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Can Informal Insurance Patch the Safety Net?

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Abstract

Most households in low-income countries deal with economic hardships through informal insurance, arrangements arising between individuals and communities on a personalized basis, rather than through markets or states. Examples include drawing down savings, engaging in reciprocal gift exchange, selling physical assets, and diversifying income-generating activities. These mechanisms can be highly effective in the right circumstances, but most recent studies show that informal insurance arrangements are often weak. In particular, poorer households appear to have substantial difficulties coping even with localized, idiosyncratic risks. In addition to helping households in the wake of large-scale natural disasters, public policy can help reduce vulnerability by encouraging flexible, private coping mechanisms while discouraging those that are fragile or that hinder economic and social mobility. Promising policies include creating self-regulating workfare programs and providing a supportive setting for institutions working to improve access to safe and convenient saving opportunities, credit, and crop and health insurance.

Key words: Informal insurance, safety nets, risk, poverty.

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1. Introduction

Many low-income countries, from Sub-Saharan Africa to Southeast Asia, have suffered major natural disasters and political upheavals through the 1990s. These events remind observers about what is hidden in official poverty statistics: that the condition of poverty is linked closely to vulnerability. Many poor households are exposed regularly to risks from poor weather, illness, political instability, and economic mismanagement.

Concern with vulnerability may be both intrinsic and tied to implications for income generation, as well as longer-term consequences on the nutrition, health, and schooling of children (e.g., Rose, 1995; Hoddinott and Kinsey, 1998; and Jacoby and Skoufias, 1997).¹ Fear of risk can lead poor households to forego potentially valuable new technologies and profitable production choices. Rosenzweig and Binswanger (1993), for example, use data from rural South India to show that an increase in risk (as measured by a one standard deviation increase in the coefficient of variation of the date of the onset of the monsoon) leads to reductions in farm profits by 35% for the poorest quarter of households, while the wealthiest (and least vulnerable) farmers are virtually unaffected. Vulnerable households may also spiral downward into ongoing poverty following adverse economic or climatic shocks, as productive assets are depleted to protect consumption levels. Addressing risk can thus be an important complement to

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¹ Calculations of the welfare costs of vulnerability by economists typically lead to relatively small numbers for the benefits of risk reduction (e.g., Newbery and Stiglitz, 1981). But consumer riots in the face of price swings, evidence on the lengths to which households and governments go to avoid volatility, and the participatory poverty assessments (such as World Bank, 1994) suggest that approaches grounded in simple microeconomic theory have been too narrow to capture the full extent of concern.
redistributive efforts and anti-poverty strategies focused on increasing economic growth and employment.

Yet, even with holes in public safety nets and private insurance markets, poor households are not completely exposed to risk. Most have developed coping strategies to deal with the harshest blows. The bulk of mechanisms are provided neither by the market nor the state but instead are “informal insurance,” arising between individuals and communities on a personalized basis. Examples include drawing down savings, engaging in reciprocal need-based gift exchange, selling physical assets, and diversifying crops and income-generating activities. Some, like ritualized gift giving, have roots going back generations or even centuries (Mauss, 1967), while others are newer responses to difficult situations.

Recent studies warn that some public policies may do little more than crowd out these informal mechanisms, but most evidence on the extent of informal insurance show that these mechanisms are in fact typically weak. Evidence emerging from regions as diverse as rural India, China, and sub-Saharan Africa suggests that households are exposed to considerable risk from adverse shocks – even idiosyncratic shocks that do not simultaneously affect their neighbors. The concern with crowding out is also diminished by the growing awareness that informal insurance can carry heavy economic and social costs. Even if informal mechanisms are effective in reducing vulnerability, they can

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2 The personalized nature of informal transactions clearly demarcates them from other market activities. Because they tend to rely heavily on information shared by the participants, the transactions may be more appropriately thought of as being “inform-al” rather than “in-formal.” The aim of the paper is to set out a structure for thinking about informal insurance and public action, rather than to provide a comprehensive review of the emerging literature. Recent surveys include Alderman and Paxson, 1994; Besley, 1995a and 1995b; Morduch, 1995; and Haddad and Zeller, 1997.
retard economic growth and social mobility. Thus, even where informal insurance is well-developed, public actions that displace informal mechanisms can yield net benefits.

The emerging evidence suggests the need for policy concern beyond disaster relief and aid in the face of large, aggregate shocks like floods, earthquakes, droughts, and other natural disasters. Priority should also be given to enabling households to address losses due to illness, poor (local) harvests, and temporary unemployment. This means creating a supportive environment for new institutions that offer safe and reliable means for poor households to borrow and, in particular, to save. Insurance provision is a little-heralded innovation offered by microfinance programs, but recent experience shows that it is possible to offer limited life insurance and protection against other basic exigencies in a simple, low-cost manner. Much more speculatively, it may be possible to improve on existing insurance arrangements for poor households by drawing lessons from microfinance analogues. As with the emerging microfinance movement, the actors in the best position to take key roles may often be non-governmental organizations and profit-making commercial enterprises. Self-regulating public workfare programs like the Employment Guarantee Scheme in Maharashtra State in India can also provide households with a flexible means for self-insurance in times of particular need.

