FCND DP No. 135

FCND DISCUSSION PAPER NO. 135

TRUST, MEMBERSHIP IN GROUPS, AND HOUSEHOLD WELFARE: EVIDENCE FROM KWAZULU-NATAL, SOUTH AFRICA

Lawrence Haddad and John A. Maluccio

Food Consumption and Nutrition Division

International Food Policy Research Institute
2033 K Street, N.W.
Washington, D.C. 20006 U.S.A.
(202) 862–5600
Fax: (202) 467–4439

May 2002

ABSTRACT

This paper explores the relationship between group membership and trust. Specifically, we examine (1) the importance of trust in the decision to join groups, (2) the subsequent ability of groups to generate trust, and (3) the influence of group membership *and* trust on a measure of well-being, per capita household income. We use longitudinal data from KwaZulu-Natal Province, South Africa, allowing us to control for potential simultaneity and measurement-error problems in the estimation. We disaggregate groups into financial and nonfinancial and "trust in people" by type of agent or actor. We can thus examine whether different types of trust are important for participating in different types of groups and whether different types of group participation are important for generating different types of trust. We find that (1) trust in local agents is an important determinant of membership in financial groups but not for membership in nonfinancial groups, (2) membership in both types of groups generates trust in nonlocal agents but not local agents, and (3) membership in financial and nonfinancial groups leads to higher well-being. The first two results suggest that financial groups serve a role in expanding the radius of trust, while the first and third results suggest a role for trust in improving well-being.

CONTENTS

TABLES

APPENDIX TABLE

FIGURES

ACKNOWLEDGMENTS

This work has benefited from interactions with Michelle Adato, Abigail Barr, Ben Fine, Christian Grootaert, John Hoddinott, Francie Lund, Michael Carter, and conference participants at the Centre for the Study of African Economies at Oxford University and at the University of Copenhagen. We thank in particular an anonymous referee who provided many detailed comments on earlier versions of the paper. Financial support from the MacArthur Foundation, Grant 99-61666-002-GSS, is gratefully acknowledged.

Lawrence Haddad and John A. Maluccio
International Food Policy Research Institute

1. INTRODUCTION

A decade ago, relatively few development researchers, particularly economists, had heard of social capital. Today, however, many regard it as the logical rounding out of an individual's asset portfolio. While there is little consensus on a definition of social capital, most agree that social interactions are at the core of the concept and that such interactions can generate returns to those directly involved and, quite possibly, to others as well.[1]

To date, the empirical economic studies examining these issues fall into two broad categories. First, there is research that focuses on the sites of social interaction, such as groups (including clubs and other voluntary associations) and networks. The studies focusing on groups typically use membership and other characteristics of groups as a proxy for social capital and assess their association with measures of well-being such as income or expenditures.[2] Studies examining networks measure the breadth and strength of network linkages (e.g., at the firm level) and explore their relationship with profits via information transmission, client screening, and search costs (Barr 2000; Fafchamps 2000). The second set of empirical studies focuses more directly on the underlying mechanisms through which social capital is thought to work, in particular

[1] Recent conceptual papers on the topic include Woolcock and Narayan (2000), de Renzio (2000), Fine (1999), and Fedderke, de Kadt, and Luiz (1999). Most of these papers make an effort to trace the key antecedents in the literature; commonly cited sources are listed in Woolcock and Narayan and invariably include Coleman (1988, 1990) and Putnam (1993; 1995).

[2] For example, Narayan and Pritchett (1999), Grootaert (1999), Grootaert, Oh, and Swamy (1999), Grootaert and Narayan (2000), and Maluccio, Haddad, and May (2000).

transactions costs, trust, and norms and rules. Included are studies examining the measurement and determinants of trust and the determinants of group participation.[3]

Unfortunately, these two literatures have remained somewhat disconnected. The group and network literature concludes that participation has important economic benefits, even when the stated function of the group is clearly non-economic. Exactly how the groups and networks do this, however, remains unclear in most cases. The determinants of trust and group-participation literature underline the importance of income and social homogeneity and raise the possibility that homogeneity is simply a proxy for existing trust. What remains less understood is whether—and how—trust can be generated, in particular via participation in groups.

In this paper, we link the empirical literatures referenced above by exploring the relationship between group membership and trust. Specifically, we examine (1) the importance of trust in the decision to join groups, (2) the subsequent ability of groups to generate trust, and (3) the influence of group membership *and* trust on a measure of well-being, per capita household income. We use longitudinal data from KwaZulu-Natal Province, South Africa, with an observation each in 1993 and 1998, allowing us to control for potential simultaneity and measurement-error problems in the estimation. We disaggregate groups into financial and nonfinancial and "trust in people" by type of agent or actor. We can thus examine whether different types of trust are important for

[3] Examples include the measurement of trust in Glaeser et al. (2000), the determinants of trust in Alesina and La Ferrara (2000a); and the determinants of group participation in Alesina and La Ferrara (2000b); La Ferrara (2000); and Glaeser, Laibson, and Sacerdote (2000).

participating in different types of groups and whether different types of group participation are important for generating different types of trust. In doing so, we provide empirical evidence on the feedback effects between trust and group participation. We find that (1) trust in local agents is an important determinant of membership in financial groups but does not matter for nonfinancial groups, (2) membership in both types of groups generates trust in nonlocal agents but not local agents, and (3) membership in financial and nonfinancial groups leads to higher well-being. The first two results suggest that financial groups serve a role in expanding the radius of trust, while the first and third results suggest a role for trust in improving well-being.

2. THE CONCEPTUALIZATION OF SOCIAL CAPITAL

In conceptualizing social capital, one quickly confronts difficulty in defining it. There is some virtue in Deepa Narayan's observation that the value of the term is in its emphasis on social relations, an underexplored area of economics (Narayan 1999). The use of the term as a catchall for things that cannot be assigned to other, more tangible forms of capital and the varied meanings of *social* also make agreement on an explicit definition difficult. Furthermore, this lack of definition does not foster the rigorous integration of conceptual and empirical work. Anthony Bebbington notes "Social capital belongs to that alarmingly long list of terms in development that are notoriously difficult to define, above all in a commonly agreed-upon manner" (Bebbington 1999). For Narayan and Pritchett (1999), "Social capital, while not all things to all people, is many

things to many people." In response, Harriss and de Renzio (1997) ask, "Does the fact that it means so many things reflect the fact that it is an idea which serves as a convenient peg for different agendas?"

Figure 1 presents a selection of definitions of social capital proposed in the literature. Laid out in this way the similarities between the various definitions are much more striking than the differences. For instance, most researchers agree that individual social interactions are at the core of social capital. And nearly all agree that while social interactions take place at the individual level, social capital has the potential to generate externalities. Membership in a group or network, for example, can have unexpected benefits and costs to members, such as facilitation of collective action or enhanced transmission of information and reputation. At the same time, these social interactions may have benefits and costs to those not directly engaged in them, including other household members, community members, and the nation as a whole. Those outside—or excluded from—the locus of social interaction, may incur costs from the group or network's pursuit of private benefits; this is sometimes referred to as *perverse social capital* (Rubio 1997), an example of which is organized crime. Lastly, nearly all acknowledge that the mechanisms that drive social capital have to do with information transmission, establishment of trust, and development of norms of collaboration.

Paul Collier provides a framework for organizing the literature that adds to our understanding of how social capital might function. The framework can also be used in the development of empirical research strategies to examine how social capital does

Figure 1—Definitions of social capital

Source	Proposed definition of social capital
Barr 2000 (p. 539)	Network of relationships between the agents within an economy.
Coleman 1990 (p. 300)	Authority relations, relations of trust, and consensual allocations of rights establish norms.
Collier 1998 (p. 6)	Social capital is first a subset of the processes which generate externalities, namely, those which are generated by social interaction. It is then a subset of these social interactions, including only those which either are themselves durable or the effects of which are durable.
Fukuyama 2000 (p. 3)	An instantiated informal norm that promotes cooperation between two or more individuals.
Glaeser, Laibson, and Sacerdote 2000 (p. 4)	Individual social capital as a person's social characteristics—including social skills, charisma and the size of his Rolodex—which enable him to reap market and nonmarket returns from interactions with others.
Knack and Keefer 1997 (p. 1271)	Defines "Putnam-esque" groups as those that "instill in their members habits of cooperation, solidarity and public-spiritedness" and "Olsonian" groups as those that serve as "distributional coalitions."
Narayan and Pritchett 1999 (p. 872)	The quantity and quality of associational life and related social norms.
Putnam 1995 (p. 67)	Features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit.
Uphoff and Wijayaratna 2000 (p. 1876)	*Structural* social capital includes "roles, rules, procedures, and precedents as well as social networks that establish on-going patterns of social interaction." *Cognitive* social capital includes "norms, values, attitudes and beliefs that predispose people to cooperate."
Woolcock and Narayan 2000 (pp. 226–235)	The norms and networks that enable people to act collectively: ♦ "the *communitarian* perspective equates with such local organizations such as clubs, associations and civic groups"; ♦ the *networks* perspective "stresses the importance of vertical as well as horizontal associations between people and of relations within and among such organizational entities such as community groups and firms"; ♦ the *institutional* view argues that the vitality of community networks and civil society is largely the product of the political, legal and institutional environment"; ♦ *the *synergy* view attempts to integrate the compelling work emerging from the networks and institutional camps.
World Bank website 2001	The norms and social relations embedded in the social structures of societies that enable people to coordinate action to achieve desired goals.

function (Collier 1998). (Figure 2 presents our summary scheme for the Collier framework.) A key contribution of the framework is that it both distinguishes between and connects the location of social interactions (such as groups and networks) and the mechanisms that generate resource flows. These distinctions and connections are critical, because often there is confusion between social capital itself and where it is being generated, especially as the latter is frequently used as a proxy for the former.

Collier characterizes social interactions as reciprocal or not, organized or not, and hierarchical or not. The first distinction highlights the idea that social interactions do not necessarily have to be reciprocal to generate externalities. For example, many forms of learning transmit knowledge in only one direction. The differences in organization evoke

Figure 2—Summary of Collier conceptualization of social capital processes

Type of externality generated	**Mechanism for generating externality**	**Forum for social interaction**		
		Nonreciprocal interaction	Reciprocal interaction	
		Hierarchical (e.g., organized seniority within clan) or One-way (e.g., unorganized with one agent watching another)	Groups (organized)	Networks (not organized)
Knowledge about world	Copying	X	X	X
	Pooling		X	X
Knowledge about reliability of people	Trust and Transactions costs	X	X	X
	Reputation transmission		X	X
Collective action	Norms/priors	X	X	X
	Rules/decisions	X	X	

Source: Derived from Collier (1998).

Woolcock and Narayan's distinction between communitarian and network types of social capital described in Figure 1. The last distinction generates space for incorporating power relations into the conceptualization of social capital.

The mechanisms (including trust, information pooling, and the establishment of norms of collective behavior),[4] in turn, generate externalities such as better knowledge of opportunities, better knowledge of agent reliability, and increased likelihood of collective action. As with the provision of public goods, when the externalities generated are positive (either within the group or outside it), social capital will likely be underprovided relative to the social optimum.

