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Assessing the success of microinsurance programmes in meeting the insurance needs of the poor

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Abstract

The paper reviews attempts to provide insurance against risks afflicting the poorest. It presents empirical evidence on the impact of different types of microinsurance, and recommends the idea of 'quasi-insurance'—the provision of insurance functions through a non-insurance route—where institutional or regulatory constraints prevent insurance proper from being offered. The paper argues that microinsurance so far has been somewhat supply-driven rather than driven by effective demand, especially from the poorest, and thus the insurance products which would benefit the poorest are still at a limited stage of development. Institutional innovations and new insurance products therefore deserve promotion.

JEL Classification: G21, G22, O16, O17

Keywords: Microinsurance, microcredit, microsavings, microfinance, risk, insecurity, poverty

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Assessing the success of microinsurance programmes in meeting the insurance needs of the poor

Paul Mosley[1]

1. Introduction

Risk and vulnerability to risk are fundamental causes of underdevelopment (World Bank 2000, Dercon 2006, Islam 2007). Shocks, in the shape of sudden misfortunes causing a loss of income and productive potential, typically force poor people exposed to them to dispose of productive assets, which may force them into lower productivity, lower income, and higher vulnerability in the future—a process known as the poverty-vulnerability vicious circle. In addition, the expectation of such shocks motivates the vulnerable to invest their resources in low-yield activities, such as production of drought-resistant subsistence crops, to protect themselves against those shocks, and thus depresses the potential income of the poor below what it would be if they were not exposed to shocks. For both reasons, the costs of risk to the livelihoods of poor people are severe. Stefan Dercon, in his survey of income shocks suffered by individuals covered by the Ethiopian Rural Household Survey between 1999 and 2004, estimates that "if these shocks had been insured and smoothed, poverty would have been lower by about a third" (Dercon 2006, p. 123). The specific shock of the Ethiopian drought of 2002 is estimated to have pushed one million additional people below the poverty line into destitution (Hess, Wiseman and Robertson 2006, page 3). And drought is only one of the many sources of vulnerability which poor people encounter.

Insurance, potentially, is one of the basic institutions which can provide a defence against social and financial exclusion for people whose existing coping strategies are failing. And if people's livelihoods are effectively protected, that should encourage investment among lower-income groups and raise overall investment and growth rates. And yet, as the 2000 World Development Report on poverty puts it, 'there are almost no insurance markets in developing countries because of problems of contract enforcement and asymmetric information' (World Bank 2000, 143). Slightly over the top though this description of the situation is, there is no doubt that the provision of one of the potentially most poverty-reducing services is seriously deficient –especially at the bottom end of the market where risk-coping capacity is at its worst. Thus the spotlight is thrown on what the microfinance movement, so dynamic in other parts of the financial spectrum, is able to do to redeem this deficiency. In this paper, we examine what this contribution might be, and how its effectiveness might be optimised in the light of experiments with insurance for the poor so far.

Insurance, everywhere, is traded in a highly imperfect market. The research which has been done on microfinance customers' expressed need for risk management and insurance services (Alderman and Paxson 1990, World Bank 2000: Chapter 8, Sebstad and Cohen 2001) suggests a substantial thwarted demand for insurance services, a demand which probably increases in intensity as one moves down the income scale, and substantial use of informal emergency loans, rotating savings and credit associations and other insurance-

1 This paper was prepared as a contribution to the United Nations *World Economic and Social Survey 2008* . Many thanks to Nazrul Islam, David Hulme, Paul Siegel, Joanna Syroka, an anonymous reviewer, and participants at the Helsinki Conference on Fragile States in June 2007 for comments on an earlier draft.

substitutes. A component of this repressed demand appears to be gender-specific: as Elson argues (1999, p. 616) "in general, risk-reducing mechanisms have been much more a feature of male forms of market participation –such mechanisms include trade unions, job security rights, social insurance benefit, business and professional associations".[2] But for all poor people, information asymmetries are extremely serious, with very many people on the demand side of the insurance market quite unaware not only of the quality of the product they are buying, but even of its nature[3]. Finally, we may note, and it is a key theme of this paper, that much of the benefit from insurance—and therefore the demand for it—comes from persons other than those who buy the insurance contract. This is not only because the reduction of poverty and inequality is a public good, benefiting the community as a whole. It is also because insurance, if it works, stabilises income and thus saves *financial institutions* the costs of chasing unpaid loans; protects *human capital* by enabling households hit by a shock to continue to make school fee payments and seek medical treatment for their families;[4] and protects *social capital* by preventing groups of all kinds (including families) from breaking up because one of their number has a debt which is unpaid as the consequence of an insurable shock. This combination of externality and hidden information creates a compelling case for external agency to fill the gaps in financial markets referred to above.

External agency has indeed entered the market for risks to low-income people in the past, often in the form of crop yield guarantee schemes for smallholders. The results have often, however, been disastrous, which explains much of the scepticism still currently expressed towards microinsurance[5]. A review from the 1980s (Hazell, Pomareda and Valdes 1986: chapter 1) reported that "multiple-hazard insurance has proved costly, and governments would be well advised to stop and look carefully before entering this market". The message from these studies is of course not that the demand for insurance is not there, but rather that the supply side needs reconfiguring. The lessons usually drawn (e.g. Hazell, Pomareda and Valdes *ibid.* 1986*;* Hazell 1992) have been that the supply should be of insurance against *one insurable hazard only,* such as hail, death of the insured, or burglary; that it should be protected against the moral hazard and adverse selection problems which render insurance so vulnerable to financial collapse; and that the provision of insurance should move from the state to the private sector or an NGO.

2 Elson continues: 'Labour market institutions have typically been constructed on the assumption that women employees were secondary earners who could draw upon the assets and earnings of men (male partners, husbands, fathers, brothers etc) to cushion them against risk. That is, labour market institutions have assumed that men have 'extended entitlements' which do not have the force of law, but are sanctioned by accepted norms about what is a legitimate claim. Women's very act of participating in the labour market, however, may weaken their extended entitlements, if it involves stepping outside what have been accepted as the normal roles for women. The possibility of earning an income of their own may empower them to take more decision about their own lives—but it may also cut them off from support by male kin, leaving them on their own, and newly vulnerable to market forces.'

3 As one SEWA loan supervisor explained,' They put money in, as with savings, so they do not understand when they cannot draw out the whole of the money they have put in whenever they want… so they ask for their money back, and they are surprised when in the early days of the insurance contact it is less than they put in'. (interview, 4 April 2002). This kind of unawareness is not confined to India, or to developing countries.

4 As McCord comments (2000, p. 24), 'Illness often creates a downward financial spiral in a household where ineffective measures are used and paid for until the illness becomes a crisis and the patient requires hospitalisation. With hospitalisation, the patient then needs continuous care, usually by the mother/wife/daughter. The family experiences a liquidation of available resources, climbing debt and a reduced ability to earn money since the woman is not at her business. Business assets are then sold to generate the needed funds to pay the medical bills. This cycle often returns improving households to poverty…'

5 State-financed agricultural insurance schemes have operated at a large loss in the United States, India, the Philippines, Brazil and Mexico (leading to the closure of the insurer in the last three cases; Mosley and Krishnamurthy (1995)). Often this has been because they insure against deficient crop yield or even deficient crop income—thereby inviting moral hazard and deficient husbandry.

What has actually emerged in developing countries after that first wave of failure is the cluster of activities known as microinsurance, within which agriculture and insurance against climatic risk currently play a lagging role, and the leading role is played by life and health insurance. Microinsurance has been defined by Churchill as "the protection of low-income people against specific perils in exchange for regular premium payments proportionate to the likelihood and risk of cost involved" (Churchill 2007, p. 11). The microinsurance movement has, essentially, three components, each of which springs from a distinctive historical root. The first is experimental schemes set up by NGOs (or, uncommonly these days, the state) to insure against *single perils* such as property, health and life insurance risks; the scheme operated by FINCA Uganda, to be discussed below, is a good example of these. These attempt to draw on the lessons from the failure of multiple-risk schemes, and aim at financial sustainability over the medium term; often they are connected with micro-lending operations, and originate in 'emergency fund' life insurance schemes which repay the outstanding balance of a loan in the event that the borrower dies[6] . The second strand is profit-making schemes set up by the private sector (*Gono Bima* of Bangladesh is one of the largest examples), not specifically to cater for the bottom end of the market, but willing to offer small insurance contracts (especially to cover personal effects, etc.) to low-income borrowers; these derive essentially from a movement down-market by commercial insurance businesses observing the profits to be made out of microfinance. The third strand, which overlaps with the first, is schemes operated by not-for-profit organisations which explicitly on behalf of disadvantaged groups insure a range of social functions, generally beginning with family health but often extending into a range of personal asset insurances. One of the oldest and most famous of these, for example—SEWA of north-western India—is also a registered trade union, and has aimed since the 1970s to provide 'work and income security, food security and social security' (Sinha 2002, p. xi); and to supply many of the functions of social protection conventionally supplied by the welfare state in industrialised countries. As a women's organisation, it addresses the asymmetry of risk between men and women described by Elson. A similar gender bias characterises the *Grameen Kalyan* (Grameen Welfare Organisation) established in 1996 to handle the health insurance business of the Grameen Bank, arising from the realisation that "illness was the major reason for 44% of our defaults" (Daiyan 2001, p. 1). Other schemes of this type, such as BRAC's rural health scheme, are less strongly focussed on women clients, but share the same social objectives. The crux is however that at least in this third sector of microinsurance what is going on is not at all a neo-liberal retreat, but rather an expansion into areas of social protection not covered by conventional loan-based microfinance[7]. Indeed, rather than the private sector expanding at the expense of the public, the NGO sector is expanding at the expense of both—motivated both by the potential synergies between different elements in microfinance programmes, and by the deficiencies in developing-country social protection systems . We discuss the synergies in detail in Appendix 3, pages 36-37 below, and the overall social protection dimension of microinsurance is covered in more detail in Chapter 8 of Mosley (2003).

Illustrations of the distribution of microinsurance institutions by region and type are provided in Table 1. As discussed by Brown and Churchill (2000) and by Churchill (2006), progress during the recent phase of microinsurance development has been most marked in the fields of life and health insurance, with agricultural and climatic risks a long way down the list. This ordering, and in particular the salience of health, only in a limited way reflects the ordering of specific risks by the respondents to the *2000 World*

6 An example is the original 'emergency fund' of the Grameen Bank of Bangladesh, which since inception in 1983 has imposed a surcharge of 25% on the standard interest rate—essentially a life insurance premium - as a contribution to an 'emergency fund' which pays out only in the event of the member's death. (The Grameen Health Insurance Scheme is a separate operation developed much later, in 1996.)

7 For more illustrations of this 'social welfare and employment protection' model of microinsurance, fromAsia, Latin America and Africa, see Lund and Srinivas (2000).

