

The Effects of Inequality on Economic Performance: A Progress Report and Proposal

Pranab Bardhan and Samuel Bowles
Network Co-chairs
October 5 1998

Table of Contents

Introduction and overview

The research challenge

What we have learned, what we do not (yet) know

What we hope to learn: A vision of research and policy

Progress Report 1996-1998

Methods of work

Research progress

A. Inequality and Cooperation in the Local Community

B. Wealth Constraints and Allocative Efficiency

C. Macroeconomic Consequences of Inequality

D. Sustainable Poverty Alleviation

Some policy implications

Outreach activities

Proposed Research and Outreach Activities, 1999-2002

New departures in methods of work

Network satellites:

A. Enhancing access to assets and opportunities

B. Delivering equal educational opportunity

C. Inequality in a dynamic global economy

D. Governing Redistribution

Outreach activities

Appendices:

Network Members

Other scholars participating in network activities

Graduate Fellows 1998

Programs of Network Meetings, 1996-1998

Members' Research Publications, 1996-1998

Introduction and Overview

In 1995 the Foundation asked us to constitute and head a research network on the effects of inequality on economic performance. We agreed to do this because, as we explained in our initial proposal, we thought that a reconsideration of this time-honored topic in economics was warranted in light of an unusual confluence of real world developments and the emergence of new conceptual frameworks. Among the former were the economic success (in the recent past) of East Asia and relative stagnation in other regions, the post-Communist transformation of the Soviet Union and formerly allied nations, and mounting evidence of the economic and human costs of inequality. The salient new developments in the social sciences stressed the importance of limited and asymmetric information in principal agent models of relationships among employers and workers, landowners and farmers, borrowers and lenders, landlords and residential tenants, as well as new models of how communities might solve commons-type coordination problems, and new ways of reasoning about incentives, decentralization and the delivery of services in the public sector.

These developments, combined, supported our then guarded optimism that a research initiative in this area might be successful not only in answering some pressing questions, but possibly also in reorienting thinking among policy makers. Beyond our confidence in the intellectual merits of the project, we were moved by the vast human toll taken by the many failures to alleviate poverty and insecurity worldwide—many of them rectifiable under the right policy measures—to accept the Foundation's request and to pursue the project with some urgency. The outstanding research team we assembled shared both our optimism and sense of urgency.

The research challenge. Our network deploys an integrated empirical and theoretical approach to answer the many facets of an overarching single question:

Do inequalities of holdings, economic rewards, or status foster institutional failures which impede the economic performance of nations, communities, firms, and farms, and if so, how might these inequalities and failures be feasibly rectified through electorally sustainable public policies?

Our general strategy in answering the basic question was the following. First, we identified a group of scholars with outstanding research records, deliberately favoring younger researchers, but not confining ourselves to those whose research to date had addressed our foundational question. In a series of meetings, we identified a set of specific research objectives which if achieved would represent substantial progress in exploring the sometimes complex answers to our basic question. We then reviewed and helped shape the research projects proposed by our members in this guiding framework. Finally, we gave our members—many of them working in groups—free rein in the ongoing pursuit and reshaping of their research. We have held periodic brainstorming sessions about strategies for the eventual dissemination of our results. The same process was used in developing our proposed research and outreach activities for 1999-2002.

As we complete our second year of discussion, writing, and field work (our first meeting as a formally constituted network was in October 1996), we feel that our initial optimism was fully warranted. The network form of organization has proven quite successful in a number of respects. The frequent meetings have helped us develop a common language, trust, and a lively interest in one another's research among researchers many of whom a few years ago had not met and were pursuing quite disparate research questions and approaches. We are particularly pleased that a number of exceptionally talented younger scholars have substantially altered their research agenda to focus on the effects of inequality on economic performance. We have succeeded in bringing to bear rich data sets and differing perspectives from both the poor countries and the advanced countries. We have bridged the often formidable barriers between theoretical and empirical work, in many cases by supporting top economic theorists in primary data collection and field work. A measure of our success in this respect is the fact that by the end of this grant period we will have collected fifteen new primary data sets, filling important gaps in the analysis of local commons problems, the effect of inequality on the effectiveness of various forms of economic governance, land and credit policy, schooling as a poverty alleviation strategy, and the political sustainability of redistributive programs.

No less important than the research already accomplished, is the emergence of an integrated long term research agenda which addresses our foundational question from a number of differing perspectives, and using data from many parts of the world. We are committed to this multifaceted strategy, because we think that the question is sufficiently challenging to warrant asking it in a number of different ways, and complex enough that the answers are likely to be context-dependent (those pertaining to land assets perhaps not obtaining for the local commons, for example). The network has provided both the intellectual and material support for the development of research projects which are unusual for their ambitious scope, their frequent interdisciplinary focus, their combination of quite abstract theory with very down-to-earth field data collection, and in some cases for the novelty of the questions asked or the methods used. (Few of the research projects described below would have been likely to have secured funding from any conventional source that we are aware of.)

The result of our research to date—both theoretical and empirical—is a range of new insights, some new empirical findings, and a host of new questions. Over the period 1999-2002, the network will continue addressing the overarching question above but with a number of changes of emphasis. First, our method of work will be increasingly collaborative, as integrated working groups have emerged on a number of topics and these will form what we have termed research satellites. Second, data collection will play a somewhat lesser role, and data analysis, interpretation, and synthesis a larger role in our research activities. Third, we will devote substantial attention to the problem of delivering educational services, particularly in the poor nations. Our main reason for this new focus is that giving poor people access to high quality human resources is one of the most promising policy interventions promoting access to assets, but one which is plagued by doubts that interventions to improve educational opportunity for the poor are doomed to ineffectiveness. And fourth, in response to the gratifying expressions of interest in our work from policy makers and others, we will devote considerable effort to synthesis and outreach, including a number of non-technical synthetic books, and possibly a new course of study.

In the report and proposal which follows, we first provide an overview, then in more detail review our work to date and finally present our proposals for the period 1999-2002. While we have achieved much more than we thought possible in this short period of time, there have also been disappointments, and we will report on these, as well.

What we (think we) have learned... We share our members' reluctance at this early stage to claim definitive findings on even the more narrowly defined questions we have asked. Nonetheless a few convergent results of our networks research may be identified. Examples include:

- Theoretical work and field studies by **Baland**, **Bardhan**, and co-authors have convinced us that inequality is an impediment to cooperation in many local commons situations, but that there is probably no general relationship between inequality and cooperation. Rather the outcomes depend sensitively on the details of asset positions and the institutional and ecological setting.¹
- Drawing on experimental work presented to the network by Frohlich and Oppenheimer and econometric studies of worker-owned firms in the U.S. presented by Pencavel as well as the field research on sugar cooperatives in Maharashtra undertaken by **Banerjee** and **Mookherjee**, the analysis of the credit market drawbacks to ownership assets by those without wealth by **Bowles** and **Gintis**, and the studies of cooperative governance by **Kremer** and **Hansmann**, we are convinced that well designed cooperative forms of work organization may exhibit important efficiency advantages stemming from their superior handling of incentive problems and that these are often offset by both capital market disadvantages and internal decision-making disabilities. Similarly, **Banerjee's** research on software companies (with **Duflo**) suggests the importance of credit constraints in limiting entrepreneurship among the less wealthy.
- **Hoff's** research on homesteading in poor urban communities, **Baland's** studies of informal groups in the Kibera slum (Nairobi) and **Bowles'** and **Gintis'** research on reciprocity motives suggest a more optimistic revision of the conventional pessimistic assessments concerning the willingness or ability of the less well-off to participate in common governance structures of neighborhoods and workplaces.
- Research on the political economy of redistribution by **Piketty**, **Benabou**, **Moene** and **Wallerstein** has made two somewhat surprising things clear: First, contrary to the standard median voter model, greater inequality may induce not more but *less* support for redistribution; and, second, similar systems of economic and political decision-making governing culturally similar individuals may support dramatically different levels of inequality and redistribution. A case in point is **Piketty's** work which shows how beliefs about why the poor are poor ("lack of effort" vs "circumstances") predict opposition or support for redistribution. An implication is that because many different sets of beliefs and redistributive policies are mutually consistent, similar societies may have very different systems of

¹ Names in bold type are of network members.

redistribution, and societies may become locked into inadequate policies of redistribution and the systems of belief which support them. The resulting path dependency of systems of distribution and redistribution provides a precise statement of what is meant by turning points and critical moments in the evolution of these systems.

- Finally, our discussions of the work of **Benabou, Bowles** and Gintis, Stiglitz, **Piketty**, Goldthorpe, Goux, and Ichino, Checchi, and Rustichini have convinced us of the analytical salience and policy relevance not only of the degree of economic inequality, but the processes generating inequality. These concerns are especially important in light of the evidence of the persistence of barriers to mobility—including social exclusion and the transmission of unequal economic opportunity from generation to generation—even in those societies ostensibly committed to their eradication.

... and what we do not (yet) know. Of the topics we set out to address, we have made relatively little progress on one: the role of inequality in impeding efficient national (or other aggregate) level bargaining, despite the contributions of **Aghion, Piketty** and **Banerjee** on the role of inequalities in fostering macroeconomic volatility and **Rabin's** insights concerning the ways that violations of fairness norms may result in bargaining breakdowns. Repeated efforts to engage top scholars (network members and others, political scientists as well as economists) in this area have been unsuccessful. We have awarded a fellowship to support one advanced doctoral student working in a related area, and we continue to think the topic important; but given our lack of success thus far, we plan to downplay the topic in the future.

With respect to the analysis of agrarian contracts and their effects on productivity, we do not yet have fully adequate answers (though the papers by **Mookherjee, Mookherjee** and Ray, and **Banerjee** and Ghatak represent important advances). However, in this case, research already underway (**Bardhan** and **Mookherjee** in particular) promises to fill at least one major empirical gap.

The consideration of the policy implications of our findings will require more sustained attention than we have yet allocated to better understanding the ways in which increased international mobility of goods and some factors of production (like capital) may limit the capacity of nation states to undertake interventions on behalf of the poor or may raise the costs of the pursuit of these policies. We address the globalization and egalitarian policies nexus in a number of the projects below, particularly in the Satellite on inequality in a dynamic global economy. Part of our interest in enhancing the educational assets of the poor is based on the simple point that human resource investments contribute to the growth of productive capacities of relatively less mobile factors of production and render them more resilient to increased global integration. We address the globalization-policy nexus directly in a working group to be organized by **Bardhan** and **Bowles**.

Finally, we have much to learn about the incentive and other problems facing governments in the delivery of needed services to the poor. This is true despite the value

of **Kremer**'s work on effective interventions to improve schooling, **Bardhan**'s study of corruption, discussion in our network meetings about decentralized budgeting in Porto Alegre, Brazil, and the impact of tenure reform on decentralized policy implementation in West Bengal, and the clarification of some of the complementarities between asset redistribution and both social and production-related insurance accomplished by **Bowles** and **Gintis**. A number of research projects are planned in this area (**Mookherjee** and **Bardhan**, **Moene** and **Wallerstein**, the proposed education satellite, and others, **Bowles** and **Bardhan**).

What we hope to learn: A vision of research and policy. The research efforts undertaken by our members often are disseminated as contributions to scholarly journals, and as such are evaluated singly for their contribution to knowledge in the eyes of professional experts. Our members have been rather successful by this standard. However, our own evaluations of the work, and our attempts to guide its future directions, are motivated by further, possibly more demanding standards and animated by hopes which some might consider utopian. What we ask of our network is not only that its members should produce top quality scholarly work, but additionally that our efforts should eventually add up to a coherent and policy-relevant response to our overarching question. We do not, of course, expect agreement among members of the network on a common set of answers; we selected our members as much for their differences as for their commonalities. While all the members share a common belief in the importance and coherence of our overarching question and the general intellectual approach in answering it, specific results and policy implications in individual projects vary in context-specific ways which indicate the richness and complexity of the issues that we analyze. The multiplicity of projects in our network is a direct reflection of this, even though our overarching question remains central and well defined.

It is far too soon to speculate on the extent of our likely success. We do think, however, that we see a number of important complementary themes emerging from the discussion of the group, and that these may be the raw material of the coherence and policy relevance which we seek. We hasten to add that these themes do not amount to a comprehensive new paradigm, for they are neither fully worked out, nor completely consistent, nor entirely unique to our network. They reflect the personal assessments (and one might say hopes) of the two authors of this report.

The first, and most important, theme emerging from this research is the increasingly confident answer that we may give to our basic question: There seems little doubt that in a wide range of cases inequality is an obstacle to economic performance, that these cases appear to be empirically important, and that some of them may be susceptible to policy interventions to jointly achieve objectives long thought by economists to be contradictory, namely, efficiency and equity.

A second theme is a general skepticism towards what might be termed a "social engineering" approach to redistribution, namely, one which focuses exclusively on the abstract (ahistorical) analysis of policy design, in favor of a more evolutionary approach which addresses problems of implementation, political sustainability and path dependency. A key to our current thinking is what we term "incentive compatible redistribu-

tion," namely, approaches which take into account incentive problems in the public sector itself, and the likelihood that what might be termed "state failures" are no less ubiquitous than "market failures." It is unusual for a project committed to egalitarian objectives to give so much attention to the possible benefits of decentralization and the both intrinsic and practical limitations to effective government intervention in many areas. But we are convinced that poverty alleviation and income security for the poor cannot be achieved with a public sector which is over-centralized and prone to corruption.

A third theme is the importance of aspects of human well-being such as dignity and autonomy in the design and evaluation of poverty alleviation policies, and the need therefore to go beyond questions of income and allocational efficiency narrowly defined. These issues arise in our analysis of cooperative governance of firms, land tenure security, the decentralization of public sector service delivery, the governance of the commons, and housing and neighborhood social capital.

Finally, we have sought, and found, examples of interventions on behalf of the poor that work, ones that yield substantial benefits at a reasonable cost and are sustainable in the long term. We have studied these not because they are typical, but because they are instructive, and also because they help to dispel a pervasive pessimism that little can be done to help the poor. Similarly, we have found evidence of barriers to mobility and poverty traps which may illuminate the impediments faced by the poor even on seemingly level playing fields. We think that this evidence may help to correct the widespread but unsubstantiated view—at least in U.S. and other advanced liberal democracies—that poverty is attributable primarily to the dispositions of the poor themselves.

Progress Report 1996-1998

Methods of work. Our mode of operation is based on intensive discussions among the group at all stages of the research process, combined with individual and collaborative (and increasingly subgroup) based execution of research. We have carried out empirical and theoretical research individually and in collaboration with other members of the network, with non-member scholars, and field study investigators. At least twice a year we met and had intensive discussion and criticisms of our own work. For this purpose we invited to each meeting several economists and non-economists outside the network. We also invited them to make presentations of their own papers on related themes. For a list of presentations in the meetings in the period October 1996 to October 1998, please see Appendix.

To stimulate new projects and to discipline our theoretical and empirical work by the challenge of relevance to practical issues, we have held, as part of our network meetings, mini-symposia on some important policy issues. For example, in our November 1997 meeting we had two mini-symposia. The first was on land policy, in which presentations were made by Michael Carter on capital access and land accumulation in Paraguay, by Jean-Philippe Platteau on security of land rights and investment in Africa, by Gershon Feder of the World Bank on land registration, and by an economic historian, Robert Allen, on a revisionist account of the enclosure movement in British history. The second concerned worker ownership of enterprises (presentations were made by legal scholar Henry Hansmann and Norman Frohlich, who collects experimental evidence on the subject, apart from a presentation on the topic by our member, Michael **Kremer**).

In our May 1997 meeting we had two mini-symposia. One was on decentralization and local public goods; presentations were made by sociologist Boaventura Santos on the basis of his study of the participatory budgeting process in the city of Porto Alegre in Brazil, and by Asim Dasgupta, Minister of Finance and Planning, Government of West Bengal, on decentralization experiments in West Bengal, apart from a presentation by our member, Abhijit **Banerjee**, with Somanathan on a cross-district study of local public goods supply in India. The other symposium was on school choice and vouchers (presentations were made by political scientist Paul Peterson on the Milwaukee school choice experiment, and by economists Caroline Hoxby and Dennis Epple on school finance equalization across school districts and school competition in the context of ability tracking, respectively).

In the same meeting we had a panel discussion on “resistance to redistribution,” where the panelists were sociologist Christopher Jencks and political scientists Martin Gilens and Michael **Wallerstein**. This exchange of views stimulated Bowles (with Gintis) to write a paper on the politics of the welfare state, which will be the lead essay in a *Boston Review* symposium. The issue of education was again taken up in a mini-symposium on social mobility in our May 1998 meeting (presentations were made by sociologist John Goldthorpe working on Britain, by Andrea Ichino and his co-authors working on a comparative study of Italy and the U.S., and by Dominique Goux working on a comparative study of France and the U.S.).