Ideally, one would link data on the social interaction locations, the mechanisms, and the externalities generated with welfare outcomes affected by those externalities. Unfortunately, it is rare to find data on all of these aspects together. Furthermore, even when such data are available, it is unlikely that one could convincingly identify and estimate more than one or two of the relationships summarized in Figure 2 at a time. In this paper we will focus on one of the locations—groups—and one of the mechanisms—trust (shaded in Figure 2).

[4] The various mechanisms by which resource flows are generated echo definitions of structural and cognitive social capital of Uphoff and Wijayaratna (2000), although the grouping of mechanisms differs.

3. EMPIRICAL ECONOMIC LITERATURE ON TRUST, GROUP MEMBERSHIP, AND HOUSEHOLD WELFARE

Collier's framework identifies trust as a potential intermediate outcome that is generated by social interactions and that, in turn, helps generate externalities, particularly those relating to reputation. Since trust can be measured in surveys (usually whether a respondent agrees with a statement such as "most people can be trusted"), albeit imperfectly, there is an empirical literature on trust. Some studies treat trust as an outcome while others consider its role in explaining other outcomes, including group formation, income generation, and economic performance. When trust is used as an explanatory factor, it is typically treated as endogenous.

We now summarize the findings of empirical economic studies examining the relationships we consider in this paper: (1) the determinants of group membership, (2) the determinants of trust, and (3) the effects of group membership and trust on household welfare.

Starting with the determinants of group participation, only Narayan and Pritchett use trust to predict group membership, doing so in an instrumental variables framework (Narayan and Pritchett 1999). They endogenize group membership in an expenditure function for Tanzania using contemporaneous trust in strangers and government officials as instruments for group membership. They do not, however, present the first-stage results, though the discussion indicates the association between the two is positive. Alesina and La Ferrara (2000b) for the United States and La Ferrara (2000) for Tanzania

develop a model that links group participation with income inequality and within-cluster variation in economic activity, race, and ethnic origin. These variables have been used by many researchers as proxies for corruption and trust.[5] The predictions of the model depend on whether access to the group is open or restricted. The empirical results demonstrate that, in general, higher inequality (lower trust) decreases participation in open groups and increases it in restricted groups, suggesting that trust plays an important, but varied, role in group participation.

Of the studies that examine the determinants of trust, only Knack and Keefer (1997) examine the role of group participation in trust formation, arguing that, a priori, the sign of the effect cannot be determined. Participation in political or economic special interest groups may reduce trust, while groups that are not politically or economically oriented may be more likely to act in ways that are in the public interest, thereby generating trust. Using cross-country data, Knack and Keefer find that membership in groups—regardless of the extent to which they are politically or economically oriented—is not significantly associated with trust.

Two other studies examining the determinants of trust do not test directly the hypothesis that group membership fosters trust, but they do highlight a number of other important factors that should be considered. Alesina and La Ferrara (2000a) estimate the determinants of trust in the United States and find that it is negatively correlated with higher income disparity and more ethnic and racial fragmentation at the community level.

[5] For example, Mauro (1995).

At the individual level, they find trust is lower for people who are older, female, black, have a high school education (but not more), have lower income, or have personally experienced separation or divorce and other types of trauma. Glaeser et al. (2000) examine similar relationships for a group of Harvard students and find consistent results. They go on to measure trust in an experimental economics game, finding that trust measured by the survey responses correlates less with *trust* than with *trustworthiness* as measured by the game. Notwithstanding the representativeness of the sample, this work highlights potential measurement and interpretation problems related to survey questions about trust (Glaser et al. 2000; Carter and Castillo 2002).

For the relationship between group membership and economic welfare, research is more plentiful and generally consistent. Several micro studies find a positive association between measures of group membership and household welfare (typically measured by household expenditures), even after endogenizing group membership and (in one case) controlling for household fixed effects (Narayan and Pritchett 1999; Grootaert 1999; Grootaert, Oh, and Swamy 1999; Maluccio, Haddad, and May 2000[6]). Knack and Keefer (1997), however, find no significant relationship between group membership and economic performance in their cross-country study.

Several studies disaggregate groups by their function when examining the relationship with economic outcomes (Grootaert 1999; Knack and Keefer 1997; Maluccio, Haddad, and May 2000). Christian Grootaert finds that production and social

[6] The latter report instrumental variable household fixed-effects estimates.

groups have a positive association with household welfare while religious groups and government/national groups have none (Grootaert 1999). Maluccio, Haddad, and May (2000) find that both financial and nonfinancial groups have positive associations with household welfare. Knack and Keefer (1997) consider political/economic and non-economic/nonpolitical groups in their analysis, finding that neither affects economic performance. They also test the relationship between trust and economic performance, finding a strong positive association.

4. SOCIAL CAPITAL IN SOUTH AFRICA AND KWAZULU-NATAL

Moser (1997) documents the effect of apartheid policies in South Africa on the levels and types of social capital, describing two offsetting tendencies. "The decades of poverty, persecution and suppression associated with apartheid policy have consolidated 'stocks' of social capital. These reciprocal social networks are strongest at the inter-household level and in horizontally structured organizations." At the same time, however, apartheid policies have "systematically destroyed many poor communities, eroding the stock of social capital." Recent countrywide participatory poverty assessments indicate that the most common types of associations are financial, including *stokvels* (various forms of savings groups) and burial societies (which provide insurance for funeral costs). The same set of studies finds that many structures associated with local leaders are hierarchical and are viewed as extractive (May et al. 1998). As such, a simple characterization of social capital in South Africa is difficult.

Formed by combining the former Zulu homeland and the former Natal Province, KwaZulu-Natal is South Africa's largest province, containing one-fifth of the country's population of approximately 41 million. Though not the poorest province, it is nevertheless poor, despite being more urbanized (43 percent) than such provinces as the Eastern Cape (37 percent) and Northern Province (12 percent). It is also ethnically diverse: 82 percent of the population are African (predominantly Zulu), 10 percent Indian, 7 percent white, and 1 percent coloured (STATS SA 1996).

May et al. (1998) find that communities in KwaZulu-Natal distrusted local governments, suspecting them of dividing communities by the establishment of a plethora of sector-specific community committees. During the mid-1980s and again in the early 1990s, KwaZulu-Natal suffered from substantial political unrest and violence. As its social capital may have been somewhat eroded by the violence and unrest during that period, KwaZulu-Natal is an especially interesting place to study (Moser 1997). At the same time, these conditions suggest that it would be unwise to draw hasty generalizations for other parts of South Africa, let alone the world, based on findings in KwaZulu-Natal.

Related sociological research sheds light on groups and trust in KwaZulu-Natal. Cross, Mngadi, and Mbhele (1998) find that in the increasingly cash-based economy of the 1990s, the most sought after memberships are in savings and credit groups. They label these groups "achieved," because entry requires a conscious decision to participate, often conditioned on trust. Other types of group memberships, more closely linked to the circumstance of one's religion or kin group and having less (or little) —to do with trust, are labeled "bound." Of course, these two characterizations represent extremes, and their

edges undoubtedly overlap. For example, while an individual may automatically be a member of kin and religious groups, he may also choose how intensively to participate in them. Cross, Mngadi, and Mbhele note a tendency for membership in achieved groups to be seen as a way of "getting ahead," while membership in bound groups is seen more as a way of "not falling behind."[7] In either case, though, one would expect to find a positive association between participation and household welfare.

5. DATA: THE KWAZULU-NATAL INCOME DYNAMICS STUDY (KIDS)

The first South African national household survey, the Project for Statistics on Living Standards and Development, was undertaken in the last half of 1993 (PSLSD 1994). Households in KwaZulu-Natal were resurveyed from March to June 1998 for the KwaZulu-Natal Income Dynamics Study (KIDS) (May et al. 2000). In 1993, the KwaZulu-Natal sample was representative at the provincial level and contained 1,354 African and Indian households (Maluccio 2002).

To ensure comparability, the 1998 household questionnaire followed the 1993 version, which was an integrated household survey similar in design to a World Bank living standards measurement survey (Grosh and Glewwe 2000). In addition, a number of new modules were introduced. A key objective of the new modules was to obtain information on different dimensions of social capital, including group membership,

[7] This echoes the concepts of bridging social capital (used to "get ahead") and bonding social capital (used to "get by") outlined by Woolcock and Narayan (2000).

personal networks, trust, civic engagement, and violence. This research primarily uses the group membership and trust sections, which we now describe.

The 1998 questionnaire lists nearly 20 types of groups or associations identified through pretesting. These fall into several general categories, including financial (e.g., saving clubs and burial societies), production (e.g., farmers and informal traders), sports and music, community service (e.g., school, water, and development committees), religious, and political.[8] For each type of group, households listed every individual who was a member in 1998 or who had been a member five years earlier, in 1993.

Using this data, we construct a measure of group membership at the household level by treating the membership of one or more household members in the same group as a single group membership for the entire household.[9] The data indicate that households in South Africa increasingly joined groups over the 1993–1998 period. On average, each household was a member of 0.8 groups in 1993 and 1.3 groups in 1998, a 65 percent increase. Over the same period, the proportion of households with at least one membership also increased, from 55 to 71 percent. African households were much more likely than Indian to report membership.

---

[8] Given the sensitive nature of politics in KwaZulu-Natal, questions regarding political organizations were kept rather general to avoid jeopardizing the interview. These groups appear to be underreported in the data.

[9] We take this conservative approach to measuring group membership because for many groups it is likely that participation by one member yields access for other members to the externalities generated. Participation by a second or third member, however, is unlikely to result in a one-for-one increase in access. In addition, the ultimate outcome welfare measure we examine, per capita expenditures, is measured at the household level.

While households reported participation in a variety of types of groups, financial groups (which include *stokvels* and burial societies) and religious organizations predominated. The financial groups tend to be more formally structured than the nonfinancial groups, more closely approximating "achieved" groups described above. In addition to total group membership at the household level, we also construct two measures for financial-group memberships, financial and production groups described above, and nonfinancial groups, comprising all remaining types.[10] Of the households that report a group membership, about one-third each report membership in financial groups only, nonfinancial groups only, and both types simultaneously.

A separate section of the questionnaire collected information on levels of trust in various agents from the household head and, for about half of the households, other key household decision-makers. Using a five-point scale, respondents ranked their level of trust in different sets of people, including extended family, neighbors, local community leaders, local government officials, and strangers.[11] Then they were asked the same question about trust in the media (newspapers/radio/television) and in the likelihood that the national government would keep its promises and work to serve the poor. As with the group membership questions, respondents were asked about current levels of trust first, and then retrospectively about trust levels in 1993. In the empirical work, we use

[10] Because nonfinancial groups are dominated by religious groups (70 percent), it proved infeasible to explore separately in the analysis the effects of different types of nonfinancial groups, e.g., "Putnamesque" versus "Olsonian."

[11] The possible responses for trust were "no trust" = 1, "low trust" = 2, "medium trust" = 3, "high trust" = 4, and "complete trust" = 5.

household averages of these trust measures in two ways: individually and the simple sum of all eight measures.

To the extent possible, analogues to the household-level questions were asked in 67 community-level surveys, which were completed by interviewing key informants from the community. First, the number of groups in each category serving the community in 1993 and 1998 was determined. Second, the informant group was asked to rate on the same five-point scale how much people in general in the community trusted the same set of actors asked about in the household questionnaire.