Table 1. Classification of microinsurance organisations
(Number of persons covered in 2004 in brackets)

	Group 1 Not-for-profit, single risk	*Group 2 Not-for-profit, multiple risk*	*Group 3 Private sector for-profit*
Asia	Life Grameen Life, Bangladesh(58,000) Health BRAC Health, Bangladesh(12,000) ASA, Bangladesh(55,000) Society for Social Services, Bangladesh, (27,000) Mutuelles de sante (francophone West Africa) Climatic/agricultural BASIX Agricultural, India(c.500)	VimoSEWA, India(120,000) Groupe de Recherche et d'Echanges technologiques (GRET), Cambodia	Gono Bima, Bangladesh National Life, Bangladesh
Latin America		IPTK, Bolivia Seguro Basico de Salud, Bolivia Servi Peru(94,000)	COLUMNA de Seguros, Guatemala (500,000) La Equidad Seguros, Colombia(30,000)
Africa	Health FINCA Health, Uganda Christian Enterprise Trust (CETZAM), Zambia Bima ya Afya, Tanzania Climatic/agricultural Centenary Rural Development Bank weather insurance, Uganda(in preparation) World Bank Ethiopia schemes (pilots) (200) World Bank Malawi scheme(pilot) (200)		
Elsewhere	TUW SKOK (Poland)		

Source: Churchill (2006), in conjunction with other sources.

Development Report.[8] Notable among the differences is the deficiency in insurance schemes to cover drought and flood risks, mentioned by Dercon (2006) as the most severe risk by low income Ethiopian rural people. In addition, the supply of insurance schemes, relative to their demand, to cover against damage to and theft of assets (e.g. livestock, equipment, local infrastructural assets), can be considered to be deficient especially in poor developing countries. A major theme of this paper will be that the current supply of microinsurance does not meet the demand from the poorest people, and to ask what can be done to right the balance.

8 Of 120 (mostly urban) Bolivian microfinance clients asked 'What do you perceive as the main risk to your livelihood?' in 1999 and 2000, 105 (85%) mentioned health and accidents 59(49%) mentioned competition and market collapse, and 41(34%) mentioned crime and theft. See Mosley (2001b): table 7, p.122. By contrast, in rural Ethiopia health problems were the third most salient risk (at 40% of households affected) after harvest failure (78%)and policy problems such as resettlement or taxation(42%). After this came oxen problems(39%), land problems(17%) asset losses(16%) and war/civil disturbance risks(7%). See Dercon and Krishnan (2000: Table 5)

Our task in this paper is, therefore, to examine how well, in the light of the experience so far, the sector is reconciling the requirements of viability and poverty reduction, and where possible to make proposals for how this could be done better. In section 2 we initially examine design issues at the level of risks to cover, and then propose a formula for setting the insurance premium. In section 3 we examine the performance of some microinsurance schemes to date, and present a small selection of some quantitative impact assessment results. In section 4 we consider whether the insurance function can be performed by what we call 'quasi-insurance', or close substitutes for insurance, rather than by insurance proper. The concluding Section 5 presents a 'map' of tentative policy recommendations.

2. Basic principles: organisation, pricing and incentives

(i) Underlying principles

Our approach, following Siegel et al. (2001) is that microinsurance should be seen as one possible instrument of *social risk management,* i.e. the control of risk in the interests of low-income people. In other words, it is one possible instrument of risk management which may be useful and practicable in some contexts and places, but not in others. In determining whether insurance is to be the selected instrument for the control of risk, it is important to acknowledge that the effectiveness of any risk management instrument depends on the nature of risks, household and group characteristics and dynamics, and the availability of alternative risk management options. It is possible to distinguish between *risk anticipation*, *risk mitigation* and *risk-coping* strategies: the many possible varieties of insurance mechanisms (listed in bold in the table) are just one possible strategy for the mitigation of risk, which is just one of three different options for risk management. Some of these alternative risk management options are illustrated in Table 2.

In this paper, we are interested in the links between the approaches to risk defined in the three parts of the table (risk-anticipating, risk-mitigating and risk-coping strategies), and especially interested in the comparative advantage, or otherwise, of insurance, within the category of risk-mitigating strategies. It has often been noted that microfinance institutions which offer *some insurance function* (savings, or insurance, or emergency loans) within their portfolio are more effective both in cost recovery and in downreach to the poorest than institutions which do not (see for example, Hulme and Mosley 1996, table 3.3; also Hulme and Mosley 1998), but the question of whether the insurance component should be supplied by microinsurance has not been researched. Indeed, in the known cases where a breakthrough has been made to incorporate extremely poor people previously out of reach of financial services, of which the classic example is the IGVGD schemes of BRAC, Bangladesh, this has not been achieved by microinsurance as such, but rather by the provision of micro-savings and food aid in kind, both of which make feasible, for some clients, a low-risk transition from the relatively non-risky environment of the subsistence economy to the risky environment of the cash economy (Matin and Hulme 2003; Halder and Mosley 2004). All of this forces us to consider both the question of how microinsurance institutions can make this transition possible, and how non-microinsurance institutions can best fulfil a risk mitigation function. After a discussion of microinsurance proper through the remainder of sections 2 and 3, we then return to the second question in section 4.

(ii) Coverage and incentives

If risk mitigation is the chosen instrument of risk management, and insurance is the chosen instrument of risk mitigation, then in order to reconcile the objectives of viability and poverty reduction, the hurdles which have to be overcome are the following:

Table 2. Instruments available for rural households to manage risk

	Micro(household level)	*Meso(community level)*	*Macro(extra-community level)*
Risk anticipation			
	Investment to protect, maintain and enhance assets Adopt new technology Adjust asset portfolio and income-generating activities Permanent migration	Investments in physical and social infrastructure Social ties and networks Participation in community institutions and decision-making Rights and security	Information on risk and risk reduction Rules and regulations Guaranteed rights and security Stable macro-economy, policy regime, and political system Functioning markets Investments in public goods, physical and social infrastructure
Risk mitigation			
Asset portfolio management	Adjust asset portfolio and income-generating activities Hold financial or non-financial assets (eg. livestock, food stocks, jewellery) for precautionary savings Seasonal migration	Markets for household assets Physical and social infrastructure	Markets for household assets Market information Investments in physical and social infrastructure
Insurance	Formal insurance Informal insurance based on intra-household social capital claims Interlinked contracts	Informal insurance based on community social capital claims Formal community insurance pooling associations	Formal insurance, private and public sector, and international organisations (e.g. crop insurance, health insurance) Disaster aid funds
Finance	Formal and informal credit Interlinked contracts	Community credit unions and savings clubs, and 'banks' for other asset stocks	Financial systems, national and international Inter-community credit associations and 'banks' for other stocks
Risk coping			
	Draw down assets (e.g. skip meals, mine soil, not pay school fees). Use underemployed assets (e.g. off farm employment, child labour) Sell assetsEncroach on assets of others Illegal activities Formal and informal credit Depend on charity	Draw down community assets (e.g. reduce maintenance, harvest or mine natural resources) Depend on charity or aid from outside community	Targeted safety nets (transfers, public works) – cf IGVGD Bangladesh Social investment projects (eg social funds) Depend on charity or aid from national or international organisations International food aid Donor assistance

Source: adapted from Siegel, Alwang and Canagarajah (2001).

Moral hazard—the tendency for the existence of insurance to create perverse incentives to claim spuriously and behave carelessly, causing resource costs which may wipe out the benefits of insurance.

Adverse selection—the tendency for the demand for insurance to concentrate among the worst risks.

Effective targeting—the possibility that poor clients may not opt, or be able to opt, for insurance.

Administrative cost—the risk that the overcoming of all the above problems may bankrupt the insurer.

As mentioned earlier, the current generation of microinsurance institutions has been engaged in a strenuous process of learning from the failures of previous insurance experiments in order to try and achieve some reasonably satisfactory solution to the problems mentioned above. This process has been improvisatory, and we begin by enumerating (in Table 3) the solutions which have been adopted to these design problems by a group of six microfinance institutions in Africa and South Asia. The criterion for inclusion is that the schemes are in intention explicitly poverty-related, and that we have some performance data on them which go beyond financial ratios and look also at social impact, although the data we have under this heading have been collected by several different hands for different purposes and are therefore for many evaluation criteria not conformable. Of the schemes described, four (Grameen, BRAC, SEWA and FINCA) fit within the 'not-for-profit multiple risk' and two (BASIX, and the World Bank Ethiopia and Malawi weather insurance schemes) fit within the 'not-for profit single risk' classification[9]. Information on weather insurance schemes is mainly unpublished, and a more detailed summary of these is given at Appendix 1. We note, in particular, the following points of common experience:

(i) All these schemes are typically confined to named insurable risks such as life, funeral expenses, hospitalisation, accidental damage, theft and drought—insurable in the sense that their likelihood of occurrence can be predicted within reasonable limits. The exception is BASIX agricultural insurance, which in the old Indian tradition guarantees a minimum return; but even here there are exclusions to defend against moral hazard.[10]

(ii) Premiums are set by these non-profit organisations in order to broadly cover costs, already marking a huge advance on the old generation of hugely loss-making insurance schemes. In addition, in the health schemes the indemnity payout is limited by confining payments to a fixed sum, which can be visualised as the cost of the risk, less an 'excess' designed to discourage excessive or improper claims[11].

(iii) Additional controls against fraud and moral hazard consist of ex-post checking of claims in the case of the medical schemes, and a payout based on *rainfall deficiency* (not on a short crop) in the case of the World Bank Ethiopia micro and macro weather-insurance schemes, which are of particular importance to this paper since they insure against the hazard which for the poorest people in the world is the greatest hazard to livelihood, namely drought. In the Ethiopia micro scheme, based like other pilots on the model set out by Gautam, Hazell, and Alderman(1994), the defence against moral hazard is exceptionally powerful because payouts are based not on information provided by claimants but purely on the weather, which neither claimants nor anybody

9 In Ethiopia, the World Bank operates two types of pilot scheme: a micro scheme in which payouts are made to farmers if rainfall at *local* weather stations falls below its target level, and a macro scheme in which a social safety net of food-for-work schemes is activated on a *national* basis if rainfall falls below its target level. Details of these schemes, and other experimental weather index schemes within the World Bank portfolio, are provided in Appendix 1.