In our October 1998 meeting we will hear political scientist Elinor Ostrom on the effect of heterogeneity on the local commons, Peyton Young on conventional contracts, political scientist Josh Epstein and computer scientist Robert Axtell of the Brookings Institution on the emergence of class structure in artificial life simulation, and sociologist Theda Skocpol addressing us on sustainable social policy.

Our May 1999 meeting will address the problem of wages and jobs, with particular attention being given to the U.S. and European experience. Participants will include David Card, Steven Machin and other empirical labor economists. The location of the meeting—London—was selected in part to facilitate our networking with European researchers.

Members from other MacArthur networks also made presentations in our meetings, Ernst Fehr on experimental evidence on reciprocal fairness in human motivation, George Loewenstein on public attitudes to inequality, and Herbert Gintis (in joint work with Samuel **Bowles**) on the role of cognitive skill differences in explaining inequality and on problems of coping with risks arising in asset-based redistribution.

It has been interesting to observe how, in a group where, when it started, many of the members did not know one another, the ongoing research and the pattern of interaction have led to new collaborations and the development of new interests and fields of enquiry for many of them. A particularly striking development, and one we have actively promoted, is that a number of high theorists in our network have been taking acute interest not only in policy research but in laborious empirical projects and field studies as well. This has been most remarkable in the case of theorists like **Banerjee**, **Kremer**, **Piketty**, and **Mookherjee**, all of whom are now involved in large empirical projects; **Benabou** and **Aghion** are planning to be.

Another positive aspect of the process of evolution of our group has been the emergence of collaborative research projects among several members (**Aghion-Banerjee-Piketty**, **Moene-Wallerstein**, **Banerjee-Kremer**, **Bardhan-Mookherjee**, **Banerjee-Mookherjee**, **Bardhan-Bowles**, etc.). Apart from collaborative research, the periodic meetings have displayed an intense cross-fertilization of ideas among members, and between members and economist and non-economist non-members.

We have from time to time also invited promising graduate students to our meetings and, starting October 1998, will be regularly having there the pre-dissertation fellows we have selected each year in our fellowship competition. Our fellowship program is based at MIT and is administered by Michael **Kremer**, in collaboration with Samuel **Bowles** and Richard Freeman. Our first set of five fellows are working on topics including inequality and local public goods provision; endogenous beliefs concerning redistribution; group inequality, segregation and allocational inefficiency; social interactions approaches to inequality and macro-social outcomes; and the perpetuation of inequality. All this, hopefully, will help us build a permanent research community around our topic areas.

Research progress

In our proposal for the current grant we identified four guiding themes in our research:

- (A) inequality as a possible impediment to cooperation in local communities and its associated impact on the local environment and the availability and quality of local public goods;
- (B) the costly allocational distortions that may arise from inequalities in wealth, pay, and governance rights, and the way in which these may impede the effective functioning of organizations, firms, farms, and other productive entities;
- (C) the ways in which inequality may militate against efficient national-level bargaining and policy-making, thus impeding macroeconomic performance; and
- (D) the evolution, efficient design and political viability of policies and governance structures to alleviate poverty and secure greater economic opportunity for the less well-off.

A. Inequality and Cooperation in the Local Community

In this area we have carried out both theoretical and empirical research in collaboration with researchers and field workers in three continents. Pranab **Bardhan** and Jeff Dayton-Johnson [27] develop a theoretical model of conservation of a common-pool resource like fishery when the fishermen have differential endowments in terms of fishing boats.² Cooperation here takes the form of restraint in resource extraction. They show that increasing inequality does not, in general, favor full conservation in an unregulated fishery. Then they consider various schemes of community regulation of the commons and find that increases in asset inequality may restrict the range of implementable mechanisms. Jean-Marie **Baland** and Jean-Philippe Platteau [14, 15] also demonstrate theoretically the ambiguous impact of asset inequality on conservation in the local commons. Elinor Ostrom will present a paper in our October 1998 meeting on the same issue. **Baland** and Patrick François are currently working on a paper where it is shown that privatization of a common property resource may make the poor worse off, even when there are general efficiency gains from such a privatization. **Baland** and Debraj Ray are working on a paper which studies the impact of asset inequality on voluntary provision of a common resource, when the individual contributions are heterogeneous. Karla **Hoff** and Arijit Sen [44] have begun work on a model of homesteading, exploring the relationship between home ownership and the maintenance of high levels of social capital and local amenities in a low-income residential neighborhood: when everyone increases his or her stake, then each person's return to stakeholding may go up enough to support a new, better equilibrium for the community.

² All papers cited with a number are listed at the end of the report. A selection of these papers appears in a separate volume; the other papers referred to may be found in the web site of the network at <http://globetrotter/macarthur/inequality/>, which is in the process of being created.

Dayton-Johnson, a student under **Bardhan**'s supervision, collected field data from 54 farmer-managed surface water irrigation systems, known as *unidades de riego*, in the Mexican state of Guanajuato. He analyzed the determinants of community cooperation in maintenance efforts (the cleaning of canals and repair of water-control structures) in terms of explanatory variables like the number of households in the system, the irrigable area, the level of land holding inequality, some measure of social heterogeneity, and the extent of government involvement in the construction of the system. He found that land inequality has a significant (negative) impact on cooperative maintenance effort, when both direct and indirect (through the choice of water allocation and cost sharing rules) effects are taken into account. Social heterogeneity also has a negative total effect on maintenance.

Bardhan has just completed collecting similar field data from 48 irrigation communities in the state of Tamil Nadu in south India (both traditional tank irrigation and modern canal systems), both at the community level and at the level of sampled individual farmers. These data will be analyzed to look at the determinants of cooperation in field channel maintenance and avoidance of rule violation in water allocation, and evaluate the role of land inequality and social stratification, apart from individual perceptions of fairness in the rules, in helping or hindering cooperation.

In a study of local public goods provision in a poor urban environment, **Baland** has collected data from the Kibera slum outside Nairobi, interviewing 520 households and 50 governing bodies of various informal groups involved in such public provision. These data will be analyzed to examine the determinants of participation in these informal groups (the study of sharing rules among Senegalese fishers undertaken by **Baland** was able to obtain only rather low quality data and will be abandoned).

We also supported field work in three villages in Colombia by Juan Camilo Cardenas (who in collaboration with some NGOs, working under Bowles' supervision) looked into the issue of how inequality within communities can affect an individual's level of use of the commons and contribution to conservation measures. Cardenas has also designed and implemented (in these three areas) a field experiment on a local commons game with asymmetries both in relative wealth or power among the players and in distribution of benefits.

B. *Wealth Constraints and Allocative Efficiency*

Several network members have examined the consequences of differential access to capital and land on productivity in farms and firms. **Bardhan**, **Bowles** and Gintis have written an extensive overview paper [26], showing that when asymmetry or non-verifiability of information or non-excludability of users make contracts incomplete or unenforceable, private contracting will not in general assign the control of assets and residual claimancy over income streams in a way that achieves socially efficient outcomes. They illustrate these ideas with reference to misallocations in land, labor and credit markets; they also explore the consequences of redistributive policies for risk-taking and risk-exposure when non-wealthy agents are risk-averse, and for resolving collective action problems inherent in the provision of local public goods in the context of commons.

Abhijit **Banerjee**, Paul Gertler, and Maitreesh Ghatak [21], in a study of tenancy reform in the state of West Bengal in India, show that security of land tenure has had a significant positive impact on agricultural productivity: their theoretical model suggests that this effect works through empowerment of poor tenants, giving them better incentives to produce and invest. Even prior to publication, this study is attracting attention on a wide scale; it appears as a featured box in a new textbook on economic development published by Princeton. Dilip **Mookherjee** in a theoretical paper [67] studies the relationship between work effort and varying wealth levels of risk-averse tenants, and shows the productivity effects of wealth changes to be strongest among middle farmers. **Mookherjee** and Debraj Ray extend the usual tenancy model to the dynamic case where the effects of current inequality on savings and investment influence the evolution of future inequality. In this context they show the emergence of poverty traps, rendering anti-poverty transfer or credit programs ineffective, unless they are large enough to take the tenant above a high threshold level of initial wealth.

Bardhan and **Mookherjee** are now in the last stages of collecting detailed farm-level data from farm management studies carried out over 1980-95 in more than 90 villages in West Bengal. This generates a panel data set for more than 500 farms of varying sizes for between three to five years. These data will be analyzed with a view to disentangling the impact of institutional reforms on agricultural productivity rise from the more conventional effects flowing from higher input availability or changes in relevant prices.

Outside agriculture, **Banerjee** and Esther Duflo have carried out a survey of 125 software firms in India, and find strong evidence that market imperfections (resulting in differential access to credit and risk-bearing capacity) constitute important barriers to entry and growth of new firms. **Banerjee** and Kaivan Munshi, using a survey of about 500 garment-exporting firms in a town in south India, find evidence that access to a strong local social network (which provides capital and insurance) makes a great deal of difference in the pattern of growth of firms. This provides support for the importance of the economic role of social networks which, while widely recognized, has often not been satisfactorily documented. Karla **Hoff** is working on a theoretical paper on informal credit and insurance networks; she shows conditions under which informal insurance arrangements (to which poor people turn when they do not have access to insurance markets) may lead to a poverty trap; the poor cannot risk removing themselves from the collective help of a group, but participation in the group may be a factor that reduces their mean income.

In a commissioned paper for our network Paul Malherbe surveyed the empirical evidence in the U.S. and UK on the existence and importance of wealth constraints (that prevent asset-poor individuals from entering, investing on an optimal scale, and remaining) in self-employment.

Credit constraints prevent many poor people also from investing in education for their children. Michael **Kremer** has been working with a team on several empirical projects looking at ways public support for education can be used to redistribute income in ways that improve efficiency. He reports on randomized evaluations of two programs of providing textbooks (and in some cases paying for the uniforms) in rural primary schools

in Kenya. Among other things, these evaluations suggest that increasing class size and using the funds to reduce school fees and purchase textbooks would reduce dropout rates without measurably reducing test scores. In another study he is currently conducting in Kenya preliminary evidence suggests that providing grants to school committees to spend on education may work better than centralized provision of textbooks. **Kremer, Banerjee**, and Jenny and Peter Lanjouw are currently evaluating the impact on school attendance of providing a second teacher to one-teacher schools in the state of Rajasthan in western India. **Kremer** is also involved in a group project to examine the effect of a school voucher program designed to provide the poor in Colombia with the opportunity to attend private schools. Unfortunately, Kremer's proposed study of credit constraints in Vietnam using a randomized evaluation of cash transfers had to be abandoned for administrative reasons.

In a commissioned paper for our network on educational finance reform Julian Betts and John Roemer analyze the reallocations of educational expenditures required to equalize opportunities across types of individuals in the U.S.: based on data for black and white men from the National Longitudinal Survey of Young Men they find that equalizing educational outcomes between races would require spending six to ten times as much on blacks as on whites, whereas efficiency losses from such a policy would be modest. In one of our meetings sociologist John Goldthorpe presented a paper which showed on the basis of the National Child Development Study data set in Britain that while merit certainly counts in social mobility processes, children of disadvantaged class origins have to display far more merit than children from more advantaged origins in order to attain similar positions.

In a careful econometric study presented in the same meeting Dominique Goux showed that across the cohorts born from 1905 to 1968 there was a significant rise in the inequalities in educational opportunity in the US, with an increase in the role of family cultural resources in the primary and secondary education and an increase in the role of family material resources in higher education. For similar birth cohorts in France she did not observe such a rise in inequality, but there was an increase in the role of family cultural resources in higher education. In both the U.S. and France school expansion and economic modernization favor families (usually the ones with more resources) that can adapt to change, and thus resulting in an increase in inequality of opportunity. In another paper in the meeting Aldo Rustichini, Andrea Ichino, and Daniele Checchi showed that while Italy (with a more centralized and public schooling system compared to the U.S.) displays less inequality between occupational incomes, it has a lower degree of intergenerational upward mobility than the U.S., not only between occupations but also between education levels: their explanation was that in a world in which family networks are important for labor market success, a centralized and uniform quality of education as in the Italian public system, far from helping poor children, may sometimes take away from them a major way of proving their talent, to distinguish themselves and to compete with rich children.

In a theoretical paper contributed to the same meeting, Joseph Stiglitz showed that widely held views concerning the desirability of social mobility and equality of opportunity cannot be derived from the standard utilitarian approaches of welfare economics.

In many poor countries households consider the cruel choice between income from their child's labor and investment in their education. Jean-Marie **Baland** and James Robinson have worked on a theoretical model where child labor is not just morally repugnant but turns out to be economically inefficient, as poor parents may not internalize properly all the beneficial effects of education for their children.

In research that overlaps with their work for the preferences network, Samuel **Bowles** and Herbert Gintis [40] have addressed the question: What characteristics of individuals (other than the conventional demographic, geographic and measured cognitive performance indices) explain differences in individual earnings, and how does schooling affect these earnings determinants?

Banerjee, Mookherjee, Munshi and Ray have a written paper [18] that analyzes, both theoretically and empirically, the effect of inequality of control rights even within a producer cooperative on efficiency. They theoretically predict that in a sugar processing cooperative inequality of landholdings among the sugarcane farmers will cause inefficiency by inducing a lower input price and a lower level of installed crushing capacity. This prediction is confirmed by data from nearly 100 sugar cooperatives in the west Indian state of Maharashtra. Drawing upon American and European experience with worker cooperatives, legal scholar Hansmann in a paper presented to our meeting pointed to the adverse effects of heterogeneity among the workforce on the collective decision-making process in employee-owned firms.

In several papers **Bowles** and Gintis have analyzed the productivity impact of employee ownership of firms, focusing on mutual monitoring, the problem of innovation-dampening risk-aversion among worker-owners, the impediments to worker ownership posed by the limited wealth of workers and credit constraints, and the design of appropriate insurance, credit subsidy and other policies. In a commissioned paper for our network Gregory Dow and Louis Putterman give a critical and integrated assessment of the many disparate explanations on a fundamental question in the theory of economic organization: why investors, rather than workers, normally own and manage a firm. The main ideas that they found to be of logical coherence and empirical plausibility consist of hypotheses relating to three classes of issues: monitoring and work incentive problems in teams, financing and investment incentive problems, and the difficulty of collective decision-making for labor suppliers as opposed to financiers.

In one of our meetings John Pencavel shared with us the results of his long-term empirical research on the worker-owned plywood factories in the U.S., documenting the higher levels of total factor productivity in their firm, and their greater job security.

Relatedly, **Kremer** theoretically explains the relative rarity of worker cooperatives by the incentive distortion effect of the tendency to redistribute away from the more able members, and the latter's reluctance nevertheless to leave the firm since this entails forfeiting the dividends on their capital contribution.

C. Macroeconomic Consequences of Inequality

Philippe **Aghion** has completed a book (with the economic historian Jeffrey Williamson) entitled *Growth, Inequality, and Globalization: Theory, History, and Policy* [3].

Philippe **Aghion**, Abhijit **Banerjee**, and Thomas **Piketty** [6] have done a detailed theoretical analysis of the various mechanisms through which inequality of investment opportunities may have adverse effects in terms of macroeconomic volatility of output and/or interest rate and increased vulnerability of the economy to inflationary spirals. They are currently extending the analysis to the case of an open economy, intending to throw light on the genesis of financial crises like those that have engulfed much of East and Southeast Asia. **Aghion** is also completing a manuscript [1] dealing extensively with the relationship between wealth inequality and economic growth. He, in collaboration with Peter Howitt and Giovanni Violante, is also working on a theoretical paper on the role of technological progress in generating within-cohort wage inequality, supplemented by some calibration exercises based on US and UK data.

Drawing upon the accumulating experimental evidence on aversion to inequality and unfairness, Matthew **Rabin** [71] has theoretically studied the ways wealth disparities may lead to costly breakdowns in bargaining. These may lead to unfavorable macroeconomic outcomes.

In a large cross-country study of the impact of political regimes on economic development, political scientist Adam Przeworski suggested, in a paper presented in our May 1998 meeting, that democracies are less likely to survive in societies that are more unequal, that wealthier dictatorships grow in ways that are more labor-extensive and labor-exploitative than democracies at the same levels of development, birth rates are much higher under dictatorships, and women's status worse, and while poverty constrains the way economies grow, people just live better and longer under democracy even in poor countries.