The analysis that follows depends heavily on the validity of the retrospective information collected in the 1998 survey. For example, if respondents were more likely to indicate only those groups important to them in 1998, not only would this bias (upward) estimates of increased membership, but it might also bias inferences regarding the contemporaneous relationships between group membership and trust or per capita income. A number of factors suggest that these measures are indeed valid, however.

When long-term recall is required, accuracy is increased if respondents can relate the information asked for to some salient event or period in their life. Certainly one of the most important events in recent history in South Africa was the 1994 national democratic election that brought the African National Congress and President Nelson Mandela to power. Since the 1993 survey was undertaken about six months prior to these elections, interviewers were carefully trained in 1998 to introduce retrospective questions relating to 1993 with the phrase "just before the first democratic national elections." Therefore, a priori, the retrospective data are likely to be accurate.

In addition, Maluccio, Haddad, and May (2000) present two types of empirical evidence to assess the reliability of the recall data for group membership: (1) a comparison of the independently collected, community-level data with the household-level data and (2) an examination of the timing of joining groups. The comparison of data sources reveal very similar patterns, and the timing of joining groups is evenly spread out over the decade before the 1998 survey, thus increasing our confidence in the recall measures.

As for the trust indicators, measures from the household interviews (aggregated to the community level) are positively and significantly related to the independently collected indicators at the community level, despite the imperfect correspondence between sample clusters and communities. Patterns of higher trust of neighbors in rural than in urban areas, for example, are also mimicked in the two separately collected data sources.

Of course there is measurement error in any survey, and its magnitude is likely to vary by the type of information collected. On balance, while there is evidence to suggest that the retrospective group membership and trust information is not measured with systematic bias, we do not expect them to be measured without error. We address this concern in the empirical work.

6. ESTIMATION AND IDENTIFICATION STRATEGY

We examine three key relationships underlying and surrounding discussions of social capital: (1) the role of trust in the decision to participate in groups, (2) the subsequent capability of groups to generate trust, and (3) the relative importance of both trust *and* groups in contributing to well-being as measured by per capita household income.

First we ask whether trust is a determinant of group participation at the household level. To explore this possibility, after conditioning on a number of characteristics of the household found to be important in other studies, we put the spotlight on the role of earlier period trust in the decision to participate in groups:

$$G_{98} = G(T_{93}, \boldsymbol{Z}_{93}), \tag{1}$$

where G_{98} indicates group memberships in 1998, T_{93} indicates trust in 1993, and $\boldsymbol{Z}_{93}$ represents a set of background characteristics measured in 1993. (Characters in bold type represent vectors.) This approach fits alongside the work of Alesina and La Ferrara (2000a) that examines determinants of group membership using factors such as ethnic and occupational heterogeneity, both common proxies for trust. A crucial difference and

advantage to our approach, however, is that we directly include lagged trust (i.e., trust in 1993) as an explanatory variable.[12]

The second relationship turns the question around to examine whether group membership leads to higher trust:

$$T_{98} = T(G_{93}, \boldsymbol{Z}_{93}). \tag{2}$$

This is consistent with the work of Glaeser et al. (2000) and Alesina and La Ferrara (2000a); however, as above, the crucial difference is that we include lagged group membership as an explanatory factor. In this fashion, we can examine which groups, if any, generate trust outside their immediate membership, thereby expanding what Fukuyama (1995; 2000) calls the "radius of trust."

In both relations (1) and (2), all other conditioning factors measured in 1993 are also lagged to further protect against the possibility of simultaneity bias for decisions made in 1998 regarding group participation and perceptions of trust. As such, it is best to interpret these relationships as reduced forms in which the main objective is to ascertain whether there is an association between trust and group membership over time.

As described earlier, the KIDS data allow us to disaggregate groups into financial and nonfinancial. Financial groups are rough approximations of what Cross, Mngadi, and Mbhele (1998) term "achieved groups," and the nonfinancial (primarily religious)

[12] We use lagged variables to reduce the possibility of the simultaneity bias that would likely result if one considered contemporaneous associations between trust and group membership. Lagged measures may also make sense if, for example, potential effects of group membership on trust are not immediate. Of course, if a lag of five years is too long, the association may be weakened.

approximate "bound groups." Furthermore we disaggregate "trust in people" by type of agent. We can thus examine which types of trust in 1993 are important for which types of group participation in 1998. We can also examine which types of group participation in 1993 are important for the generation of trust in which agents in 1998. The findings might help us answer such questions as whether trust in government can help crowd in more group formation (Fukuyama 2000) or crowd it out (Collier 1998), or whether certain types of groups generate broader radii of trust than others.

The third relation we estimate explores the relative effects of current group membership and current trust on per capita household income. By directly including measures of trust, this model augments the usual approach reviewed above, which only includes measures for groups (Narayan and Pritchett 1999; Grootaert 1999; Maluccio, Haddad, and May 2000):

$$Y_{98} = Y(G_{98}, T_{98}, \boldsymbol{Z}_{98}). \tag{3}$$

We estimate relations (1)–(3), instrumenting for trust and group membership wherever they appear as independent variables and including community-level dummy variables. This has the effect of controlling for the array of institutional or other factors that may be common to households in a community (or more precisely sample cluster, which may consist of or cut across various communities). It is important to emphasize that we do not presume to understand the influence of those factors. Instead, we choose to control for them to better ascertain the influence of factors operating at the household level without introducing biases by omitting relevant factors at the community level.

In estimating (1) and (2), two-stage least squares (2SLS) is implemented primarily to control for measurement error (either random or correlated resulting from our retrospective data) since we expect the time lags to reduce any simultaneity bias caused by the possibility that group membership and trust are simultaneously determined. In the third relationship, we use 2SLS primarily to control for simultaneity—it is quite plausible, for example, that higher income leads directly to more group participation and not just the other way around. Of course, the 2SLS technique does not discriminate and (conditional on the validity of the instruments) has the benefit of addressing both types of problems in both sets of relationships, even when not the primary concern. At each step we evaluate first whether the instruments are relevant before carrying out standard overidentification tests.[13] The instrument sets and logic underlying them are described next.

For the first relation—explaining group membership in 1998—we use five variables taken from the 1993 household survey to instrument for lagged 1993 trust (see Table 1). This is extremely important for our identification strategy, since it enables us to control for the possibility that the retrospective data collected in 1998 about 1993 are measured with errors associated with other 1998 measures; using actual (as opposed to retrospective) 1993 information purges the predictions of this possible source of correlation.

[13] Included in their not having a direct effect is that they are uncorrelated with anything in the error term that may have a direct effect, such as unobserved heterogeneity. See Bound, Jaeger, and Baker (1995) and Davidson and MacKinnon (1993).

Table 1—Description of instrumental variables

Description	Source	Used in relations	Used in tables
Instruments for trust			
(1) if household member victim of crime during 12 months before 1993 survey (*crime*)	1993 HH Survey	(1), (3)	2, 3, 6
crime × logarithm of 1993 cluster standard deviation of per capita expenditures	1993 HH Survey	(1), (3)	2, 3, 6
crime × 1993 cluster standard deviation household head years of education	1993 HH Survey	(1), (3)	2, 3, 6
crime × index of activity heterogeneity (as in La Ferrara 2000)	1993 HH Survey	(1), (3)	2, 3, 6
(1) if household indicated in 1993 they expected their situation to get worse under the new government	1993 HH Survey	(1), (3)	2, 3, 6
1993 sum of trust measures (*lagged trust*)	1998 HH Survey (retrospective)	(3) only	6
Instruments for group membership			
community decision-making meetings attended in 1993: scale 1=none to 5=all (meetings)	1998 HH Survey retrospective	(2), (3)	4, 5, 6
logarithm of time spent in area (ltime)	1998 HH Survey (retrospective)	(2), (3)	4, 5, 6
ltime × meetings	As above	(2), (3)	4, 5, 6
meetings × 1993 total number of community groups in existence (community groups)	1998 Community Survey (retrospective)	(2), (3)	4, 5, 6
ltime × community groups	As above	(2), (3)	4, 5, 6
ltime × meetings × community groups	As above	(2), (3)	4, 5, 6
1993 household group membership (lagged groups)	1998 HH Survey (retrospective)	(3) only	6 only
lagged groups × lagged trust	As above	(3) only	6 only

The first measure is an indicator of whether a household member had been a victim of crime in the past 12 months. The maintained assumption for this (and all instruments in this set) is that this trauma is correlated with 1993 lagged trust, but not with current group membership other than through its association with trust.[14] We then interact this crime variable with three measures of heterogeneity in the community in 1993 that are also likely to be important determinants of trust: income heterogeneity (the

[14] Glaeser, Laibson, and Sacerdote (2000) find associations between trauma and trust.

logarithm of the cluster standard deviation of per capita expenditures), educational heterogeneity (the cluster standard deviation of the household head's years of education), and employment activity heterogeneity (a fractionalization index of the primary activity of the head of household as used in La Ferrara [2000]). The final instrument is an indicator of whether the household expected its situation to get worse under the new government. We interpret this to be an indicator of trust (in government) in 1993.

For the second set of relations explaining trust in 1998, we use six different variables to instrument for lagged 1993 group membership taken from the 1998 survey (see Table 1). The first is an indicator of how often the household head and other key decisionmakers attended community decisionmaking meetings in 1993. The maintained hypothesis is that this is correlated with group membership but not (later) trust, except through its effect on group membership. Next we include a measure of how long the household has resided in the area, as clearly those who have been there longer have been exposed for a longer period to the possibility of joining community groups.[15] These household-level variables are first interacted with each other, then with the total number (i.e., supply) of groups in the community in 1993, one at a time, and then in a triple interaction of all three measures.

[15] An anonymous referee made the point that, in theory, length of time in residence and attendance at community meetings might also affect trust levels directly, although it turns out they are not highly correlated in the sample. In addition to the overidentification tests presented as evidence that the instruments are valid, we considered specifications excluding these two variables and their interaction (but retained their interactions with the community measures). The findings were essentially unchanged, though the point estimates were less precisely estimated.

Finally, for the third relation, we include all the aforementioned instruments for groups and trust, as well as 1993 lagged values of the group and trust measures being considered and an interaction of those lagged values (see Table 1). As an additional check against the possibility of correlated measurement error for the retrospective measures of trust and groups with their 1998 values, we also discuss results that do not include the lagged values in the instrument set.

7. RESULTS

A question for any analysis using panel data, and particularly important in a study like this based only on those interviewed in the final round, is the extent and nature of sample attrition. The 1993 (and thus 1998 target) sample included 1,354 households and 1,132 (84 percent) were successfully reinterviewed in 1998. This rate of attrition is on par with or below those of similar studies in developing countries. Of course, a relatively low level of attrition does not necessarily mean that the analysis is not distorted by attrition; one must still consider the processes underlying it (Fitzgerald, Gottschalk, and Moffit 1998).

