0%	0.7%
All	61.6%	32.2%	1.5%	1.6%	1.9%	0.1%	1.2%
Number of observations	1,235						

Note. Banaue is the closest town located less than 30 kilometers from the four sample villages (*barangay*)
Sample villages are located in the Ifugao province, within the Cordillera Administrative Region (CAR)

Table 4. Participation in Informal Credit

Participation during survey	
Borrowed at least once over 3 rounds	92%
Lent during at least once over 3 rounds	61%
Borrowed and lent at least once over 3 rnds	54%
Borrowed and lent in same survey round	24%
Did not participate over the three rounds	1%
Repeated Interaction	
Repeated loans between rounds	92%
Switched roles in lending (*)	52%
Expect to borrow or lend again from at least one lender	92%
Number of observations	206

Source: Survey data. (*) Switched between lending and borrowing during the survey.

Table 5. Loan Amount
(computed on the basis of loans taken or given over the three survey rounds)

Relationship of Borrower/Lender	Mean (pesos)	Coefficient of variation	Number of observations
Close relatives	908	1,192	91
Distant relatives	1,169	2,016	429
Friends and neighbors	722	1,637	334
All informal	967	1,811	854
Shopkeepers	468	888	329
Formal institutions	7,081	7,078	52
All formal	1,370	3,546	381
All	1,091	2,484	1,235

Table 6. Reason for Receiving a Loan
(computed on the basis of loans taken or given over the three survey rounds)

	Reason the loan was (informal loans)		**Reason the loan was taken (formal loans)**	
	(unweight.)	*(weighted by loan value)*	*(unweight.)*	*(weighted by loan value)*
Consumption	**72.9%**	**53.8%**	**84.3%**	**35.0%**
To pay for household consumption	41.3%	19.3%	76.9%	21.9%
To pay for medical expenditures	20.8%	13.8%	5.0%	10.7%
To pay for funeral and other ritual expenditures	10.8%	20.7%	2.4%	2.5%
Investment	**17.2%**	**31.7%**	**9.4%**	**41.1%**
To pay for school expenditures	10.8%	9.1%	2.4%	8.4%
To finance a business or farm investment	4.9%	11.5%	6.8%	30.8%
To apply for a job abroad	1.5%	11.1%	0.3%	1.9%
Reciprocity	**9.6%**	**14.5%**	**6.3%**	**23.8%**
To repay another loan or gift	3.8%	6.9%	4.7%	23.1%
To give another gift or loan	5.9%	7.6%	1.6%	0.7%
Other reasons	0.2%	0.0%	0.0%	0.0%
Number of observations	**854**		**381**	

Table 7. Loan Characteristics, by Source
(computed on the basis of loans taken or given over the three survey rounds)

	Interest-Bearing Loans		Collateral used		Agreed-upon repayment date	
Relationship of Borrower/Lender	*(unweigh.)*	*(weighted by loan value)*	*(unweigh.)*	*(weighted by loan value)*	*(unweigh.)*	*(weighted by loan value)*
Close relatives	1.1%	0.2%	0.0%	0.0%	3.3%	1.3%
Distant relatives	17.7%	31.7%	0.9%	2.7%	2.3%	1.4%
Friends and neighbors	14.1%	36.7%	0.6%	1.4%	5.7%	5.5%
All informal	14.2%	30.0%	0.7%	2.0%	3.8%	2.6%
Shopkeepers	0.6%	1.0%	0.9%	5.5%	4.6%	7.9%
Formal institutions	48.1%	53.0%	36.5%	62.5%	30.8%	32.7%
All formal	7.1%	37.7%	5.8%	45.7%	8.1%	25.4%
All	12.2%	33.0%	2.3%	18.9%	5.1%	11.4%
Number of observations	1,235		1,235		1,235	

Table 8. Propensity to repay (all repayments)
(estimator is duration model)