D. Sustainable Poverty Alleviation

Roland **Benabou** [32] has tried to explain how countries with similar technologies and preferences may come to adopt different policy paradigms, some exhibiting high levels of economic security and equality of opportunity, and others not, and why the democratic process may sustain these divergent trajectories. With imperfect credit and insurance markets there can be multiple steady states with mutually reinforcing high inequality and low support for redistribution, or vice versa. Such models have obvious implications in explaining the striking difference between the U.S. and European systems of education finance and health insurance, for example. In another model that **Benabou** is currently working on, he looks at the way a country's productive and education system shape each other through endogenous technological choice by firms and investment decisions by future workers with different abilities and family backgrounds. Again, one may be able to understand how different joint systems of education/technology can emerge and persist: more skill-based technologies and greater educational disparities reinforcing each other in one case, more balanced productive and educational structures in the other.

In another paper **Benabou** [30] assesses the costs and benefits of different forms and rates of redistribution, and then simulates a model of these relationships with plausible parameter estimates from the empirical literature: for a wide range of parameters both costs and benefits of redistribution are of the same order of magnitude, suggesting that redistribution need not impose large net costs on society.

Benabou and Efe Ok [31] formalize the argument that (and work out the conditions under which) the relatively poor majority in a democracy do not engage in large-scale expropriation and redistribution from the rich. The authors reason that the poor take into account the fact that they, or their children, may move up in the income distribution and therefore be hurt by such policies. Then in analyzing empirical mobility matrices from the PSID data they find evidence of this hypothesis of the prospect of upward mobility.

Karl **Moene** and Michael **Wallerstein** [58] pursue the question of political support for redistribution in the context of the welfare state, focusing on the differential implications of the redistributive as opposed to insurance (as in the case of unemployment insurance) motives for voting for welfare spending. They are trying to test three empirical implications of their theoretical model: (a) welfare spending rises with average income holding income distribution constant; (b) welfare spending falls with increased inequality, holding average income constant; and (c) welfare spending falls with increased volatility of income, holding average income constant. In another paper [56] they study the proper mix of universalistic and targeted programs when the level of taxation is chosen endogenously by majority rule, and conclude that insistence on too much targeting, as economists are prone to do with a view to making anti-poverty programs more effective, may politically turn out to be worse for the poor than a more universalistic alternative.

In the same area of political support for redistribution Thomas **Piketty** is engaged in a large, long-run project to explore in a systematic way what can be learned from major international social survey data sets about the determinants of individual attitudes toward income inequality and redistribution. He is using micro data sets from the International Social Survey Program spanning seven countries, as well as from the General Social Survey run in the United States and the British Social Attitudes Survey. He is trying to understand individual attitudes toward redistribution in terms of explanatory variables like current income and occupation, future income prospects, and answers to some ‘psychological’ questions (like: “according to you, what is the key to economic success—luck, innate talent, effort, etc...?”). One of his findings is that variations in perceptions about the generation of inequality contribute at least as much as variations in income to explain variations in attitude toward redistribution, and a substantial part of what may appear as income effects can in fact be attributed to psychological factors that happen to be correlated with income.

On account of some limitations of the concepts used in the existing surveys from his theoretical point of view, **Piketty** has gone on to design and run his own social survey in France. This will, among other things, allow him to test for the multi-dimensionality of redistributive politics (individual political attitudes may, for example, vary not only

about the magnitude of redistribution but also about specific policy tools of redistribution—helping the poor through, say, increasing the minimum wage as opposed to fiscal transfers).

A different aspect of the politics of redistribution is that of alternative governance structures and their relative effectiveness. Anti-poverty programs may, for example, have differential efficacy depending on whether they are run by officials answerable to a central government (which lacks information about local needs and the nature of benefits actually distributed to the poor) or by a democratically elected local government. Pranab **Bardhan** and Dilip **Mookherjee** are working on a theoretical paper analyzing the various trade-offs involved in decentralization. While accountability problems may be overcome by program implementation by local governments, there may be additional problems of interjurisdictional conflicts, corruption, and vulnerability of local governments to capture by the rich, which may favor centralization.

Two empirical papers presented in our meeting described the beneficial effects of decentralized governance, one by Asim Dasgupta, Finance Minister of West Bengal, on the basis of the experiments with decentralization carried out in West Bengal villages in the last two decades, and the other by sociologist Boaventura Santos, on the basis of his study of the participatory budgetary process in the Brazilian city of Porto Alegre.

Some policy implications.

Taking all four guiding themes of our research network together, while we have not shied away from rigorously trying to address the inadequacies of current theoretical models, several key policy issues have been at the forefront of our attention. For example, our research has implications for:

- (a) the effect of land reform (and tenurial security) legislation on agricultural productivity and on conservation of environmental resources (like irrigation water and fisheries) in poor countries;
- (b) how home ownership, by increasing stake in building local amenities and social capital, can improve low-income residential communities in inner cities of rich countries;
- (c) improving local participation in public goods provision in urban slums of poor countries;
- (d) how increased access to credit and social insurance can facilitate market entry and survival of small entrepreneurs and help worker-owned enterprises cope with financial constraints;
- (e) how more public support to schools (even at the expense of a somewhat larger class size, if funds are scarce) in the form of provision of textbooks, lower fees, decentralized grants, etc., in poor countries can improve educational outcomes;

- (f) how attention to perceived reciprocal fairness among negotiating parties can prevent costly breakdowns in bargaining (resulting, say, in strikes, or in mismanagement of environmental resources);
- (g) how influencing the public perception about the origins of inequality can make a difference in political support for welfare policies and also for the form redistributive policies take (say, helping the poor through minimum wages as opposed to fiscal transfers);
- (h) how narrowly targetting anti-poverty policies, as economists usually suggest for increasing cost-effectiveness, can reduce their political viability; and
- (i) how high existing inequality and lack of public support for redistribution (say, in education finance or health insurance) can be mutually reinforcing, and piecemeal attempts at reform may not be effective.

We have not, however, sought to contribute to the design of policy measures, as practitioners in the policy field have the required competence in these areas. As will be seen immediately below, we have interacted frequently with policy professionals about our research, and as our projects come to fruition we will expand these efforts.

Outreach Activities

1. Pranab **Bardhan** and Samuel **Bowles** organized a full day of presentations of our research at a high-level World Bank workshop in July 1997 on new directions in development economics hosted by Joseph Stiglitz, senior vice president of the Bank, and supported by the Foundation. Network members making presentations included **Bardhan**, Roland **Benabou**, **Bowles**, Karla **Hoff**, Michael **Kremer**, Dilip **Mookherjee**, and Michael **Wallerstein**. Other MacArthur Network members participating in the workshop included Akerlof, Case, Folbre and Quah.

2. Stiglitz, apart from enthusiastically attending almost all our meetings, being a dinner speaker in one meeting, and presenting a paper in another, has requested us to produce a manuscript containing relatively non-technical survey articles on the various issues that our network is researching on, which may be used by the Economic Development Institute (EDI) of the Bank in their programs of training bureaucrats and policy makers in developing countries. We are proposing to do this in the future.

3. **Bardhan** and **Bowles** (along with Gintis) have prepared an extended essay [26] synthesizing many of the research results of our network with existing research on the topic of wealth constraints and economic performance. This paper will be published in the *Handbook of Income Distribution*, edited by Anthony Atkinson and Francois Bourguignon. **Piketty** has written an overview article [69] for the same *Handbook* on the theories that explain persistence of inequality. **Benabou** has published a survey of research on inequality and economic growth, published by the National Bureau of Economic Research. **Aghion** has written a survey article [1] on the causal relationship between inequality and economic growth, which he gave as the Raffaele Mattioli Lecture at L. Bocconi University. **Bardhan**

wrote a survey article [28] on the issues of decentralized development, and gave it as the Ramaswami Memorial Lecture at Delhi School of Economics. He gave an overview of the issues of institutions and governance in economic development as the plenary address at the annual meeting of the African Economic Research Consortium held at Harare in December 1997. **Hoff** wrote a survey article [48] on market failures and the distribution of wealth for a special issue of *Politics and Society*. **Bowles** and Gintis have authored a book [34], *Recasting Egalitarianism: New Rules for Markets, Communities, and States* (edited by the sociologist Erik Wright, an associate of our network, and published by Verso, London), intended for general social science and policy community readership. *The Good Society* will publish a symposium reacting to the asset redistribution proposals in this book. **Bowles** and Gintis have written a general paper, "Is Equality Passe?", and *The Boston Review* will present a symposium reacting to this paper.

4. The Foundation organized a mini-conference on May 1 1997 on the prospects of egalitarian growth where some of our network members were invited to make presentations to a group of economists and policy makers specifically invited by the Foundation for this purpose from a few countries in Central America. **Banerjee**, **Bardhan**, **Bowles**, **Hoff**, and **Kremer** made presentations. We have received requests from some Central American policy makers for continuing interaction on issues of egalitarian growth.

5. Our network has been invited to participate in the organization of a three-day workshop on Decentralized and Participatory Development to be held at Calcutta in December, 1998, hosted by the State Planning Board. (Asim Dasgupta, Minister of Finance and Planning of the Government of West Bengal, who is the main organizer of the workshop, has attended one of our network meetings in 1997 and presented a paper on decentralization experiments in West Bengal). The workshop will discuss decentralization issues in India, Bangladesh, China, and Kenya. Eight of our network members will attend this workshop and, with the assistance of Dasgupta, will visit decentralization projects in rural West Bengal after the workshop.

6. **Kremer** is intensively involved in several education NGOs in Kenya and Colombia; **Banerjee** and **Kremer** are working with an education NGO in Rajasthan, India.

7. **Banerjee**, **Hoff** and **Mookherjee** were invited by the World Bank to contribute to the World Development Report 1998, and **Bardhan** was invited to do a pre-publication review of the draft Report. **Bowles** was asked to contribute to the World Development Report, 2000.

8. The Brazilian Ministry of Land Reform and the World Bank organized a workshop (in Brasilia in July 1998) whose title, "Asset Distribution, Poverty, and Economic Growth," and content reproduced many of the themes of our research. **Bardhan** was a dinner speaker at the conference; other presenters in that conference included **Hoff** and **Banerjee**.

Proposed Research and Outreach Activities

New departures in modes of work

As overlapping interests have become clear and the nature and extent of complementary skills evident, network members have begun to work more collaboratively, and to involve non-network members in our research. As a result our research and outreach activities in the coming three years will be conducted in what we term satellites, namely clusters of members (often involving non-members) pursuing a group project seeking answers to the foundational question with which we began the report.

A second development is that as our research comes to fruition, we will devote an even greater effort to the presentation of our results in synthetic and non-technical ways where this is possible and appropriate. (The first two years of the project saw a significant amount of this type of non-technical outreach publication, as we have noted above.)

The research which we propose below represents our current plans, parts of which will no doubt be amended, extended, abandoned and supplemented by new topics as our research unfolds. Our members cannot now anticipate what approaches to our foundational question will appear promising three years hence, and it would be counter-productive to ask them to do this.

Satellites

A. Access to assets and opportunities

While the poor by definition have little wealth, they may still be able to gain access to productivity-enhancing assets such as land, equipment, education and training by taking advantage of credit and rental markets. However, recent theoretical work (much of it by members of the network) has pointed to reasons why these markets do not work very well for the poor. The reasons may be either structural (for example, information asymmetries) or institutional (for example, lack of adequate contractual enforcement mechanisms such as bankruptcy laws). Poverty traps thus often lock the poor into a lifetime of low productivity and few assets: their firms tend to be undercapitalized, their farms lack productivity-enhancing inputs, their children will leave school early and they will not be able to take advantage of training opportunities.

Over the past few years these ideas have found broad acceptance as theoretical possibilities in policy circles and among social scientists; however, for these issues to get the attention that we believe is warranted, two things need to be done. First we need more adequate measures of the magnitude of the effects, both to confirm that these are important real-world barriers to mobility rather than academic curiosa, and to guide the process of policy design. And second, we need to think about how we would go about designing better policies in the specific areas that we do understand.

This satellite will thus explore the ways that wealth inequality and the consequent limits on borrowing affects access by the poor to the productive assets and how greater ownership of assets for them might be facilitated. Enhanced asset ownership by the poor combines a number of attractive features: it raises the incomes of the poor in ways that also contribute to greater personal autonomy and dignity, and it may also attenuate difficult-to-solve incentive problems which reduce allocative efficiency. Examples include exchange relationships where complete contracting is impossible, such as relationships between lenders and borrowers, employers and workers, residential tenants and landlords, landowners and agrarian workers or tenants, and many others. That the objectives of greater equality, human dignity, and allocative efficiency might be jointly pursued through asset-based redistribution has been suggested at least since John Stuart Mill's writings a century and half ago. But many, perhaps most, attempts in this direction have failed in at least two of these objectives.

The network members making up the core of this satellite—**Banerjee, Bardhan, Bowles, Hoff, Mookherjee, and Baland**—will conduct field empirical studies of the impediments faced by the wealth-poor and develop both new conceptual frameworks and new policy directions for addressing these barriers to mobility. Studies currently projected by the satellite follow.

Karla **Hoff** will study ways of *Expanding the Set of Housing Contracts Available to the Poor*. Recent work provides persuasive evidence that homeownership affects behavior. DiPasquale and (preferences network member) Glaeser show that home ownership leads to greater knowledge about and involvement in the local community. Green and White show that, particularly for low-income households, children of homeowners are less likely to drop out of high school than children of renters and are less likely, as teenagers, to have children. The fact that successful children are less likely to engage in socially destructive behavior represents a finding that homeownership generates positive externalities. A third study (supported by the Foundation), by Sampson, et al., explores the relationships among residents in a neighborhood. Some 8,000 residents in 343 neighborhoods in Chicago were asked about the likelihood that their neighbors could be counted on to intervene if “(i) children were skipping school and hanging out on a street corner, (ii) children were spray-painting graffiti on a local building, (iii) children were showing disrespect to an adult, (iv) a fight broke out in front of their house, or (v) the fire station closest to their home was threatened with budget cuts?” The reported assessments of the willingness to intervene were greater in neighborhoods with a higher percentage of homeowners, and the willingness to play the role of “social enforcer” (the term is due to W. J. Wilson) was in turn linked to reduced violence in the neighborhood. Some African-American neighborhoods are poor yet have low rates of violent crime and high rates of resident involvement in the enforcement of social standards.

In a theoretical paper, **Hoff** and Abhijit Sen will examine the links between civic involvement in the community, tenure choice (to own or rent), and residential choice in a city composed of several communities. Their model will be designed to illuminate the ways in which differences in the cost of risk bearing or the cost of borrowing, such as would generally arise between groups that differ in wealth, can lead to socioeconomic segregation between richer communities with high levels of civic engagement and poorer communities with low levels of engagement. Slight differences in risk-bearing or borrowing costs will

tend to translate into large differences between communities. They will use the model to explore the scope for socially beneficial government intervention to create a market for limited equity home ownership. Caplin et al. have recently studied the feasibility and the risk diversification advantages of such a market for a given household. Here **Hoff** and Sen emphasize the channels through which such a market could improve communities.

The argument to be developed is based on three premises. First, actions by residents in a community shape community quality. We treat civic actions as having effects that are partially excludable. For example, supervision of play groups in one's immediate neighborhood directly benefits one's own children, but it also benefits the community as a whole in that it contributes to a network of voluntary controls and standards. Networks of residents who are involved in the community make possible good information flow and facilitate the building of effective local institutions. This information network strengthens the ability of the neighborhood to extract public resources and to respond to cuts in public services, issues which are important in the light of the link between public signs of disorder (such as abandoned buildings and vandalism) and more serious crime.

The second premise is that civic actions are in part a response to market incentives. Homeownership creates incentives for individuals to improve the quality of their community since it is capitalized into the value of their homes. In addition to the cross-section studies cited above, there is direct evidence that moving a low-income individual from renting status to homeownership status affects his behavior.

The third and most fundamental premise is that there are civic actions that homeowners may take that are strategic complements: one resident's efforts to solve his own problems in the community and to deal with socially destructive behavior that directly affects him are more likely to succeed if he can hook into a network of individuals who are informed and who trust each other. This is true whether he is intervening with children who are spray-painting graffiti on a building near his own, or seeking satisfaction from a local official. One resident does not gain much from playing a leadership role in the community if others are neither interested in joining him as a leader nor in playing a follower role. Moreover, social involvement tends to lead to a sense of shared standards of acceptable behavior and to mutual trust; and it is trust that enables a resident to confront persons who are exploiting or disturbing public space.

As is common in models in which people's behavior depends on how many others are behaving a particular way, a property of the model we consider here is that there are cross-over points; if a certain number of people are playing the role of social enforcer, then each person will himself choose to play the same role. Critical points also give rise to lock-ins and poverty traps, with some communities characterized by low levels of ownership and little of what Sampson and his co-authors termed collective efficacy, while other communities, seemingly similar, enjoy high levels of both. The most important practical implication of the research will relate to the policy, mandated by the courts in several U.S. states, to narrow the gaps in education spending per pupil in different communities. There has long been an awareness that without solving the problems of extreme social dysfunction in the community, school expenditures may not be effective. An implication of the model of this paper is that government subsidies that increase opportunities for homeownership by low-income households and thereby increase residents' involvement in solving

the community's social problems, may greatly increase the welfare effects of redistributing education expenditures.