Maluccio examines attrition for these data and finds that larger households were more likely to be reinterviewed, and households with higher per capita expenditures were more likely to have moved but not successfully tracked for re-interview. Despite the latter finding, estimation of expenditure functions similar to those presented below (but without the group membership and trust indicators) shows that while there is evidence of

selection, the bias resulting from ignoring it is largely confined to the effect of urban location (Maluccio 2002). Since we control for community effects in this analysis, we conclude that the expenditure functions estimated below are unlikely to be severely biased by attrition in the panel sample. Since no information for group memberships or trust is available from the 1993 survey, however, it is not possible to speculate on the nature of attrition bias in the other estimated relations.[16]

Table 2 through Table 6 present the results for the regression analyses.[17] Table 2 presents 2SLS estimates of relation (1), the reduced-form determinants of 1998 household group membership for all groups, financial groups only, and nonfinancial groups only. For each of these we examine the role of trust using two measures: the sum of all the trust measures and, in separate regressions, trust in neighbors only, a proxy for local trust. The instrumental variables for trust in neighbors pass both a "relevance test" (i.e., they are jointly significant predictors of trust in 1993 in the first stage regression including all the other explanatory factors and community dummy variables from the second stage) and an overidentification test (i.e., we fail to reject the joint hypothesis that the instruments do not belong in the second-stage group membership equation and the equation is well specified) (Bound, Jaeger, and Baker 1995; Davidson and MacKinnon (1993). Although the instruments do not predict the sum of all trust as well as neighbor

[16] It is possible, however, to at least explore whether the instrumental variables taken from the 1993 survey are correlated with attrition—and they are not.

[17] Means and standard deviations for all variables are presented in Appendix Table 7. While many variables are similar, on average, across the periods, this masks substantial change within households over time. For example, for the trust measures, the correlation between 1993 and 1998 reports for each measure are never higher than 0.80.

trust, we include those specifications anyway, as the sum of trust is important later in the analysis.

Table 2—Group membership and the role of lagged trust, 1998

	Dependent variable: Number of 1998 […] group memberships at household level					
	(1)	(2)	(3)	(4)	(5)	(6)
Explanatory variables	**All groups**	**All groups**	**Financial groups only**	**Financial groups only**	**Non-financial groups only**	**Non-financial groups only**
1993: Ln avg month PCE	0.2456**	0.1662*	0.1959***	0.1067*	0.0431	0.0483
	(2.43)	(1.80)	(2.89)	(1.66)	(0.69)	(0.77)
1993: Head years education	0.0249	0.0269*	0.0038	0.0069	0.0213**	0.0204**
	(1.61)	(1.88)	(0.33)	(0.63)	(2.36)	(2.20)
1993: (1) if male head	0.0967	0.1138	0.0319	0.0656	0.0613	0.0469
	(0.85)	(1.04)	(0.40)	(0.83)	(0.96)	(0.69)
1993: Head age	0.0016	0.0017	0.0006	-0.0002	0.0007	0.0015
	(0.34)	(0.37)	(0.17)	(0.07)	(0.25)	(0.52)
1993: Number females 01-15	0.0566	0.0415	0.0389	0.0216	0.0154	0.0167
	(1.59)	(1.29)	(1.54)	(0.91)	(0.76)	(0.84)
1993: Number males 01-15	0.0622*	0.0819**	0.0418*	0.0623***	0.0189	0.0188
	(1.65)	(2.53)	(1.68)	(2.85)	(0.83)	(0.86)
1993: Number females 16-50	0.0722	0.0321	0.0385	-0.0055	0.0363	0.0380
	(1.59)	(0.79)	(1.21)	(0.19)	(1.37)	(1.39)
1993: Number males 16-50	0.0681*	0.0565	0.0384	0.0201	0.0287	0.0342
	(1.73)	(1.45)	(1.30)	(0.66)	(1.23)	(1.32)
1993: Number females 51 +	0.0656	0.0362	-0.0171	-0.0512	0.0834	0.0863
	(0.74)	(0.45)	(0.28)	(0.83)	(1.37)	(1.44)
1993: Number males 51 +	0.1339	0.0913	0.1349	0.1076	0.0128	-0.0031
	(0.96)	(0.79)	(1.33)	(1.26)	(0.17)	(0.04)
1993: Sum all trust measures	0.1273		0.1198*		0.0128	
	(1.25)		(1.71)		(0.21)	
1993: Trust in neighbors		0.3553		0.4629**		-0.0818
		(1.09)		(2.04)		(0.38)
Constant	-2.1833	-0.5659	-2.1564	-0.9256	-0.0692	0.3602
	(1.05)	(0.35)	(1.50)	(1.32)	(0.05)	(0.56)
Number of observations	1,132	1,132	1,132	1,132	1,132	1,132
F-test overall regression	4.17	4.96	5.89	5.86	8.26	5.73
	[<0.01]***	[<0.01]***	[<0.01]***	[<0.01]***	[<0.01]***	[<0.01]***
F-test excluded 1st stage instruments for trust	1.48	2.49	1.48	2.49	1.48	2.49
	[0.19]	[0.03]**	[0.19]	[0.03]**	[0.19]	[0.03]**
Overidentification test for instruments ($?^2$)	0.53	1.41	2.44	1.97	2.86	2.76
	[0.97]	[0.84]	[0.66]	[0.74]	[0.58]	[0.60]

Notes: Instrumental variables estimates endogenizing trust using instruments described in Table 1. Regressions include community fixed-effects (not shown). Absolute value of t-statistics in parentheses are calculated using robust standard errors (StataCorp 2001). P-values of tests are in brackets. * indicates significance at 10%, ** at 5% and *** at 1% levels.

Average per capita expenditures (excluding direct expenses on group memberships) in 1993, our proxy for permanent income, increases combined and financial-group participation, but has little effect on nonfinancial-group participation, where the more important factor is education of the household head. Since few of the groups under consideration have to do with education, this latter effect is likely related to the role education of the head plays as a proxy for resources in the household. Better-off households participate in groups more. Few of the other conditioning factors included as controls, such as demographic structure of the household, are individually significant.[18]

The two trust measures show no relationship with the combined group measure or nonfinancial groups, but are significant determinants of participation in financial groups, particularly trust in neighbors in 1993.

Results from 2SLS regressions identical to those in Table 2, with the exception of varying the agent trusted, are summarized in Table 3, which presents the coefficients on each of the different trust measures for the different group types. (For example, the coefficient on the sum of all trust in column (1) of Table 2 is presented in row (1), column (1) of Table 3.) None of the measures of trust in 1993 has a significant effect on overall group membership in 1998. In addition to the sum of all trust measures and trust in neighbors reported on above, trust in extended family also has a positive effect on

[18] The regressions include community dummy variables or "fixed-effects" that control for all factors common to households in the community. These include, for example, location effects and, due to the spatial patterns of settlement, race.

Table 3—Group membership and the role of lagged trust, 1998

Coefficients on instrumented lagged trust variable from regressions on groups

	Dependent variable: Number of 1998 […] group memberships at household level		
Independent variable: Trust in […]	**All groups**	**Financial groups only**	**Nonfinancial groups only**
Sum of all trust measures	0.1273 (1.25)	0.1198* (1.71)	0.0128 (0.21)
Neighbors	0.3553 (1.09)	0.4629** (2.00)	-0.0818 (0.38)
Extended family	0.1433 (0.32)	0.6422* (1.75)	-0.4563 (1.28)
Local leaders	0.8323 (1.14)	0.8187 (1.44)	0.0425 (0.11)
Local government	0.8764 (1.23)	0.8410 (1.51)	0.0531 (0.13)
Strangers	0.3201 (0.67)	0.2334 (0.81)	0.1017 (0.32)
Media	0.0237 (0.05)	-	-0.2861 (0.65)
National government keeps promises	0.3227 (0.95)	-	0.3384 (1.33)

Notes: See notes to Table 2. If cell is blank, instruments did not pass the overidentification test described in the text at a 5% level of significance, so IV estimates were not generated. * indicates significance at 10%, ** at 5%, and *** at 1% levels.

financial-group membership in 1998. Finally, none of the 1993 trust measures affects membership in nonfinancial groups in 1998.[19]

Using the same estimation methods, Table 4 presents the results for the reduced-form determinants of the 1998 trust measures, relation (2). As in Table 2, we present the results for the sum of trust across all agents and trust in neighbors separately, by all groups, both financial and nonfinancial. After controlling for community effects, few

[19] Results using ordinary least squares (not shown) highlight the importance of instrumenting. Nearly all of them display negative associations between the trust measures and group membership, a few of which are significant at the 10 percent level. Since responses to whether the individuals trusted the national government to serve the needs of the poor were nearly always the same as trust in national government to keep its promises, we do not present the former trust category in the tables.

Table 4—Trust and the role of lagged group membership, 1998

	Dependent Variable: 1998 Trust in […]					
	(1)	(2)	(3)	(4)	(5)	(6)
Explanatory variables	**Sum all trust measures**	**Neighbor trust**	**Sum all trust measures**	**Neighbor trust**	**Sum all trust measures**	**Neighbor trust**
1993: Ln avg month PCE	-0.4004	0.0753	-0.7915	0.0577	0.3856	0.1085
	(0.69)	(0.85)	(1.23)	(0.57)	(0.78)	(1.39)
1993: Head years educ	-0.0587	0.0010	0.0553	0.0058	-0.1327	0.0003
	(0.68)	(0.07)	(0.63)	(0.42)	(1.43)	(0.02)
1993: (1) if male head	-0.8508	-0.1228	-0.7047	-0.1172	-0.6203	-0.1045
	(1.31)	(1.28)	(1.15)	(1.23)	(0.99)	(1.12)
1993: Head age	-0.0237	0.0042	-0.0401	0.0035	0.0048	0.0056
	(0.89)	(1.04)	(1.23)	(0.74)	(0.21)	(1.56)
1993: Number females 01-15	-0.2082	0.0030	-0.1466	0.0054	-0.1261	0.0091
	(1.04)	(0.10)	(0.76)	(0.19)	(0.70)	(0.33)
1993: Number males 01-15	0.0632	0.0022	-0.0981	-0.0049	0.3115*	0.0124
	(0.31)	(0.07)	(0.42)	(0.14)	(1.71)	(0.48)
1993: Number females 16-50	-0.3619	0.0262	-0.2175	0.0321	-0.3227	0.0334
	(1.39)	(0.72)	(0.95)	(0.94)	(1.26)	(0.91)
1993: Number males 16-50	-0.1738	0.0222	-0.1829	0.0215	0.1130	0.0355
	(0.70)	(0.59)	(0.67)	(0.55)	(0.55)	(1.09)
1993: Number females 50 +	-0.8416	0.0233	0.1701	0.0661	-1.3243**	0.0239
	(1.53)	(0.30)	(0.32)	(0.83)	(2.01)	(0.26)
1993: Number males 50 +	0.0537	-0.0568	0.2625	-0.0475	-0.2479	-0.0720
	(0.08)	(0.59)	(0.39)	(0.48)	(0.41)	(0.78)
1993: HH No. All Groups	6.616***	0.2767	-	-	-	-
	(3.05)	(0.86)	-	-	-	-
1993: HH No. Financial Groups	-	-	10.62***	0.4546	-	-
	-	-	(2.68)	(0.82)	-	-
1993: HH No. Nonfinancial Groups	-	-	-	-	8.3170**	0.1738
	-	-	-	-	(2.53)	(0.35)
Constant	16.36***	2.851***	17.57***	2.901***	16.32***	2.895***
	(4.20)	(5.24)	(4.11)	(5.30)	(4.68)	(5.38)
Number of observations	1,132	1,132	1,132	1,132	1,132	1,132
F-test overall regression	6.05	4.27	7.03	4.10	5.52	4.32
	[<0.01]***	[<0.01]***	[<0.01]***	[<0.01]***	[<0.01]***	[<0.01]***
F-test excluded 1st stage instruments	2.78	2.78	1.95	1.95	2.17	2.17
for groups	[0.01]***	[0.01]***	[0.07]*	[0.07]*	[0.04]**	[0.04]**
Overidentification test for instruments	5.32	9.11	8.19	9.06	10.15	10.09
($?^2$)	[0.50]	[0.17]	[0.22]	[0.17]	[0.12]	[0.12]

Notes: Instrumental variables estimates endogenizing household number of groups using instruments described in Table 1. Regressions include community fixed-effects (not shown). Absolute value of t-statistics in parentheses calculated using robust standard errors (StataCorp 2001). P-values of tests in brackets. * indicates significance at 10%, ** at 5%, and *** at 1% levels.

factors included in the specification explain reported trust levels. Columns (1), (3), and (5), however, show clearly that membership in groups of both types in 1993 affects trust summed across all agents in 1998. Columns (2), (4), and (6), on the other hand, indicate there is little effect of group membership in 1993 of either sort on 1998 trust in neighbors.