10 In particular, payouts for crop losses have been conditional on proof of good husbandry.

11 In the Appendix to Chapter 4 of Mosley (2003) we examine how the value of this excess should be computed.

Table 3. Six 'new-generation' microinsurance schemes: Summary description						
Scheme	*SEWA, GujeratMultiple: life, health and housing*	*FINCA Health*	*Grameen Kalyan, Bangladesh Health*	*BRAC Health, Bangladesh*	*World Bank pilots Weather, Ethiopia and elsewhere*	*BASIX,Hyderabad, India Weather/ agricultural production*
Location	Multiple within Gujerat state, India	Urban Kampala, Uganda	Multiple within Bangladesh	Multiple within Bangladesh	Alaba wereda, S. Ehtiopía; Malawi;Ukraine; others in preparation	Multiple within Andhra Pradesh, S. India
Date established	1992 (parent organisation established 1975)	1998 as health insurance scheme	1993 as Rural Health Programme (reconstituted as Grameen Kalyan, 1997)	2001 (parent organisation established 1973)	Pilot established 2005	Initiated as trial scheme 1999, remodelled 2000, remodelled again 2002
Organisational type	Registered trade union involved in political and organisational support to self-employed women. This operates a bank and an autonomous social insurance scheme.	Company limited by guarantee and NGO Operates partner-agent model, with insurance services provided by a specialist health insurance company (MicroCare) and reinsurance by DFID.	Health insurance offshoot of microfinance NGO. Operatesfull-service model: Grameen Kalyan is the insurer.	Health insurance offshoot of microfinance NGO. Operatesfull-servicemodel: BRAC is the insurer.	Commercial bank. Proposed scheme operates full-service model, with insurance being provided by the Ethiopian Insurance Corporation	NGO. Now operates partner-agent model: as of 2003, insurance is provided by a separate insurance company
Customers	Any self-employed woman, whether member of parent SEWA organisation or not. Insurance of husbands' lives and hospital charges available at additional charge	Patients of six named hospitals who hold an 'insurance card' (some of them FINCA customers)	Any, but Grameen Bank customers pay a discounted premium	Any, but BRAC customers pay a discounted premium	Any: voluntary participation	BASIX members only
Risks covered	Health, life and asset insurance against fire, flood and natural calamities; husband's death and hospitalisation	Hospital costs	Maternal and child health, check-ups, subsidised drugs	Maternal and child health, check-ups, subsidised drugs, hospitalisation partly paid for	Rainfall more than 20% below moving average	Original scheme: shortfall of yield below specified level

Table 3 (cont'd)

Defences against moral hazard		Co-payment (registration fee), exclusions*, payments limited to cases where patients hospitalised	Single risk which the insured cannot influence	Single risk which the insured cannot influence	Single risk which the insured cannot easily influence	Peer monitoring of claims; claims assessed and verified by a village committee which includes a BASIX representative. At least 50% of indemnity value must come from member's own deposit in village fund
Defences against adverse selection		1. Life insurance compulsory for all borrowers 2. More than 60% of all members must enrol before coverage is extended to a village bank	Hospitalisation claims reviewed by doctor		Under rainfall insurance the risk suffered by all claimholders is uniform in the event of deficient rainfall, and individuals with low yields do not have a superior incentive to seek insurance in relation to individuals with high yields.	
Premium($/ annum)	Three options: I:$1.53 II: $3.67 III: $7.44	$46 (Ushs 69000) per 4 family members	Taka 100-120/$2.50 (non-members); Taka 50/$1 (members)	100 taka plus 2 taka/ visit(members); 250 taka plus 5 taka/ visit (non-members)	6% of basic loan amount for rainfall insurance	Charged on a per acre basis, linkthe product to total agricultural activity rather than loan size and giving the farmer the flexibility to buy multiple units based on affordability.
Targeting devicesand other special features	Richer members can become life members of scheme through fixed deposit of Rs 700; these payments cross-subsidise poorer members. Two-thirds of premium is subsidised by grants from GTZ and Ministry of Labour		Discounts for ultra-poor.	Discounts for ultra-poor		Village self-management—of the 20% mentioned above, 10% goes to a village fund, 5% to an inter-village fund (which finances payouts) and 5% to BASIX.

* FINCA exclusions: the scheme will not cover – complex dental surgery other than as a result of accident; optical appliances; hearing aids; cosmetic surgery; intentional self-inflicted injury or illness; injury or illness arising out of intentional involvment in riot, civil commotion, affray, political or illegal act by a member; alcoholism or drug addiction.

else can influence[12]. In the BASIX crop-insurance scheme the payout is based on the deficiency in the value of the harvest, which would appear to invite moral hazard, but the defence remains, by contrast with the old Indian crop insurance schemes, that this payout—see (i) above - is based on evidence of good husbandry during the planting and growing season.

(iv) Of the schemes mentioned, only FINCA health employs an explicit defence against adverse selection, which is to require at least two-thirds of all group members to be members of the insurance scheme.

(v) None of the insurance schemes listed below is free-standing, except the World Bank 'Ethiopia micro' weather insurance scheme; all are layered on top of an existing microfinance operation (and in the case of SEWA, a number of trade-union and social-welfare functions also). This has multiple implications:

- There is a cost saving on the administration and in particular the salesmanship of insurance, since the infrastructure with which to disseminate information about the scheme is already in position.
- Specifically, many clients only join insurance schemes because of their existing bond with the 'parent' microfinance organisation. This often, sometimes in conjunction with an external shock (see below), acts as a recruiting device for a new and unfamiliar microinsurance scheme that overcomes, for new members, the barriers of cost, unfamiliarity and distrust associated with membership. Often pre-existing *groups* of microfinance members have joined the scheme together.
- In this sense, social capital is an input into, as well as hopefully an output of, the microinsurance scheme.
- Over and above the 'social' benefits of a lower disaster risk for a given level of assets and income, the sponsoring microfinance organisation, in all of these cases, reaps the benefits of lower default rates (this was precisely the purpose of the scheme in Grameen Bank, as we saw).

(vi) All of the schemes have negotiated reinsurance for themselves on local or international markets—somewhat in contradiction of Brown and Churchill's claim that (2000, p. xiii) 'reinsurance is largely unavailable for microinsurers'.

(vii) Explicit targeting on the poor, in the sense of concessional benefits for those below a certain income level, is practised only by the Bangladesh institutions—Grameen and BRAC—each of whom offer lower premiums to the 'ultra-poor'—and by the Ethiopia macro scheme, which has the advantage of being available to landless workers and other vulnerable individuals who are damaged by drought indirectly rather than directly. There may also be a certain amount of self-targeting, in the sense that it may be particularly the most vulnerable who are risk-averse, and the risk-averse who opt for insurance. As an additional offset, it seems to be that the fraud/moral hazard problem may be less with low-income customers—as there is some evidence from the insurance trade that moral hazard risk declines with income. As the general manager of the COLUMNA insurance company in Guatemala put it, "Thinking about how to take advantage of an insurance policy seems to be something that declines with income and education" (cited in Brown and Churchill 2000, p.69. In other words, targeting on poor clients acts as a multiplier—as an additional defence against moral hazard, as in the case of microfinance.

12 For other attempts to apply the Gautam, Hazell and Alderman model in Africa see Skees, Varangis, Larson and Siegel(2005) and Mosley(2001a), also Appendix 1 below.

The question now for discussion is whether some further learning may be possible from the experience of these schemes which may make possible an enlargement and a diffusion of their benefits. This must be placed in context: microinsurance is by no means the only instrument of poverty reduction or even of risk reduction. *Prima facie* there is a great deal to commend Brown and Churchill's observation (2000, p. xii) that "savings are more effective than insurance for providing protection against common stresses (whereas insurance provides protection against larger losses that occur more infrequently)". The role of savings and other non-insurance forms of microfinance is discussed in Section 4.

In the hope of stimulating such learning we take as point of departure a simple model of the pricing decision, based on the 'break-even' condition that the typical microinsurance organisation is a nonprofit organisation seeking to maximise social benefit subject to the basic requirement of financial sustainability, or break-even. We shall begin by presenting the model in its simplest possible form, leading to an 'optimal premium' formula which we then elaborate for externalities and anti-moral hazard defences.

The simple break-even condition may be written:

Net revenue from premiums > (cost of claims + administrative expenses + cost of reinsurance)

In symbols: $(1-p)R > I + a + r$ (1)

where: p = default rate for insurance premiums, R = level of insurance premium, I = value of indemnities (claims), a = administrative expenses (salaries, costs of data-gathering and monitoring, etc.) and r = costs of reinsurance, all expressed as a proportion of the total portfolio value.

Given that for moral hazard reasons an excess has to be deducted (see Appendix below):

$I = (1-e)V$, where V = the estimated value of the asset at risk (2)

Combining (1) and (2), the break-even insurance premium solves[13] as

$R^* = ((1-e)V + a + r)/(1-p)$ (3)

It can be expected that the value of the break-even premium R^* will fall as the volume of business increases, with the spreading of set-up, administrative and promotion costs over a larger and larger number of accounts (Figure 1a). This basic downward-sloping relationship, exhibiting economies of scale, will shift upward with the range of risks covered, the level of insurability, and the size of the insurance premium. It shifts downward as defences against moral hazard, such as those discussed in table 2, are built into the system. The danger in such a case is that if demand is mainly latent and in any case very steeply price-responsive, the market for insurance may be initially very small. With high break-even premiums and low volume, the infant insurer is very fragile and is at risk of never becoming viable and never learning the lessons of experience, because it never has the resources with which to do that.[14] At the beginning of its life, at a point

13 In those several cases (e.g. weather insurance) where the potential claim consists of an adverse shock (e.g. a drought) multiplied by the response of people's livelihoods to that shock, it may be useful to write that claim I as the product of the shock ρ and the elasticity of response of livelihood ε to the shock, such that the break even premium becomes
$R^* = (1-e)\varepsilon\rho + a + r)/(1-p)$ (3')

14 The experience of SEWA, Ahmedabad, is relevant on this point:
'In the early days many claims were rejected and many took a long time to settle—insurance companies were reluctant to send assessors into a curfew-affected area—and to prove—many clients had never seen a photocopier. So our costs were extremely high then. Now all claims are settled within a week to ten days, and our costs have come down a great deal. But they have only come down because we were able to keep going for a number of loss-making years while our demand built up' (interview, SEWA Welfare, 5 April 2002).

such as A on Figure 1, it is in a precarious position. Charging a high break-even premium to a, by hypothesis, unknown clientele, it may never be able to build up a market, and if it gambles on charging less than break-even, the risk of financial collapse is ever-present. The organisation needs to move speedily down its cost-curve from A to B, building up its clientele, or else die, a predicament which David Hulme and I (1996, Chapter 2) have referred to as 'the knife-edge'.

The solution to this problem has typically been found either in the form of subsidy from an external sponsor, or in the form of support from a 'parent' microfinance organisation—often, as in the case of BRAC and Grameen, an organisation with an established reputation which expects insurance to be able to confer financial and other synergies to it (see Appendix 3 below). Luckily, such external or internal support can be justified from the external benefits which insurance confers, and does not have to be justified on purely pragmatic grounds.

These external benefits are essentially of four kinds:

(i) *Knowledge achieved by experimentation*. By experimenting with different institutional designs, 'pioneer' insurers create for their successors ideas and information concerning what will and will not work in a particular environment. They also provide support for other parts of the organisation, as in the case of Grameen Kalyan previously discussed (see page 5 above). This information is free to the beneficiaries, inside and outside the microinsurance organisation, and thus confers an external benefit on them. But it can only exist if the pioneer is able to survive for long enough to develop and test the original design. The issue of complementarity and positive interaction between different parts of a microfinance organisation is potentially important, and not much discussed within the vast microfinance literature (see e.g. Hermes and Lensink 2007). Some experimental discussion of complementarity is therefore attempted in Appendix 3 below.

(ii) *'Bonding social capital' benefits achieved through lower individual and group vulnerability*. An insured group of microfinance clients is less vulnerable than an uninsured group (providing that payouts happen reliably and on time).[15] Similarly, the variability of income within the group is in principle less and the likelihood that clients will be stopped from making loan instalments by a sudden negative shock is reduced, enabling trust between clients within groups ('bonding social capital') to increase[16]. This improvement in social capital is an external benefit to the group—a reduction in its costs of doing business, caused by the insurance, for which it does not pay.

(iii) *'Linking social capital' benefits achieved through an improvement in clients' awareness of service quality*. Evidence from BRAC (discussed below) suggests that the consumption of insurance, in combination with training, acts as an empowering mechanism: clients meet more often and as a consequence discuss more frequently the quality of the healthcare they are receiving, putting pressure on the provider to improve that service. In this way, the introduction of the insurance appears to trigger social capital between group members and health service provider—benefits for which, again, the group members do not pay, so that they constitute an external benefit of the scheme.