2. Evidence on risk-sharing

New empirical tests of the ability of households to cope with risk show that while households and communities are poorly equipped to handle large aggregate shocks, households are also vulnerable to the effects of idiosyncratic shocks. Such shocks can also be large (relative to household resources) and more frequent than major disasters.
The tests of insurance mechanisms relate the variability of total household consumption to income variability. If households can use coping mechanisms to at least partly “smooth” consumption, income should be more variable than consumption. Sharper testable implications can be drawn out with respect to perfect consumption smoothing arrangements. If communities perfectly pool their incomes to share risks (and any given household’s income is a small part of the total), the consumption level of a given household relative to its neighbors should be only a function of total community income and the household’s assigned share of the total. The household’s own income realization should then not affect consumption patterns, and all idiosyncratic risk (relative to village shocks) should be eliminated.3

The idea was first tested on data from low-income countries by Townsend (1994), using the ICRISAT village studies from rural South India. He finds that the evidence

3 The specific tests of consumption insurance are rooted in the theory of optimal social allocations, and they begin with the assumption that each household has a fixed social weight, \( \theta \), in a social planner’s problem. If household A’s utility from consumption is \( u(C_A) \) and household B’s utility is \( u(C_B) \), then marginal utilities are simply \( u'(C_A) \) and \( u'(C_B) \). In the benchmark theory without enforcement or information problems, transfers should be made in every period so that \( \theta_A u'(C_A) = \theta_B u'(C_B) \). That is, redistribution from households A to B or from B to A should occur until there is no possible way to increase the weighted sum of their utilities. The burden of idiosyncratic shocks should thus be shared by the participants. And, in principle, the relationship should also hold for households A and C, A and D, A and E, B and C, etc. With data in two periods, the relationships continue to hold such that \( \theta_A u'(C_{A1}) = \theta_B u'(C_{B1}) \) and \( \theta_A u'(C_{A2}) = \theta_B u'(C_{B2}) \). Putting the two relationships together yields that marginal utilities must grow over time at the same rate for all households: \( u'(C_{A2})/u'(C_{A1}) = u'(C_{B2})/u'(C_{B1}) \). Under assumptions made commonly about the shape of utility functions (e.g., \( u(c) = c^{1-p}/(1-p) \) where \( p > 0 \) is the coefficient of relative risk aversion), the relationship also holds for the growth of consumption itself (or its logarithm). This relationship has provided the basis for a test of the basic theory on risk sharing. If the proposition and the assumptions about the form of preferences are correct, once we know the consumption growth of any single household (or of a region in aggregate), we should know the consumption growth of everyone. Moreover, no other variables (like income or income growth) should have influence. Given the assumptions, the test boils down to whether or not coefficients on income and income growth are statistically significant in explaining patterns of household-level consumption once regional consumption aggregates are controlled for. If the proposition holds exactly, the marginal propensity to consume out of idiosyncratic income changes should be zero. Townsend (1994) and Cochrane (1991) give a more explicit presentation. The presentation here implicitly assumes that households have identical preferences for consumption over time, that consumption and leisure are separable in utility, that utility is additively separable over time, and that utility is only a function of consumption levels. If instead utility also depends on household characteristics (a reasonable
does not fully support the proposition with respect to perfect risk pooling, but it comes surprisingly close: having controlled for community resources, the marginal propensity to consume out of a household’s own income is nowhere greater than 0.14 while the theory of perfect risk sharing predicts it should be zero. Ravallion and Chaudhuri (1997), Morduch (1991), and Ligon, Thomas, and Worall (1997), however, find weaker evidence using the same data, with Ravallion and Chaudhuri’s estimates of the marginal propensity to consume falling between 0.12 and 0.46. These results suggest that informal insurance exists, but it is not nearly perfect. More critically, it is not clear which specific mechanisms drive the results: they are consistent with both gift exchange within communities (but not perfect risk-sharing) and with self-insurance activities like borrowing and saving (but not the perfect ability to smooth consumption). In practice, borrowing and saving is typically a far more important coping mechanism than the exchange of transfers.

Most replications from other countries also find evidence of highly imperfect informal insurance. Deaton (1997), for example, finds little evidence that favors strong risk-sharing in samples from Cote d’Ivoire, and Townsend (1995a and 1995b) finds a mixed record of risk-sharing in a sample of Thai villages.

With data from rural China, Jalan and Ravallion (1997) find that the bottom 10% of households in rural China can protect themselves from just 60% of an adverse income shock – although the top 10% can cope with all but 10% on average. The Chinese evidence echoes my evidence from rural South India that households with large landholdings are able to cope with idiosyncratic income shocks with little problem. But the
consumption levels of landless households and small-holders move strongly with income
shortfalls (Morduch, 1993).

Gertler and Gruber (1997) take a different cut on tests of risk sharing. In
evaluating the ability to cope with health shocks in Indonesia, they find that households
insure adequately against about 70% of common, moderate-sized health shocks.
However, households can protect their consumption levels against only about 30% of
health shocks that seriously impair performance over the long-term, mirroring Cochrane’s
from the rural Philippines.

Lund and Fafchamps, in particular, find that acute illness is only addressed
reliably by informal insurance for younger adults, while older adults who fall ill are far
less likely to be helped. In their data, informal insurance also helps with funerals, but not
with mild illness, unemployment of household members other than the head or head’s
spouse, and poor harvests. Network quality also matters: households with more friends
(especially richer friends) have a greater ability to use informal insurance. Less-
connected households fare much worse.