Results from 2SLS regressions identical to those in Table 4, with the exception of varying the agent trusted in the dependent variable, are summarized in Table 5, allowing us to explore which types of trust are being generated. Group membership appears to build trust in strangers, the media, and national government, though this claim is weaker for nonfinancial groups, since not all the estimates for these types of trust could be

Table 5—Trust and the role of lagged group membership, 1998

Coefficients on instrumented lagged group variables from regressions on trust measures

	Dependent variable: Trust in […]							
Explanatory variables	**Summed across all actors**	**Neighbor**	**Extend. family**	**Local leader**	**Local govt officials**	**Strangers**	**Media**	**Natl govt keeps promises**
All groups	6.6162***	0.2767	0.3659	0.1927	0.6282*	1.1464***	1.3412***	1.0379**
	(3.05)	(0.86)	(1.12)	(0.64)	(1.84)	(2.67)	(2.94)	(2.39)
Financial groups	10.62***	0.4546	0.3437	0.3265	0.3526	2.1353**	1.6565**	2.4131**
	(2.68)	(0.82)	(0.63)	(0.66)	(0.66)	(2.52)	(2.04)	(2.39)
Nonfinancial groups	8.3170**	0.1738	0.5257	0.2204	1.1006*	-	2.3042***	-
	(2.53)	(0.35)	(1.01)	(0.47)	(1.93)	-	(2.98)	-

Notes: See notes to Table 4. If cell is blank, instruments did not pass the overidentification test described in the text at 5% level, so IV estimates were not generated. * indicates significance at 10%, ** at 5%, and *** at 1% levels.

generated.[20] If increased group membership builds trust in these actors, then nonmembers can potentially benefit from strengthened norms of trust.

Lastly, Table 6 presents 2SLS estimates for the contemporaneous effect of groups and trust on per capita income, relation (3). Group membership in 1998 has a positive effect on per capita income, and this holds when it is disaggregated into financial and nonfinancial groups (latter results not shown). Columns (2) and (3) indicate that (the sum of) contemporaneous trust does not have a significant effect on income, with or without group memberships. We also consider interaction terms between the two measures to explore the hypothesis that people who are trusting (or describe themselves as such) will get more or less from group membership, but found no evidence of either (results not shown). Excluding the lagged values of group membership and trust from the instrument set changes the coefficient point estimates in Table 6 very little but yields slightly less precise estimates.[21] For relation (3), unlike relations (1) and (2), it is possible to control for unobserved heterogeneity (using household fixed-effects) as well; when this is done, there is no change in the qualitative results and the coefficient on group membership increases slightly, remaining significant (results not shown). Finally, in this table we explain per capita income, rather than expenditures, to more directly make the link

[20] As with the group membership regressions, ordinary least-squares results indicate negative relationships between groups and trust and, for nonfinancial groups, a few of these are significant at the 10 percent level.

[21] The ordinary least-squares estimates of relation (3) are very similar to those presented in the table; the only difference is the effect of groups is modestly smaller (possibly due to random measurement error bias). We choose to report the 2SLS estimates for consistency with the other tables in the paper.

between social capital and income. Nevertheless, the results are similar when per capita expenditures are used instead.

Table 6—Log per capita income and the role of contemporaneous group membership and trust, 1998

	Dependent variable: 1998 Log average per capita income per month		
Explanatory variable	**(1)**	**(2)**	**(3)**
1998: Head years of education	0.0790***	0.0858***	0.0790***
	(6.87)	(7.47)	(6.89)
1998: (1) if male head	0.2534***	0.2519***	0.2520***
	(2.97)	(2.96)	(2.97)
1998: Head age	0.0129***	0.0143***	0.0130***
	(3.87)	(4.27)	(3.86)
1998: Number females 01-15	-0.1340***	-0.1352***	-0.1344***
	(6.00)	(5.99)	(6.04)
1998: Number males 01-15	-0.1200***	-0.1137***	-0.1196***
	(5.71)	(5.40)	(5.67)
1998: Number females 16-50	-0.0514**	-0.0448*	-0.0518**
	(2.11)	(1.82)	(2.12)
1998: Number males 16-50	0.0185	0.0234	0.0184
	(0.67)	(0.85)	(0.67)
1998: Number females 51 +	0.0188	0.0243	0.0189
	(0.28)	(0.36)	(0.28)
1998: Number males 51 +	0.0226	0.0289	0.0230
	(0.24)	(0.31)	(0.25)
1998: HH Total number of groups	0.1065***	-	0.1086***
	(2.76)		(2.84)
1993: Sum all trust measures	-	-0.0045	-0.0036
		(0.43)	(0.35)
Constant	4.7731***	4.960***	4.848***
	(15.09)	(12.55)	(12.20)
Observations	1,132	1,132	1,132
F-test overall regression	20.39	19.8	20.1
	[<0.01]***	[<0.01]***	[<0.01]***
p-value of F-test excluded 1st stage instruments for groups (column 1), and trust (column 2), and their interaction (column 3)	[<0.01]***	[<0.01]*** [<0.01]***	[<0.01]*** [<0.01]*** [<0.01]***
Overidentification test for instruments ($?^2$)	6.18	7.86	6.52
	[0.86]	[0.73]	[0.84]

Notes: Instrumental variables estimates endogenizing groups, trust, and their interaction, using instruments described in Table 1. Regressions include community fixed-effects (not shown). Absolute value of t-statistics in parentheses calculated using robust standard errors (StataCorp, 2001). P-values of tests in brackets. * indicates significance at 10%, ** at 5%, and *** at 1% levels.

8. DISCUSSION AND CONCLUSIONS

Our empirical results provide evidence that local trust in neighbors and extended family is important for financial-group participation, and that groups appear to be locations of social interactions that generate trust in nonlocal agents (strangers, the media, and national government). Furthermore, group membership, both financial and nonfinancial, is a determinant of per capita income. Treating group membership as a proxy for social capital suggests a positive effect for social capital, particularly in the case of nonfinancial-group membership where there are no explicit financial benefits envisioned. There is no evidence, however, that trust is contemporaneously important for income generation.

These findings resonate with a number of themes from the literature. First, membership in financial groups depends on trust, specifically on local trust (neighbors and extended family), whereas membership in nonfinancial groups does not depend on trust in any agent. Taken together, this suggests that trust operates as economic contract theory would predict (Furlong 1996). It is important in those groups that involve frequent time-sensitive exchanges of resources but not for groups without this form of interaction. This is consistent with the fact that members are mostly neighbors and extended family (since the majority of groups are local organizations). In addition, the findings are also supported by the microfinance literature, which indicates that membership of extended family and neighbors in a group facilitates entry for potential members (Zeller 1998; Wydick 1999).

The results can be contrasted with those of Alesina and La Ferrara (2000a), who find that proxy measures for general trust indicate it is positively associated with membership in open access groups and negatively associated with membership in restricted access groups (the former similar to nonfinancial groups and the latter financial groups in the South African context). They also contrast with those of La Ferrara (2000), who finds membership in economic groups in Tanzania is unrelated to income inequality (a proxy for lower trust), although greater income inequality is associated with a lower likelihood of participating in political and religious groups.

The identity of the agent for whom trust is being asked about matters. The analyses mentioned above rely on questions such as "most people can be trusted." Our results show that the identity of the person that the respondent has in mind when answering the question is important, at least when considering the relationship between trust and group participation. This difference may be what underlies the different findings. Furthermore, such differences suggest the survey questions are not merely picking up trustworthiness, which would not vary by agent.

The role of trust in the decision to participate in groups is also consistent with our general characterization of financial groups as "achieved" and nonfinancial groups as "bound."[22] The majority (70 percent) of the nonfinancial groups are religious in nature, i.e., groups for which it is logical that membership would rely less on trust, and this is what we find. This does not mean that religious groups do not serve many other purposes;

[22] One difference between the "bound" groups described in the text and the nonfinancial groups in the sample is that few of the sample groups are kin-based.

they likely do. In particular, many respondents reported being members of so-called African Independent Churches, organizations known for their (economic) mutual support mechanisms (Cross, Mngadi, and Mbhele 1998). Another common type of religious group is the "mothers association," which offers condolences and other support during times of crisis, such as funerals. So, while trust may not be critically important for participation in these groups, this does not mean that they do not necessarily have economic benefits as well.

Group membership in 1993 (both financial and nonfinancial) generates trust in nonlocal agents in 1998. A possible mechanism underlying this result is that participation in groups might lead to greater engagement, and therefore familiarity, with the wider world. None of the group memberships, however, leads to higher scores on measures of local trust, such as in neighbors and local leaders, suggesting it may represent a qualitatively different form of trust, generated via different processes or possibly even exogenous.

Our finding that membership in groups affects certain kinds of trust contrasts with cross-country results of Knack and Keefer (1997). Aside from aggregation concerns associated with country-level analyses, there are at least two possible explanations for the difference. The first is that allowing for a lag is important (trust is not built in a day), while their analysis uses contemporaneous measures of trust. The second is that, as with the role of trust on group membership, it is important to distinguish between trust in different actors.

Trust in local agents in 1993 is important for financial-group membership in 1998, and financial-group membership in 1993 generates trust in nonlocal leaders in 1998. This suggests a conversion from local trust to generalized trust; financial groups are expanding the radius of trust.