15 From the point of view of making microfinance schemes work, a lot depends on the practicalities of whether this is in fact the case. For the case of the Indian Comprehensive Crop Insurance scheme of the early 1990s, where payouts were restricted to so few individuals and happened so late that the variance of the incomes of the insured was actually greater than the variance of the incomes of the uninsured, see Mosley and Krishnamurthy (1995)

16 For a general discussion of the social capital concept in relation to the data from our institutions, see Mosley et al. (2003), Chapter 6 .

Table 4. FINCA Uganda: computation of elements in optimum premium formula (2')

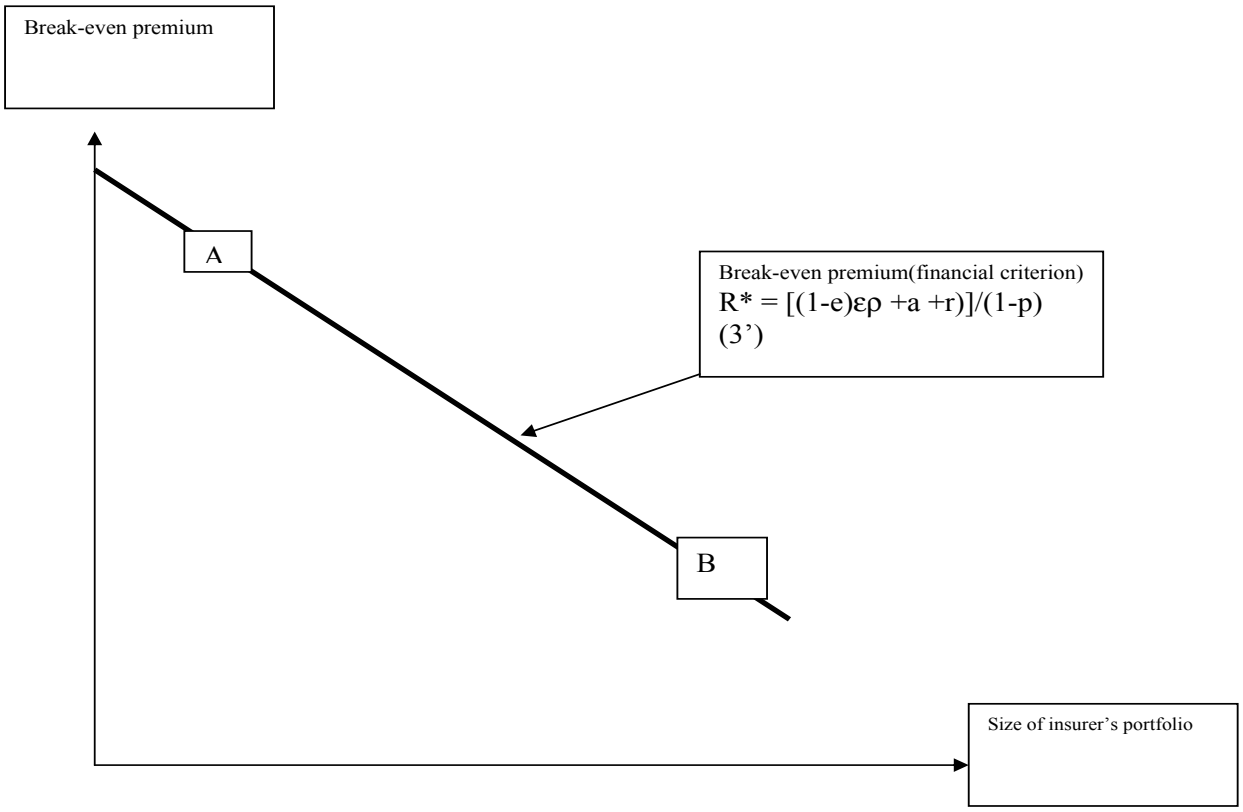
Symbol	Meaning	Actual estimated value, mid-2003		Estimated 'optimal' value(%)	Method of computation
		$ per (insured) family of four	% of average loan ($200)		
V	Average value of 'asset at risk'; here expected value of medical claims per annum	28	14	4	Estimated annual average claims Sh14000 p.a. per person (1)
e	Value of excess (deductible)	1	0.5	3	
a	Average administrative cost (staff, IT, etc.)	34	17	17	Estimates from MicroCare, interviews 12/2 and 26/8 2003
p	Average default rate on premiums	0.5	1.5	1.5	Average FINCA default rate for insured patients, see Mosley et al. 2003, Table 4.6.
r	Costs of reinsurance	8.6	4.3	4.3	Imputed cost estimated from Africa Reinsurance, Nairobi
r* = ((1-e)V +a +r)/(1-p)	Break-even premium, financial criterion	74	37		Application of formula in first column
	Actual premium	60	30		Sh 120,000 per family of four.
X	Value of external benefits to non-insured: (ii) bonding social capital benefits through stabilisation of income(Note: No attempt to estimate external impacts (i), (iii) and (iv)				Estimated externality = 18% of increase in investment of insured over uninsured (see Mosley et al. 2003, Table 4.6)
R* = ([(1-e)V +a +r)/(1-p)] – x)	Break-even premium, economic criterion				Application of formula in first column (break-even formula corrected for externalities)

Sources: (1) Average of data from MicroCare (interview 26/08/03) and sample A (interviews 14/02/03 and 26/08/03)

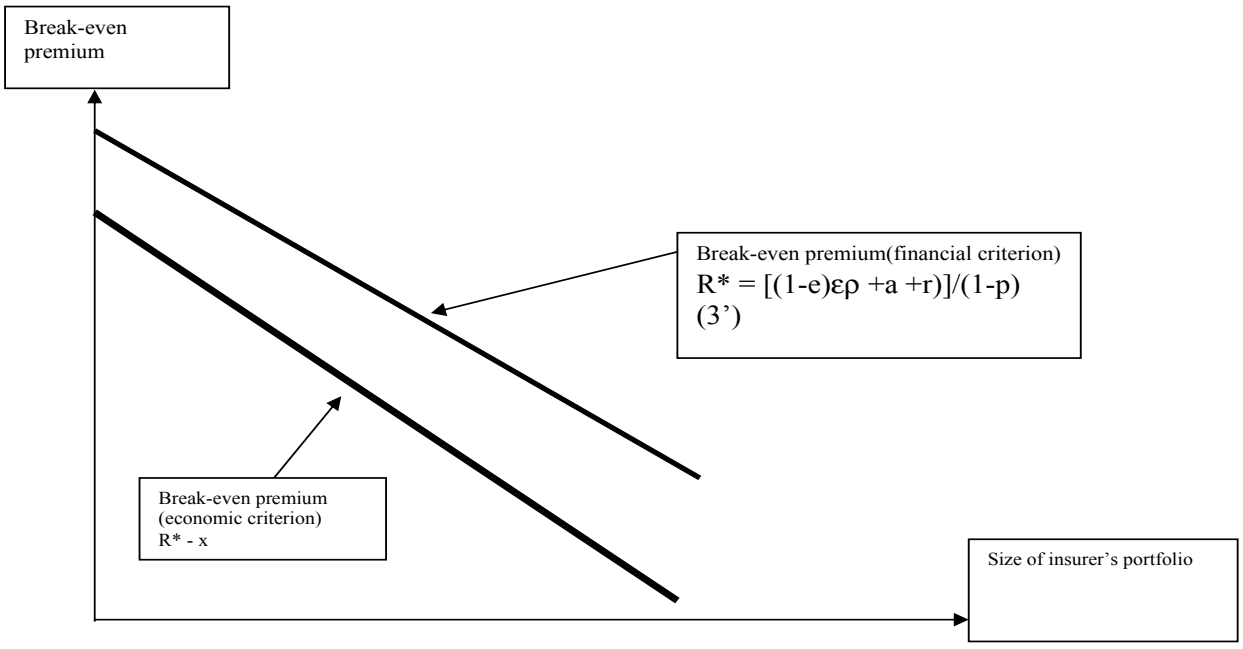
Note: The implication would appear to be (i) that MICROCARE/FINCA is currently, on financial criteria, charging too little for its insurance, however (ii) that there are very substantial externalities for which sponsor subsidy would be appropriate.

Figure 1. 'Break-even' insurance premia

(a) financial criterion only



(b) financial and economic criteria



(iv) 'Beneficial contagion' in which benefits acquired by the insured by virtue of their insurance then increase the utility of the uninsured—cures from a contagious disease which the sick seek only because they are insured are an obvious example.

Let the combined value of these four externalities be X; in that event, the economic criterion for break-even, by contrast with the financial criterion (3) will be

$$R^* = [\{(1-e)V + a + r)\}—X)]/(1-p) \qquad (3")$$

which takes account of the value of these external benefits. If these are paid, for example by an aid donor or other sponsor, then the long-run cost curve represented by (3) falls. As this new cost curve is depicted in the lower part of Figure 1, the introduction of the new criterion enables the institution to make a surplus (to the extent of the shaded area between the demand curve and the new cost curve (3")), so that it becomes viable.

For one institution—FINCA Uganda—we can try and put some empirical flesh on these bones. We estimate the value of the parameters for that institution as follows:

The implication would appear to be (i) that MICROCARE/FINCA is currently, on financial criteria, charging too little for its insurance, however (ii) that there are very substantial externalities for which sponsor subsidy would be appropriate.

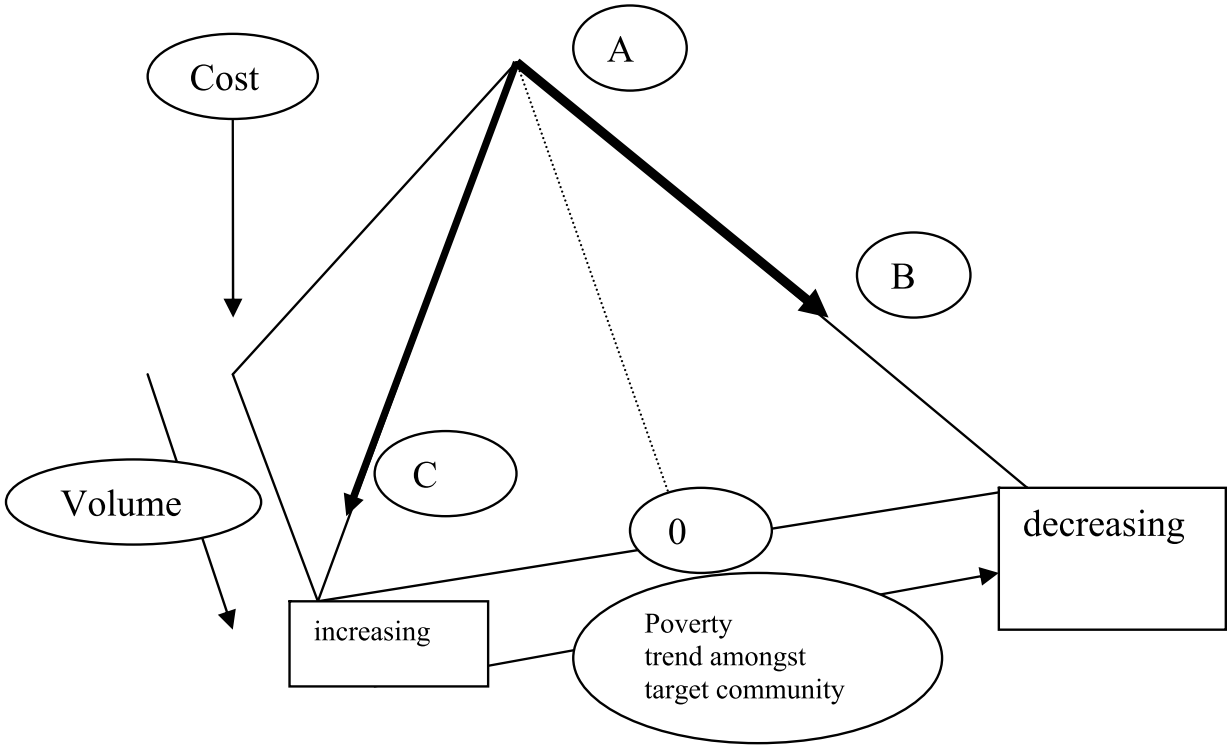
How can a microinsurance organisation traverse the knife-edge from A to B, and make itself safe? Churchill et al. (2006, pages 564-582) suggest two particular routes by which this can be done.

