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# RESEARCH STATEMENT

Markets in developing countries are often missing or malfunctioning. The lack of access to credit and insurance is particularly problematic as it impacts most decisions that individuals make. Many informal institutions can be seen as filling the gap left by market failure. My research primarily concerns the characterization, limitations and implications of these markets and informal institutions. My work can be organized around three topics: 1. the determinant of risk sharing; 2. power and exploitation in contracts; 3. household labor in the presence of imperfect markets.

## 1. THE DETERMINANT OF RISK-SHARING.

Households in developing countries are regularly exposed to substantial risks and cope with the large fluctuations in their income mainly through informal insurance arrangements. There is considerable evidence that substantial mutual insurance – through reciprocal gifts, loans and transfers – takes place between individuals within village communities and networks but that perfect insurance is rarely achieved.[1] The most important constraint appears to stem from the fact that such agreements are not written on legal paper and there is little reliance on a court of law. In the absence of formal enforceability, these agreement must be designed to elicit voluntary participation, that is be *self-enforcing*. At any point in time, participating individuals must have the incentive to comply. In one line of my research, I study self enforcing risk-sharing arrangements.

**Groups and networks.** The literature on risk sharing generally assumes that insurance takes place among all members of a community and defines self-enforcing agreements as those that are proof from noncompliance by *individual* members of the group.[2] An individual who would default on a transfer is assumed to be isolated from the community, so that he must self-insure.

In two joint papers with Debraj Ray, "*Group Formation in Risk Sharing Arrangements*" and "*Informal Insurance, Enforcement Constraints, and Group Formation*," we define self-enforcing risk-sharing agreements as agreements that are robust to potential deviations by *any subgroup* of individuals (not only individuals).

[1] See for instance Morduch (1991), Deaton (1992), Townsend (1994), Udry (1994), Jalan and Ravallion (1999) and Ligon, Thomas and Worrall (2002).

[2] See Coate, S. and M. Ravallion (1993), Kocherlakota (1996), and Ligon, Thomas and Worral (2002).

These deviations must be *credible* in the sense that the subgroup must itself employ some self-enforcing risk-sharing agreement. We find that the stability of subgroups is inimical to the stability of the group as a whole. This has two surprising consequences. First, it implies a limit on the size of stable groups, providing a natural explanation for why insurance often occurs within smaller units than the entire community. This is in sharp contrast to the individual deviation problem where the largest group is expected to form. Second, an increase in income uncertainty and therefore in the need for insurance can actually *decrease* the level of risk-sharing in a community: by improving the stability of subgroups, it can prevent insurance within the entire community.

This paper led us to question the assumption that insurance takes place in fully formed groups, whether small or large. For instance, $A$ may insure with $B$, and $B$ with $C$, but $A$ and $C$ may have nothing to do with each other. Some actual risk-sharing networks have recently been mapped and reveal complex architectures.[3] In a joint paper with Francis Bloch and Debraj Ray "*Informal Insurance in Social Networks*," we model risk-sharing networks as a collection of *bilateral* arrangements based on internalized *norms* of reciprocity. For a risk-sharing network to be *stable*, each individual must have the incentive to abide by those norms: self-enforcement constraints must be satisfied. In our model, network links play two distinct and possibly conflictual roles. They act as conduits for *both* transfers and information on noncompliance. We study the effects of these two roles on the scope for insurance. We find that characteristics of the *architecture* of networks – in particular some measures of "sparsity" of networks in which the removal of certain links separates the networks into different components – determines the stability of networks (a concept of *self-enforceability*).

I am currently working on a project with Francis Bloch and Debraj Ray to characterize the *fragility* of networks and of particular members of the network. Relaxing the assumption that networks are non-stable as soon as there is a state of nature in which one individual would prefer not to comply, we recognize that some stable networks could perform relatively well for a while before failing.

**Self-enforcing risk-sharing arrangements.** In a paper with Gary Charness titled "*Informal Risk Sharing in an Infinite-horizon Experiment*," we study risk-sharing using an experiment. Our experimental design captures the main features of a simple model of risk sharing without commitment between two agents. We find evidence generally consistent with risk sharing, with higher transfers coming from individuals who received a good shock in the period. Moreover, transfers are much higher with a higher continuation probability and are also

[3] for instance, Stack (1974), Wellman (1992), de Weerdt (2002), Dercon and de Weerdt (2000), and Fafchamp and Gubert (2004).

highly correlated with the individuals degree of risk aversion. A more surprising finding is that transfers decrease with ex ante inequality, possibly reflecting coordination problems or considerations of identity.

In a current project, "*Does Wealth Inequality Help Informal Insurance?*," I study the effects of inequality in the presence of voluntary risk-sharing. In any period, an agents resources are composed of his share of a secure endowment (*wealth* or permanent income) and a random component (*labor income*). To be sure, redistributing wealth does not affect the total resources available in any period but, by changing the outside options, it affects the set of self-enforcing allocations. I find that introducing wealth inequality between the agents tend to improve consumption smoothing opportunities (insurance) between these two individuals. I am also studying how individuals preferences for a risk-sharing partner vary with their wealth.