Group membership in 1998 is important for income generation. This echoes the findings of Maluccio, Haddad, and May (2000) for the same households, but it also suggests the effects of group membership on income are not caused (only) by trust. Instead, the effect of group membership may be operating through some of the other mechanisms shown in Figure 2, such as copying and pooling for generating knowledge about the world, reputation transmission for assessing the reliability of different agents, or the establishment of norms and rules for prompting collective action (Collier 1998). Our results are consistent with the household and community-level studies described earlier, but again contrast with the results of Knack and Keefer. For this finding, a possible explanation for the difference is that the groups serve the function of competing to capture government rents, for example, suggesting that at the national level these intercommunity struggles would have a negligible or negative effect.[23]

We have shown that trust in neighbors or extended family in 1993 leads to increased membership in financial groups in 1998. We have also found that increased financial-group membership in 1998 leads to increased income in 1998. Thus, we have established a link between trust in local agents in 1993 to income in 1998, via financial

[23] This point was suggested to us by an anonymous referee.

groups in 1998. (It was not possible, however, to show this link directly in the estimation of the per capita income function.) While it is somewhat arbitrary to discuss the magnitude of changes due to the index measures of trust, at the sample means, our findings suggest that a one standard deviation increase in trust in neighbors would lead to a more than one percent increase in per capita income, via financial-group membership. Thus, we have begun to understand how returns to social capital by way of groups are generated: it all seems to start with high levels of trust in local agents (neighbors and extended family). We were unable, however, to identify any significant determinants of local agent trust in 1998 once community-specific factors are taken into account, representing an area for further research.

APPENDIX TABLE

Table 7—Variable means and standard deviations (n = 1,132)

	1993		1998	
	Mean	**S.D.**	**Mean**	**S.D.**
Ln avg month per capita expenditures	5.39	(0.73)	5.61	(0.90)
Ln avg month per capita income	5.04	(1.22)	5.67	(1.25)
Head years of education	3.77	(3.58)	4.22	(3.66)
(1) if male head	.69	(0.46)	0.61	(0.49)
Head age	50.92	(14.40)	53.36	(14.21)
Household Size	6.24	(3.52	6.32	(3.83)
Number females 01-15	1.34	(1.45)	1.24	(1.46)
Number males 01-15	1.38	(1.38)	1.27	(1.46)
Number females 16-50	1.64	(1.18)	1.70	(1.35)
Number males 16-50	1.22	(1.11)	1.32	(1.21)
Number females 51 +	.44	(0.56)	0.51	(0.57)
Number males 51 +	.24	(0.44)	0.28	(0.48)
Household Group memberships				
Number of group memberships – all	0.78	(0.88)	1.29	(1.19)
Number of group memberships – financial	0.30	(0.55)	0.62	(0.77)
Number of group memberships – nonfinancial	0.48	(0.60)	0.67	(0.78)
Trust				
Trust in neighbors	3.20	(1.15)	3.25	(1.10)
Trust in extended family	3.88	(1.11)	3.86	(1.13)
Trust in local leaders	2.60	(1.15)	2.77	(1.12)
Trust in local government officials	2.41	(1.13)	2.62	(1.15)
Trust in strangers	1.79	(1.10)	1.85	(1.15)
Trust in the media	3.25	(1.14)	3.47	(1.08)
Trust national government to keep promises	2.14	(1.13)	2.26	(1.25)
Trust national government to serve the poor	2.13	(1.26)	1.98	(1.07)
Sum all trust measures	21.26	(5.15)	22.22	(5.53)
Instruments				
(1) if HH victim of crime in past 12 months	0.17	(0.37)	-	-
Ln cluster s.d. of per capita expenditures	0.54	(0.10)	-	-
S.D. of household head years of education	2.36	(0.65)	-	-
Index of activity heterogeneity	0.42	(0.14)	-	-
(1) expected situation to worsen under new government	0.30	(0.46)	-	-
Frequency of community decisionmaking meeting attendance	2.09	(1.26)	-	-
Ln time living in area	3.08	(0.79)		

REFERENCES

Alesina, A., and E. La Ferrara. 2000a. *The determinants of trust*. National Bureau of Economic Research Working Paper 7621. Cambridge, Mass., U.S.A.: National Bureau of Economic Research.

Alesina, A., and E. La Ferrara. 2000b. Participation in heterogeneous communities. *Quarterly Journal of Economics* CXV (3): 847–904.

Barr, A. 2000. Social capital and technical information flows in the Ghanaian manufacturing sector. *Oxford Economic Papers* 52 (3): 539–559.

Bebbington, A. 1999. Capitals and capabilities. A framework for analyzing peasant viability, rural livelihoods and poverty. *World Development* 27 (12): 2021–2044.

Bound, J., D. A. Jaeger, and R. M. Baker. 1995. Problems with instrumental variables estimation when the correlation between the instruments and the endogenous explanatory variable is weak. *Journal of the American Statistical Association* 90 (430): 443–450.

Carter, M. R., and M Castillo. 2002. The economic impacts of altruism, trust, and reciprocity: An experimental approach to social capital. The University of Wisconsin-Madison. Photocopied.

Coleman, J. S. 1988. Social capital in the creation of human capital. *American Journal of Sociology* 94 (Supplement): S95–S120.

Coleman, J. S. 1990. Foundations of social theory. Cambridge Mass., U.S.A.: Harvard University Press.

Collier, P. 1998. *Social capital and poverty. Social capital initiative.* Social Capital Initiative Working Paper No. 4. Washington, D.C.: World Bank.

Cross, C., T. Mngadi, and W. Mbhele. 1998. Poverty at ground zero: Social capital and economic shocks in rural KwaZulu-Natal. Report submitted to the International Food Policy Research Institute. Washington, D.C.

Davidson, R., and J. G. MacKinnon. 1993. *Estimation and inference in econometrics.* New York: Oxford University Press.

Fafchamps, M. 2000. Ethnicity and credit in African manufacturing. *Journal of Development Economics* 61 (1): 205–235.

Fedderke, J., R. de Kadt, and J. Luiz. 1999. Economic growth and social capital: A critical reflection. *Theory and Society* 28: 709–745.

Fitzgerald, J., P. Gottschalk, and R. Moffit. 1998. An analysis of sample attrition in panel data. *Journal of Human Resources* 33 (2): 251–299.

Fine, B. 1999. The development state is dead—Long live social capital? *Development and Change* 30 (1): 1–19.

Fukuyama, F. 1995. *Trust.* New York: The Free Press.

Fukuyama, F. 2000. *Social capital and civil society.* IMF Working Paper No. 74. Washington, D.C.: International Monetary Fund.

Furlong, D. 1996. *The conceptualization of "trust" in economic thought*. Working Paper 36. Brighton, U.K: Institute of Development Studies, University of Sussex.

Glaeser, E., D. Laibson, and B. Sacerdote. 2000. *The economic approach to social capital*. National Bureau of Economic Research Working Paper No. 7728. Cambridge, Mass., U.S.A.: National Bureau of Economic Research.

Glaeser, E., D. Laibson, J. A. Scheinkman, and C. L. Soutter. 2000. Measuring trust. *Quarterly Journal of Economics* CXV (3): 811–846.

Grosh, M., and P. Glewwe, eds. 2000. *Designing household survey questionnaires for developing countries: Lessons from 15 years of the Living Standards Measurement Study.* Washington, D.C.: World Bank.

Grootaert, C. 1999. *Social capital, household welfare, and poverty in Indonesia*. Local Level Institutions Working Paper No. 6. Washington, D.C.: World Bank.

Grootaert, C., and D. Narayan. 2000. *Local institutions, poverty and household welfare in Bolivia*. Local Level Institutions Working Paper No. 9. Washington, D.C.: World Bank.

Grootaert, C., G. Oh, and A. Swamy. 1999. *Social capital and outcomes in Burkina Faso*. Local Level Institutions Working Paper No. 7. Washington, D.C.: World Bank.

Harriss, J., and P. de Renzio. 1997. Missing link or analytically missing? The concept of social capital. An introductory bibliographic essay. *Journal of International Development* 9 (7): 919–937.

Knack, S., and P. Keefer. 1997. Does social capital have an economic payoff? A cross-country investigation. *Quarterly Journal of Economics* CXII (4): 1251–1288.

La Ferrara, E. 2000. *Inequality and group participation: Theory and evidence from rural Tanzania*. Discussion Paper 2433. London: Centre for Economic Policy Research.

Maluccio, J. A. 2002. Using quality of interview information to assess nonrandom attrition bias in developing country panel data. *Review of Development Economics*. Forthcoming.

Maluccio, J. A., L. Haddad, and J. May. 2000. Social capital and household welfare in South Africa 1993–1998. *Journal of Development Studies* 36 (6): 54–81.

Mauro, P. 1995. Corruption and growth. *Quarterly Journal of Economics* 110 (2): 681–712.

May, J., M. R. Carter, L. Haddad, and J. A. Maluccio. 2000. KwaZulu-Natal Income Dynamics Study (KIDS) 1993–1998: A longitudinal household data set for South African policy analysis. *Development Southern Africa* 17 (4): 567–581.

May, J., P. Ewang, F. Lund, A. Norton, and W. Wentzel. 1998. *Experience and perceptions of poverty in South Africa.* Durban, South Africa: Praxis Publishing.

Moser, C. 1997. *Violence and poverty in South Africa: Their impact on household relations and social capital*. Informal Discussion Paper Series. Washington, D.C.: Southern Africa Country Department, World Bank.

Narayan, D. 1999. Bonds and bridges: Social capital and poverty. Poverty Group, PREM, World Bank, Washington, D.C. Photocopy.

Narayan, D., and L. Pritchett. 1999. Cents and sociability: Household income and social capital in rural Tanzania. *Economic Development and Cultural Change* 47 (4): 871–897.

Putnam, R. 1993. *Making democracy work. Civic traditions in modern Italy.* Princeton, N.J., U.S.A.: Princeton University Press.

Putnam, R. 1995. Bowling alone: America's declining social capital. *Journal of Democracy* 6 (1): 65–78.

PSLSD (Project for Statistics on Living Standards and Development). 1994. *South Africans rich and poor: Baseline household statistics*. Cape Town: South African Labour and Development Research Unit, University of Cape Town.

de Renzio, P. 2000. *Bigmen and Wantoks: Social capital and group behavior in Papua New Guinea*. QEH Working Paper 27. Oxford: Oxford University.

Rubio, M. 1997. Perverse Social Capital—Some Evidence from Colombia. *Journal of Economic Issues* 31 (3): 805–816.

StataCorp. 2001. Stata Statistical Software: Release 7.0. College Station, Tex., U.S.A.: Stata Corporation.

STATS SA (STATISTICS SOUTH AFRICA). 1996. South African Population Census 1996. www.statssa.gov.za/census96/.

Uphoff, N., and C. Wijayaratna. 2000. Demonstrated benefits from social capital. The productivity of farmer organizations in Gal Oya, Sri Lanka. *World Development* 28 (11): 1875–1890.

Woolcock, M., and D. Narayan. 2000. Social capital: Implications for development theory, research, and policy. *World Bank Research Observer* 15 (2): 225–249.

Wydick, B. 1999. Can social cohesion be harnessed to repair market failures? Evidence from group lending in Guatemala. *Economic Journal* 109 (3): 463–475.

Zeller, M. 1998. Determinants of repayment performance in credit groups: The role of program design, intragroup risk pooling, and social cohesion. *Economic Development and Cultural Change* 46 (3): 599–620.