The logic of this model, and the low-level trap that it supports, is the following: To elicit effort requires stakeholding, which is costly in terms of risk-bearing. Each individual is willing to take on more risk—to bet on the success of his neighborhood and the appreciation of the value of his own house—if others do. When everyone increases their stake, then each person's return to stakeholding goes up enough that a new, better equilibrium can be supported.

Hoff will also try to characterize the features of *Homesteading Programs that Yield Healthy Communities*. The experimental results reported by **Rabin**, and the theory presented by Fehr in our Bellagio meeting, provide a framework in which to examine these questions. Within these frameworks, one can ask the following questions: Is field evidence on homesteading congruent with lab studies that find a strong positive correlation between subjects' contribution levels to a public good and their beliefs about how much others are contributing? Does communication among residents or trust that others will contribute have large effects on each resident's contributions to local amenities, as experimental evidence suggests it should? Does the opportunity to punish each other affect the level of contributions to local amenities, as Fehr suggests? Extreme examples of punishment opportunities are the right of the community to terminate a lease or withdraw a homesteading subsidy; presumably milder, social sanctions exist, too. Can one structure homesteading programs so that the most community-spirited types (e.g., the homeowners) are decisive for the prevailing behavior in equilibrium? Is there field evidence to confirm lab results that a few free riders (e.g., pure renters) can dispel trust in a community? Does the design of community institutions or homesteading programs influence which type is decisive? Do mixed-income or mixed-tenancy status neighborhoods have to be unstable? What factors seem to promote trust in homesteading projects?

Shifting now from housing assets to land, Pranab **Bardhan** and Dilip **Mookherjee** will study *Economic, Political and Sociological Dimensions of Farm Productivity and Institutional Reform in West Bengal*. The purpose of this field data collection and analysis is to understand sources of rapid agricultural growth in West Bengal, India, over the period 1980-95, utilizing individual farm-level production data. The project is distinctive in focusing on the interplay of land reforms with the contribution of local government reforms and collective action. In particular, they will assess the role of a number of institutional reforms carried out by the Left Front government, in power in the state since 1977. These reforms principally included:

- (a) land reforms, comprising land redistribution, tenancy registration and regulation;
- (b) revitalized local governments, through political reforms and greater decentralization of finances and decision-making authority;

- (c) enhanced scale and design of employment and credit programs targeted at the poor;
- (d) attempts to organize collective action of agricultural workers.

Aggregate data shows evidence of increasing use of fertilizers in agriculture, besides a switch toward high-yielding varieties of rice and cash crops. The Left Front government, as well as a number of academic researchers, have claimed that most of the output-enhancing changes were principally caused by the institutional reforms. This claim has been based, however, on casual correlations between output and input data at the aggregate state level, and a handful of field studies suggesting a benign impact of institutional reforms in some villages. No attempt has been made to disentangle the role of these reforms from other, more conventional, explanations based on capital accumulation or changes in relevant prices.

The researchers' strategy is to utilize production data from individual farms over the period 1980-95 to assess the role of institutional reforms, and possible validity of alternative channels by which these reforms may have an impact on agricultural growth. For instance, land redistribution is likely to have an appreciable impact only if small farms generate higher yields than large farms, possibly owing to enhanced labor incentives, or increased incentives to adopt high-yielding varieties. Tenancy regulations will be effective if they have significant effects on labor effort and on investment incentives of tenants, and if a significant fraction of land is leased to tenants. Local government reforms will be effective if they help deliver improved local infrastructure, or increase fertilizer supplies. Anti-poverty employment and credit programs could increase incentives to adopt high-yielding but risky crops. Higher wages for hired workers will enhance productivity in the presence of nutrition- as well as motivation-based efficiency-wage effects in farm production. The aim of this project is to test for the presence of these effects econometrically.

Bardhan and **Mookherjee** have already collected data on farm level production for over ninety villages scattered throughout West Bengal over the period 1980-1995, based on Farm Management Studies carried out by the Indian government. This generates an unusually rich panel data set for more than five hundred farms of varying sizes for between three to five years each. It includes production as well as price data for principal inputs and output of each crop separately, besides some limited data pertaining to the wealth of the cultivator. Supplementary data concerning village-level variables need to be collected from other sources. They are currently attempting to collect data on (i) rainfall, (ii) landownership distributions, (iii) land reforms, and (iv) the scale of employment and credit schemes. Most of these are available at the district level from published sources, but this entails too high a level of aggregation. Consequently, the need arises to carry out an independent survey of the concerned villages to directly collect the necessary data concerning (ii)-(iv) above at the village level. If such village-level surveys are to be conducted, it would make also sense to enlarge the scope of these surveys to collect data that could be used in other projects as well. They are currently initiating one set of surveys of the villages, concerning functioning and performance of local governments.

Designing policy to achieve high levels of participation by the poor. A related project being carried out by Abhijit **Banerjee** along with Maitreesh Ghatak will extend

their earlier analysis of the tenancy reforms in West Bengal, seeking to understand why a significant number of potential beneficiaries chose not to take advantage of the reforms. Answering this question will tell us something about the limitations of externally imposed changes in property rights. Is it, for example, the case that the poorest simply do not dare to take advantage of a law that favors them, because they are too dependent on the landlords, and will remain so even if they make active use of the new opportunities? Taking account of possible answers will be an important part of designing new land policies and other interventions to alter property rights.

Abhijit Banerjee will also conduct a field survey to explore *Credit Constraints and Risk Exposure among Small Garment Producers in Calcutta*. In this industry small producers lack working capital (indeed the smallest have so little capital that they often cannot finance the purchase of inputs and thus are forced to rely on scrap materials discarded by the larger producers), and the business is extremely vulnerable to any adverse shock (to family members health or prices, for example). **Banerjee** will use this study to quantify the impediments to breaking out of poverty by becoming an entrepreneur. In his study he intends to enlist the support of a geographer and an NGO labor organizer, who are experts on the local informal sector.

In a related project **Banerjee** will study *Skill Formation in the Plumbing Business* in India, as a window into the impediments to human resource accumulation among the poor. Plumbing skills are generally acquired from other plumbers, often family members, through an apprenticeship. There is thus no real market in plumbing skills, and as a result outsiders cannot easily break into plumbing, even where the private and social benefits associated with the skill enhancement are considerable. It would appear that if the plumber were able to sell his services as a teacher of plumbing skills, everyone would benefit. **Banerjee** will seek to understand impediments to skill formation and policies to circumvent these obstacles to mobility.

Dilip **Mookherjee** (with Debraj Ray) will study *Asset Accumulation Constraints and the Dynamics of Inequality* to better understand the evolution of savings behavior and asset accumulation, and the resulting impact on the dynamics of economic inequality when individuals are credit constrained. This project—which is suggested by **Mookherjee's** earlier work on bilateral tenant landlord contracting—has broad implications for the evolution of land tenancy, the dynamics of financial market constraints for small firms, and constraints on human capital accumulation by the poor. Moreover, the role and implications for wealth inequality can be understood as a result. In view of the fact that sustainable redistributions of assets—that is, those which will not be undone by the voluntary contracting of individuals—require that the resulting allocation of ownership rights is consistent with individuals' savings and investment decisions, this project has important policy implications in the area of supporting human resource investment and entrepreneurship by the poor.

As **Hoff's** work on homesteading makes clear, greater access by the poor to assets may attenuate incentive problems concerning the care of the asset or the amount and quality of productive effort, but productive asset ownership (as opposed to holding one's meager wealth in more liquid form) generally exposes the poor to heightened risk. The disadvantages of increased risk exposure may outweigh the benefits of enhanced income and autonomy made possible through ownership, thus thwarting efforts to extend asset owner-

ship to the poor. **Bowles** (with Herbert Gintis) will undertake a project entitled *Asset Based Redistribution: Improving the Tradeoffs* to develop a model integrating the incentive advantages of asset redistribution and the risk exposure disadvantages. The incentive advantages will be analyzed both in the relatively transparent case of individual production (of the type studied in agriculture and in **Banerjee's** study of family firm garment producers in Calcutta) as well as the more demanding case where the productive activity in question involves a team (as in the case of an urban residential neighborhood studied by **Hoff**, a commons problem of the type studied by **Bardhan, Baland**, and others, or an employee-owned cooperative). **Bowles'** study will seek to better understand the effects of publicly and privately provided insurance in minimizing both the subjective costs and allocational inefficiencies arising from increased risk exposure associated with asset ownership. The result will be a series of papers which will eventually take the form of a short book to be published by Princeton University Press.

Another example of team production is the case of producer cooperatives. Dilip **Mookherjee** and Sanghamitra Das plan to carry out an empirical examination of the *Comparative Performance of Cooperatives and Privately Owned Sugar Factories* in India to analyze the effect of property ownership and different organizational forms on firm performance. For this purpose a panel data set will be assembled from industry associations, the Indian Government Bureau of Industrial Costs and Prices, and the Agricultural Census.

Jean-Marie **Baland**, Pranab **Bardhan** and Dilip **Mookherjee** will study *Poverty, Inequality and Reliance on Local Common Property Resources: An Empirical Evaluation*. It is commonly thought that an important cause of environmental degradation is local poverty. The underlying notion is that the poor rely disproportionately on common property resources such as open access land, forests or fisheries. Increased poverty can thus accelerate depletion of such resources, leading in turn to greater poverty, creating a vicious circle. The theoretical literature on this topic, however, suggests that matters are not so clear-cut. The key question concerns the way that common property resource use varies with wealth levels. On the one hand, common property resources are by their very nature accessible to all, irrespective of wealth or status. The private costs required to exploit such resources, however, do typically depend on wealth and status. If exploitation requires investment in suitable forms of physical capital (e.g., boats or nets in the case of fisheries, chainsaws in the case of forests) then the poor are limited in their ability to utilize the resource. On the other hand, if it is mainly time and unskilled labor that is involved (e.g., following grazing cattle around, or walking long distances to gather firewood), and the markets for such services are either not well developed or involve serious imperfections, then the poor may be more likely to utilize the resource. The availability of alternative market substitutes and quality differences (e.g., alternative energy sources) will also play an important role in determining the way that resource use varies with wealth levels.

This implies that the issue is likely to be settled empirically, if at all. There is a need to understand the determinants of use of common property resources, focusing particularly on household characteristics, such as occupation, wealth, income, demographic variables. Other local variables likely to be important are the cost of resource extraction activities, as well as resource substitutes available through the market. Moreover, formal and informal local organizations (e.g., local governments, fishermen's cooperatives, associated norms concerning resource use) will have an important impact. Ultimately, the key question of

interest is the extent to which asset inequality and the institutional nature of the local agrarian economy have an impact on common property resources.

The researchers will carry out village studies and household surveys that will throw light on these questions. These need to be conducted in settings where dependence on common property resources is significant, and where the stock of such resources is changing rapidly. The latter will facilitate analysis of the causes of environmental degradation and their effects on living standards of families of different characteristics.

They plan to carry out such surveys in Zimbabwe and in West Bengal (India). Other states in India, such as Northern Uttar Pradesh, or in South India could also be included, finances and logistics permitting. A doctoral student whose field work we supported (Juan Camilo Cardenas) has already collected extensive data on commons access by wealth level in Colombia. The scale and design of the required surveys are yet to be worked out in detail. The advantage of including West Bengal is that **Bardhan** and **Mookherjee** are already involved in detailed village studies as well as farm management studies in many local villages, so much information about the local agrarian economy and local governments will be available for such villages. Besides, forest preservation, fishing cooperatives and management of common water resources have played an important role in the economy of many West Bengal villages in the recent past. Household surveys, if feasible, will involve selection of a number of villages that will be surveyed at least twice, say in year 1 and year 3 of the project, in order to identify suitable household/village fixed effects, and to identify the effect of progressive degradation of the common property resource.

A final project of this satellite, still tentative, would involve economists, other social scientists and lawyers in a working group to apply the new microeconomics of the firm and contractual relations generally to the empirical analysis of *cooperative governance of productive institutions*. The primary objective of the project would be to draw together the threads of the research on coops by network members (**Banerjee, Bowles, Hoff, Kremer, Mookherjee** in particular) and explore their connections with other empirical, experimental, and theoretical studies, with a possible result being a book. It may be wondered why further effort in a heavily researched field such as cooperative ownership might yield important results at the present time. Our reason for guarded optimism is first, that the new microeconomics of labor markets and firms (stressing incomplete contracts) provides an insightful framework with which to analyse alternative configurations of residual claimancy and control in firms (especially by contrast with the older complete contracting framework used in much of the literature on the subject). Second, recent findings from the field of experimental economics (and social psychology) may shed new light on the role of reciprocity, fairness, and other motives in favoring some forms of organization over others. And third, the increasing number and variety of forms of cooperative ownership emerging in the aftermath of communism and elsewhere around the world (as well as evidence of the allocative advantages and even competitive success of some of these) provides a rich field for empirical research. Possible participants in this project are political scientists Lee Benham, Walter Korpi, and Joe Oppenheimer, legal scholars Henry Hansmann, and William Simon, and experimentalists Ernst Fehr and Louis Putterman, as well as John Pencavel, Greg Dow, Avner Ben Ner, and Paul Seabright. The project remains tentative because its value will depend on the pace and direction of research on these issues being undertaken by the network members named above.

B. Delivering equal educational opportunity

This satellite will bring together economists, educators, and practitioners from non-governmental organizations to consider the barriers to educational advancement to those without other forms of wealth, and the ways of making schooling a more effective avenue for advancement by the poor.

Investment in education is widely seen as critical to reducing poverty and inequality. Yet education for the poor is beset by a number of problems. The quality of schooling available to poor people is often low. In some poor communities, family investment in education is also low—school attendance among enrolled students is sporadic, drop-out rates are high, and students and families provide few complementary inputs, such as school supplies and time spent on homework. Among the policy proposals being advocated to improve education for the poor are supplementary funding for schools in poor areas, vouchers targeted to the poor to allow them to attend private schools, merit scholarships designed to provide poor students and their families with an incentive to invest in education, and investments in pre-school education to prepare children from poor backgrounds for school.

Policy analysis in this area is hampered by unresolved questions concerning whether increased school inputs are effective. Using data primarily from the U.S., researchers on “educational production functions” have found inconsistent evidence for the effectiveness of additional school resources, with results depending sensitively on the particular measure of school outcomes (achievement scores, subsequent labor market success, for example), school inputs (expenditures, class size, teacher quality), and the likely dependence of input-output relationships on the form of school governance (centralized, decentralized, public, private, and so on).

Moreover, there is some evidence that the importance of school inputs may be considerably greater in poor countries where educational systems are chronically starved for resources. Angus Deaton and Ann Case, members of another network, for example, found that additional school inputs were very effective in the black schools of South Africa but not in the much more richly provided white schools. It is instructive that some South African policy makers reacted to the Case-Deaton findings by citing widely circulated research by Eric Hanushek using U.S. data to show that school inputs were ineffective.

Our choice of projects in this area has been guided by the following considerations: i) we have concluded that randomized evaluations are a very promising approach to evaluating educational interventions, one complementing existing approaches, and one which might succeed in identifying successful interventions and documenting them in ways which would be persuasive to scholars and policy makers alike (a difficult requirement to meet); ii) the vast majority of evaluations (most of them non-random) have been conducted in advanced countries where in many cases there is little variance in the relevant school inputs, so there is much to be gained by studying cases (such as are found on a world scale) with more variance in the levels of educational resources; iii) the presence in our group of a leading scholar in the field of randomized evaluation, Michael Kremer and his substantial network of contacts among NGOs and others in school systems around the world.

The education satellite will conduct several studies to examine the pros and cons of strategies for enhancing the role of education in reducing poverty and inequality. The members of the satellite group are Michael **Kremer**, Abhijit **Banerjee**, and Roland **Benabou**. Projects of the education satellite include a study of a French attempt to overcome social disadvantage through enhanced schooling resources, a randomized evaluation of a school voucher program in Columbia, a system of incentives for scholarship in Rajasthan in western India, an early childhood intervention in Kenya, and a reconsideration of the evidence concerning enhanced schooling as a growth-and-redistribution strategy.