These results, based on disaggregations by class and type of shock, reveal
weaknesses in informal insurance that would not otherwise be evident. And again they
imply ample scope for potentially beneficial interventions that go beyond disaster relief.

budget parameters – but this is a harder proposition to test.
3. Informal insurance mechanisms

The results above do not give insight into how consumption smoothing is achieved. Reciprocal gift-giving is a common way to solidify social and economic relationships – and one potentially important form of informal insurance. Anthropologists, though, have tended to downplay the place of gifts as a product of the rational calculus associated with informal insurance systems, instead highlighting their role in securing social status and signaling commitment to the community (e.g., Malinowski, 1922). But, given the great potential for gift-exchange to reduce risk, it is only natural that economists have taken the gift-insurance relationship seriously. Economists have thus tended to view gifts as they do other transfers like public aid (e.g., Cox and Jimenez, 1991).

Private transfers are large and frequent in some countries: for example, a recent survey shows that 40% of black South Africans report either receiving or giving transfers, and, on average, transfers amount to 37% of income for net recipients (Cox and Jimenez, 1997). Private transfers have also been found to be large in urban Colombia (where 46% receive and 52% give; Cox and Jimenez, 1998), Thailand (Paulson, 1995), and the Philippines (where 82% of urban households and 89% of rural households report receiving transfers; Cox and Jimenez, 1995).

The role of migrants can also be substantial. For example, roughly two-thirds of all transfer inflows originated abroad in a large survey from Pakistan (1985-88; Foster and Rosenzweig, 1999). And in the Philippines 26% of urban households (and 13% of rural households) received remittances from abroad (Cox and Jimenez, 1995). These flows pertain both to spouses remitting back to their families and to migrant children in
urban areas remitting to their parents in the countryside (see, e.g., Paulson, 1995, on
Thailand and Lucas and Stark, 1985, on Botswana).

But elsewhere, especially where migration is limited, reported transfers are of
minor consequence. In a 4,000 household data set from India in 1968-71, Foster and
Rosenzweig (1999) find, for example, that under 10% of households report net transfer
activity. The lack of transfers is especially notable in contexts in which they are expected
to be most valuable. In the smaller ICRISAT survey of poor villages in rural South India,
Rosenzweig (1988) finds that transfers respond to risk but amount to less than 10% of the
size of typical income shortfalls. Similarly, Reardon, Matlon, and Delgado find that
transfers comprise less than 3% of losses for the poorest households after the 1984
drought in the Sahel. This picture is reinforced by Czukas, Fafchamps, and Udry (1998),
who find little evidence that transfers offset income shocks in the Burkina Faso droughts
between 1981 and 1985. The picture from rural China is only slightly more optimistic.
Morduch and Sicular (1999) find that no more than a quarter of households report
receipts of transfers from their neighbors in a four-year study of sixteen villages in
northern China; ten percent report receiving gifts from outside their village. The transfers
were modestly sized, however, averaging about 10-20% of average household income for
recipients.

Lim and Townsend (19980 have completed a careful examination of ICRISAT
transactions files and conclude that credit and borrowing and the use of buffer stocks of
grain provide the main ways that households bridge gaps between income and desired
consumption levels. The importance of these mechanisms is mirrored in most low-
income economies (Deaton, 1992; Alderman, 1996). Households might also take actions
to smooth income after receiving a shock – for example by working longer hours or taking on an extra job (Kochar, 1999). And they may take precautions beforehand to reduce the probability or extent of loss (Morduch, 1995). These mechanisms can be relatively effective in the right circumstances, leading to concern with crowding out.

4. Re-examining the costs of “crowding out”

To the extent that informal mechanisms are limited, concern with the potential for crowding out should be small. Still, some evidence leads to worries. Cox and Jimenez (1995) use household-level data from the urban Philippines to give a particularly striking example. They estimate that the receipt of net transfers from other households is particularly sensitive to whether the recipient is unemployed. The magnitude of the sensitivity is such that Cox and Jimenez conclude that if the government was to institute a simple unemployment insurance scheme, net private transfers to the unemployed would fall by 92 pesos for every 100 pesos offered by the public program. In the end, the average unemployed worker would be better off by only eight pesos.

Exercises based on extrapolations like this yield provocative results, but interpretation must be careful. First, the research is not based on the impacts of introducing an actual program. Second, researchers typically just have data on one side of any given transfer: who makes it or who gets it, but not both. Without complete information, it’s difficult to tease out the exact reasons for the transfers. What looks like informal insurance against risk (i.e., a response to illness) might instead reflect a correlation arising for other reasons (e.g., a gift from a child given mainly to provide old age support). In the evidence from the Philippines, do the critical retirement income
variables reflect the desire of givers to help retirees, as assumed? Or do the variables instead signal a type of household (one with little or no retirement income) that is more likely to include migrants – and thus to receive remittances -- rather than to stay together under one roof? In the latter case, the receipt of net transfers could look like informal social insurance but instead could simply reflect steps taken to maximize household income. Richer data are required before explanations can be distinguished.