FCND DISCUSSION PAPERS

01 *Agricultural Technology and Food Policy to Combat Iron Deficiency in Developing Countries*, Howarth E. Bouis, August 1994

02 *Determinants of Credit Rationing: A Study of Informal Lenders and Formal Credit Groups in Madagascar*, Manfred Zeller, October 1994

03 *The Extended Family and Intrahousehold Allocation: Inheritance and Investments in Children in the Rural Philippines*, Agnes R. Quisumbing, March 1995

04 *Market Development and Food Demand in Rural China*, Jikun Huang and Scott Rozelle, June 1995

05 *Gender Differences in Agricultural Productivity: A Survey of Empirical Evidence*, Agnes R. Quisumbing, July 1995

06 *Gender Differentials in Farm Productivity: Implications for Household Efficiency and Agricultural Policy*, Harold Alderman, John Hoddinott, Lawrence Haddad, and Christopher Udry, August 1995

07 *A Food Demand System Based on Demand for Characteristics: If There Is "Curvature" in the Slutsky Matrix, What Do the Curves Look Like and Why?*, Howarth E. Bouis, December 1995

08 *Measuring Food Insecurity: The Frequency and Severity of "Coping Strategies,"* Daniel G. Maxwell, December 1995

09 *Gender and Poverty: New Evidence from 10 Developing Countries*, Agnes R. Quisumbing, Lawrence Haddad, and Christine Peña, December 1995

10 *Women's Economic Advancement Through Agricultural Change: A Review of Donor Experience*, Christine Peña, Patrick Webb, and Lawrence Haddad, February 1996

11 *Rural Financial Policies for Food Security of the Poor: Methodologies for a Multicountry Research Project*, Manfred Zeller, Akhter Ahmed, Suresh Babu, Sumiter Broca, Aliou Diagne, and Manohar Sharma, April 1996

12 *Child Development: Vulnerability and Resilience*, Patrice L. Engle, Sarah Castle, and Purnima Menon, April 1996

13 *Determinants of Repayment Performance in Credit Groups: The Role of Program Design, Intra-Group Risk Pooling, and Social Cohesion in Madagascar*, Manfred Zeller, May 1996

14 *Demand for High-Value Secondary Crops in Developing Countries: The Case of Potatoes in Bangladesh and Pakistan*, Howarth E. Bouis and Gregory Scott, May 1996

15 *Repayment Performance in Group-Based credit Programs in Bangladesh: An Empirical Analysis*, Manohar Sharma and Manfred Zeller, July 1996

16 *How Can Safety Nets Do More with Less? General Issues with Some Evidence from Southern Africa*, Lawrence Haddad and Manfred Zeller, July 1996

17 *Remittances, Income Distribution, and Rural Asset Accumulation*, Richard H. Adams, Jr., August 1996

18 *Care and Nutrition: Concepts and Measurement*, Patrice L. Engle, Purnima Menon, and Lawrence Haddad, August 1996

19 *Food Security and Nutrition Implications of Intrahousehold Bias: A Review of Literature*, Lawrence Haddad, Christine Peña, Chizuru Nishida, Agnes Quisumbing, and Alison Slack, September 1996

20 *Macroeconomic Crises and Poverty Monitoring: A Case Study for India*, Gaurav Datt and Martin Ravallion, November 1996

21 *Livestock Income, Male/Female Animals, and Inequality in Rural Pakistan*, Richard H. Adams, Jr., November 1996

22 *Alternative Approaches to Locating the Food Insecure: Qualitative and Quantitative Evidence from South India*, Kimberly Chung, Lawrence Haddad, Jayashree Ramakrishna, and Frank Riely, January 1997

FCND DISCUSSION PAPERS

23 *Better Rich, or Better There? Grandparent Wealth, Coresidence, and Intrahousehold Allocation*, Agnes R. Quisumbing, January 1997

24 *Child Care Practices Associated with Positive and Negative Nutritional Outcomes for Children in Bangladesh: A Descriptive Analysis*, Shubh K. Kumar Range, Ruchira Naved, and Saroj Bhattarai, February 1997

25 *Water, Health, and Income: A Review*, John Hoddinott, February 1997

26 *Why Have Some Indian States Performed Better Than Others at Reducing Rural Poverty?*, Gaurav Datt and Martin Ravallion, March 1997

27 *"Bargaining" and Gender Relations: Within and Beyond the Household*, Bina Agarwal, March 1997

28 *Developing a Research and Action Agenda for Examining Urbanization and Caregiving: Examples from Southern and Eastern Africa*, Patrice L. Engle, Purnima Menon, James L. Garrett, and Alison Slack, April 1997

29 *Gender, Property Rights, and Natural Resources*, Ruth Meinzen-Dick, Lynn R. Brown, Hilary Sims Feldstein, and Agnes R. Quisumbing, May 1997

30 *Plant Breeding: A Long-Term Strategy for the Control of Zinc Deficiency in Vulnerable Populations*, Marie T. Ruel and Howarth E. Bouis, July 1997

31 *Is There an Intrahousehold 'Flypaper Effect'? Evidence from a School Feeding Program*, Hanan Jacoby, August 1997

32 *The Determinants of Demand for Micronutrients: An Analysis of Rural Households in Bangladesh*, Howarth E. Bouis and Mary Jane G. Novenario-Reese, August 1997

33 *Human Milk—An Invisible Food Resource*, Anne Hatløy and Arne Oshaug, August 1997

34 *The Impact of Changes in Common Property Resource Management on Intrahousehold Allocation*, Philip Maggs and John Hoddinott, September 1997

35 *Market Access by Smallholder Farmers in Malawi: Implications for Technology Adoption, Agricultural Productivity, and Crop Income*, Manfred Zeller, Aliou Diagne, and Charles Mataya, September 1997

36 *The GAPVU Cash Transfer Program in Mozambique: An assessment*, Gaurav Datt, Ellen Payongayong, James L. Garrett, and Marie Ruel, October 1997

37 *Why Do Migrants Remit? An Analysis for the Dominican Sierra*, Bénédicte de la Brière, Alain de Janvry, Sylvie Lambert, and Elisabeth Sadoulet, October 1997

38 *Systematic Client Consultation in Development: The Case of Food Policy Research in Ghana, India, Kenya, and Mali*, Suresh Chandra Babu, Lynn R. Brown, and Bonnie McClafferty, November 1997

39 *Whose Education Matters in the Determination of Household Income: Evidence from a Developing Country*, Dean Jolliffe, November 1997

40 *Can Qualitative and Quantitative Methods Serve Complementary Purposes for Policy Research? Evidence from Accra*, Dan Maxwell, January 1998

41 *The Political Economy of Urban Food Security in Sub-Saharan Africa*, Dan Maxwell, February 1998

42 *Farm Productivity and Rural Poverty in India*, Gaurav Datt and Martin Ravallion, March 1998

43 *How Reliable Are Group Informant Ratings? A Test of Food Security Rating in Honduras*, Gilles Bergeron, Saul Sutkover Morris, and Juan Manuel Medina Banegas, April 1998

44 *Can FAO's Measure of Chronic Undernourishment Be Strengthened?*, Lisa C. Smith, with a *Response* by Logan Naiken, May 1998

45 *Does Urban Agriculture Help Prevent Malnutrition? Evidence from Kampala*, Daniel Maxwell, Carol Levin, and Joanne Csete, June 1998

46 *Impact of Access to Credit on Income and Food Security in Malawi*, Aliou Diagne, July 1998

FCND DISCUSSION PAPERS

47 *Poverty in India and Indian States: An Update*, Gaurav Datt, July 1998

48 *Human Capital, Productivity, and Labor Allocation in Rural Pakistan*, Marcel Fafchamps and Agnes R. Quisumbing, July 1998

49 *A Profile of Poverty in Egypt: 1997*, Gaurav Datt, Dean Jolliffe, and Manohar Sharma, August 1998.

50 *Computational Tools for Poverty Measurement and Analysis*, Gaurav Datt, October 1998

51 *Urban Challenges to Food and Nutrition Security: A Review of Food Security, Health, and Caregiving in the Cities*, Marie T. Ruel, James L. Garrett, Saul S. Morris, Daniel Maxwell, Arne Oshaug, Patrice Engle, Purnima Menon, Alison Slack, and Lawrence Haddad, October 1998

52 *Testing Nash Bargaining Household Models With Time-Series Data*, John Hoddinott and Christopher Adam, November 1998

53 *Agricultural Wages and Food Prices in Egypt: A Governorate-Level Analysis for 1976-1993*, Gaurav Datt and Jennifer Olmsted, November 1998

54 *Endogeneity of Schooling in the Wage Function: Evidence from the Rural Philippines*, John Maluccio, November 1998

55 *Efficiency in Intrahousehold Resource Allocation*, Marcel Fafchamps, December 1998

56 *How Does the Human Rights Perspective Help to Shape the Food and Nutrition Policy Research Agenda?*, Lawrence Haddad and Arne Oshaug, February 1999

57 *The Structure of Wages During the Economic Transition in Romania*, Emmanuel Skoufias, February 1999

58 *Women's Land Rights in the Transition to Individualized Ownership: Implications for the Management of Tree Resources in Western Ghana*, Agnes Quisumbing, Ellen Payongayong, J. B. Aidoo, and Keijiro Otsuka, February 1999

59 *Placement and Outreach of Group-Based Credit Organizations: The Cases of ASA, BRAC, and PROSHIKA in Bangladesh*, Manohar Sharma and Manfred Zeller, March 1999

60 *Explaining Child Malnutrition in Developing Countries: A Cross-Country Analysis*, Lisa C. Smith and Lawrence Haddad, April 1999

61 *Does Geographic Targeting of Nutrition Interventions Make Sense in Cities? Evidence from Abidjan and Accra*, Saul S. Morris, Carol Levin, Margaret Armar-Klemesu, Daniel Maxwell, and Marie T. Ruel, April 1999

62 *Good Care Practices Can Mitigate the Negative Effects of Poverty and Low Maternal Schooling on Children's Nutritional Status: Evidence from Accra*, Marie T. Ruel, Carol E. Levin, Margaret Armar-Klemesu, Daniel Maxwell, and Saul S. Morris, April 1999

63 *Are Urban Poverty and Undernutrition Growing? Some Newly Assembled Evidence*, Lawrence Haddad, Marie T. Ruel, and James L. Garrett, April 1999

64 *Some Urban Facts of Life: Implications for Research and Policy*, Marie T. Ruel, Lawrence Haddad, and James L. Garrett, April 1999

65 *Are Determinants of Rural and Urban Food Security and Nutritional Status Different? Some Insights from Mozambique*, James L. Garrett and Marie T. Ruel, April 1999

66 *Working Women in an Urban Setting: Traders, Vendors, and Food Security in Accra*, Carol E. Levin, Daniel G. Maxwell, Margaret Armar-Klemesu, Marie T. Ruel, Saul S. Morris, and Clement Ahiadeke, April 1999

67 *Determinants of Household Access to and Participation in Formal and Informal Credit Markets in Malawi*, Aliou Diagne, April 1999

68 *Early Childhood Nutrition and Academic Achievement: A Longitudinal Analysis*, Paul Glewwe, Hanan Jacoby, and Elizabeth King, May 1999

FCND DISCUSSION PAPERS

69 *Supply Response of West African Agricultural Households: Implications of Intrahousehold Preference Heterogeneity*, Lisa C. Smith and Jean-Paul Chavas, July 1999

70 *Child Health Care Demand in a Developing Country: Unconditional Estimates from the Philippines*, Kelly Hallman, August 1999

71 *Social Capital and Income Generation in South Africa, 1993-98*, John Maluccio, Lawrence Haddad, and Julian May, September 1999

72 *Validity of Rapid Estimates of Household Wealth and Income for Health Surveys in Rural Africa*, Saul S. Morris, Calogero Carletto, John Hoddinott, and Luc J. M. Christiaensen, October 1999

73 *Social Roles, Human Capital, and the Intrahousehold Division of Labor: Evidence from Pakistan*, Marcel Fafchamps and Agnes R. Quisumbing, October 1999

74 *Can Cash Transfer Programs Work in Resource-Poor Countries? The Experience in Mozambique*, Jan W. Low, James L. Garrett, and Vitória Ginja, October 1999

75 *Determinants of Poverty in Egypt, 1997*, Gaurav *Datt* and Dean Jolliffe, October 1999

76 *Raising Primary School Enrolment in Developing Countries: The Relative Importance of Supply and Demand*, Sudhanshu Handa, November 1999

77 *The Political Economy of Food Subsidy Reform in Egypt*, Tammi Gutner, November 1999.