Roland **Benabou** will conduct an empirical study of the workings of the educational process ("education production function") using French data: *The Effectiveness of School Resources in Reducing Social Disadvantage*. The study will evaluate the effect of the "Zone d'Education Prioritaire" (ZEP) program, which provides substantial additional resources to schools in areas with unfavorable socioeconomic indicators. The French Ministry of Education collects data on about 60,000 secondary public schools, which will allow the following variables to be measured at the school level:

- Educational Inputs: number of students, number of classrooms, socioeconomic composition, percentage of foreigners, budget, number of teachers, and whether or not the school is classified as a ZEP;
- Educational Outputs: percentage of successful students on the national exams such as Baccalaureate and BEPC.

There has been no serious, systematic assessment of whether the ZEP "treatment," which is politically very controversial, is effective or not. This, of course, is one place where the payoff to a serious empirical study would be considerable. There are also other important issues for the efficient allocation of resources of interest for policy. For instance, are additional funds for non-instructional inputs more or less effective than additional teachers? Are such inputs substitutes or complements to school composition?

Michael **Kremer**, along with Joshua Angrist, Elizabeth King, and Erik Bloom, will study *School Vouchers for Poor Children in Columbia*. Programs to increase school choice have been advocated as a way of improving the quality of education in both developed and less-developed countries. Advocates argue that public schools have weak incentives to perform, and that school choice forces schools to compete for students and thus be more responsive to parents. Evidence on the effects of school choice programs, particularly vouchers, would be valuable to policy makers, but is currently scant. While many studies have examined the effects of participating in school choice programs, it is difficult to isolate the effect of the program itself since participation in the program may be non-random—the variables affecting student performance are correlated with those that determine participation in the program. For example, parents who are more strongly committed to their children's education may also be those who participate most effectively in choice programs. On the other hand, education authorities may respond to poor school performance or a perceived deficiency of home inputs by providing additional choices. Since unobserved variables may be either complements or substitutes for observed variables, it is difficult even to determine the direction of bias in studies that omit such variables. One response to this problem is to study a voucher program in which access was substantially

randomized, as in the Milwaukee schools case which we considered in one of our network meetings. But, to our knowledge, there have been no studies using random assignment to gauge the effectiveness of voucher programs in developing countries.

Kremer and his team will evaluate the effect of Colombia's school voucher program, which was targeted to the poor. Colombia's PACES program provided approximately 100,000 poor students with vouchers to attend private secondary schools between 1991 and 1997. Many of these were distributed by lottery. In order to evaluate the effect of the voucher program, they plan to compare applicants who won the lottery with applicants who lost the lottery. They will examine the effects of the voucher program on: school enrollment and attendance, behavior in school (e.g. disciplinary problems), school performance and scores on achievement tests, grade progression, time spent on homework versus in the labor market, marriage status and fertility, enrollment of younger siblings in school, and teacher attendance. They will estimate separate treatment effects for students with different socio-economic backgrounds, for those with different levels of parental education, for boys and girls, and for students applying to different types of schools.

A related theoretical study by Michael **Kremer** will ask *Why Schooling is Publicly Provided*. From the standpoint of standard economic theory, it is not clear why democratic governments operate schools instead of simply financing them while allowing families to choose among private schools. But around the world, education is overwhelmingly conducted in the public sector. Moreover, choice of school within the public sector is often limited. Michael **Kremer** plans to explore the possibility that governments operate schools because citizens have preferences about non-contractible aspects of the education of *other* people's children. The most important of these non-contractible aspects of education is likely to be ideology (meaning, broadly, such things as religion, values, and customs).

The project will investigate a model under which children's ideology depends on the ideology of their parents and of their schools, and people find it costly to interact with others who have different ideologies. Under a completely centralized public system, all students will be taught the ideology of the median voter. Under a voucher system, parents will send their children to schools that teach ideologies similar to their own. Over a series of generations, this will lead to a more ideologically polarized society. The project will explore empirical evidence from the Netherlands, Canada, Israel, and the United States to examine the extent to which school choice contributes to ideological and cultural segregation.

Banerjee and **Kremer** (along with Peter Lanjouw, and Jean Lanjouw) will implement *An Experimental Scholarship Scheme Program in Rajasthan* and study its effects on student achievement. In many poor communities in developing countries, school enrollment and attendance remain low despite substantial investments both by the state and by NGOs. Even where it has been possible to get children into school, drop-out rates at the primary level continue to be stubbornly high. A possible reason for low investment in education is a perceived low return to schooling. Parents who were interviewed as part of **Banerjee's** and **Kremer's** earlier research in Rajasthan often reported that they placed little value on primary schooling since they expected that their children would not be able to finish secondary school and get a government job, even if they completed primary school.

In order to increase parent and children's investment in education, the researchers will reward children (and their parents) who invest in schooling and demonstrate this in scholastic achievement. The advantage of subsidizing educational performance, rather than merely inputs into education, such as enrollment, is that this provides families with incentives for a broader range of inputs into education, including attendance, effort in school, time for homework, and parental involvement in the monitoring of schools. The program will be evaluated using a randomized design, with 50 treatment and 50 comparison schools.

Michael **Kremer**, Paul Glewwe, and Sylvie Moulin propose to evaluate *An Early Childhood Education Intervention in Kenya* which provides resources to support community-based pre-schools in a rural district. Since the 1970's, developing countries have invested more and more in basic education, as a first step in equitable, broad-based economic development. In more recent years, many of these countries have added early childhood interventions to their menu of social programs, and these are seen as particularly important for the poor. A growing literature in this field has shown that early interventions may be critical for the physical, mental and social development of a child, and that children of the poor may be less likely to get adequate stimulation to prepare them for success in school. Studies of pre-school programs in the U.S. have shown that these interventions may significantly attenuate the disadvantages that children from poor backgrounds face, and that the impacts can be sustained. Although a number of studies suggest that attending pre-school can be beneficial relative to not attending, there are no randomized studies that examine provision of resources to pre-schools. This is an important gap in the research literature. The team will study a set of pre-schools, half which were randomly selected to receive additional materials, teacher incentives and training.

Finally, the education satellite group proposes to hold two workshops to discuss the research projects described above, as well as other topics relating to education, poverty, and inequality. The first meeting will be held mid-way through the project, in April 2001, and the second meeting will be held in October 2002. Several economists and educationists from outside the satellite group will be invited to make presentations at these conferences. Possible invitees include Mark Rosenzweig, Jere Behrman, Caroline Hoxby, Nancy Birdsall, David Card, Alan Krueger, John Chubb, Marlaine Lockheed, Diane Ravitch, Maris O'Rourke, Mary Eming Young, Richard Murnane, and Paul Schultz.

During the conferences, we will present preliminary and final results from each of the research projects, and we will discuss other topics of interest to education and equity. In particular, some recent research using aggregate production function estimates—for example that presented to our network by Benhabib and Spiegel and Przeworski—has raised serious questions about the efficacy of schooling as a growth-inducing and egalitarian redistributive strategy. The satellite members and invited guests will seek to better understand the schooling-growth-redistribution nexus in light of this new evidence, taking account of the role of schooling in promoting productivity growth and raising individual incomes in ways not addressed by the conventional neoclassical production function growth accounting framework.

C. Inequality in a dynamic global economy

This satellite is composed of a major research effort on earnings inequality coordinated by **Aghion**, **Benabou**, and **Kremer** and a workshop on redistributive policies and globalization coordinated by **Bardhan** and **Bowles**.

Project on Wage Inequality and Technical Progress. This large-scale collaborative empirical and theoretical project seeks to understand the forces generating greater inequality in the distribution of earnings in the advanced economies, as a necessary step toward developing policies to address this trend. The project differs from most of the extant research in this field by stressing the role of economic organization—both firms and unions—and by addressing interactions between types of explanation—trade and technology, for example—as well as firms, unions and the portability of skills and other interactions. The project integrates efforts by theorists with broad interests extending well beyond labor markets with the efforts of accomplished labor econometricians.

Over the last twenty years there has been a significant increase in wage inequality in the United Kingdom and in the United States. While other countries have seen a less marked rise in wage inequality, in a number of these countries the position of those at the bottom of the distribution has worsened through a sharp increase in the incidence of unemployment. The last ten years have seen an upsurge of research interest in the source of this increased labor market inequality. There have been a considerable number of empirical studies for individual countries, some cross-country studies, and a number of theoretical studies. A number of factors have emerged as possible explanations:

- technical progress—particularly skill-biased technical change which destroys low-skilled jobs;
- increased globalization, and the associated competitive pressure from low-wage countries;
- labor market deregulation and the associated erosion of union power;
- skill supply – changes in the provision of education and training that have altered the balance of skills in the economy.

While these factors all seem to play a role in explaining the observed rise in inequality, we are far from having a full understanding of the issues involved. Thus we do not fully understand the relative importance of these various factors, not least because we have not taken account of their interaction. In addition, there are aspects of the rise in labor market inequality that have not so far been addressed. The following is a list of issues which still require investigation.

First, much of the discussion has been concerned with the rise in inequality *between* skills or occupations. But there has also been a significant increase in inequality *within* particular skills/occupations and *within* educational cohorts. A number of factors need to be explored here. One is that the nature of skills is more complex than the conventional divisions by occupational or educational category allows. The second, related, idea is that

the nature of firms/organizations is changing in such a way that it may be optimal to reward otherwise equivalent individuals differently.

A second issue concerns the links between the various explanatory factors given above. While most studies treat technical change and trade as independent factors, the two could well be related. Thus one of the forces driving globalization is technical progress, which lowers the cost of setting up and operating overseas plants in low-wage countries. But equally one might expect globalization to act as a spur to more rapid technical change. Similarly, technical progress could so change the nature of skills that it affects the incentives of workers to join unions, while at the same time the pace of technical change could be affected by the degree of unionization and other labor market institutions. Finally, as indicated before, there is an interaction between technical change and organizational change.

Third, much of the conventional discussion as set out above focuses on the substitution between workers with different *levels* of skills *within* an organization, and how this is affected by technical change. But equally important is the substitutability of a worker with any given level of skill *between* organizations. Thus an important determinant of both the rate of return to skill and of the pattern of wage inequality relates to the *transferability* of skills between firms and organizations. A high degree of transferability means that workers suffer less from sector-specific shocks. How transferable skills are depends on a variety of factors. The first concerns the nature of skills – whether they are general or specific. The proportion of each type of skill that a worker acquires will depend on the nature and amount of education and training that the worker receives. The second depends on the nature of the product market. Factors that are relevant here are the rate at which firms enter and leave the market, the rate of diffusion and adoption of new technology.

Finally, a puzzle arises as to why inequality has continued to grow despite the fact that the supply of skills has also grown—no doubt partly in response to the earlier growth in inequality. Previously, periods of rising wage inequality have been followed by a sufficient increase in the supply of skilled workers that the differentials have narrowed, and left the long-run distribution of wages fairly constant. We need to understand the complex dynamics between supply and demand for skills, why this might have changed recently, and consequently whether rising wage inequality is now a permanent feature of modern economies.

The aim of this project is to undertake a systematic theoretical and empirical investigation of the interaction between technical progress, labor market inequality and the evolution of institutions (corporate organization, unions, trade regulations, etc.). This is a formidable challenge requiring a program of theoretical and empirical/econometric studies. The benefits from undertaking this as a large-scale project rather than as a series of much smaller projects are as follows.

- The focus of the research is on the complex interactions between the various factors involved. While the investigation will inevitably proceed by looking at just some of these interactions in isolation, the overall framework will emphasize the more complex picture, and so both the nature of the research and the conclusions drawn will be conditioned by this broader picture. A series of

smaller-scale projects inevitably runs the risk that only partial interactions are investigated.

- Given the complexity of the issues, it is best undertaken by having theorists and econometricians working together, so that the empirical analysis is guided by good theory, and the theoretical work is grounded on empirical realities.

In addition to the network members, the project will involve a number of leading (mostly younger) labor economists and econometricians: S. Machin, C. Meghir, D. Ulph, J. Van Reenen, and G. Violante, as well as others.

The second project of this satellite is quite different: it is a synthesis and brainstorming workshop: *Globalization and the Limits to Redistribution*. In the years 2000 and 2001, Pranab **Bardhan** and Samuel **Bowles** will bring together a working group of economists, political scientists and others to consider the impact of globalization on redistributive policy. A major objective will be to see if the research of the network to date suggests income security and poverty alleviation policies that are both economically and politically viable in a world of independent nation states embedded in increasingly competitive world markets. The main work of the group would be synthesis of existing research and the development of possible new research agendas, rather than the generation of new research.

The rationale for such a group is that trade liberalization and declining transportation and communication costs constitute simultaneously i) a major positive force for development and for economic accountability of governments and firms, ii) a contributor to the volatility of individual incomes, iii) a source of rising costs of some conventional redistributive and income security practices fueling an anti-welfare state political climate and iv) partly as a result of (ii), a source of new demands for income security and social safety net policies. The objective of the group would be to explore, through case studies, other empirical work and modeling, policies which can achieve efficient redistribution and social insurance in a world characterized by a high level of mobility of some factors of production (capital, information), relative immobility of others (labor, resources).

Participants in the group might be drawn from a number of different MacArthur economics networks (Anne Case, Danny Quah, Steven Durlauf, Kenneth Arrow, Herbert Gintis come to mind) and would include other social scientists and practitioners: political scientists John Londregan (UCLA) and Adam Przeworski (NYU), Jorge Castañeda (NYU), and Steven Haggard (UCSD), Erik Wright (a sociologist at University of Wisconsin), Philippe Van Parijs (a philosopher at the Catholic University of Louvain), practitioners Frank Vandembroucke (former Foreign Minister of Belgium) and Asim Dasgupta (Finance Minister of West Bengal) as well as economists Jim Robinson (USC), Dani Rodrik (Harvard) and Matt Slaughter (Dartmouth).

D. Governing Redistribution

Members of this satellite—**Bardhan, Hoff, Piketty, Mookherjee, Moene, and Wallerstein**—are seeking to understand what we term the *governance failures* and *political failures* which often afflict programs of poverty alleviation and economic opportunity. Governance failures occur when governments are either incapable of delivering services to the poor, or when programs intended to help the poor or to extend economic opportunity are diverted toward other ends. Political failures occur when programs which deliver to the poor substantial benefits at reasonable cost are nonetheless electorally unsustainable. The two are closely related.

The first set of projects concern political failures.

Economic beliefs and redistributive values. Thomas **Piketty** will extend his survey work in France, seeking to further illuminate the link between beliefs about the role of effort in income generation and support for or opposition to redistribution. Many empirical questions raised by theoretical models of voter preferences in these areas remain unanswered. Using a considerably larger sample, **Piketty** will explore the role of party ideology in the design of specific redistributive policies seeking to answer such questions as: Why do some parties advocate wage policy or labor regulation rather than fiscal transfers, to what extent is party ideology about redistribution grounded in the opinion of its electorate? The diversity of both beliefs and values in the French electorate make the French case particularly interesting. **Piketty's** economic viewpoint should yield new insights in the public opinion research field; this is true in part because while social surveys have been organized for years by psychologists, political scientists and sociologists, there have been relatively few attempts to quantify in a rigorous way the relative magnitude of income vs. beliefs effects, and thus to better understand what might be termed the self-interested as opposed to broadly ethical component in public opinion concerning the welfare state.

Karl Moene and **Michael Wallerstein** undertake empirical and theoretical work on ***Path Dependency in Redistributive Systems.*** In their approach, the multiple political/economic equilibria which lock nations into particular sets of redistributive policies arise in two different ways. The first is that for a variety of reasons, increased welfare spending may enhance the bargaining power of low-income workers, at least in countries in which low-income workers are unionized and wages are set in a centralized fashion. Then higher welfare spending would be associated with a more egalitarian pre-tax and transfer wage distribution. Greater wage equality, in turn, leads to greater support for welfare spending according to the work described above. Such a feedback loop may lead to multiple equilibria: one with lower wage inequality and higher welfare spending, the other with higher inequality and lower welfare spending. The idea, however, needs to be carefully worked out, including the possibility that the feedback loops may depend on both the type of the wage-setting system and welfare policy.

A second way in which multiple equilibria may arise is illustrated by the case of health care policy. The history of health care reform suggests that once a country develops an extensive system of private health insurance, it is very difficult to obtain majority support for changing to a system of public health insurance. Yet, in countries that adopted public health insurance at an early stage before a widespread system of private health

insurance was in place, subsequent attempts to privatize health care have been defeated. **Moene** and **Wallerstein's** project is to work out the logic that explains the path dependence that we observe.