— *limit the benefits offered* (one practical suggestion made is to stick to life insurance or credit protection, as 'safe', predictable-risk insurance instruments. Another idea, used in practice by SEWA and other organisations, is to put an upper limit on the payout that can be made. A third is to focus on major perils, such as hospitalisation in the case of health insurance)

— *focus on cost-efficiency* (for example, use low-cost premium payment methods, such as automatic deductions from a member's savings account, and low-cost distribution systems, such as microfinance institutions themselves. Churchill et al. (2006) argue that, as in microfinance, minimising 'default' on premium payments is also crucial; and subsidies obtained from government and inside the parent organisation can also help).

As a survival strategy, seen from the point of view of the vulnerable microinsurance organisation, all this is fine—and, to state the obvious, an organisation which cannot survive cannot provide benefits to the poor or to anyone else. However, from the above list of ideas it is not clear which ones will help the poor and which ones will not. So let us bring poverty reduction into the story: there are various ways in which a microinsurance organisation can traverse the knife-edge, some of them poverty-reducing and some of them not. Taking Figure 1 into three dimensions, let us examine what options are available. The cost-curve of Figure 1 now appears not as a slope but as a mountain, and the initial position, point A, is an exposed and dangerous mountain-top, from which the infant microinsurance organisation can descend either in a poverty-reducing (A to B) or a non-poverty reducing route, from A to C. How can we ensure that the mountaineer will take the correct route, from A to B?

Figure 2: The right and wrong way down the 'knife-edge': poverty-reducing and non-poverty-reducing technologies for bringing down costs and achieving viability



We now suggest four ways in which the mountaineer can attempt to descend the mountain by the correct route, and make sure that his expansion path is pro-poor. Exploring these pro-poor routes off the mountain will occupy the rest of the paper.

(i) The organisation can diversify its product in a poverty-oriented direction .

Thus Grameen and BRAC of Bangladesh have diversified from life insurance into health insurance; BASIX from agricultural insurance, which it has now given up, into livestock and weather insurance; and SEWA, which began by offering only a basic life insurance product, into insuring healthcare for clients, their spouses and now (2003) their children. Even more exciting, it may be possible to diversify, as the World Bank is seeking to do in Ethiopia and other African countries, into weather insurance at the macro level in support of the national 'productive safety net', which potentially may be supportive of people at a level of poverty not covered by previous insurance schemes.

(ii) The organisation can seek to make itself more accessible to the poorest, by a range of routes:

Direct subsidy, as practised by the Grameen Bank and BRAC through charging lower premiums to the ultra-poor;

Savings linkages, to make a safe savings instrument available to the insured person and provide additional protection both for the client and the insurer;

Direct targeting of client organisations with high impact on the poorest (these will not necessarily be the poorest entrepreneurs, as it is often possible to achieve indirect impact on poor members of the labour force by targeting the nonpoor individuals who employ them—see Mosley and Rock (2004);

Marketing to overcome misperception by poor clients of the risks to which they are exposed[17]. Imaginative marketing strategies have been used by some organisations to overcome this blockage[18]. But often what has caused a big surge in demand has nothing to do with marketing policy, but rather was an extraneous event which has made individuals only too well aware of the risks to which they are exposed—such as the Gujerat earthquake of January 2001, following which membership of the SEWA insurance scheme rose.

(iii) The organisation can subsidise the provision of those external impacts mentioned above which are pro-poor, as indicated in the lower part of Figure 1.

(iv) The organisation can (recalling the argument of Table 1) use methods of what we call quasi-insurance, social protection delivered by an instrument which formally is not insurance, to supplement the poverty-reducing impact of its microinsurance measures.

We can sum up our basic hypotheses about what microinsurance is expected to deliver in terms of a simple metaphorical construct, reproduced here as Figure 3.The low-income household is visualised as trying to steer a desired course between the two objectives of reduced vulnerability to risk (represented on the horizontal axis) and increased yield on its assets(represented on the vertical axis). In relation to this diagram, we shall argue that all of the strategies to be discussed in the final part of this paper (pro-poor targeting, pro-poor product diversification, and 'quasi-insurance'; see table 6 below) as seeking to move the client in the direction indicated by the thick black arrow—risk reduction, without significant reduction in expected assets, for low-income individuals. But is this what is actually achieved on the ground? We now turn to some impact assessment studies of microinsurance to help us answer this question.

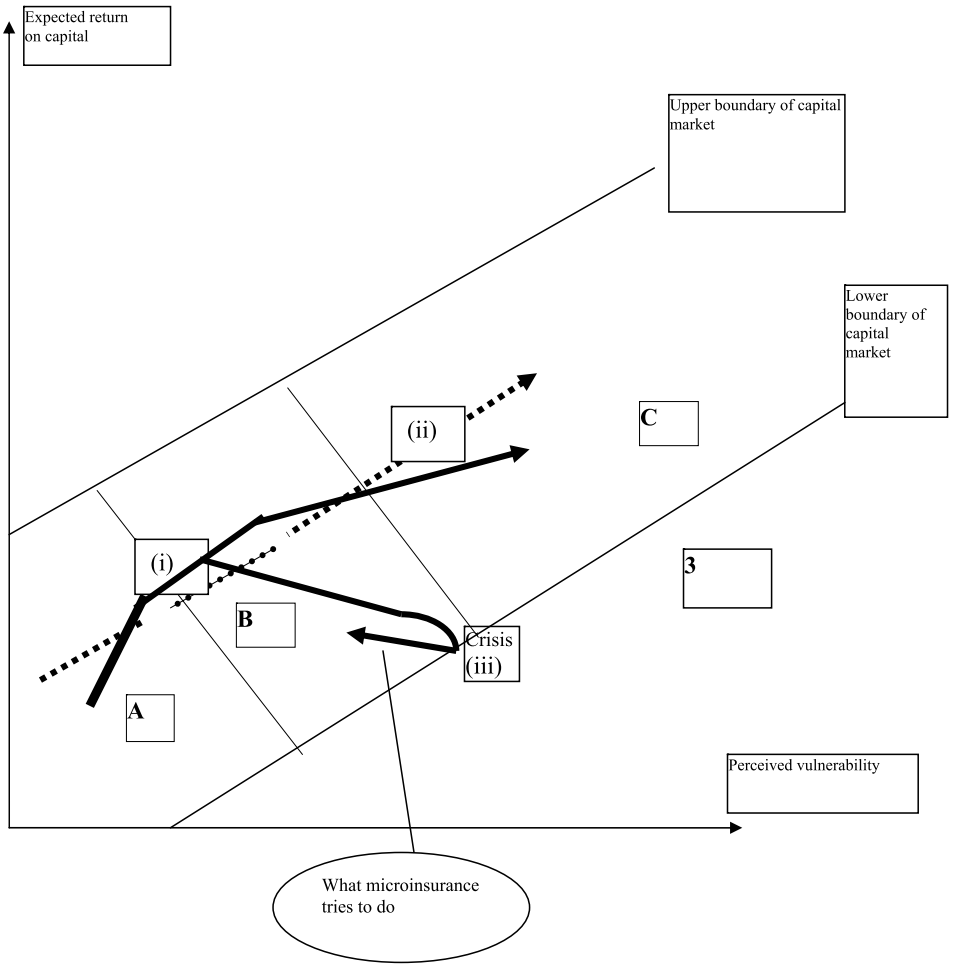
3. What does microfinance achieve? Some preliminary findings

We have impact data for five microinsurance schemes, four of them in the general field of health and one in the field of weather insurance; however the evaluations have been carried out by different people, and therefore are of only limited comparability. All of the evaluations use 'classical' control-group methods on a group of insurance clients and non-clients in both institutions. The schemes in question are the health insurance schemes of the giant Bangladeshi microfinance conglomerates, such as BRAC, Grameen and Society for Social Services (SSS), plus FINCA Uganda, another health microinsurance scheme, and the World Bank's Ethiopia weather schemes. The results are recorded in Table 5, and they are divided into four groups: indicators of *operational performance;* indicators of *client-level impact*; indicators of *wider impact* which go beyond the individual client; and *side-effects.* Only in the second and third cases can we get any clear picture of the poverty dimension of impact.

17 As the director of Grameen Kalyan put it, "people are not aware of their health before they become bedridden" : Interview, Sheikh Abdud Daiyan, Dhaka, 8 January 2002.

18 The Peruvian microinsurance organisation IFOCC 'created simple figures to help clients understand the benefit and the relative cost of the insurance. In addition, IFOCC helped clients to understand the relative size of the premium payments by asking them to think of the funds received from a loan as a jaguar, the interest paid on the loan as a rabbit, and the insurance premium as a cuy or guinea pig'. Brown and Churchill(2000), page 20. More broadly rapid diffusion of insurance membership may be used by imaginative use of local opinion leaders, see the case of BRAC below.

Figure 3. Microinsurance and portfolio choice



Key to symbols:

Zones of the capital market and patterns of borrower behaviour:

A : low risk, low yield, very low income and asset levels, financial services demanded as 'protectional' services, mainly in the form of savings. Social capital almost entirely 'bonding' (e.g. solidarity groups)

B : moderate risk, moderate yield, financial services demanded mainly for working capital with very small fixed capital investment (see Table 3). Social capital mainly 'bonding', some 'linking" to groups in other activities and regions.

C : high risk (unless insurance available), high average yield, financial services demanded for fixed capital equipment (esp. housing and vehicles) and labour hiring as well as fixed capital. Social capital 'linking', 'bonding' and 'bridging' to upper levels of administration.

'Trajectories':

(i) – biased towards avoidance of risk, as is to be expected at low levels of income

(ii) – 'the centre of the river' – a 50/50 balance between yield and vulnerability, more to be expected at higher levels of income.

(iii) – an adverse shock, partly corrected in the diagram by recourse to insurance.

The two parallel lines sloping north-eastwards represent the upper and lower boundaries of the capital market, which can be seen as a rather dangerous river to be navigated by means of a livelihood strategy ; empirical observation (e.g. Sebstad and Cohen 2000; World Bank 2000) suggests that poor clients will typically do anything to avoid the right bank of the river, where lurk the crocodiles of financial exclusion, and will therefore attempt while they are poor to steer a trajectory such as (i). Households in a more secure position, in relation either to physical or social assets, may gravitate towards trajectory (ii). In this context we can see the potential role of insurance – households which experience an adverse shock, and which risk being caught in a vicious circle of decapitalisation, may be able to pull themselves out of a drift towards catastrophe by drawing on an insurance facility which fulfils the urgent need of making them less vulnerable, at the cost of only a small reduction in rate of return (trajectory (iii)).