	Respondent is borrower						Respondent is lender	
	Informal loans		Loans from shopkeepers		Formal loans		Informal loans	
	Hazard	**z-stat.**	**Hazard**	**z-stat.**	**Hazard**	**z-stat.**	**Hazard**	**z-stat.**
Loan amount	0.729	**-8.40**	0.837	**-3.56**	0.855	-1.10	0.903	**-1.68**
Interest factor	0.100	**-7.40**	0.308	-0.94	0.012	**-2.94**	0.066	**-3.22**
Share still due	4.144	**2.75**	1.458	1.28	2.801	1.02	3.668	**1.79**
Shock to respondent	0.803	**-2.03**	0.738	**-1.96**	0.575	-1.38	0.975	-0.14
Household characteristics of respondent:								
Age of household head	1.011	**2.16**	1.025	**3.67**	1.025	1.23	0.994	-0.74
Last grade completed by head	1.033	**2.07**	0.998	-0.11	1.017	0.31	0.979	-0.86
Craft skill dummy	1.083	0.75	1.201	1.23	1.084	0.18	0.982	-0.09
Permanent wage dummy	1.112	0.79	1.447	1.68	0.575	-1.05	0.948	-0.22
Household size	0.957	-1.52	0.914	**-2.01**	1.091	0.59	0.956	-0.81
Wealth	1.054	**2.90**	0.992	-0.29	1.038	0.62	1.030	1.24
Household characteristics of partner:								
Age of household head	1.014	**3.61**					1.002	0.25
Income level	1.033	0.41					1.281	1.39
p-parameter	0.517	**13.52**	0.563	**10.34**	0.474	**3.04**	0.259	**3.92**

Dependent variable is time between the time the loan was granted and a repayment was made.
Shock to respondent is instrumented (see text).

Table 9. Propensity to repay controlling for individual effects (all repayments) (*)
(estimator is duration model with Weibull distribution)

	Respondent is borrower						Respondent is lender	
	Informal loans		Loans from shopkeepers		Formal loans		Informal loans	
A. Shared frailty model	**Hazard**	**z-stat.**	**Hazard**	**z-stat.**	**Hazard**	**z-stat.**	**Hazard**	**z-stat.**
Loan amount	0.711	**-7.47**	0.799	**-3.61**	0.855	-0.91	0.829	**-2.21**
Interest factor	0.063	**-7.91**	0.175	-1.24	0.012	**-1.74**	0.034	**-3.22**
Share still due	5.265	**3.06**	2.591	**2.69**	2.801	0.99	10.489	**2.67**
Shock to respondent	0.761	**-2.40**	0.678	**-2.36**	0.575	-1.06	1.053	0.27
Household characteristics of respondent:								
Age of household head	1.016	**2.28**	1.032	**2.62**	1.025	1.19	0.996	-0.25
Last grade completed by head	1.046	**2.05**	1.013	0.34	1.017	0.30	0.978	-0.61
Craft skill dummy	1.092	0.61	1.074	0.28	1.084	0.14	0.880	-0.42
Permanent wage dummy	0.980	-0.10	1.183	0.46	0.575	-0.73	0.853	-0.44
Household size	0.976	-0.59	0.903	-1.43	1.091	0.31	1.003	0.03
Wealth	1.043	**1.73**	1.011	0.30	1.038	0.52	1.067	**1.90**
Household characteristics of partner:								
Age of household head	1.012	**2.84**					1.010	1.19
Income level	1.075	0.82					1.275	1.05
p-parameter	0.628	**14.52**	0.817	**11.82**	0.474	1.07	0.592	**7.27**
theta-parameter (frailty distrib.)	-1.408	-4.77	-0.573	**-2.02**	-18.206	-0.79	-0.210	-0.74
B. Fixed effect model								
Loan amount	0.663	**-6.00**	0.868	-1.47			0.773	**-1.82**
Interest factor	0.023	**-9.04**	0.096	-1.39			0.009	**-3.34**
Share still due	16.937	**4.54**	4.556	**3.88**			179.229	**3.81**
Shock to respondent	0.726	**-2.45**	0.710	-1.63			1.031	0.14
Household characteristics of partner:								
Age of household head	1.006	1.19					1.021	**1.77**
Income level	1.098	0.78					1.020	0.06
p-parameter	0.886	**21.86**	1.252	**21.35**			0.973	**13.56**
Number of observations	1197		500		104		426	
Number of cases of repayment	430		218		32		156	
Time at risk	3169		1231		307		1171	