## 2. Power and Exploitation in Contracts.

Often, agreements that are accepted by poor people may seem *exploitative*. However, when such transactions are voluntary, the meaning of "exploitation" or "power" is difficult to define.

For instance, while seemingly exploitative, bonded labor and serfdom (some of the oldest and most pervasive labor practices) are often not imposed on laborers but voluntarily chosen. It is generally the lack of suitable alternatives which makes workers opt for a life in servitude. In "*Bonded Labor and Serfdom: A Paradox of Voluntary Choice*," I show that the very *existence* of these voluntary forms of servitude can restrain the credit opportunities of laborers. Due to differences in enforcement power, landlords can strategically reduce laborers' outside credit options so that they are left with no better alternative than servitude. This is the sense in which these institutions can be deemed exploitative. Under these circumstances, government interventions banning servile institutions, by promoting the development of alternative options for the laborers, have the potential to substantially improve the condition of a large class of laborers.

In a joint paper with Debraj Ray titled "*Contracts and Externalities: How Things Fall Apart*," we further investigate the idea that an individual can strategically reduce the outside opportunities of individuals with who he contracts. We consider situations where individuals have an outside-option payoff that depend positively on how many "free agents" (agents who are not under contract) there are. We study how a principal (employer, landlord, lender, etc ), unwelcome though he may be, approaches the problem of contracting with these individuals. Two variants are studied: one in which the principal cannot make further offers to agents who reject him and the other where he can. We find that limited resistance is possible: in the first case, a few agents could get relatively high offers while in the second case agents may refuse to accept the terms of the offer

for a limited period of time. But, in time, most agents succumb to the advances of the principal for offers significantly below their free reservation payoff. It is in this sense that "things fall apart" for the agents.

In another paper with Debraj Ray "*Bargaining Power and Enforcement in Credit Markets*," we study the effect of a change in the level of enforcement in credit markets — i.e. a change in the outside options of a potential defaulter — on the terms of the credit contract, as well as on borrower payoffs. The results crucially depend on the allocation of "*bargaining power*" between the borrower and the lender. We find that there is a crucial threshold such that if the borrower has power that exceeds this threshold, her expected utility must *increase* whenever her outside options come down and her consumption must rise when her income is low. But if the borrower has less power than this threshold, her expected payoff must *decline* with her outside options and the borrowers consumption must decline in states where her income is low. These results are important in evaluating policies that limits the liability of defaulting borrowers (such as bankruptcy laws or a ban on bonded labor). Moreover, these finding reconcile different results in the literature in credit markets such as Krueger and Perri (2003) on consumption inequality in the United States and Kranton and Swami (1999) on credit markets in 19th century India.

In a current project with Francis Bloch, "*Contracting with Intermediaries: the Role of Gatekeepers*," we study the power of intermediaries in public good provision. Decentralization or delegation to local authorities has been promoted all over the world. This is especially so in developing countries where"community-based development" projects have become a very important form of development assistance. Donor organizations contract with local authorities who assess the need of community members for a certain public good. We study the distortions associated with the use of intermediaries in a three-tier model with a principal who has to choose a level of public good provision, an intermediary and a agent who has a private valuation for the policy. A crucial assumption is that the intermediary can contract with the agent *before* accepting or refusing the principal's contract. In particular, the intermediary can condition its participation to the principal's contract on the agent's type. It is in this sense that the intermediary acts as a gatekeeper.

### 3. Household Labor in the Presence of Imperfect Markets.

The lack of access to credit and insurance markets can affect many decisions that households make. In a paper with Kaushik Basu (my PhD advisor) and Joseph Stiglitz titled "*Minimum Wage Laws and Unemployment Benefits when Labor Supply is a Household Decision*," we show that an increase in unemployment can prompt households to send more workers out in search of work to insure against the risk of the primary worker. This is the *added worker effect*. This effect works in

the opposite direction to the *discouragement effect* where, given the cost of searching, unemployment can discourage people from searching for work. Our paper establishes sufficient conditions for the domination of the added worker effect, conditions that are more likely to be satisfied in poorer countries. We find that, in the presence of the added worker effect and of wage rigidities such as a minimum wage, there can be multiple equilibria – that is different wages levels at which labor demand equals labor supply – including one of the equilibrium has *low* wages and *high* unemployment. Unemployment benefits can, by countering some of the risk of unemployment, neutralize the inefficiencies of households' tendency to oversupply labor.

In "*Malnutrition and Child Labor*," I study another prevalent institution: family and child labor. In both pre-industrial societies and in contemporary developing economies, it is common to find; (a) entire families, including children, performing regular work; and (b) a positive link between a persons consumption and his or her productivity. I argue that there is a natural reason for the concurrence of (a) and (b). In the presence of intra-household altruism, a higher income of one family member increases the consumption of *all* members. It follows that when an employer pays the adult a high wage in order to enhance the workers productivity, part of this high wage ends up augmenting the consumption of the laborers children, making them more productive. Employing the children as well internalizes this externality. This explains the higher incidence of family labor in factories and on farms in poorer societies where (b) is more likely to be true.