Some of the sharpest evidence is from South Africa. While the apartheid system was falling apart, the South African government extended basic pension benefits to black South Africans on terms similar to those that had been available to whites lacking private pensions. The program was fully implemented by early 1993, delivering a state pension equal to about $3 per day to all women over age 60 and men over age 65, subject to a means test (Case and Deaton, 1998). The means test excluded nearly all whites and only the richest blacks. Blacks in the past had had to rely mainly on their own means to cope with aging and with economic downturns, and for the most part the new benefits were not expected. How were these traditional private mechanisms affected by the post-Apartheid reform? Jensen (1998) estimates that (for households receiving private transfers) every publicly-provided rand led to a 0.2 to 0.4 rand reduction in private transfers to the elderly (migration by children was also reduced slightly).

A similar degree of crowding out is predicted on the basis of studies of transfers in urban Peru and the urban Philippines: displacement by 17% and 37%, respectively, for each unit transferred as a retirement benefit (Cox and Jimenez, 1995 and 1997). Without the chance to evaluate the introduction of an actual new program (as in Jensen, 1998), the predictions derive from estimates of the sensitivity of net transfer receipts to existing
social security or private pension arrangements. Cox and Jimenez then use coefficients from this exercise to predict the consequences of the introduction of a broad state pension system.

Even with displacement rates as high as 20-40%, are social losses proportionately high? Not necessarily, since leakage does not imply pure wastage. The degree to which displacement undercuts policy objectives depends on the specific objectives of the program in question: Poverty reduction? Old-age support? Enhancing economic efficiency? Reducing vulnerability?

In the South African case, older citizens received less in total than supposed, but others gained – and those gains were socially valuable. In richer contexts, the transfers tend to be from the old to the young. In a sample of white South Africans, for example, net recipients are 5.5 years younger than net givers (Cox and Jimenez, 1997). But in poorer contexts, the reverse is most often true, largely because parents invest in children with the expectation that the children will then provide old-age support. In line with the hypothesis, net recipients among black South Africans are on average eight years older than net givers. The displaced transfers thus tended to return to young households, many of which are as poor as older households, yielding little leakage as far as poverty reduction is concerned. In addition, keeping the funds in the hands of younger households is more likely to encourage investment in human capital accumulation and other productive activities. Second, public transfer systems may be more efficiently delivered than private transfers, yielding a net gain to society via displacement. For example, public transfer schemes may be able to pool resources more efficiently than localized, private arrangements (Cox and Jimenez, 1996). Third, some displacement,
even if it constitutes an unwanted leakage, may be a required cost of strengthening and widening the safety net to include particularly vulnerable households. In the South African case, for example, just under half of pension recipients do not receive private transfers at all (Jensen, 1998). Putting the other arguments aside, tolerating some crowding out of transfers received by half of the elderly black population can be seen as a cost of extending the safety net to the other half.

5. Tensions in informal insurance

Why is evidence of risk-sharing so weak in places where it is expected to be strong? For example, consider the highly risk-prone semi-arid tropics of south India, where two out of every ten years on average bring drought. Despite the importance of large weather shocks, most of the variation in measured household incomes over time is idiosyncratic to particular households. Morduch (1991) shows that 75 - 96% of the variance of the logarithm of household income remains after removing variation due to changes in average village income over time and to average household income over the period (1976-82). Some of this idiosyncratic, residual variation is surely measurement error, but even if half was error, substantial idiosyncratic variation still remains. As a result, within-village gift-exchange, designed so that no net redistribution takes place over the period, could in principle reduce the variability of household after-gift income by as much as 90% in one of the villages under study. But, as noted above, in practice reported transfers are not nearly big enough to do so, amounting to just 10% of typical income shortfalls (Rosenzweig, 1988). Instead, coping mechanisms in this sample derive mainly from private actions like borrowing and saving.
Tensions in systems of reciprocal transfers

Researchers point first to problems in enforcing understandings. Household A will help household B today, with the expectation that B will eventually reciprocate. But what will keep B from reneging? If A and B are related by blood or marriage, altruism may hold them together. But without altruism or enforceable contracts, self-interest is needed to keep incentives in line.

The repeated nature of the interaction over time allows for self-interested reciprocity. If A can credibly commit to end all future insurance relationships with B in the event that B reneges, B may well see fit to fulfill obligations. This will depend on whether the gain to reneging today is smaller than the flow of future benefits from continued participation.

As Coate and Ravallion (1993) suggest, however, the degree of effective insurance that is provided will adjust so as not to tip the balance toward reneging. In practice, tensions are heightened when both parties are down on their luck (e.g., a drought) or when a partner’s luck is particularly bad. Then, pushed close to the subsistence constraint, holding onto whatever one has may be especially tempting despite the agreement to share with others. As a result, reciprocal exchange tends to fall apart (or to offer less of a return) when insurance is most needed. In general, it works best when participants have a cushion from poverty. Consistent with the evidence above from rural China, the rural Philippines, and rural South India, theory suggests that systems of reciprocal transfers will be more effective for slightly richer households and in less dire
contexts (e.g., Coate and Ravallion, 1993; Kletzer and Wright, 1998; Ligon, Thomas, and Worall, 1997).

Moral hazard is also likely to limit group-based insurance, just as it undermines standard insurance markets. When insurers cannot adequately observe and enforce that insurees are taking all due precautions, incentives can be enhanced by providing only partial insurance coverage. This is one reason that informal insurance is most prevalent among relatives or neighbors in similar professions – i.e., those with good flows of information.