Table 5. Microinsurance institutions: Indicators of targeting and impact

	Health schemes				*Weather schemes*
	FINCA Uganda	*BRAC Bangladesh*	*Grameen Kalyan*	*SSS*	*BASIX, India*
Activities supported	*Health insurance in support of microfinance activities*	*Health insurance in support of multiple development activities*	*Health insurance in support of multiple development activities*	*Health insurance in support of microfinance activities*	*Index- based weather insurance, free- standing*
1. Operational indicators					
Profitability	About 73% of costs of claims plus operations currently covered from premiums.	About 80% of costs of claims plus operations currently covered from premiums.	100% costs are being recovered from revenue generation in the old health centres	45% costs are being recovered from revenue generation	More than 100% costs recovered; no subsidy
Arrears rates	1.6% of insured, 1.4% for uninsured (i.e. dfference 'positive' but insignificant)[1]		No difference in the arrears rate between program and control areas	Arrears rate in the program area is 1.5%, but it is zero in control areas	Minimal
2. Indicators of direct impact					
Savings	Positive (significant at 5% level)[2]		Mean difference between program and control areas is positive (significant at 1% level)	Mean difference between program and control areas is negative, but not significant	
Investment	Positive* (significant at 1% level)[2]	Positive	Mean difference between program and control area is positive (significant at 1% level)	Mean difference between program and control area is positive (significant at 9% level)	Substantially higher among clients than among a control group of non-clients
Educational expenditure	Positive* (significant at 5%level)[2] .	Positive	Mean difference Negative (not significant)	Mean difference between program and control area is positive (not significant)	
Loan growth	Positive (significant at 1% level)[1]		-	-	
Vulnerability	83% of respondents say that membership of the scheme gives 'more peace of mind'		88% of the microentrepreneurs in program area compared 12% in control area say that they do not have any anxiety in managing medical expenditure	81% of the microentrepreneurs in program area compared 19% in control area say that they do not have any anxiety in managing medical expenditure	
Health indicators			Mean difference of ADI index between program and control area is positive (significant at 5%level)	Mean difference of ADI index between program and control area is positive (insignificant)	
Income	Scheme members are better off than non-scheme members)[2]	The scheme has been extended to a number of ultra-poor clients			Average beneficiary income range Rs 12000- 30000 pa (ie below $1/day)
Assets					80% have land holding less than 2 hectares

Table 5 (cont'd)

	Health schemes				*Weather schemes*
	FINCA Uganda	*BRAC Bangladesh*	*Grameen Kalyan*	*SSS*	*BASIX, India*
Activities supported	*Health insurance in support of microfinance activities*	*Health insurance in support of multiple development activities*	*Health insurance in support of multiple development activities*	*Health insurance in support of microfinance activities*	*Index- based weather insurance, free- standing*
3. Indicators of indirect (wider') impact					
Financial risk to sponsor	71% of respondents feel 'less likely to get into financial trouble since joining the scheme'[2]				
Stability of income	Insignificant difference between treatment and control group[2]	Positive*	Positive but insignificant difference between program and control areas	No difference between program and control areas	Higher amongst clients than in control group
Social capital and intra-group relations	Improved levels of trust within solidarity groups[2]	'The scheme has encouraged us to take more interest in the quality of healthcare we are receiving'			
Incorporation of socially excluded	Little evidence (indeed, scheme members are better off than non-scheme members)[2]	The scheme has been extended to a number of ultra-poor clients			Generally progressive (eg average beneficiary income below $1/day)
4. Side-effects					
Relations with project staff	Became more neglectful in some cases[2]				
Care for personal health (moral hazard)	No evidence of moral hazard (DPT vaccination and malaria protection rates same between treatment and control group)[2]				

Sources: BRAC: field tests, Sultanpur, April 2002. FINCA.

1 Survey of 200 clients, January 2003, from FINCA records;

2 Survey of 62 clients from Nsambya and Mukisa branches, Kampala, interviewed February 2003. Data for survey (2) available from p.mosley@sheffield.ac.uk and more detailed results are provided in Mosley(2003), chapter 6. Ethiopia results from World Bank(2006). BASIX: from BASIX (2007) and Manuamorn (2007). Malawi and Ethiopia micro: from World Bank(2006); Ethiopia macro: from Syroka and Willcox(2006).

We may briefly summarise the general thrust of these impacts as follows. All the insurance schemes are quite close to being viable in their own right, and there is some, at this stage very mild, evidence that they improve loan repayment rates; insurance appears to have a positive impact on physical and human capital expenditures, apparently mediated via higher absorptive capacity for loans; insurance clients perceive themselves as less vulnerable than non-clients[19]; and several of the 'wider impacts' on which we speculated above do indeed materialise, as we discuss below.

19 As movingly described by respondent 20, an insurance scheme member: "My children were sickly and I used to spend so much at a time I wasn't expecting, but now I have a plan to spend I get enough time to look for the money (because) when illness comes it doesn't give you time to first look around for money".

Now let us focus on the poverty reduction impacts, both client-level and 'wider'; the effects in Table 5 (except in the World Bank Ethiopia scheme) are measured separately for clients falling below the poverty line and others, and only the effects for clients below the poverty line are recorded in the table. These effects fall, as discussed earlier, into five distinct categories:

(1) Effects operating via *individual well-being*—for example, all the Bangladesh schemes—Grameen, BRAC, and SSS—improve self-reported health in relation to that of a control group.

(2) Effects operating via *stability of income and expenditure,* which transmitted scheme benefits from clients to the wider community of non-clients. These appear, in both countries, to have raised physical investment; often in the business[20](e.g. respondent 12, a chicken farmer: "Before the scheme began I used to have less birds and I used to feed them in home-made feeders. Now all my hens have factory-made feeders. I've so far bought 3 feeders. Drugs for them are now more affordable"), but even more typically in the home, e.g. respondent 21 who initially bought building materials to improve sanitation by constructing bathrooms and toilets. When the income doubled she would buy a motorcycle for business transactions. Land purchase was the most commonly cited form of investment under this heading. Sometimes insurance raised human capital investment also, e.g. respondent 4: "I feel as a result (of this scheme) I have put my children in better schools as an investment." There were also, in Uganda, minor effects on labour hiring and this had a small multiplier effect on poverty reduction. Note that the persons quoted were members of the control group, i.e. *non-clients* who benefited from the scheme as a consequence of local expenditure patterns becoming more stable and clients investing more. For this impact to happen what is vital is that insurance have the effect of making people's expenditures more stable and predictable: likely, but not inevitable.

(3) Effects operating via *social capital and interpersonal relations.* These are both positive and negative. Within local communities there is compelling evidence that 'bonding' social capital, in the sense of trust, has indeed been strengthened as a consequence of the advent of insurance. In many cases this was as a consequence of expenditures, and liabilities, becoming more predictable, so that individuals had an increased incentive to trust one another. A particular aspect of this predictability was reduced reliance on informal emergency borrowing, e.g. respondent 4: "because of the medical insurance scheme I am not worried of borrowing money from friends and family"; respondent 5 "in case of emergency I don't have to borrow money to pay for medicine"; indeed, for some respondents largesse was now possible e.g. respondent 17: "I am now not worried when my relatives visit with their endless problems".

The effect of insurance on 'linking' social capital—between those local communities and other organisations—is much more complex: in Bangladesh, there is evidence that the insurance scheme has incentivised clients to find out more about, and improve, the quality of the medical service, but among nearly half of the Ugandan clients who answered our questionnaire it was clear that they felt service had deteriorated and that they were not in possession of any levers by which they could improve it. Many of them were responding based on *actual or perceived exclusions from the scheme:* for example respondent 1 stated: "No, relations with the hospital have not improved. When I was introduced to this scheme I was told all illness shall be treated…" Respondent 7: "They want cash so the scheme only meets less expensive illnesses like malaria, cough etc but not blood pressure, diabetes, TB, AIDS etc." Respondent 28: "I wish (blood) pressure patients could be included on the scheme." As it happens, the true exclusions from the scheme are few, but there is a stipulation that "continuous medication for chronic diseases (e.g. diabetes, high blood pressure)" is

20 It was a very common observation that availability of insurance reduced the need to deplete investment by raiding the business to finance working capital.

excluded; the definition of 'continuous' is clearly ambiguous but there is a clear policy of not excluding any patient according to diagnosis.[21] Most doctors in the scheme appeared to interpret it as meaning that they should not prescribe for drugs in excess of specified cash limits per patient per cycle. There are also criticisms based on quality of care. For example, respondent 24 complained that the insurance patients were treated as second-class citizens: "(The doctors) attend to those with the cash first yet they (the insured patients) have (also) paid."[22] She also complained that the hospital staff whose job it is to confirm the insured status of patients do not provide round-the-clock cover (especially at weekends), resulting in cash payments being demanded of insured patients. A fairly typical grumble is respondent 36: "Relationship is not good because Micro-Care clients are treated as though they are not paying any money and also the nurses take too long to attend to Micro-Care clients, discouraging from going back to the hospital." It was also complained (e.g. by respondent 41) that doctors working for the insurance scheme reduce the dosage prescribed by other hospital doctors; but this complaint, we may note, came from a client who insisted that the Micro-Care doctor "was never there." Some restrictions on membership were also resented e.g. respondent 13 noted that "I wish we were allowed to add more people on the card" (presumably from outside the group); Again, these appeared to be based on a misperception, since patients *can* be added to a family policy without difficulty at specified rates; but this is one more illustration of the proposition that misperceptions can be powerful. What has happened is that FINCA (by contrast with BRAC) has become a junior partner with a rapidly-growing insurance enterprise to whom low-income microfinance clients are 'nothing special', and as described above, feel they are being exploited. This suggests that the often-praised 'partner-agent' model of microinsurance,[23] under which a microfinance provider buys insurance from a third party for its clients, may have its problems if the insurance provider, as here, grows too large to care about the quality of service provided to a poor and ill-favoured group of clients.

In the World Bank Ethiopian weather schemes, the social impact was limited, in the case of the micro-scheme, by the choice of partner NGOs. The Bank was only willing, in their pilot scheme, to work with NGOs and with financial institutions linked to the ruling coalition party—and hence forfeited the opportunity to penetrate to the ultra-poor. (Stefan Dercon, private communication, 6 May 2006) .This limited the downreach of the Ethiopian micro crop insurance scheme in Alaba Wereda, in contrast with several crop insurance schemes in India, notably the BASIX scheme, which have been implemented by NGOs independent of government and were better able to reach the poor.

(4) There are also effects operating via *the downward extension of the market for financial services.* Especially in Bangladesh, pressure has been exerted to make sure that some ultra-poor clients join the scheme, and so a social inclusion impact has been deliberately engineered into the implementation of the scheme. Again, this effect is not guaranteed. In Uganda, for example, in spite of our prior hypothesis that the demand for insurance would be greatest amongst the poorest, insurance scheme members are actually richer than the control group of non-members.

21 "As a matter of policy MicroCare does not screen clients for particular diseases or exclude according to diagnosis. We strongly feel that HIV-positive people should have equal access to medical services". Interview, MicroCare Kampala, 10 February 2003.