In a different topic area, Stergios Skaperdas and I studied investments in conflict management in a paper titled "*Investing in Conflict Management*." We examine where adversaries divide their resources between "guns," "butter," and conflict management. The model captures the idea that achieving peace, and building the institutions that will maintain it, requires time and effort on the part of adversaries. While making this effort, the likelihood of peace is uncertain and preparations for conflict are on-going. We find that larger initial wealth increases the likelihood of peace. Moreover, the number of adversaries can have widely different effects on peace. A larger number of adversaries in international conflicts tends to increase the likelihood of peace, but it has the opposite effect in domestic conflicts.

## 1. REFERENCES


(1) Basu K., G. Genicot and J.E. Stiglitz, (2003) "Minimum Wage Laws and Unemployment Benefits when Labor Supply is a Household Decision," in *Markets and Government*, Oxford University Press.
(2) Bloch F., G. Genicot and D. Ray (2006) "Informal Insurance in Social Networks," *working paper*.
(3) Charness G. and G. Genicot (2006) "Informal Risk Sharing in an Infinite-horizon Experiment" *working paper*.
(4) Coate, S. and M. Ravallion (1993), "Reciprocity without Commitment: Characterization and Performance of Informal Insurance Arrangements," Journal of Development Economics 40, 1–24.
(5) Deaton, A. (1992), *Understanding Consumption*. Oxford: Clarendon Press.
(6) Dercon, S. and J. de Weerdt (2000) "Risk-Sharing Networks and Insurance against Illness," mimeo.
(7) Fafchamps, M. and F. Gubert (2004) "The Formation of Risk-Sharing Networks," mimeo.
(8) Fafchamps, M. and S. Lund (2003), "Risk Sharing Networks in Rural Philippines." *Journal of Development Economics* 71, 233–632.
(9) Genicot, G. and D. Ray (2006) "Contracts and Externalities: How Things Fall Apart," *Journal of Economic Theory* forthcoming.
(10) Genicot, G. and D. Ray (2006) "Bargaining Power and Enforcement in Credit Markets," *Journal of Development Economics* **79**(2).
(11) Genicot, G. and D. Ray (2005) "Informal Insurance, Enforcement Constraints, and Group Formation," in *Group Formation in Economics; Networks, Clubs and Coalitions*, edited by G. Demange and M. Wooders, Cambridge University Press, Cambridge U.K.
(12) Genicot G. (2005) "Malnutrition and Child Labor," *Scandinavian Journal of Economics* **107**(1), pp 83-102.
(13) Genicot, G. and D. Ray (2003) "Group Formation in Risk Sharing Arrangements," *Review of Economic Studies* **70**, 87-113.
(14) Genicot G. (2002) "Bonded Labor and Serfdom: A Paradox of Voluntary Choice," *Journal of Development Economics* **67**(1), 101-127.
(15) Genicot G. and S. Skaperdas (2002) "Investing in Conflict Management," *Journal of Conflict Resolution* **46**(1), 154-170.
(16) Jalan, J. and M. Ravallion (1999), "Are the Poor Less Well Insured? Evidence on Vulnerability to Income Risk in Rural China," *Journal of Development Economics* 58, 61–81.
(17) Kocherlakota, N. (1996), "Implications of Efficient Risk Sharing without Commitment," *Review of Economic Studies* 63, 595–609.
(18) Kranton, R.E. and A. Swamy, 1999, "The Hazard of Piecemeal Reform: British Civil Courts and the Credit Market in Colonial India." *Journal of Development Economics* **58**(1), 1-24.

(19) Krueger, D. and F. Perri, 2003, "Does Income Inequality Lead to Consumption Inequality? Empirical Findings and Theoretical Explanation," *Review of Economic Studies* **73**(1) (2006) Pages: 163-193
(20) Ligon, E., Thomas, J. and T. Worrall (2002), "Mutual Insurance and Limited Commitment: Theory and Evidence in Village Economies," *Review of Economic Studies* 69, 115–139.
(21) Morduch, J. (1991) "Consumption Smoothing Across Space: Tests for Village Level Response to Risk," Harvard University, mimeo.
(22) Stack C.B. (1974) *All Our Kin: Strategies for Survival in Black Community*, New York: Harper & Row.
(23) Townsend, R. (1994), "Risk and Insurance in Village India," *Econometrica* 62, 539–591.
(24) Udry, C. (1994), "Risk and Insurance in a Rural Credit Market: An Empirical Investigation in Northern Nigeria," *Review of Economic Studies* 61, 495–526.
(25) Wellman, B. (1992) "Which types of ties and networks provide which types of support?" In E. Lawler, Markovsky, B., Ridgeway, C., and Walker, H. (Ed.), *Advances in Group Processes*. Greenwich, CT, JAI Press.