Transfer-based systems can also run into trouble when opportunities arise to accumulate savings, since a degree of insurance can then be had free of obligation to neighbors and kin. Similarly, when incomes of participants grow at different rates, richer households tend to choose to opt out rather than face the possibility of systematically redistributing to others. Richer participants find themselves giving relatively more than they get back on average, and at a point they will leave, either to form a new group with other richer households or to fend for themselves individually. Evidence of these sort of bifurcations is given by Platteau and Abraham’s (1987) study of reciprocity in fishing villages in Kerala, India and by Lund and Fafchamps’s study of risk-coping mechanisms in the rural Philippines. Platteau (forthcoming) takes one step backward to argue that one reason for low saving rates in sub-Saharan Africa is that rural communities and families discourage saving in order to avoid eventual cleavages.

These tensions explain how common mechanisms can solidify economic and social barriers along ethnic, gender, generational and class lines (La Ferrara, 1997; Fafchamps, 1992), and they can contribute to “poverty traps” (Platteau, forthcoming;
Hoff, 1997). Marcel Fafchamps (1992) draws on African experiences to suggest that instead of leading to cleavages, reciprocal exchange may instead lead to (voluntary) patron-client relationships. Rather than being asked to give more than poorer households, relatively rich households may find themselves in a position to extract surpluses from poorer households. Rich households, with their stocks of wealth, can offer a great deal to poor, vulnerable households. But the poor may have to offer labor at concessional rates in order to obtain protection from their patrons in hard times. The terms of reciprocal exchange may thus greatly favor the rich, although the terms are to everyone’s absolute advantage. This seemingly feudal scenario may play out in subtle forms throughout poor economies.

Fafchamps’s model suggests how informal insurance may adapt to particular economic conditions, but -- despite the ability to adapt -- observers suggest that these reciprocal mechanisms have started falling apart in recent years in Africa. Blame is put on economic and political upheavals, reinforced by increasing mobility and urbanization. In principle, urbanization and the increasing ease of mobility can both help and hinder the functioning of informal insurance. The negative is straightforward: in moving away, households are able to “default” on their obligations to relatives and neighbors. This may explain why in Kenya and elsewhere, until recently migrants would often move as a family. Now prohibitive costs and risks make that less prevalent, and workers often move on their own, adding to the likelihood of default on obligations to their ex-neighbors.

The positive aspects rely on continued links. Migration allows geographic diversification of incomes, increasing the value of reciprocal relationships. Paulson
(1995) shows evidence from Thailand that migration within families is often done to partly diversify the family’s “portfolio” of earnings sources, and Lucas and Stark (1985) and Rosenzweig and Stark (1989) make similar claims based on data from Botswana and rural South India, respectively. Because it is key that links remain unsevered, only family-based groups can typically survive mobility.

In a recent theoretical contribution, Banerjee and Newman (1998) embed these ideas in a more general model of structural change. They suggest that the lack of insurance mechanisms in urban areas can inhibit mobility from villages. In villages, workers often achieve some security via ex post group-based insurance mechanisms, but they have relatively low earnings opportunities. In the city they have greater earning opportunities but weaker insurance mechanisms. The result is that only the relatively rich (who can cope better without group-based insurance) and the relatively poor (who never had much group-based insurance to start with) will migrate. The bulk of the population will stay put, even though it may be socially beneficial for them to break village ties and join the modern sector. The presence of informal insurance in villages can then be a drag on economic development, and evidence along these lines, drawing on data from Indian villages, is provided by Das Gupta (1987). While in parts of sub-Saharan Africa the greatest problems tend to be due to excessive rural-urban migration, not insufficient mobility, the Banerjee-Newman model can still provide useful insight. The basic ideas can be applied to explain inefficient mobility between economic sectors, for example, rather than just inefficient geographic mobility.

The final set of tensions centers on the role of the family. The family has been hovering in the background in the discussion above since relatives are generally the
people turned to first – and often again as a last resort – in times of need. The institution of the family, stretching over generations and bearing well-understood protocols, greatly facilitates informal insurance. Most important, information and enforcement problems are mitigated. On the other hand, the family tends to have a much more limited pool of resources on which to draw relative to the broader community.

The most important tensions arise when the demographic structure of households is shaped to meet the purposes of informal insurance. For example, the old age security theory for fertility suggests that children are produced partly to provide informal social security. In situations with over-crowding and where parents do not take into account the negative externalities imposed by their children (through, e.g., congestion and environmental degradation), social welfare may be enhanced by shifts to alternative social security mechanisms (Dasgupta, 1993; Anand and Morduch, 1999). For example, promoting secure, convenient savings programs may allow households to reduce fertility without undermining the ability to cope in old age and can provide a second round of benefits to the community through reductions in negative population-related externalities.