A second project by **Moene** and **Wallerstein** is to study *Fairness and Wage Determination* by investigating the consequences of incorporating workers' views regarding equality in the theory of wage-determination. The existing literature is based, almost universally, on the assumption that workers care only about their own wage and perhaps the chance of obtaining employment. In fact, we know that workers do care about the distribution of wages as well. Workers' concerns regarding the equity of pay is important in all systems of wage setting. Even if employers set wage unilaterally, profit-maximizing employers will take account of how the wage scale affects workers' morale and loyalty to the firm. It is unlikely, however, that workers' concerns with equity affect wages equally in all systems of wage setting. It is important to work through how incorporating workers' concerns with equity alters the standard comparisons of the different systems of wage-setting. Parts of this work will draw on the experimental research of performance of preferences network member Ernst Fehr and his colleagues and the theoretical work of Matthew **Rabin**.

Jean-Marie **Baland** will study three aspects of the relationship between inequality and politics. The first concerns *Unequal Land Holdings and Political power* (with Jim Robinson and possibly Jean-Philippe Platteau). A striking feature of the labor relationships of *latifundias* in Latin America (as well as some semi-feudal areas in Asia) is that, when general elections are held, the landlord-employer appears to have a determining influence on the political activities of "his" workers, including voting decisions (typically, when some are illiterate, he fills the voting sheet for them). This implies that there are some political rents to be gained which are associated with your position as an employer on the labor market, and ultimately to your land ownership. Those rents are not transferable, as the vote of one worker has no impact while the vote of all workers does, so that there are some increasing returns in the process. As a consequence, one should observe large holdings and land prices which are higher than the land's economic value as a productive asset, making purchase of small parcels by small farmers unattractive. In other words, in such economies, the activity of land markets cannot be separated from the political sphere: land brings tenants that will serve as the political base for its owner. Also, as the wage contract typically involves some inefficiency over self-employment, the distribution of land ownership is inefficient but self-sustaining because it is worth more in large parcels than small (due to the increasing returns described above).

An interesting application of this argument is to explain the *Divergence in Development Patterns between North and South America* along the lines suggested by Engermann and Sokoloff, who relate growth performance to the pattern of land ownership: apart from technological reasons, is there also something in the political institutions that may explain this development pattern? The suggestion of this project is that patron-client political relationships may help to explain the competitive viability of inefficiently large landholdings, not solely through the exercise of state power (via subsidies, etc.) but through the distortion of land markets along the above lines, as well.

In the third land-related project, Baland will explore the *Determinants of Patterns of Land Inheritance* and the effect of differing inheritance systems on inequality and intergenerational mobility. Land inheritance is still for many households in the Third World the main mode of wealth acquisition. However, in some areas, and at some periods, one observes extremely disequalizing inheritance patterns, sometimes backed by law, such as primogeniture in Great Britain. This project will investigate the economic determinants of land inheritance institutions. Some historians of the European medieval period argue that primogeniture appeared in the Middle Ages at a time when national states, if any, were extremely weak, and land ownership and nobility were associated with a number of political duties (defense, justice) which are not easily divisible. The non-divisibility of these functions may have conferred benefits on groups adopting inheritance patterns concentrating land and thus help to explain the evolution of these patterns.

Baland will also investigate *Ethnic and Class Conflicts: The Role of Inequality and Barriers to Mobility* (with Jim Robinson). A number of recent studies (by Alesina and co-authors, by Pritchett and co-authors, for example) have documented the statistical association of ethnic heterogeneity with low levels of public goods provision, poor health status, and other indicators of low levels of development. A plausible explanation, the one offered by these authors, is that heterogeneity is associated with ethnic conflicts. This project, which is still at its very initial stages, is stimulated by questions such as:

- Why are African countries so prone to ethnic conflict and so little to class conflict (even though the two are sometimes strongly related)?
- Why do people choose to find salient an observable characteristic such as ethnic identity (even though sometimes artificially created or exacerbated, as Saire's history shows) to launch a conflict along this dimension instead of the income distribution (say, capitalist-worker) dimension?
- Can we attribute the proneness of people to enter into ethnic conflict to the fact that there is some mobility in income and social status (and extended family remittances) while ethnic identity is (relatively) given? Would increased inter-class inequality lead to more or less ethnic conflict?

Pranab **Bardhan** and Maitreesh Ghatak will theoretically explore the *Macroeconomic Effects of Social and Economic Heterogeneity*. In an economy where public investment in the infrastructure is important for productivity in the private sector they will examine conditions under which group heterogeneity and inequality may lead to deadlocks in the allocation of fiscal resources, favoring short-run subsidies over long-run investment, and thus hindering economic growth.

The remaining projects in this satellite will concern governance failures.

Pranab **Bardhan** and Dilip **Mookherjee** will study *Decentralization and Bureaucratic Corruption in Antipoverty Programs and Delivery of Public Services*. A key problem with governmental antipoverty schemes lies in their implementation. In many developing countries these schemes have been subjected to significant 'leakages' and failures in targeting deliveries to the truly poor, owing to poor accountability of bureaucrats entrusted

with their implementation. The latter in turn owes to inherent informational and incentive problems within centralized bureaucracies. If bureaucrats are primarily answerable to a central government that lacks information about local needs and about the nature of benefits actually distributed to the poor, and if bureaucrats are motivated by self-interest, it is only natural that such programs will be poorly implemented. One possible resolution of this problem is to strengthen processes of local governance. Responsibility for the implementation of these programs could be shifted to democratically elected local governments, and bureaucrats made answerable to these local governments instead. Then the accountability problems may be substantially overcome, as is suggested by certain informal accounts (e.g., Robert Wade's comparison of Indian and Korean irrigation bureaucracies, or the effects of strengthened local governance in West Bengal, India, or Porto Alegre, Brazil). However, critics of local decentralization argue, plausibly, that it might make matters worse by increasing problems of interjurisdictional externalities, making the poor more vulnerable to capture of local governments by the rich, or rendering corruption easier.

The purpose of this project is to develop a conceptual framework that helps evaluate these conflicting arguments, by identifying the different costs and benefits of decentralizing authority to local governments. This will, the researchers hope, allow a clearer appraisal of the overall effects of decentralization that might be useful in evaluating actual experience where these decentralization experiments have been carried out (as in West Bengal, see below). This would also be important in the design of successful decentralization mechanisms.

The project will focus principally on certain institutional and technological parameters on the effect of decentralization:

- (i) existence of technological externalities (such as overall capacity constraints), and mechanisms for resolving inter-jurisdictional conflicts;
- (ii) method of financing local expenditures (user fees versus intergovernmental grants) and tightness of governmental fiscal constraints;
- (iii) allocation of authority between local governments and bureaucrats;
- (iv) informational asymmetries between local governments and bureaucrats; and
- (v) extent of capture of local governments by the rich.

The research strategy is to explore whether for suitable conditions for these parameters it is possible to show that local governmental mechanisms can substantially improve upon the outcome of a centralized bureaucracy; but if any one of these parameters is sufficiently unfavorable, then decentralization can make matters worse.

An empirical project closely related to **Bardhan's** and **Mookherjee's** theoretical investigation above is their exploration of the *Functioning and Performance of Local Governments in West Bengal*. This project also complements the one on analysis of farm productivity in West Bengal that is currently being carried out by the authors. In order to relate institutional reforms with the dynamics of farm productivity, it is necessary to have

concrete data on the nature of reforms carried out in different villages. The Farm Management Study data base being used to assess farm productivity, however, does not contain much village-level information that can be used to assess the nature of institutional reforms that have been taking place in each of the villages. So there is a need to carry out an independent survey of the local governments concerned, to directly assess the nature of governmental interventions, with respect to provision of infrastructure and agricultural inputs, implementation of land reform laws, and the scale of local antipoverty employment and credit schemes.

Of independent interest is the nature of political institutions at the local level, and the extent to which they facilitated significant interventions. To this end the authors also propose to gather information concerning the electoral process (e.g., regularity of elections, turnout, extent to which incumbents retained their seats, and the role of different parties, castes and sexes in elected governments), the precise range of autonomy granted to local governments, and systems of accountability at the local level (such as regularity of mandated bi-yearly meetings with local citizens, and openness of accounts). **Bardhan** and **Mookherjee** hope to gain a better understanding of the way political institutions facilitate the effectiveness of local governments in delivering public services and in implementing redistributive schemes.

It will also be interesting to contrast the pattern of decentralization of power to local governments, and their impact on the delivery of public services, to other states in India. **Bardhan** and **Mookherjee** therefore propose to extend the scope of these local government surveys to at least one other state in India.

Erik Olin Wright is working on a comparative study of *Empowering the Poor: Experiments in Deliberative Democracy*. Studies of decentralization of political institutions and its effects on economic performance and other outcomes typically treat the internal workings of the decentralized units as black boxes. There may be vague references to the units being democratic or clientelistic or bureaucratic, but rarely is the problem of the internal process of decisionmaking within the decentralized units foregrounded as a central problem. There are good reasons to believe, however, that some of the salient consequences of decentralization depend as much on the nature of the internal political organization of such units as it does on the sheer fact of decentralization. Studying this problem in a number of innovative institutional contexts around the world is the central objective of this project. Three institutional settings have so far been included in the project: the participatory budget in Porto Alegre, Brazil, and certain other Brazilian cities; community policing and school decentralization in Chicago; and novel labor market and training institutions in the Milwaukee area. Potentially, several other cases will be added, particularly the administrative decentralization in West Bengal. In each of these cases, the objective of the research is two-fold: First, to examine the extent to which the internal processes of these institutions can be considered instances of “deliberative” democracy — a democratic form that emphasizes participatory forms of deliberation and consensus formation over bargaining and logrolling; and second, to examine the extent to which such deliberative, egalitarian forms of participation contribute to desirable outcomes in the functioning of these institutions.

Karla Hoff will research *The Effect of Government Decentralization on the Private Provision of Local Public Goods*. Many industries, especially export industries, have two characteristics: producers rely on a set of critical inputs supplied by government—for example, electricity and water—and the reputation of all producers may be hurt by shoddy production by one producer. In this setting, firms should have a strong incentive to collectively improve the quality of public inputs. There should be strong pressure on the government to perform. The pressure may be more effective if the local, rather than the central, government is the provider of the public goods. This raises a set of issues:

In a setting where government is decentralized, has the private sector been better able to pressure local government to improve the quality of publicly provided inputs? And with what effect on the performance of industry?

What evidence is there that “exit,” e.g., private provision of generators and water filtering systems and four-wheel drive vehicles that can negotiate bad roads, is greater in regions where government control is more centralized?

What is the cost of such “exit” in terms of inefficiencies in the production of services with high average cost but low marginal cost?

In sum, it would be interesting to examine the effect of centralized vs. decentralized provision of local public goods on:

- the quality of publicly provided inputs;
- reliance on private backup systems (e.g., backup generators) for publicly provided inputs;
- the growth of new industry, especially export industries, where group reputation is likely to be important.

A particular kind of decentralization has emerged through private sector organizations in the U.S. Businesses in some neighborhoods of metropolitan areas have formed to levy contributions from their members and use them to finance local public goods—e.g., street repair, street cleaning, and security. U.S. law facilitates the formation of these groups by providing that unanimous support among the businesses in a neighborhood is not required to impose levies on all businesses in a neighborhood. One may ask whether this is a possible route to decentralization of the provision of certain services in poor countries.

The basic spirit of this project is to view coordination problems in markets with group reputation effects as an obstacle to industrial development, and to examine the effect of government decentralization on the extent of such problems. The central hypothesis is that the ability of a region to establish a new export industry in environments where group reputation matters depends on the ability of the local industry to collectively sanction low quality input provision by the public sector, or to collectively find a substitute for public provision of critical inputs.

Outreach activities:

As our report on the first two years of our grant makes clear, we have devoted considerable effort to presenting our research in non-technical form and have disseminated it widely to policy makers and the public. In the coming three-year period, as some of our research projects near completion, we will continue to bring the main conclusions of our work together in readily accessible form directed towards two audiences: the policy and advocacy communities (governmental and non-governmental) and students and their teachers. At our meeting in May 1998, network members initiated a lively discussion about how best to do this; we have not pressed this discussion to a conclusion, as it is premature to decide on how best to communicate our research until we have more definite results. For all of the writing projects, we have in mind primarily non-technical presentations of the type generally found in the *Journal of Economic Perspectives*. Proposals which we believe have substantial merit include the following:

There is considerable enthusiasm for the network jointly co-authoring a book presenting our response to the overarching question asked at the outset of this proposal. Given that all members would have the status of co-authors, the project might provide the occasion for a serious attempt to integrate and interpret our results.

A second proposal is to ask one or more members to author non-technical synthetic interpretations of our research in distinct areas. Valuable book-length treatments might be possible on the following topics:

Earnings Inequalities: The Role of Globalization, Technology, Skills and Labor Market Institutions;

Inequality and the Local Commons;

The Politics of Inequality and Redistribution;

Delivering Educational Opportunity;

Unequal Wealth, Economic Governance and Allocative Efficiency.

A third proposal is to develop a new course, possibly with a development economics focus, using our material. Joe Stiglitz has expressed the World Bank's strong interest in having such a course available for its many training programs, and we think that it might have considerable impact in updating and reorienting the substantive focus of development economics courses, many of which have not taken advantage of the insights offered by new developments in economics.

Appendix

MacArthur Inequality and Economic Performance Research Network Members

Philippe Aghion

Professor at University College, London. Has studied the implications of credit market imperfections for the growth process and its relation to wealth distribution, the theory of the firm in the context of incomplete information, the endogenous process of innovations, and the political economy of reform in the transition process in Eastern Europe. Editor of *The Economics of Transition*, a journal brought out by the European Bank for Reconstruction and Development.

Jean-Marie Baland

Lecturer at University of Namur, Belgium. Has done both theoretical and empirical work on rural development (including a recent book on the economic-anthropological issues arising in the process of halting degradation of environmental resources) and on the macro-economic implications of unequal economic growth. Has also carried out field work in economic anthropology in West Africa.

Abhijit Banerjee

Professor at Massachusetts Institute of Technology. Has done theoretical work on 'herd behavior', capital market imperfections and occupational choice, income distribution and risk-taking, and learning behavior.

Pranab Bardhan

Professor at University of California, Berkeley. Has done theoretical and field studies research on rural institutions in poor countries, on political economy of development policies, and on international trade. A part of his work is in the interdisciplinary area of economics, political science, and social anthropology. Chief Editor of *The Journal of Development Economics*.

Roland Benabou

Professor at New York University. Has done major theoretical research on social stratification and local school finance and community structure (and generally on the implications of inequality for growth), and on search market equilibrium and price dynamics.

Samuel Bowles

Professor at University of Massachusetts, Amherst. Has worked on principal-agent models of employment, the economics of education, the evolution of preferences, and theoretical institutional economics.

Karla Hoff

Princeton University and the World Bank. Works on the institutional issues of rural development, the economics of human resources, the economics of risk and insurance, and on the public economics of redistributive policies. With Joseph Stiglitz and Avishay Braverman, co-edited (and wrote parts of) *The Economics of Rural Organization*.

Michael Kremer

Associate Professor at Massachusetts Institute of Technology. Has worked on diverse areas including growth theory, assortative matching models, long-run demographic and technological change, investment in schooling, and on reforming the institution of patenting innovations. Recipient of MacArthur Fellowship in 1997.

Karl Moene

Professor at University of Oslo, Norway. An expert on the history and policy implications of solidaristic bargaining processes in Scandinavia, the politics and economics of redistribution, and the political economy of land reforms in poor countries. Editor of *The Scandinavian Journal of Economics*.

Dilip Mookherjee

Professor at Boston University. Has worked on incentive contracts, viability of cooperative arrangements, authority and responsibility in hierarchical structures, effects of land reforms on productivity, and on incentive and organizational aspects of financial and tax reform.

Thomas Piketty

Economist at CEPREMAP, Paris, France. Has worked on social mobility and redistributive politics, fair allocations in public economics, and dynamics of wealth distribution and credit rationing.

Matthew Rabin

Associate Professor at University of California, Berkeley. One of the few economists who have broadened game theory and bargaining theory to incorporate the missing psychological and moral elements necessary to explore the question of unequal outcomes. Has written major papers on fairness in repeated games and on models of pre-game communication. (Rabin has joined the MacArthur preferences network and will leave our network in 1999.)

Michael Wallerstein

Professor at Northwestern University. A political scientist who has worked on social democracy, solidaristic bargaining, trade union behavior, and on the structural dependence of the state on (mobile) capital.

Erik Olin Wright (network associate)

Professor of Sociology at the University of Wisconsin at Madison. He has done extensive cross-national survey work on inequality, economic position, and opinions. He is Director of the Real Utopias Project studying new blueprints for more just societies.