22 In the same vein, respondent 39 'They push us behind the queue. Especially when it comes to payment because we have to show our cards and they decide to put all the scheme members behind and deal with those who have money.If I arrive early the nurses and doctors will treat us but after that is when the problem starts since I arrive at for example 10am I will leave the hospital at 4pm which (makes it just as sensible to) go to a private clinic and pay rather than go to hospital'.

23 See for example McCord(2000), Brown and Churchill(2000)

(5) Finally, there are effects operating through the provision of *an institutional model.* (We have not attempted to quantify these in Table 4). For example, information on the design of the existing, pioneering, microinsurance institutions and the lessons which can be learned from their experience can be transmitted almost costlessly—via the internet and other means - to those wishing to emulate and improve on the precedents.

The crux of our argument is that since the beneficiaries of nearly all these impacts are not those who pay the premium, there will be under-investment in a state of nature at the bottom end of the microinsurance market (as the World Bank eloquently noted) and there is a case for institutional intervention to remedy a situation which is still not very far away from total market failure. One way of doing this is by means of a subsidy which enables the scheme to break even on economic, rather than on financial, criteria (as per our formula (3'); but what needs to be subsidised is not only the level of premium, but rather the creativity which enables institutional models which are properly adapted to local environments to be brought into being. So far, just a very few NGOs have managed this, but at least their number is growing.

4. 'Quasi-insurance': Financial substitutes for microinsurance proper

As discussed above (Table 1), many organisations which are not insurers, including lenders, nonetheless provide an insurance function: as remarked by Morduch (1999, pages 1605-1606): "microfinance borrowing is shown to improve the ability to smooth consumption across seasons, and entry into the programs is driven in part by insurance concerns…" Substantively, the results suggest that benefits from risk reduction may be as important (or more important) than direct impacts on average levels of consumption. In every case where a choice has to be made concerning choice of risk management strategies it is desirable to assess whether such non-insurance options may offer a lower-cost or more effective method of protecting the poor than microinsurance. We call this approach *quasi-insurance*. The ways in which microfinancial services may be able to achieve this function are multiple. For illustration, we consider here just four outstanding cases:

1 'Risk-minimising' credits for the ultra-poor. The very poorest, who are most exposed to risk, do not often take advantage of microfinancial services, or *a fortiori* of microinsurance; and yet, precisely because they are most exposed to shocks, they are most in need of support services –essentially fulfilling an insurance function, as above - which may help them smooth consumption. The Bangladeshi NGO BRAC (formerly Bangladesh Rural Advancement Committee) sought to break into this vicious circle by providing under its IGVGD (Income Generation for Vulnerable Groups Development) and CFP (Challenging the Frontiers of Poverty) schemes for ultra-poor single women[24], first providing food aid on its own, then requesting that a part of that food aid be converted into small cash savings, then linking the savings to training in a low-capital low-risk enterprise (such as poultry raising, goat-keeping, small-scale fish-farming or sericulture), and then finally for those who wished to receive providing conventional microfinance loans. For the ultra-poor and risk-averse client (cf. Figure 3 above) an 'escalator' was thus established, beginning at minimal levels of risk—as appropriate for destitute people frightened of the cash economy -, providing them with insurance via savings, and then gradually increasing both risk and potential

24 The scheme was established in 1983, and now caters for more than 250,000 low-income women in Bangladesh, in the majority of cases single women abandoned by their partners. The income and asset threshold for admission to the scheme is: less than 50 decimals of land, and income less than Tk 300 per capita per month, or about a quarter of the World Bank 'dollar-a-day' poverty line. For more detail on IGVGD see Halder and Mosley(2004) or Matin and Hulme(2003)

return via a loan facility. It is the escalator which provides the insurance, therefore, rather than a standalone microinsurance institution.

2 Emergency loans from 'village banks'. The Bolivian NGOs Promujer and CRECER (which cater for a lower stratum of the population than any others in the country)[25] practise a 'village bank' model, in which training, maternal and child health and legal advice services are provided alongside group credit for those desiring them. They also offer an emergency loan facility. Essentially this loan facility (known in Bolivia as a *cuenta interna* or 'internal account') functions like a rotating savings and credit association—it takes a fortnightly or monthly subscription from clients, which goes into a common pool from which, in case of need such as a sudden income shock, members are entitled to draw emergency loans supplementary to their existing borrowings, if approved by a vote of the members of their borrower group. Such emergency loans, alongside progressive lending relating loan size to loan repayment, protect clients against the risk of ejection from the credit market due to unanticipated shocks (Lenton and Mosley 2007). This facility therefore provides a form of quasi-insurance: it shelters those most prone to shocks, financing the shelter by means of a subscription which is not called an insurance premium but nonetheless acts as one. When put under pressure in the civil emergencies in Bolivia of October 2003 and June 2005, it protected not only the livelihoods of clients but also repayment rates—and it was supplemented by additional improvised measures to protect repayment rates, such as emergency in-kind food donations and 'home collections' of loans from clients who were apprehensive of having to cross a barricade to make their repayments (Aliaga and Mosley 2007).

3 Micro-savings schemes. Savings, classically, enable the 'protection' function of insurance to be performed by enabling the low-income household to draw on a cash reserve, rather than an insurance policy, at times of crisis. As described in Hulme, Barrientos, and Moore (2007), microsavings remain a neglected element in microfinance, historically of great importance since the nineteenth century as an instrument by which poor households buffered themselves against shocks, and in the twenty-first century, at least in potential, fulfilling the role, since the consequences of shocks are worst for the poorest, as a highly progressive component of the microfinance operation.

This potential is not fulfilled at present: a majority of microfinance schemes do not offer any savings facility. Of the 336 microfinance institutions (MFIs) globally for which 2006 data were available, two-thirds (215 institutions) showed no savers at all, and of the remaining 121, 45 had fewer savers than active borrowers (Hulme et al. 2007:3). These institutions' data on client poverty status are very limited, but given that the function of savings is principally of protection, and that protection against shock is needed by people in inverse proportion to their wealth (cf. Figure 3 above), it seems probable that the narrow scope of savings institutions acts, like the constraints on formal microinsurance, as a limitation on the anti-poverty leverage of the microfinance sector as a whole.

Part of this undersupply of savings services is caused by regulatory restrictions which prevent microfinance NGOs from taking deposits (and, at the same time, from offering insurance facilities, except in the form of informal emergency funds or loan facilities). Even those MFIs which offer savings facilities are often unsympathetic to the savings needs of the poor (eg. BancoSol of Bolivia will not accept deposits less than $10). A way around these restrictions is offered by the kind of linkage arrangements described in the next paragraph.

25 See Marconi and Mosley (2006)

4 Loan-savings linkages. In a number of countries, NGOs, which are the dominant form of microfinance organisation, are not authorised to take savings deposits, which as discussed above represent the least risky mode of contact with the financial system. Consequently, in the assumed absence of microinsurance, individuals who wish to receive financial services are obliged to take loans, and are not able to protect themselves by savings against the risk of decapitalisation caused by the combination of overborrowing and external shock (see Hulme et al. 2007). One important potential way around this problem is by the formation of linkages between microfinance NGOs and banks or nonbank financial intermediaries. Under this approach, savings services, and their associated quasi-insurance function, are supplied to customers of microfinance NGOs via such linkages rather than directly. These linkages provide a buffer against the risk of decapitalisation, and in industrialised countries, where much microfinance takes the form of small loans to unemployed people caught in the 'debt trap', such linkages may enable an improvement in the debt management capacity of people previously unable to save, and enable them to utilise the 'savings buffer' previously referred to in case of emergency (Mosley, Lenton, Dayson and Vik 2007).

Especially in environments where microinsurance is not available but even in environments where it is, therefore, it may be appropriate to consider quasi-insurance options as a strategy for protecting the poor—these may be able to provide particular forms of protection against risk at lower cost than microinsurance proper.

5. Conclusions for policy and institutional design

There are, therefore, various ways off the mountain of Figure 3: microinsurance organisations can pursue the quest for viability either in a poverty-reducing or a non-poverty reducing way. The impact analysis of the previous section has presented some findings concerning the extent to which different institutional development strategies may impact favourably on the poor, and these are presented in Table 6. In the light of this table, we can now recapitulate the lessons of this paper concerning how microinsurance and substitutes for it can help to 'move the right way off the mountaintop'—to reduce poverty, in the light of the empirical evidence just presented.

As mentioned earlier, we may take six possible approaches, either separately or in combination, to making microinsurance more poverty-focussed. In the sequence in which these have been presented in our argument above, these are:

1. Lower the cost of microinsurance by enabling microinsurance firms to *move down their cost curve.* This is essentially the approach taken by Churchill (2006) in his final chapter. It is vital, because if microinsurance is not viable it cannot supply services to the poor or anyone else. In our judgement, however, it can usefully be supplemented by the following pro-poor options:

2. *Vary the microinsurance product-mix.* As indicated by our previous argument, the availability of insurance types does not match well to the needs of the poorest: those most vulnerable to risks either cannot insure at all or cannot insure against the risks which matter most to them. Ultimately this requires ingenuity both in designing insurance against risks which are crucial but historically have proved hard to insure against—such as weather risk—and in making potential clients aware of the options which exist. This has been successfully achieved, on the available evaluation evi-

Table 6. Approaches to making microinsurance more poverty-responsive

	Approach	*Illustration*	*Remarks; evidence from impact assessments*
Within microinsurance:			
1. Measures to increase viability (without any obvious poverty cost)	(i) Limit benefits (ii) Practise cost-effective ways		See list in Churchill et al. pp 582ff. Summary here very brief. See original source for details
2. Measures to vary product-mix of microinsurance towards poor	(i) Shift to more poverty friendly insurance products e.g. drought insurance) (ii) Within-product shifts to more poverty-friendly applications (e.g. maternal and child health)	BASIX, India (see Appendix 1 below) World Bank – Ethiopia macro (see Appendix 1 below) Grameen- type schemes (see Table 3 above) SSS Bangladesh – (see Table 3 above)	Achieved substantial poverty reductions, see Hamid (2007).
3. Design measures to increase accessibility of the poor:	(i)Interest rate concessions for ultra-poor (ii)Non-financial measures to bring ultra-poor within the ambit of microinsurance -form of support -links to other poverty-friendly financial services Search/publicity methods	BRAC Health (see Table 3 above) Ethiopia macro scheme (linked to food aid) Savings schemes: (i) see Hulme et al. (2007) (ii) savings schemes to make premia affordable, e.g. SEWA	Discussion of savings linkages also in Churchill (2006), sections 2.2, 2.3. Could be accompanied by sponsor 'smart subsidies', see Appendix 2
4. Design microinsurance schemes so that spillovers ('wider impacts') spill over more effectively to the very poor		FINCA Uganda	Evidence of wider community-level impacts on income stabilisation, see Table 5 Could be accompanied by sponsor 'smart subsidies', see Appendix 2
5. Other poverty-friendly risk mitigation methods with an insurance function ('quasi-insurance')	Lending: (i) escalator-type schemes keeping initial risk minimal for poorest, eg (ii) emergency loans schemes, Savings:	BRAC ultra-poor schemes (see Matin and Hulme 2003, and Halder and Mosley 2004) Bolivia bancos comunales (village bank model with internal account), see Lenton and Mosley (2007) Microsavings schemes, eg Safe Save Bangladesh	
6. Other poverty-friendly methods for risk anticipation and risk coping	In agriculture, note in particular possibilities for drought-resistant crops		

dence, by BASIX and SEWA, both of which have broadened their basic insurance product so that it reaches further down the income scale. In principle, the World Bank's experimental weather insurance schemes also achieve this, but we do not yet have hard data on whether this is happening.