Other insurance-demographic links with similar tensions include pressure on migration and marriage patterns to enhance their insurance attributes (Rosenzweig and Stark, 1989; Paulson, 1995); family “churning” as a response to the death of household heads (notably, the work of Martha Ainsworth and Mead Over on responses to AIDS in Tanzania); and child fostering (Ainsworth, 1996).4

4 Child fostering is common in Cote D’Ivoire, Ghana, and Sierra Leone. Bledsoe and Isiago-Ibinhe discuss insurance-related motives for fostering. Ainsworth (1996), however, finds that such motives are weaker than labor-related motives in a survey from Cote D’Ivoire.
Tensions in other forms of informal insurance

Other insurance mechanisms also work least well when most needed. In principle, buying and selling assets can provide a good hedge against idiosyncratic risks (at the least). Rosenzweig and Wolpin (1993), e.g., find that buying and selling bullocks is an important consumption smoothing device in semi-arid India. But even there, covariation of risks can raise problems. Lim and Townsend (1998) suggest that in fact covariant shocks and the nature of bullock transactions instead adds volatility to cash-holdings rather than protecting them, and, after carefully sifting through the same data, they uncover little evidence that is consistent with the Rosenzweig-Wolpin findings. The Lim-Townsend finding is consistent with tensions introduced when risks co-vary. Then, asset prices can fluctuate widely as households want to buy goods at the same time or to dump goods at the same time. As a result, it may not be surprising that Czukas, Fafchamps, and Udry (1998) find that selling livestock protects households against only 20-30% of the income shortfalls due to village-level shocks due to drought in Burkina Faso. (It is possible, however, that evidence would have looked stronger under less extreme conditions.)

In addition, informal mechanisms are typically weak against repeated shocks. Simulations by Deaton (1992) show that the efficacy of using buffer stocks or savings accounts to smooth consumption is conditioned largely on the degree of correlation of shocks over time. When bad conditions are likely to persist for several years in a row, households need to keep very large stores of assets in order to achieve adequate protection. With liquidity constraints, they will have a hard time smoothing consumption. This is one reason that the consequences of droughts and floods may be
especially bad: since they frequently entail adverse environmental changes (run-off; desertification; poor soil conditioning), they play out even after the climate has returned to normal, creating repeatedly bad shocks.

Even where mechanisms work well in a narrow sense, they may only do so at large long-run social costs. First, many mechanisms are inherently costly. In risk-prone areas of India, for example, households may sacrifice as much as 25% of average income to reduce exposure to shocks (Walker and Ryan, 1990). In principle, improving safety nets can thus increase average incomes by reducing the reliance on these costly measures (e.g., Platteau, 1991; Morduch, 1993, 1994). Perhaps more important, the desire to stay with tried and true technologies limits experimentation and innovation, creating ongoing problems for households.

Improving insurance may also mitigate social inequalities. Many informal insurance mechanisms have a gender dimension as well. It is often women who bear the brunt of arranged marriage systems, child fostering, and migration. Women may also lose out more than men during downturns. Rose (1999), for example, finds that for a sample from India that child mortality rates increase during periods of very low rainfall and that mortality rates are significantly higher for daughters than sons. Reducing vulnerability and instituting more flexible instruments may thus have broader social implications, and this is an area for further investigation.

6. Policy Implications

A first set of policy priorities includes actions to reduce risk itself. For example, improving governance can sharply reduce the vulnerability of households to human-
created downturns. Increasing macroeconomic stability, reining in inflation, reducing the tendency to frequently reverse economic policies, securing property rights, improving transport and communications, and creating a stable political environment will go far both in reducing the frequency and size of downturns and in creating a supportive environment to facilitate private risk-reducing activities. Similarly, risk can be reduced through public health campaigns for immunization and sanitation, the use of civil works (dams, retaining walls, irrigation), and, in some cases, price stabilization.5 The ability to cope with risk can be aided by increasing incomes and generating stable employment opportunities. But these are all policy areas that are on the table for other reasons and are best judged by other criteria.

In richer countries, households typically prepare for income declines by early in life acquiring savings accounts, credit lines, pensions, insurance, and annuities. Where these actions run into limits, governments typically provide means-tested poverty alleviation programs, public unemployment and health insurance, and social security (Subbarao, et al., 1997, ch.3).

But it is well understood that in most low-income countries, neither the administrative capacity nor the funding exists to build similar public safety nets. Instead, governments have tended to focus on providing temporary aid in the wake of large

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5 Where price fluctuations are an issue, price stabilization may reduce aggregate shocks faced by households, reducing volatility that can undermine informal insurance arrangements. Price stabilization, however, is hard to do in a way that keeps domestic price trends in line with international price trends, leading to the risk of distortions that widen over time. Moreover, price stabilization does not necessarily stabilize incomes. If prices and output are substantially negatively correlated, incomes will be less volatile than prices, and stabilizing prices can increase income variability. As the experience with government marketing boards in Africa shows, instituting price controls can also open up opportunities for bureaucratic malfeasance. Finally, the theory of price stabilization suggests that gains to stabilizing will likely be low relative to costs (Newbery and Stiglitz, 1981). Views that take into account potential benefits for the macroeconomy look more favorable for stabilization, however (e.g., Timmer, 1987, on Indonesia).
natural disasters. Public action can, however, help to address smaller, localized hardships as well. A key role is to provide regulatory and institutional frameworks conducive to the development of flexible private and public programs aiming to expand households’ access to employment opportunities, insurance, credit, and convenient ways to save. Limiting the government’s role conserves scarce administrative resources and avoids potential conflicts of interest between short-term political exigencies and requirements for longer-term institutional sustainability. These policies provide ways to strengthen informal coping mechanisms and broaden their accessibility, rather than aiming to displace private actions.