*Non-Member Scholars Participating in Network Activities
(1996-1998)*

1. **Daron Acemoglu**
Department of Economics
Massachusetts Institute of Technology
[Oct 1998 Meeting: “Good Jobs vs Bad Jobs: Theory and Some Evidence”]
2. **Robert C. Allen**
Department of Economics
University of British Columbia
[Nov 1997 Meeting: “The Enclosure and the Yeoman”]
3. **Robert Axtell**
Center on Social and Economic Dynamics
Brookings Institution
[Oct 1998 Meeting (co-author with Josh Epstein):
“The Emergence of Economic Classes in an Agent-based Bargaining Model”]
4. **Jess Benhabib**
Department of Economics
New York University
[May 1997 Meeting (co-author with Mark Spiegel): “The Contribution of Educational Capital to National Productivity”]
5. **Juan Camilo Cardenas**
Department of Resource Economics
University of Massachusetts at Amherst
[“Local Commons, Cooperation and Inequality: Non-market Valuation and Experimental Evidence in Natural Resource Management in Colombia”]
6. **Michael Carter**
Department of Agriculture and Applied Economics
University of Wisconsin at Madison
[Nov 1997 Meeting (co-author with Diana Fletschner and Pedro Olinto): “Do the Poor but Efficient Survive in the Land Market? Capital Access and Land Accumulation in Paraguay”]
7. **Daniele Checchi**
Facoltà di Economia
Università degli Studi di Milano, Italy
[May 1998 Meeting at Bellagio (co-author with Andrea Ichino and Aldo Rustichini): “More Equal but Less Mobile Education Financing and Intergenerational Mobility in Italy and the U.S.”]
8. **Dr. Asim Dasgupta**

Minister of Finance, Government of West Bengal, India

India”]

9.

Graduate Student, Department of Economics
University of California, Berkeley

on the Local Commons: A Theoretical Exercise”]

10.

Department of Economics
Simon Fraser University

[Oct 1996 Meeting (co-author with Louis Putterman): “Why Capital (Usually) Hires

11.

Dennis Epple

School of Industrial Administration
Carnegie Mellon University

“Ability Tracking, School Competition, and the Distribution of Educational Benefits”]

12.

Josh Epstein

Center for Social and Economic Dynamics
Brookings Institution

[Oct 1998 Meeting (co-author with Robert Axtell):
“The Emergence of Economic Classes in an Agent-based Bargaining Model”]

13.

Gershon Feder

Research Manager, Rural Development
The World Bank

[Nov 1997 Meeting (co-author with Akihiko Nishio):
“The Benefits of Land Registration and Titling: Economic and Social Perspectives”]

14.

Ernst Fehr

Institute for Empirical Research in Economics
University of Zurich, Switzerland

[May 1998 Meeting at Bellagio:
“Homo Reciprocans—The Economic Implications of Reciprocal Fairness”]

15.

Norman Frohlich

Department of Business Administration
Faculty of Management
University of Manitoba, Canada
[Nov 1997 Meeting (co-author with John Godard, Joe A. Oppenheimer and Frederick A. Starke): "Employee vs. Conventionally Owned and Controlled Firms: An Experimental Analysis"]

- 16. Roy Gardner**
Workshop in Political Theory and Policy Analysis
Indiana University
[Oct 1996 (co-author with Andrew Herr, Elinor Ostrom and James Walker):
"The Power and Limitations of Proportional Cutbacks in Common-Pool Resources"]
- 17. Frederic Gaspard**
Facultes des sciences economiques et sociales
Notre-Dame de la Paix, Namur, Belgium
[Nov 1997 Meeting (co-author with Anne-Sophie Brasselle and Jean-Philippe Plat-
teau): "Land Tenure Security and Investment Incentives: Some Further Puzzling
Evidence from Burkina Faso"]
- 18. Martin Gilens**
Department of Political Science
Yale University
[May 1997 Meeting: "Why Americans Hate Welfare: Prejudice, Misperception, and
the Politics of the American Welfare State"]
- 19. Herbert Gintis**
Department of Economics
University of Massachusetts, Amherst
[September 1996 Meeting (co-author with Samuel Bowles):
"The Distribution of Wealth and the Assignment of Control Rights in the Firm"
May 1997 Meeting (co-author with Sam Bowles):
"The Role of Cognitive Skill Differences in Explaining Inequality"]
- 20. John Goldthorpe**
Faculty of Sociology
Oxford University, United Kingdom
[May 1998 Meeting at Bellagio (co-author with Richard Breen): "Class Inequality
and Meritocracy"]
- 21. Dominique Goux**
Centre de Recherche en Economie et Statistique (CREST)
INSEE
Malakoff Cedex, France
[May 1998 Meeting at Bellagio (co-author with Eric Maurin):
"Educational Opportunity and Social Mobility in France and the U.S."]
- 22. Henry Hansmann**

Yale Law School
Yale University
[Nov 1997 meeting: “The Ownership of Enterprise”]

23. **Caroline Hoxby**
Department of Economics
Harvard University
[May 1997 Meeting: “All School Finance Equalizations Are Not Created Equal: (Marginal Tax Rates Matter)”]
24. **Andrea Ichino**
European University Institute
Department of Economics
Florence, Italy
[May 1998 Meeting at Bellagio (co-author with Daniel Checchi and Aldo Rustichini):
“More Equal but Less Mobile Education Financing and Intergenerational Mobility in Italy and the U.S.”]
25. **Christopher Jencks**
J.F. Kennedy School of Government
Harvard University
[May 1997 Meeting: “Resistance to Redistribution”]
26. **Ravi Kanbur**
World Bank
[Oct 1996 Meeting Participant]
27. **Jean-Jacques Laffont**
IDEI-Universite des Sciences Sociales
Toulouse Cedex, France
[May 1998 Meeting at Bellagio:
“Homo Reciprocans—The Economic Implications of Reciprocal Fairness
28. **Paul Malherbe**
[“Effects of Wealth Constraints on Self-Employment: A Survey of Empirical Evidence”]
29. **Eric S. Maskin**
Department of Economics
Harvard University
[Nov 1997 Meeting Participant]
30. **Jose Molinas-Vega**
Catholic University
Asunción, Paraguay
[Oct 1996 Meeting Participant]
31. **Kaivan Munshi**

Department of Economics
University of Pennsylvania
[Nov 1997 Meeting: (co-author with Abhijit Banerjee, Dilip Mookherjee and Debraj Ray): “Inequality, Control Rights, and Rent-Seeking: A Theoretical and Empirical Investigation of Sugar Cooperatives in Maharashtra”
[“Theoretical and Empirical Study of Chit Funds in Madras, India”]

32. Elinor Ostrom

Co-director, Workshop in Political Theory and Policy Analysis
Indiana University
[Oct 1998 Meeting: “The Contested Role of Heterogeneity”]

33. John Pencavel

Department of Economics
Stanford University
[Oct 1996 Meeting: “What Has Been Learned about Worker-Owned Firms from the Plywood Coops of the Pacific Northwest?”]

34. Paul E. Peterson

Department of Government
Harvard University
[May 1997 Meeting (co-author with Jay P. Greene and Jiangtao Du):
“Effectiveness of School Choice: The Milwaukee Experiment”]

35. Jean-Philippe Platteau

Facultes des Sciences économiques, sociales et de gestion
Notre-Dame de la Paix
Namur, Belgium
[Oct 1996 Meeting (co-author with Jean-Marie Baland): “Inequality and Collective Action in the Commons”
Nov 1997 Meeting (co-author with Anne-Sophie Brasselle and Frederic Gaspart):
“Land Tenure Security and Investment Incentives: Some Further Puzzling Evidence from Burkina Faso”]

36. Adam Przeworski

Department of Politics
New York University
[May 1998 Meeting at Bellagio:
“The Effect of Income Distribution on the Dynamics of Political Regimes”]

37. Louis Putterman

Department of Economics
Brown University
Providence, RI 02912
[Oct 1996 Meeting (co-author with Gregory Dow): “Why Capital (Usually) Hires Labor: An Assessment of Proposed Explanations”]

38. Debraj Ray

Department of Economics
Boston University
[Oct 1996 (co-author with Dilip Mookherjee: “Tenancy, Saving Incentives and Wealth Dynamics”
Co-author with Abhijit Banerjee, Dilip Mookherjee and Kaivan Munshi:
“Inequality, Control Rights, and Rent-Seeking: A Theoretical and Empirical Investigation of Sugar Cooperatives in Maharashtra”]

39. John Roemer

Department of Economics
University of California, Davis
[May 1998 Meeting at Bellagio:
“Distributive Class Politics and the Political Geography of Interwar Europe;”
Co-author with Julian R. Betts: “Equalizing Opportunity through Educational Finance Reform”]

40. Aldo Rustichini

Research Professor of Microeconomics
Center, Tilburg University
The Netherlands
[May 1998 Meeting at Bellagio (co-author with Andrea Ichino and Daniel Checchi): “More Equal but Less Mobile Education Financing and Intergenerational Mobility in Italy and the U.S.”]

41. Boaventura Santos

Professor of Sociology
Centro de Estudos Sociais, Coimbra, Portugal
[May 1997 Meeting: “Participatory Budgeting in Brazil”]

42. Paul Seabright

Faculty of Economics and Politics
Cambridge, United Kingdom
[Oct 1996: “The Effect of Inequality on Collective Action”]

43. Amartya Sen

Department of Economics
Harvard University
[Nov 1997 Meeting Dinner Speaker]

44. Nirmal Sengupta

Madras Institute of Development Studies, Madras, India
[Collaboration with Pranab Bardhan: A survey of irrigations groups in south India with a view to analyzing the impact of inequality on water management performance.]

45. Theda Skocpol

Professor of Government and Sociology
Department of Sociology
Harvard University
[Oct 1998 Meeting: “Sustainable Social Policy”]

- 46. Rohini Somanathan**
Department of Economics
Emory University
[May 1997 Meeting (co-author with Abhijit Banerjee): “Public Goods in India”]
- 47. Mark Spiegel**
Economic Research
Federal Reserve Bank of San Francisco
[May 1997 Meeting (co-author with Jess Benhabib):
“The Contribution of Educational Capital to National Productivity”]
- 48. Joseph Stiglitz**
Senior Vice President and Chief Economist
The World Bank
[May 1997 Meeting: Dinner Speaker;
May 1998 Meeting at Bellagio:
“Reflections on Social Justice, Economic Efficiency and Individual Responsibility”]
- 49. Peyton Young**
Center on Social and Economic Dynamics, Brookings Institution and
Department of Economics, Johns Hopkins University
[Oct 1998 Meeting: “Conventional Contracts”]

Meeting Agendas

October 30-November 1, 1998, in Cambridge

May 5-9, 1998, in Bellagio, Italy

November 14-16, 1997, in Cambridge

May 2-4, 1997, in Cambridge

October 11-13, 1996, in Cambridge

Schedule for October 30-November 1 1998 Meeting at M.I.T.

<u>Friday, Oct. 30</u>	MIT Faculty Club, Dining Room West
10-11:45	Peyton Young "Conventional Contracts"
12-2:00	Non-members' lunch break Members-only meeting #1 in Dining Room West
2 - 3:45	Josh Epstein and Robert Axtell "The Emergence of Economic Classes in an Agent-based Bargaining Model"
3:45-4:15	Coffee break
4:15 - 6:00	Karla Hoff "Homesteading"
<u>Saturday, Oct. 31</u>	MIT Faculty Club, Dining Room West
9-10:45	Elinor Ostrom "The Contested Role of Heterogeneity"
10:45-11:15	Coffee break
11:15-1:00	Pranab Bardhan and Dilip Mookherjee "Decentralization and the Delivery of Public Services"
1:00-3:00	Non-members' lunch break Members-only meeting #2 in Dining Room #3
3:00-4:45	Daron Acemoglu "Good Jobs vs Bad Jobs: Theory and Some Evidence"
7:30 p.m.	Dinner at The Olive restaurant Dinner Speaker Theda Skocpol on: "Sustainable Social Policy"
<u>Sunday, Nov. 16</u>	MIT Sloan Building #E51, Room 385

9-10:45	Sam Bowles "Egalitarianism and the Evolution of Group-Beneficial Norms"
10:45-11:15	Coffee break
11:15-1:00	Matthew Rabin "A Review Article on Social Preferences"

Schedule for Meeting May 5-9, 1998 at Bellagio, Italy

Tuesday, May 5

- Participants arrive
- 7:30 PM Bellagio staff welcome and introduction meeting
- 8:00 PM Welcome dinner

Wednesday, May 6

- 8:30 - 10:15 AM Jean-Jacques Laffont:
“A Theory of Supervision with Endogenous Transaction Costs”
- 10:15 - 10:45 AM Coffee break
- 10:45 - 12:30 Ernst Fehr:
“Homo Reciprocans—The Economic Implications of Reciprocal
Fairness”
- 12:30 - 3:30 PM Lunch break
- 3:30 - 5:15 PM Joseph Stiglitz:
“Social Justice and Individual Responsibility”
- 5:15 - 5:45 PM Coffee break
- 5:45 - 7:30 PM John Goldthorpe:
“Class Inequality and Meritocracy”
- 8:00 PM Dinner

Thursday, May 7

- 8:30 - 10:15 AM Roland Benabou:
“Social Mobility and the Demand for Redistribution”
- 10:15 - 10:45 AM Coffee break
- 10:45 - 12:30 Adam Przeworski:
“The Effect of Income Distribution on the Dynamics of Political
Regimes”
- 12:30 - 3:00 PM Lunch break

Thursday, May 7

3:00 - 5:00 PM	Short presentations by Network members
5:00 - 5:30 PM	Coffee break
5:30 - 7:30 PM	Research Network Members Only Meeting (Agenda for future research)
8:00 PM	Dinner

Friday, May 8

8:30 - 10:15 AM	Dominique Goux: “Educational Opportunity and Social Mobility in France and the U.S.”
10:15 - 10:45 AM	Coffee break
10:45 - 12:30	Andrea Ichino, Daniel Checchi and Aldo Rustichini: “More Equal but Less Mobile Education Financing and Intergenerational Mobility in Italy and the U.S.”
12:30 - 3:30 PM	Lunch break
3:30 - 5:15 PM	John Roemer: “Equality of Opportunity”
5:15 - 5:45 PM	Coffee break
5:45 - 7:30 PM	Members Only Meeting II
8:00 PM	Dinner

Saturday, May 9 Free day at Bellagio

Sunday, May 10
AM Departure

Schedule for Meeting November 14-16, 1997, at M.I.T.

<u>Friday, Nov. 14</u>	Building #E56-Penthouse at M.I.T., Cambridge, MA
9-10:30	Abhijit Banerjee, Dilip Mookherjee, Kaivan Munshi, and Debraj Ray "Inequality, Control Rights, and Rent-Seeking: A Theoretical and Empirical Investigation of Sugar Cooperatives in Maharashtra"
10:30-11	Coffee break
11-12:30	Michael Kremer "Why Are Worker Cooperatives So Rare?"
12:30-2	Lunch break
2-3:30	Norman Frohlich "Employee vs. Conventionally Owned and Controlled Firms: An Experimental Analysis"
3:30-4	Coffee break
4-5	Henry Hansmann "The Ownership of Enterprise"
5-6	Business Meeting I (Network Members only)

Saturday, Nov. 15 Sloan Building #E51, Room #385, at M.I.T., Cambridge, MA

- 9-12:30 Symposium on Land Questions
(with 10:30-11 coffee break)
- Robert Allen
"The Enclosure and the Yeoman"
- Michael Carter
"Do the Poor but Efficient Survive in the Land Market? Capital
Access and Land Accumulation in Paraguay"
- Gershon Feder
"The Benefits of Land Registration and Titling: Economic and
Social Perspectives"
- Jean-Philippe Platteau and Frederic Gaspart
"Land Tenure Security and Investment Incentives: Some Further
Puzzling Evidence from Burkina Faso"
- 12:30-2 Lunch break
- 2-3:30 Karl Moene and Michael Wallerstein
"Rising Inequality and Declining Support for Welfare Spending"
- 3:30-4 Coffee break
- 4-5:30 Jean-Marie Baland
"Commons as Insurance and the Welfare Impact of Privatization"
- 7:30 Drinks and Dinner
Boston Marriott Cambridge, Dana Room, Third Floor
(Speaker: Amartya Sen)

Sunday, Nov. 16 Sloan Building #E51, Room 385

- 9-10:30 Philippe Aghion
"Bargaining while Searching for Outside Options: A Potential Role
for Unions?"
(Discussion to be led by Eric Maskin)
- 10:30-11 Coffee break
- 11-12 Business Meeting II (Network Members only)

MacArthur Research Network on Inequality and Economic Performance

Schedule for Meeting on May 2-4, 1997, at M.I.T.