78 *Determinants of Poverty in Mozambique: 1996-97*, Gaurav Datt, Kenneth Simler, Sanjukta Mukherjee, and Gabriel Dava, January 2000

79 *Adult Health in the Time of Drought*, John Hoddinott and Bill Kinsey, January 2000

80 *Nontraditional Crops and Land Accumulation Among Guatemalan Smallholders: Is the Impact Sustainable?* Calogero Carletto, February 2000

81 *The Constraints to Good Child Care Practices in Accra: Implications for Programs*, Margaret Armar-Klemesu, Marie T. Ruel, Daniel G. Maxwell, Carol E. Levin, and Saul S. Morris, February 2000

82 *Pathways of Rural Development in Madagascar: An Empirical Investigation of the Critical Triangle of Environmental Sustainability, Economic Growth, and Poverty Alleviation*, Manfred Zeller, Cécile Lapenu, Bart Minten, Eliane Ralison, Désiré Randrianaivo, and Claude Randrianarisoa, March 2000

83 *Quality or Quantity? The Supply-Side Determinants of Primary Schooling in Rural Mozambique*, Sudhanshu Handa and Kenneth R. Simler, March 2000

84 *Intrahousehold Allocation and Gender Relations: New Empirical Evidence from Four Developing Countries*, Agnes R. Quisumbing and John A. Maluccio, April 2000

85 *Intrahousehold Impact of Transfer of Modern Agricultural Technology: A Gender Perspective*, Ruchira Tabassum Naved, April 2000

86 *Women's Assets and Intrahousehold Allocation in Rural Bangladesh: Testing Measures of Bargaining Power*, Agnes R. Quisumbing and Bénédicte de la Brière, April 2000

87 *Changes in Intrahousehold Labor Allocation to Environmental Goods Collection: A Case Study from Rural Nepal*, Priscilla A. Cooke, May 2000

88 *The Determinants of Employment Status in Egypt*, Ragui Assaad, Fatma El-Hamidi, and Akhter U. Ahmed, June 2000

89 *The Role of the State in Promoting Microfinance Institutions*, Cécile Lapenu, June 2000

90 *Empirical Measurements of Households' Access to Credit and Credit Constraints in Developing Countries: Methodological Issues and Evidence*, Aliou Diagne, Manfred Zeller, and Manohar Sharma, July 2000

91 *Comparing Village Characteristics Derived From Rapid Appraisals and Household Surveys: A Tale From Northern Mali*, Luc Christiaensen, John Hoddinott, and Gilles Bergeron, July 2000

FCND DISCUSSION PAPERS

92 *Assessing the Potential for Food-Based Strategies to Reduce Vitamin A and Iron Deficiencies: A Review of Recent Evidence*, Marie T. Ruel and Carol E. Levin, July 2000

93 *Mother-Father Resource Control, Marriage Payments, and Girl-Boy Health in Rural Bangladesh*, Kelly K. Hallman, September 2000

94 *Targeting Urban Malnutrition: A Multicity Analysis of the Spatial Distribution of Childhood Nutritional Status*, Saul Sutkover Morris, September 2000

95 *Attrition in the Kwazulu Natal Income Dynamics Study 1993-1998*, John Maluccio, October 2000

96 *Attrition in Longitudinal Household Survey Data: Some Tests for Three Developing-Country Samples*, Harold Alderman, Jere R. Behrman, Hans-Peter Kohler, John A. Maluccio, Susan Cotts Watkins, October 2000

97 *Socioeconomic Differentials in Child Stunting Are Consistently Larger in Urban Than in Rural Areas*, Purnima Menon, Marie T. Ruel, and Saul S. Morris, December 2000

98 *Participation and Poverty Reduction: Issues, Theory, and New Evidence from South Africa*, John Hoddinott, Michelle Adato, Tim Besley, and Lawrence Haddad, January 2001

99 *Cash Transfer Programs with Income Multipliers: PROCAMPO in Mexico*, Elisabeth Sadoulet, Alain de Janvry, and Benjamin Davis, January 2001

100 *On the Targeting and Redistributive Efficiencies of Alternative Transfer Instruments*, David Coady and Emmanuel Skoufias, March 2001

101 *Poverty, Inequality, and Spillover in Mexico's Education, Health, and Nutrition Program*, Sudhanshu Handa, Mari-Carmen Huerta, Raul Perez, and Beatriz Straffon, March 2001

102 *School Subsidies for the Poor: Evaluating a Mexican Strategy for Reducing Poverty*, T. Paul Schultz, March 2001

103 *Targeting the Poor in Mexico: An Evaluation of the Selection of Households for PROGRESA*, Emmanuel Skoufias, Benjamin Davis, and Sergio de la Vega, March 2001

104 *An Evaluation of the Impact of PROGRESA on Preschool Child Height*, Jere R. Behrman and John Hoddinott, March 2001

105 *The Nutritional Transition and Diet-Related Chronic Diseases in Asia: Implications for Prevention*, Barry M. Popkin, Sue Horton, and Soowon Kim, March 2001

106 *Strengthening Capacity to Improve Nutrition*, Stuart Gillespie, March 2001

107 *Rapid Assessments in Urban Areas: Lessons from Bangladesh and Tanzania*, James L. Garrett and Jeanne Downen, April 2001

108 *How Efficiently Do Employment Programs Transfer Benefits to the Poor? Evidence from South Africa*, Lawrence Haddad and Michelle Adato, April 2001

109 *Does Cash Crop Adoption Detract From Childcare Provision? Evidence From Rural Nepal*, Michael J. Paolisso, Kelly Hallman, Lawrence Haddad, and Shibesh Regmi, April 2001

110 *Evaluating Transfer Programs Within a General Equilibrium Framework*, Dave Coady and Rebecca Lee Harris, June 2001

111 *An Operational Tool for Evaluating Poverty Outreach of Development Policies and Projects*, Manfred Zeller, Manohar Sharma, Carla Henry, and Cécile Lapenu, June 2001

112 *Effective Food and Nutrition Policy Responses to HIV/AIDS: What We Know and What We Need to Know*, Lawrence Haddad and Stuart Gillespie, June 2001

113 *Measuring Power,* Elizabeth Frankenberg and Duncan Thomas, June 2001

114 *Distribution, Growth, and Performance of Microfinance Institutions in Africa, Asia, and Latin America*, Cécile Lapenu and Manfred Zeller, June 2001

FCND DISCUSSION PAPERS

115 *Are Women Overrepresented Among the Poor? An Analysis of Poverty in Ten Developing Countries*, Agnes R. Quisumbing, Lawrence Haddad, and Christina Peña, June 2001

116 *A Multiple-Method Approach to Studying Childcare in an Urban Environment: The Case of Accra, Ghana*, Marie T. Ruel, Margaret Armar-Klemesu, and Mary Arimond, June 2001

117 *Evaluation of the Distributional Power of* PROGRESA*'s Cash Transfers in Mexico*, David P. Coady, July 2001

118 *Is* PROGRESA *Working? Summary of the Results of an Evaluation by IFPRI*, Emmanuel Skoufias and Bonnie McClafferty, July 2001

119 *Assessing Care: Progress Towards the Measurement of Selected Childcare and Feeding Practices, and Implications for Programs*, Mary Arimond and Marie T. Ruel, August 2001

120 *Control and Ownership of Assets Within Rural Ethiopian Households*, Marcel Fafchamps and Agnes R. Quisumbing, August 2001

121 *Targeting Poverty Through Community-Based Public Works Programs: A Cross-Disciplinary Assessment of Recent Experience in South Africa*, Michelle Adato and Lawrence Haddad, August 2001

122 *Strengthening Public Safety Nets: Can the Informal Sector Show the Way?*, Jonathan Morduch and Manohar Sharma, September 2001

123 *Conditional Cash Transfers and Their Impact on Child Work and Schooling: Evidence from the* PROGRESA *Program in Mexico*, Emmanuel Skoufias and Susan W. Parker, October 2001

124 *The Robustness of Poverty Profiles Reconsidered*, Finn Tarp, Kenneth Simler, Cristina Matusse, Rasmus Heltberg, and Gabriel Dava, January 2002

125 *Are the Welfare Losses from Imperfect Targeting Important?*, Emmanuel Skoufias and David Coady, January 2002

126 *Health Care Demand in Rural Mozambique: Evidence from the 1996/97 Household Survey*, Magnus Lindelow, February 2002

127 *A Cost-Effectiveness Analysis of Demand- and Supply-Side Education Interventions: The Case of* PROGRESA *in Mexico*, David P. Coady and Susan W. Parker, March 2002

128 *Assessing the Impact of Agricultural Research on Poverty Using the Sustainable Livelihoods Framework*, Michelle Adato and Ruth Meinzen-Dick, March 2002

129 *Labor Market Shocks and Their Impacts on Work and Schooling: Evidence from Urban Mexico*, Emmanuel Skoufias and Susan W. Parker, March 2002

130 *Creating a Child Feeding Index Using the Demographic and Health Surveys: An Example from Latin America*, Marie T. Ruel and Purnima Menon, April 2002

131 *Does Subsidized Childcare Help Poor Working Women in Urban Areas? Evaluation of a Government-Sponsored Program in Guatemala City*, Marie T. Ruel, Bénédicte de la Brière, Kelly Hallman, Agnes Quisumbing, and Nora Coj, April 2002

132 *Weighing What's Practical: Proxy Means Tests for Targeting Food Subsidies in Egypt*, Akhter U. Ahmed and Howarth E. Bouis, May 2002

133 *Avoiding Chronic and Transitory Poverty: Evidence From Egypt, 1997-99*, Lawrence Haddad and Akhter U. Ahmed, May 2002

134 *In-Kind Transfers and Household Food Consumption: Implications for Targeted Food Programs in Bangladesh*, Carlo del Ninno and Paul A. Dorosh, May 2002