(*) One gets very similar results using data on first repayments only.
Note: Fixed-effect model did not converge using formal loans only.

Table 10. Total amount repaid
(estimator is maximum likelihood selection model)

	Respondent is borrower						Respondent is lender	
	Informal loans		Loans from shopkeepers		Formal loans		Informal loans	
A. Amout repaid	**Coef.**	**z-stat.**	**Coef.**	**z-stat.**	**Coef.**	**z-stat.**	**Coef.**	**z-stat.**
Loan amount	0.918	**56.72**	0.951	**52.86**	0.580	**4.65**	0.957	**34.80**
Interest factor	0.325	**2.56**	1.076	**2.38**	-0.164	-0.13	1.131	**3.33**
Share still due	0.846	**4.22**	0.658	**5.96**	0.843	0.78	0.467	1.54
Shock to respondent	0.032	0.73	-0.023	-0.42	0.506	1.36	0.001	0.02
Household characteristics of respondent:								
Age of household head	-0.002	-0.84	0.002	0.59	0.040	**2.16**	-0.002	-0.55
Last grade completed by head	0.001	0.15	0.014	1.60	-0.041	-0.88	0.000	0.02
Craft skill dummy	-0.030	-0.71	-0.013	-0.23	-0.244	-0.64	-0.112	-1.31
Permanent wage dummy	-0.157	**-2.88**	-0.034	-0.41	-0.210	-0.57	-0.090	-0.87
Household size	0.012	1.01	-0.012	-0.71	-0.144	-1.10	0.022	0.92
Wealth	0.013	**1.89**	-0.016	-1.57	0.110	**2.36**	0.008	0.80
Household characteristics of partner:								
Age of household head	0.001	0.81					0.002	0.73
Income level	-0.056	**-1.85**					-0.029	-0.34
Intercept	0.456	**2.80**	-0.121	-0.67	1.312	0.91	0.688	**2.17**
B. Selection equation								
Loan amount	-0.209	**-6.76**	-0.099	**-2.40**	-0.166	-1.33	-0.019	-0.41
Interest factor	-1.851	**-7.30**	-1.281	-1.37	-2.925	**-2.39**	-1.653	**-3.41**
Share still due	0.916	**3.03**	0.272	1.05	0.982	1.39	0.854	**1.95**
Time elapsed since loan	0.149	**8.26**	0.179	**6.63**	0.117	**1.78**	0.039	**1.97**
Shock to respondent	-0.169	-1.00	0.044	0.19	-1.195	**-1.67**	0.119	0.54
Household characteristics of respondent:								
Age of household head	0.007	**1.68**	0.019	**3.14**	0.022	1.27	0.001	0.19
Last grade completed by head	0.028	**2.18**	0.008	0.45	0.016	0.33	0.000	0.02
Craft skill dummy	0.020	0.24	0.113	0.89	0.226	0.64	0.070	0.49
Permanent wage dummy	0.054	0.49	0.204	1.08	-0.088	-0.21	-0.103	-0.60
Household size	-0.025	-1.04	-0.055	-1.47	0.024	0.21	-0.019	-0.47
Wealth	0.036	**2.19**	-0.011	-0.50	0.034	0.74	0.013	0.72
Household characteristics of partner:								
Age of household head	0.008	**2.71**					-0.004	-0.92
Income level	0.063	0.99					0.181	1.31
Round 2 dummy	0.044	0.21	-0.086	-0.29	0.661	0.77	-0.023	-0.09
Round 3 dummy	0.284	**1.71**	0.000	0.00	1.438	**2.23**	0.114	0.61
Intercept	-0.654	**-1.85**	-0.975	**-2.25**	-1.740	-1.21	-0.576	-1.06
arctan(rho)	0.125	0.90	0.583	**3.69**	0.254	0.58	-1.879	**-12.39**
ln(sigma)	-0.909	**-25.49**	-0.901	**-13.27**	-0.240	**-1.76**	-0.524	**-7.06**
Number of observations	1,209		506		104		437	
of which: uncensored	438		223		33		160	
Testing proportionality to amount due								
	chi-square	**p-value**	**chi-square**	**p-value**	**chi-square**	**p-value**	**chi-square**	**p-value**
Coefficient of loan amount=1	**25.54**	0.0000	**7.32**	0.0068	**11.35**	0.0008	2.40	0.1212
Coefficient of interest factor=1	**28.26**	0.0000	0.03	0.8665	0.83	0.3611	0.15	0.7000
Coefficient of share still due=1	0.59	0.4435	**9.61**	0.0019	0.02	0.8835	**3.09**	0.0786
Three coefficients are equal	**20.46**	0.0000	**7.16**	0.0279	0.47	0.7894	2.83	0.2426