Promoting Savings

It had been long thought that most poor households have little desire to save in banks, but the experience of Indonesia’s Bank Rakyat Indonesia and programs like it are turning the view around. Once BRI established a safe, convenient savings vehicle, they found high demand for deposits where customers had previously not been interested. BRI now has over 16 million low-income depositors (versus two million borrowers), greatly aiding the bank’s profitability. While there is no systematic evidence on the income levels of depositors, bank staff argue that they tend to be poorer on average than borrowers and diverse in their socio-economic backgrounds. Partly as a result, savings mobilization efforts are now being renewed in microfinance programs in Latin America, Asia, and Africa. Public policy can aid by ensuring an appropriate regulatory environment and helping to keep inflation in check.
One promising program has shown the surprising demand for savings deposits among poor households in the slums of Dhaka, Bangladesh, and the program is being replicated by other non-governmental organizations in South Asia. The NGO SafeSave of Dhaka took lessons from the functioning of local rotating saving and credit associations, in which participants contributed small sums to a collective pot through daily collections by the ROSCA manager (Rutherford, 1999). SafeSave uses this principle for collecting contributions to savings accounts: collectors make daily round of participants’ homes and businesses six days a week. The response has been much greater than expected, and depositors have been able to build up usefully large sums of money. The program also allows depositors to take loans against savings, providing a means to address temporary consumption shortfalls and other short-term emergencies.

Without easy saving opportunities, households are tempted to squander surpluses or are susceptible to calls for short-term help from family members or neighbors – often at the expense of long-term progress (Platteau, forthcoming). In this way, provision of savings instruments may well be much more important than provision of credit in raising incomes and reducing risk – and it is generally easier to accomplish than credit provision.6

Such financial deposits can be particularly effective in helping households weather the difficult scenarios that undermine systems of gift exchange. This is seen in considering the various forms of shocks that households encounter. Events that occur

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6 How and where deposits are invested appears to be far less important than that deposits are mobilized from poor households. In principle, there is no reason not to invest the money abroad, for example, if domestic options prove difficult and returns are unattractive. Where it is costly to set up savings bank branches, simple mechanisms like post office savings plans (or innovations based on the African susu collector) may offer appealing options.
with low frequency -- like old age, death in the family, chronic poverty and chronic
disability – are fundamentally different from others. Although often anticipated, the
events can hit households hard and may require a continuing flow of transfers to the
affected households. Without such transfers, having deposits can be a major benefit. (An
important tension, though, in relying on savings over the long-term arises if interest rates
on deposits fall below inflation rates, eroding the purchasing power of deposits.) Having
savings also allows households to avoid having to borrow from moneylenders at high
interest rates when emergency funds are needed (especially as interest rates may reach 5-
10% per month; von Pischke, 1992). Deposits can also be especially valuable in the face
of large covariant shocks like regional drought. After covariant shocks, the price of assets
typically plunges as all villagers simultaneously try to sell their holdings, sharply
diminishing gains made through asset sales. Financial savings, however, will generally
hold greater value (and could increase in value as prices fall).

Public policy that leads to better-integrated savings programs can help to widen
the risk pool, allowing the financial system to more easily handle localized shocks. The
theoretical relationship between promoting deposit mobilization, enhancing efficiency,
and generating economic growth is described by Bencivenga and Smith (1991), and
policy implications flow directly. The keys to a successful savings program are providing
long-term security and convenience, finding a way to hedge against inflation, vigilantly
minimizing costs, and exploiting opportunities to safely but profitably re-lend deposits.
Existing banks and NGOs may not be up to all of these tasks, and designing effective (but
not overly intrusive) prudential regulations is a critical first step.
Microcredit

Microcredit programs have succeeded by creating a hybrid institutional form that channels formal sector funds to poor households, and there may be broader applications. The programs are not perfect. A challenge in the African context, for example, is to create mechanisms that work well in semi-arid and arid rural regions. Current programs face severe difficulties working in these contexts since households there tend to have less diversified income bases and higher transactions costs due to low population densities. More generally, most poverty-focused programs face high costs that undermine attempts at profitability. A recent survey shows that for poverty-focused microfinance programs as a whole, on average only 70% of total costs are covered (MicroBanking Bulletin, 1998).

The benefits, though, may be considerable. Using a recent survey of 1800 households in Bangladesh, I find that access to microcredit programs yields no appreciable increase in average consumption levels in the short-term (Morduch, 1998). However, for those with access, the volatility of consumption over the three main cropping seasons is roughly half that of control groups (after controlling for village-level unobservable variables). This reduction in consumption variability turns out to be mainly a product of reduced income variability across seasons – which is made possible by the employment diversification that credit affords. Helping rural households further reduce risk by diversifying into non-farm labor is an overlooked, but important, return to microcredit, and more research needs to be done along these lines in order to inform
discussions of the costs and benefits of supporting credit-based approaches (Morduch, 1999; Khandker, 1998).  

Insurance

Crop insurance programs have been a disaster nearly everywhere -- not unlike targeted credit programs through the 1970s (Yaron, Benjamin, and Piprek, 1997). The problems given by imperfect information and high transactions costs have proven steep, and there are no easy solutions. Although reform at present looks unpromising, in principle the problems of insurance markets are not much more intractable than those of credit markets – and microfinance programs have shown effective ways around some of the largest hurdles there.