<u>Friday, May 2</u>	Sloan Building E52, Room #232 at M.I.T., Cambridge, MA Political and Bureaucratic Obstacles to Redistribution
9-10:30	Boaventura Santos on Participatory Budgeting in Brazil, and comments by Erik Wright
10:30 - 11	Coffee break
11 - 12:30	Abhijit Banerjee and Rohini Somanathan on Local Public Goods Supply in India
12:30 - 2	Lunch break (at M.I.T. Faculty Club, E52 sixth floor, Dining Room East)
2-3:15 PM:	Asim Dasgupta on Decentralization Experiments in West Bengal
3:15-3:30	Coffee break
3:30 - 5:00	Panel Discussion on Resistance to Redistribution: Christopher Jencks Michael Wallerstein Martin Gilens
5-6	Group Meeting I (Network Members only)
7:30	Dinner at Marriott Hotel (Speaker: Joseph Stiglitz)
<u>Saturday, May 3</u>	Sloan Building E51, Room #395 at M.I.T., Cambridge, MA Decentralization and Educational Opportunities for the Poor
9 - 9:45	Paul Peterson on School Choice
9:45 - 10:30	Dennis Epple on Vouchers
10:30 - 11	Coffee break
11 - 11:45	Caroline Hoxby on School Financing
11:45 - 12:30	Discussion
12:30 - 2	Lunch
<u>Saturday, May 3</u>	<u>Effects of Educational Investment</u>

- 2 - 3:15 Jess Benhabib and Mark Spiegel on the Contribution of Educational Capital to National Productivity
Discussion
- 3:15 - 3:30 Coffee break
- 3:30 - 4:45 Roland Benabou on What Levels of Redistribution Maximize Income and Efficiency
Discussion
- 4:45 - 6 Sam Bowles and Herbert Gintis on the Role of Cognitive Skill Differences in Explaining Inequality
Discussion

Sunday, May 4

Sloan Building E51, Room #395 at M.I.T., Cambridge, MA

- 9 - 10:15 Michael Kremer on Textbooks, Teachers and Class Size in Kenya
- 10:15 - 10:30 Coffee break
- 10:30 - 11:45 Matthew Rabin on Bargaining Power, Fairness and Efficiency
- 12 - 1 Group Meeting II (Network Members only)

Agenda

October 11-13, 1996 Cambridge, Massachusetts

- October 11** -- MIT Faculty Club E52, 6th Floor, Dining Room East
Symposium on Inequality and Cooperation on the Local Commons
- 9-9:45 a.m. Presentation by Paul Seabright
- 9:45-10:30 Presentation by Roy Gardner
- 10:30-11:00 Coffee break
- 11-12:00 Discussion (led by Ravi Kanbur)
- 12-1:00 p.m. Lunch break -- Faculty Club, Dining Room West
- 1-2:30 Presentation by Bardhan and Johnson and Discussion
- 2:30-3:00 Coffee break
- 3:00-4:30 Presentation by Baland and Discussion
- 4:30-6:00 Presentation by Aghion, Banerjee and Piketty on Inequality and Macroeconomic Volatility
Discussion
- 7:30 Presentation by Joseph Stiglitz on Inequality & Economic Policy
Library at Davio's Restaurant at the Royal Sonesta Hotel
- October 12** -- MIT Building E51, Freeman Room E52244
Symposium on Cooperative Governance and Wealth Constraints
- 9-9:45 a.m. Presentation by John Pencavel on Lessons from the Plywood Cooperatives
- 9:45-10:30 Presentation by Gregory Dow and Louis Putterman on the Constraints Facing Worker-owned Firms
- 10:30-11:00 Coffee break
- 11-12:00 Discussion (led by Herb Gintis)
- 12-2:00 p.m. Lunch break

2-3:30 Presentation by Bowles and Gintis on Distribution of Wealth and the
Assignment of Control Rights
Discussion

3:30-4:00 Coffee break

4-5:30 p.m. Presentation by Karla Hoff on Informal Insurance and Poverty Traps
Discussion

October 13 - MIT Building E51, Freeman Room E52244

9-10:30 a.m. Presentation by Dilip Mookherjee and Debraj Ray on a Dynamic
Contracting Model in Land Markets
Discussion

10:30-11:00 Coffee break

11-12:30 p.m. Organizational meeting (group members only)

We have awarded fellowships of \$15,000.00, and tuition up to \$6,500, to five graduate students:

Reza Baqir of the University of California at Berkeley will be researching the effects of income inequality at the local government level. He will investigate how income inequality and ethnic division affects the provision of local public goods, local fiscal performance and the size of local government.

Christina Fong of Washington University proposes to investigate the ways in which economic experiences may influence the level of generosity that people display to strangers. She has titled her study "Occupational Experience and Public Generosity."

Katherine Baird of the University of Massachusetts at Amherst will examine the way in which initial group inequalities in individual endowments interact with group segregation, social distance, and the opportunity sets of group members. She has entitled her proposal, "The Effects of Inequality on Social Groups and Allocational Efficiency."

Markus Moebius of MIT will be studying how social interactions between agents in society can influence aggregate outcomes such as poverty, involvement in crime and large-scale residential segregation.

Ted Miguel of Harvard University will study how social and economic institutions allow certain ethnic groups to gain disproportionate education, wealth, and power; to understand how groups maintain economic and political power once they have attained it; and to examine the impact that these inequalities have on aggregate economic activity.

Three other highly qualified candidates did not receive this fellowship because they were the recipients of other fellowships. They were: Najy Benhassine, Esther Duflo, and Emmanuel Saez.

1996-1998

PHILIPPE AGHION:

Books:

[1] *Inequality and Economic Growth* (1997), Mattioli lectures, forthcoming, Cambridge University Press.

[2] with P. Howitt, *Endogenous Growth Theory* (February 1998), M.I.T. Press.

[3] with J. Williamson: *Growth, Inequality and Globalization: Theory, History and Policy* (1998), Cambridge University Press, forthcoming.

Papers:

[4] with Abhijit Banerjee and P. Bacchetta, "Financial Liberalization and Volatility in Emerging Market Economies" (forthcoming).

[5] with P. Howitt and G. Violante: "Wage Inequality and Technological Progress," work in progress.

[6] with Abhijit Banerjee and Thomas Piketty: "Dualism and Macroeconomic Volatility" (1996), currently revised for the *Quarterly Journal of Economics*.

[7] with P. Howitt: "On the Macroeconomic Consequences of Major Technological Change" (1997), University College London working paper.

[8] with Patrick Bolton: "A Theory of Trickle Down Growth and Development," *Review of Economic Studies* (1997), 64 (2) 219: 151-162.

[9] with Patrick Bolton: "Incomplete Social Contracts" (1997).

[10] with Philippe Jehiel, "Bargaining While Searching for Outside Options: A Potential Role for Unions" (1997).

[11] with J. Tirole, "Formal and Real Authority in Organisations," *Journal of Political Economy* (1996).

JEAN-MARIE BALAND:

[12] with James Robinson, "A Model of Child Labour," 1998, submitted to the *Journal of Political Economy*.

[13] with Debraj Ray, "Technical Complementarities and the Impact of Inequality on the Provision of Local Public Goods," mimeo, September 1998.

[14] with Jean-Philippe Platteau, "Wealth Inequality and Efficiency in the Commons. Part I: The Unregulated Case." *Oxford Economic Papers*, 1997.

[15] with Jean-Philippe Platteau, "Wealth Inequality and Efficiency in the Commons. Part II: The Regulated Case." *Oxford Economic Papers*, 1998.

[16] with P. Francois, "Commons as Insurance and the Welfare Impact of Privatization." Mimeo (1997).

[17] with Jean-Philippe Platteau, "Inequality and Collective Action on the Commons," forthcoming in *World Development*.

ABHIJIT BANERJEE:

[18] with Dilip Mookherjee, Kaivan Munshi and Debraj Ray, "Inequality, Control Rights, and Rent-seeking: A Theoretical and Empirical Investigation of Sugar Cooperatives in Maharashtra," July 1997.

with Philippe Aghion and P. Bacchetta, "Financial Liberalization and Volatility in Emerging Market Economies" (forthcoming).

[19] with Esther Duflo, "Contractual Limits and Risk Bearing in the Software Industry in India" (forthcoming).

[20] with Kaivan Munshi, "Social Networks and Reputation Building in the Knitted Garment Industry in India" (forthcoming).

[21] with M. Ghatak and Paul Gertler, "Empowerment and Efficiency: Economic Analysis of a Tenancy Reform Program in India," June 1998.

[22] with M. Ghatak, "The Economic Theory of Agrarian Reform" (1997).

with Philippe Aghion and Thomas Piketty, "Dualism and Macroeconomic Volatility," (1996) currently revised for the *Quarterly Journal of Economics*.

[23] with Kaivan Munshi, "Labor and Capital Market Imperfections and the Organization of the United Garment Industry."

[24] "Notes towards a Theory of Industrialization in the Developing World."

PRANAB BARDHAN:

[25] "Corruption and Development: A Review of Issues." *Journal of Economic Literature*, Vol. XXXV (September 1997), pp. 1320-1346.

[26] with Herbert Gintis and Samuel Bowles, "Wealth Inequality, Wealth Constraints, and Economic Performance." A. Atkinson and F. Bourguignon, eds., *Handbook on Income Distribution*, Elsevier, forthcoming.

[27] with Jeff Dayton-Johnson, "Inequality and Conservation on the Local Commons: A Theoretical Exercise" (March 1997).

[28] "Decentralized Development." Ramaswami Memorial Lecture at Delhi School of Economics, *Indian Economic Review* (July-December 1996).

ROLAND BENABOU:

[29] "Meritocracy, Redistribution and the Size of the Pie" (C.V. Starr Center Working Paper No. 96-43). Forthcoming in *Meritocracy and Inequality*, Kenneth Arrow, Samuel Bowles and Steven Durlauf, eds., Princeton University Press (1998).

[30] "What Levels of Redistribution Maximize Income and Efficiency?" New York University mimeo, July 1997.

[31] with Efe Ok, "Social Mobility and the Demand for Redistribution: The POUM Hypothesis," New York University Mimeo, August 1997, revised June 1998.

[32] "Unequal Societies: Income Distribution and the Social Contract." NBER Working Paper 5583 (May 1996).

[33] "Inequality and Growth." *NBER Macroeconomics Annual* (1996).

SAMUEL BOWLES:

Book:

[34] with Herbert Gintis, *Recasting Egalitarianism: New Rules for Markets, Communities, and States* (London: Verso, 1998).

Papers:

[35] "Egalitarianism and the Evolution of Group-Beneficial Norms" (August, 1998).

[36] with Herbert Gintis, "Asset Based Redistribution: A New Policy Paradigm" (August 1998), will be the basis of a symposium in *The Good Society*.

[37] with Herbert Gintis, "Mutual Monitoring in Teams: The Effects of Residual Claimancy and Reciprocity" (July 1998), submitted to the *Journal of Political Economy*.

[38] with Herbert Gintis, "Wealth, Risk and Insurance: Improving the Efficiency Equity Tradeoff" (June 1998). Submitted to the *Quarterly Journal of Economics*.

[39] with Herbert Gintis, "Is Equality Passé? The Evolution of Reciprocity and the Future of Egalitarian Policies." *Boston Review* will devote a symposium to this paper in Fall, 1998.

with Pranab Bardhan and Herbert Gintis, "Wealth Inequalities, Wealth Constraints, and Economic Performance." Forthcoming in A. Atkinson and F. Bourguignon, eds., *Handbook on Income Distribution*.

[40] with Herbert Gintis, "Skills, Personality, and Schooling in the Earnings Determination Process" (August 1998). Requested by the *Journal of Economic Literature*.

[41] with Herbert Gintis, "Incentive Enhancing Preferences" (February 1997).

[42] with Herbert Gintis, "Wealth Distribution and the Assignment of Control Rights in Firms" (October 1996).

KARLA HOFF:

[43] "Wealth Distribution, Economic Efficiency, and Incentives: Theory and Application to the Rural Sector." Presented at a conference of the World Bank and the Brazilian Ministry of Land Reform on "Asset Distribution, Poverty and Economic Growth," July 1998.

[44] with Arijit Sen, "Homesteading" (1998).

[45] "Bayesian Learning in a Model of Infant Industries." *Journal of International Economics* 43 (1997), 409-436.

[46] "Informal Insurance Schemes: An Equilibrium Analysis" (1997).

[47] "The Behavioral Aspects of Homeownership" (August 1997).

[48] "Market Failures and the Distribution of Wealth: A Perspective from the Economics of Information," *Politics and Society* 24 (1996), 411-432, Special Issue on Efficient Redistribution. To be reprinted shortly in Sam Bowles' and Herb Gintis' book [34].

[49] "The Emergence of Organization in Informal Insurance." Revised, 1996.

[50] Comment on Timothy Besley, "Political Economy of Targeting: Theory and Institutions." Proceedings of the 1996 Annual World Bank Conference on Development Economics (January 1997), 135-140.

MICHAEL KREMER:

[51] "Why are Worker Cooperatives So Rare?" NBER Working Paper (1997).

[52] "How Much Does Sorting Increase Inequality?" *Quarterly Journal of Economics*, Volume CXII (February 1997), p 115-140.

[53] "Should Taxes be Conditioned on Age?" MIT working paper (1997).

[54] with Paul Glewwe and Sylvie Moulin, "Textbooks and Test Scores: Evidence from a Prospective Evaluation in Kenya." MIT Working Paper (1997).

[55] with David Myatt, Robert Namunyu, and Sylvie Moulin, "The Quality-Quantity Tradeoff in Education: Evidence from a Prospective Evaluation in Kenya." MIT Working Paper (1997).

KARL OVE MOENE:

[56] with Michael Wallerstein, "Targeting and Political Support for Welfare Spending" (1998), under review at the *Journal of Public Economics*.

[57] with Michael Wallerstein, "Inequality and Redistribution" (August 1998).

[58] with Michael Wallerstein, "Rising Inequality and Declining Support for Welfare Spending" (October 1997).

[59] with Michael Wallerstein, "Pay Inequality." *Journal of Labor Economics* (1997), 15(3): 403-

430.

[60] with Michael Wallerstein, "Political Support for Targeted versus Universalistic Welfare Policies." Institute for Policy Research, Northwestern University, Working Paper, 1997.

[61] with Michael Wallerstein, "Job Creation and Job Destruction with Local and Centralized Wage-Setting."

DILIP MOOKHERJEE:

[62] "Information Systems and Public Policy in Developing Countries." Background paper for the 1998 World Development Report of the World Bank.

[63] with Rajeeva Karandikar, Debraj Ray and Fernando Vega-Redondo: "Evolving Aspirations and Cooperation," *Journal of Economic Theory*, 1998, 292-331.

[64] with Jonathan Bendor, "Regulating Intergroup Conflict: Ascriptive versus Universalistic Norms," Mimeo, 1998.

[65] "Incentives and Coordination in Hierarchies," mimeo (1998).

[66] "Incentive Reforms in Developing Country Bureaucracies: Lessons from Tax Administration," Annual World Bank Conference in Development Economics (1997), 103-125.

with Abhijit Banerjee, Kaivan Munshi and Debraj Ray, "Inequality, Control Rights and Rent-Seeking: A Theoretical and Empirical Analysis of Sugar Cooperatives in Maharashtra." Mimeo (July 1997).

[67] "Wealth Effects, Incentives and Productivity." *Review of Development Economics*, I (1) (February 1997).

[68] with Debraj Ray, "Tenancy, Saving Incentives and Wealth Dynamics." Mimeo, last version September 1996, to be revised.

THOMAS PIKETTY:

with Philippe Aghion and Abhijit Banerjee, "Dualism and Macroeconomic Volatility" (1998), currently revised for *The Quarterly Journal of Economics*.

[69] "Theories of Persistent Income Inequality." To be published in A. Atkinson and F. Bourguignon, eds., *Handbook on Income Distribution*, Elsevier, forthcoming.

MATHEW RABIN:

[70] "Fairness as a Constraint on Incentives," forthcoming.

[71] "Bargaining Structure, Fairness, and Efficiency" (February 1997).

[72] "Bargaining, Social Preferences, and Inefficiency" (1996).

MICHAEL WALLERSTEIN:

with Karl Ove Moene, "Targeting and Political Support for Welfare Spending" (1998), under review at the *Journal of Public Economics*.

with Karl Ove Moene, "Inequality and Redistribution" (August 1998).

with Karl Ove Moene, "Rising Inequality and Declining Support for Welfare Spending" (October 1997).

with Karl Ove Moene, "Pay Inequality." *Journal of Labor Economics* (1997), 15(3): 403-430.ert5r

with Karl Ove Moene, "Political Support for Targeted versus Universalistic Welfare Policies." Institute for Policy Research, Northwestern University, Working Paper, 1997.

with Karl Ove Moene, "Job Creation and Job Destruction with Local and Centralized Wage-Setting."