Table 11. Repayment in labor
(estimator is logit; only observations with repayment are included)

	Respondent is borrower				Respondent is lender	
	Informal loans		Loans from shopkeepers		Informal loans	
	Coef.	**z-stat.**	**Coef.**	**z-stat.**	**Coef.**	**z-stat.**
Loan amount	-0.215	**-1.87**	1.290	**5.02**	-0.376	**-1.97**
Interest factor	-1.780	-1.04	-121.327 (*)		-1.364	-0.27
Share still due	-1.304	-0.99	-1.023	-1.01	22.650 (*)	
Time elapsed since loan	-0.158	**-1.81**	-0.203	-1.50	-0.173	-1.60
Shock to respondent	1.742	**2.69**	-1.382	-1.16	-1.231	-1.17
Household characteristics of respondent:						
Age of household head	0.037	**2.29**	-0.011	-0.50	-0.011	-0.40
Last grade completed by head	-0.112	**-2.22**	-0.125	-1.47	0.053	0.84
Craft skill dummy	0.341	1.08	0.450	0.81	-0.912	-1.59
Permanent wage dummy	-0.710	-1.41	0.225	0.32	-1.063	-1.33
Household size	0.179	**2.12**	-0.263	**-1.71**	-0.179	-1.09
Wealth	-0.276	**-2.20**	-0.197	-1.26	0.155	**2.53**
Household characteristics of partner:						
Age of household head	0.007	0.71			0.000	-0.02
Income level	0.621	**2.99**			-1.630	**-2.25**
Round 2 dummy	-2.186	**-2.57**	2.919	**1.84**	1.496	1.08
Round 3 dummy	-1.106	**-1.70**	2.604	**1.93**	2.608	**2.40**
Intercept	-1.834	-1.47	-8.391	**-3.22**	3.824	1.55
Number of observations	438		223		160	
Pseudo R-squared	0.204		0.356		0.285	

(*) A positive interest rate perfectly predicts absence of payment in labor
Dependent variable takes value one if repayment in labor
Note: Formal loans are never repaid in labor.