Some microfinance programs have introduced insurance successfully on a limited scale. The programs generally offer term life insurance at very low rates (with benefits large enough to clear debts and provide for a burial but not much more). In addition, the Grameen Bank of Bangladesh, for example, appears to have had success with its “emergency fund” for borrowers. The fund aids loan repayment and provides general help in the event of illness and other emergencies. Information and transactions costs are reduced by coupling these mechanisms with credit provision. Research and

7 Reardon, Delgado, and Matlon (1988), for example, show that non-farm income accounted for 30 to 40% of total income in drought-affected Burkina Faso and that it was only imperfectly correlated with crop income, providing protection against the drought. Some of the non-farm income, though, may come as an ex post response to downturns in farm income, leading to negative correlations. Czukas, Fafchamps, and Udry (1998), however, find that non-farm income was positively correlated with farm income during a similar circumstance in Burkina Faso such that non-farm income was not an important offset to crop income.
experimentation will yield the degree to which it is possible to provide these types of insurance mechanisms separately from other microfinance services.

As Morduch and Sicuá (1999) suggest, there may be ways to improve insurance provision for poor households by instead drawing broader lessons from microfinance. Drawing on experiences in northern China, we describe an insurance company that has found some success by selling crop insurance to groups of households (to a whole village, for example), rather than to individuals. For now, the method is used just to lower transactions costs for insurers and is a poor analogue to the group-lending practices used by microfinance institutions. But if future premia were tied to the history of losses, a group-based contract could provide incentives for peer-monitoring along the lines that microcredit programs have found successful in addressing moral hazard. This is an area open to speculation, and many roadblocks remain -- for example, how should a program discourage collusion by the entire group? But while there are a long list of reasons for pessimism, the successes of microfinance suggest the value of further innovation and experimentation.

One important lesson from microfinance is that programs operated directly by governments tend to have inherent difficulties in generating compliance by participants: borrowers are far more likely to default on loans from government sources, and governments are more likely to tolerate defaults in the name of political expediency. This has proven disastrous for the long-term sustainability of public credit programs. There is a parallel in the case of insurance: insurees appear less likely to take due precautions when governments are the insurers. Facilitating insurance provision by non-profits, non-
governmental organizations, and for-profit companies may thus be an important step forward in itself.

*Employment Guarantee Schemes*

Direct public interventions can also be critical in helping to reduce vulnerability, especially for the poorest households. Among the most promising are rural public works programs like the Employment Guarantee Scheme in Maharashtra State, India and the Food for Work Program in Bangladesh, both of which are described by Ravallion (1991). The EGS was started during the drought of 1970-73 and the FFWP started shortly afterward. The programs provide wage employment in return for work constructing and maintaining public infrastructure. Ravallion (1991) reports that in a typical year, the EGS provided about 100 million person-years of employment between 1975 and 1989. On average, 500,000 people participated per month out of a total 20 million rural workers in Maharashtra.

The work requirement provides a way to target the aid to truly needy households, allowing the programs to avoid instituting costly means tests. The work requirements and the modesty of wages have been successful in discouraging non-poor households from participating. Such self-selection is allied to self-regulation: participants only take advantage of the program when needed, often in lean seasons before harvests. During peak seasons, alternative employment opportunities are generally more attractive. Thus the programs avoid long-term dependency and ever-growing lists of participants. It also means that the programs are set up to help households cope with temporary hardships, not mainly as an answer to chronic poverty. Walker, Singh, and Asokan (1986) find for
example that the coefficient of variation of income among landless laborers in two villages with access to the EGS was half that of a similar village without access to the EGS.

The success of replications of the EGS will depend on the size of budgets, eligibility criteria, and the setting of wages. As Ravallion (1991: 171-72) argues, to be as effective as possible the program should have “as few restrictions on eligibility as feasible, and wage schedules and the rights of participants should be well defined, well known, and nondiscriminatory. Ideally, all who want work at the going wage rate should be able to get it.” The principle of inclusiveness is a key to reductions in vulnerability as households are best-off knowing that they will have a place to turn when they fall on hard times. The elderly and households without available workers may have difficulty taking advantage of the programs, but the experiences in South Asia suggest that the programs have been able to help a great many.

7. Conclusion

Poor households throughout much of the world face twin disadvantages. The first is difficulty in generating income. The second is vulnerability to economic, political, and physical downturns. Inflation, recession, drought, flood, illness, and civil war hit hardest those households that are least well-equipped to handle the shocks. Harder still, the two disadvantages reinforce each other. Poverty is a source of vulnerability, and repeated exposure to downturns reinforces poverty.

The circular nature of poverty and vulnerability does not, however, preclude effective responses. The evidence to date suggests several broad directions to pursue. In
addition to helping households cope with large natural disasters, there is a role for public action in encouraging flexible private actions to cope with risk while discouraging those that are fragile and create rigidities. Counting on existing modes of informal insurance is unlikely to be a reliable way to patch public safety nets. Recent evidence shows that existing informal insurance arrangements are often limited in effectiveness, leaving poor households with substantial difficulties coping even with localized, idiosyncratic risks.

Concern has arisen about whether public action will just end up crowding out private informal insurance mechanisms. To the contrary, well-designed public action can strengthen and broaden the capacity of household to act independently through informal mechanisms. Making saving more safe and convenient, helping to expand credit access, and fostering basic insurance programs can provide promising ways to help households help themselves in the face of adversity. Employment guarantee schemes like those developed in South Asia can also provide a flexible, self-regulated, and well-targeted means for households to supplement incomes. The possibility of crowding out existing informal arrangements should not be ignored, but in most instances in low-income countries it is unlikely to substantially undermine steps to help households – and the crowding out of some private actions can have socially valuable social benefits.
References