Table 12. Debt forgiveness
(estimator is OLS)

	Respondent is borrower						Respondent is lender	
	Informal loans		Loans from shopkeepers		Formal loans		Informal loans	
	Coef.	**t-stat.**	**Coef.**	**t-stat.**	**Coef.**	**t-stat.**	**Coef.**	**t-stat.**
Loan amount	0.000	-0.03	0.000	-0.01	0.007	0.22	0.005	0.29
Interest factor	0.507	**9.38**	0.385	**2.32**	-0.084	-0.39	0.503	**5.34**
Time elapsed since loan	0.012	**3.05**	0.024	**4.60**	0.032	**2.24**	0.011	**1.71**
Shock to respondent	-0.022	-0.49	0.063	0.82	0.014	0.09	-0.032	-0.33
Household characteristics of respondent:								
Age of household head	0.002	1.40	0.003	1.63	0.006	1.51	-0.004	**-2.05**
Last grade completed by head	0.004	1.15	-0.004	-0.77	0.002	0.18	0.001	0.10
Craft skill dummy	-0.046	**-2.03**	0.038	1.09	-0.069	-0.84	-0.017	-0.35
Permanent wage dummy	0.053	**1.76**	0.086	**1.84**	-0.022	-0.22	-0.099	**-1.78**
Household size	-0.002	-0.37	-0.005	-0.51	-0.037	-1.44	0.001	0.06
Wealth	-0.006	-1.24	-0.006	-1.03	0.002	0.19	0.000	0.03
Household characteristics of partner:								
Age of household head	0.000	-0.18					-0.002	-1.26
Income level	0.006	0.36					0.058	1.25
Intercept	-0.096	-1.05	-0.167	-1.58	-0.242	-0.71	0.096	0.52
Number of observations	455		147		43		141	
R-squared	0.340		0.139		0.100		0.250	

Dependent variable is debt forgiveness ratio (see text).

Table 13. Expectation of future lending
(estimator is logit)

	Respondent is borrower						Respondent is lender	
	Informal loans		**Loans from shopkeepers**		**Formal loans**		**Informal loans**	
	Coef.	**z-stat.**	**Coef.**	**z-stat.**	**Coef.**	**z-stat.**	**Coef.**	**z-stat.**
Loan amount still due	-0.092	**-2.68**	-0.037	-0.54	-0.633	**-2.63**	-0.104	-1.44
Interest rate on current loan	-7.145	**-2.41**	4.183	0.38	-38.515	-1.23	-7.038	-1.10
Time elapsed since loan	-0.170	**-4.47**	-0.135	**-1.94**	-0.389	-1.51	-0.152	**-2.25**
Debt forgiveness ratio	0.247	0.46	-0.331	-0.30	-3.208	-0.98	-0.442	-0.44
Shock to respondent	0.286	0.62	1.519	1.42	-0.471	-0.13	0.166	0.16
Household characteristics of respondent:								
Age of household head	-0.005	-0.39	-0.002	-0.11	0.006	0.09	-0.003	-0.14
Last grade completed by head	0.074	**1.88**	0.058	0.89	-0.503	**-1.77**	0.101	1.54
Craft skill dummy	-0.006	-0.03	-0.057	-0.13	-0.367	-0.18	1.423	**2.66**
Permanent wage dummy	-0.012	-0.04	0.643	0.96	2.430	1.16	0.446	0.71
Household size	-0.010	-0.14	-0.089	-0.70	-0.109	-0.20	-0.086	-0.56
Wealth	0.019	0.36	0.020	0.27	0.062	0.38	-0.120	**-1.74**
Household characteristics of partner:								
Age of household head	-0.012	-1.48					-0.016	-0.94
Income level	0.209	1.21					-0.703	-1.42
Intercept	1.917	**2.26**	2.001	1.61	8.865	**1.78**	3.904	**2.18**
Number of observations	435		142		38		133	
Pseudo R-squared	0.123		0.0658		0.542		0.219	

Dependent variable is 1 if respondent expects more lending from current lender in future.

Table A1. Determinants of Subjective Shock Measures

	Coef.	t-stat.
Acute sickness	0.289	**3.59**
Non-acute sickness	0.192	**3.26**
Ritual	0.651	**5.29**
Weighted index of crop problems	-0.017	-1.58
Unemployment (head/spouse)	-0.060	-0.51
Unemployment (other member)	0.205	**2.39**
Village-time dummies	Included but not shown.	
Number of observations	603	
R-squared	0.392	