3. *Make microinsurance services more affordable by the ultra-poor.* This may be done by a range of methods:

- interest-rate subsidy (as practised by BRAC, Bangladesh), which has been successful in bringing a number of ultra-poor clients into the fold of microinsurance.

- by offering a savings facility which gradually enables the poor to pay their premiums (as in SEWA, India) . The manual by Churchill (section 2.3, pages 111-130) also mentions a number of schemes which link insurance to savings so as to make premiums easier to repay.
- by bending the design of the microinsurance scheme so that it focuses on services especially consumed by the poor (such as maternal and child health). This was successfully achieved by BRAC and SSS.

4. Design microinsurance schemes so that they maximise spillovers to *the very poor.* Table 5 showed that for FINCA, Uganda, BRAC Bangladesh and SSS Bangladesh , there are substantial spillovers to non-borrowers through income stabilisation, through health and through empowerment.
(Effects 3 and 4 can be supplemented by sponsors providing a results-based subsidy)
(Another crucial element is lobbying and persistence. Any number of regulatory obstacles can be invented by an obstructionist person or environment.)

5. Where microinsurance is not available or not suitable, provide 'quasi-*insurance' services which provide protection against shocks even though not labelled as insurance.* Illustrations of how this may be approached are provided in the previous section 4.

6. Where the option exists of anticipating rather than simply providing *insurance against shocks, use that as a complementary approach.* One approach to this is to incentivise, via agricultural extension, the planting of drought-resistant varieties.

It is of course feasible for both local and national branches of government to support pro-poor actions at the local level by maintaining an appropriate regulatory and policy framework—in particular through support for informal and labour-intensive activities.

Thus there is substantial empirical evidence already to back the proposition that microinsurance, if the appropriate complementary policies and design features are embedded into it, may be a powerful instrument against poverty. Substantial additional research is however needed both to validate the tentative and incomplete impact assessments provided in Table 5, and, above all, creativity and experimentation is needed to devise and locally test new poverty-focussed insurance instruments, and dedication and courage are needed to pursue the case for these in face of inevitable opposition from those who see radical designs as 'not fitting into the box' . Insurance is, of its nature, a conservative profession, dedicated to the minimisation of risks, and what is needed in the present cause is to combine that conservatism in the control of costs and risks with extreme daring and perseverance in the process of including the very poor and vulnerable in design and implementation.

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Appendices

Appendix 1. Weather insurance schemes: more details

Globally, drought and weather-related disturbances are a major cause of poverty; specifically in Africa, Syroka and Willcox (2006, p. 203) argue that "the predominant risks faced by vulnerable populations in sub-Saharan Africa are meteorological in nature". When a drought occurs, it occurs across a wide range of communities and often over most of Africa (as in 1992 and 2002)—so that risks co-vary, and thus informal insurance mechanisms cannot cope. Yet very little formal insurance is available against these risks, especially for the protection of poor people, and most of the literature on the experimental schemes which exist is unpublished. Thus we provide here some background data on what is known about these schemes, and their potential ability to provide 'insurance against poverty.'

As discussed above (pp. 2-3), early agricultural insurance schemes in developing countries were a disaster, partly because they were operated by para-statal organisations not subject to rigorous financial discipline and partly because they were not able to overcome the moral hazard problem: they typically offered 'area yield guarantees' which were an invitation to slack husbandry because they paid out the same indemnity however large or small was the effort put into the care of the crop. An important practical breakthrough was made by Gautam, Hazell, and Alderman (1991), who showed that an ideal defence against moral hazard was to insure not against *deficiency of income,* which was an invitation to reduce effort in face of the protection provided by insurance, but rather against *deficiency of rainfall,* which was exempt from moral hazard, because nobody can influence rainfall. Even better, rainfall-deficiency insurance economises on scarce administrative resources, because no expenditure is required on checking of claims: the payout of indemnities can be made as soon as the size of the local rainfall deficiency is known. Gautam, Hazell and Alderman thus proposed that the problem of drought losses should be dealt with by inviting *all* individuals in the drought-prone country (not only those subject to drought) to participate in a lottery: tickets could be bought (premia could be paid) by anyone, and payouts proportionate to the extent of likely crop losses would be made if the rainfall index fell below (say) 80% of its moving average value. Over and above the advantages mentioned above, this way of designing the scheme had the merit that it potentially provided benefits to low-income individuals who were affected indirectly, rather than directly, by drought—for example landless labourers, who are often the poorest and most vulnerable people of all.

For all its merits, this idea did not begin to be implemented until the beginning of the 2000s. Several proposals for complementing microfinance in agricultural areas with weather index-based insurance were made on the basis of the Gautam, Hazell and Alderman approach,[26] but the honour of the first commercially viable rainfall insurance model belongs to the South Indian NGO BASIX in 2003, as described below. Pilot insurance projects to insure a target population in a particular area against rainfall deficiency have also been completed by the World Bank, for Ethiopia, Malawi, and Ukraine, with forthcoming pilots in other countries. Finally, in Ethiopia in the wake of the severe drought of 2002-2003 the UN World Food Programme has sponsored a form of rainfall insurance which covers the whole country rather than a particular locality: it activates the food aid social safety net *across the country* in immediate response to evidence of rainfall deficiency *averaged across the country*, and thus combines the approach of a Gautam-Hazell-Alderman rainfall-based payout with the new and powerful idea of anticipating *ex ante*, rather than responding to *ex post*, suffering due to drought.

26 Including one by the present author, working with Centenary Bank of Uganda (Mosley 2001) which was aborted when the chief executive of Centenary died in May 2001.

We now discuss and compare the experience of each of these schemes to date.

'Micro' (farmer-based) schemes

BASIX and others, India

India is the country where modern-style weather insurance has gone furthest. At the time of writing in June 2007 some 500,000 Indian farmers are covered by weather-index insurance contracts (see Manuamom 2007). The breakthrough with this new form of microinsurance was made at the bottom end of the market by a non-governmental organisation, BASIX, which since its foundation in the 1990s has provided a range of rural development services to low-income farmers,[27] including microfinance and microinsurance. Its approach to insurance has been experimental and evolutionary, beginning with life insurance, progressing in the later 1990s into agricultural insurance (administered on the traditional Indian 'area yield guarantee' model) and livestock insurance, and initiating a pilot weather index insurance scheme in 2003 in Mahboobnagar district of Andhra Pradesh, in collaboration with the commercial insurance company ICICI-Lombard. Following the success of this pilot, BASIX began selling weather index insurance outside its home state of Andhra Pradesh. By 2006 11,500 farmers in six states of India were buying rainfall insurance from BASIX—and these, notably, were low income farmers, with an income range of 12,000 to 30,000 rupees per annum, i.e. less than one dollar a day.

BASIX's weather insurance product has been sold throughout without subsidy, more or less on the principles set out in Figure 2 above, and over the four years 2003-06, the ratio of claims to payouts is only 70%, so that the scheme has been able to build up reserves.

The structure of trust-relationships which BASIX had developed with its clients over the years acted as a strong pedestal on which to ground the new experimental structure of microinsurance, and BASIX provides an important illustration of the principle that microinsurance often works better if it can provide synergies to, and receive them, other parts of the organisation. What was also crucial was that BASIX had the creativity and the patience to experiment, over the ten year period from 1995-2005, with several microinsurance models, rather than commit itself by premature salesmanship to a fixed blueprint and then lose credibility by having to retreat from it.

World Bank pilot, Ethiopia

A pilot rainfall insurance scheme, operating on essentially the same principles as BASIX, was executed in Alaba Wereda (a high-productivity smallholder region of southern Ethiopia) in 2006, using a state-owned insurance company, the Ethiopia Insurance Corporation, as intermediary distribution agent; but with totally different results to those achieved in BASIX. The key problem was that the pilot, in the words of an evaluation, "failed to identify any organisation that could be used to reach clients effectively and provide the necessary capacity building and product education to farmer clients". No banks were willing to become involved, since their fertiliser loans were already fully guaranteed by the government (hence more lucrative than insurance). *Faute de mieux*, the Ethiopia Insurance Corporation agreed to fill the gap, but the results were predictable. It proved hard to sell any policies, and only thirty farmers took up the offer of insurance.

This is the only case reviewed here where microinsurance has been offered on a stand-alone basis, rather than being layered on to the efforts of an existing organisation; and the consequences were disastrous, since the organisation retailing the insurance (the Ethiopia Insurance Corporation) did not believe, and

27 80% of these have a landholding of less then 2 hectares (BASIX, 2007)

therefore was not able to inspire trust among sceptical farmers, in its own insurance product. It had no existing goodwill in the region, and being able only to entice a few farmers into the scheme had to charge a proportionately high premium, which then by the 'knife-edge' argument (page 16 above) deterred any potential customer wavering on the brink. The Alaba pilot experiment has now been abandoned.

World Bank pilot, Malawi

By contrast with the 'Ethiopia micro' case reviewed above, in Malawi the World Bank offered microinsurance alongside something farmers badly wanted, namely credit, in an environment where commercial banks were refusing to lend to smallholders. For the pilot in 2005, the offer of rainfall-based insurance was made only on one crop, namely hybrid groundnuts, and by the following year, 2006, 892 insurance contracts had been sold, with the National Smallholder Farmers' Association of Malawi (NASFAM) acting as agent. The growth of the scheme was inhibited, ironically, by a good harvest in 2006, which pushed down the price of groundnuts to the point where farmers found it hard to afford their insurance premiums; but for now, the Malawi pilot continues, neither having achieved take-off like BASIX nor oblivion like the parallel Ethiopia pilot.

'Macro' (social safety net-linked) schemes

World Food programme (WFP) pilot, Ethiopia

The origins of the WFP scheme go back to the 2002 drought, which was the worst in Ethiopia since the catastrophic famine of 1984-85, a repetition of which was only prevented by massive disbursements of responsive food aid through the national social safety net programme. Much of this food aid, as always, arrived late, and the thought occurred to many that 'prevention' of the food shortage would have been not only more dignified than 'cure' based on food shipments in response to disturbing images of malnutrition, but also productively far more efficient, because it would have equipped vulnerable households with the means to cope *before* they lapsed into destitution. The truly innovative idea was to combine this anticipatory approach with Gautam-Hazell-Alderman rainfall insurance so as to construct the beginnings of a weather insurance-based social safety net. Reinsurance cover was arranged for the 2006 season from Africa Re, which would have provided deficiency food aid payments for 62,000 low-income individuals if the 2006 rains had failed. However, in the event, the 2006 rains were abundant in all parts of Ethiopia, and no payouts were made. Because of this it is not possible to see the ex-post impacts of the scheme; however, it is possible to be excited by the potential of the idea. The key to it is that the Productive Safety Net (food-for-work) schemes developed by the Ethiopian government for the chronically food-insecure in partnership with donors still, in spite of current political troubles, command substantial farmer-level support, because they are increasingly depended on for subsistence (Hess et al. 2006, p. 3) and the insurance pilot was able to build on this support. It is now intended to develop the scheme gradually so that it is in full production by the 2009/10 season, protecting 5 million food-insecure individuals—a scheme which dwarfs in size all microinsurance schemes put together.

We can now compare these widely differing experiences:

Key lessons

All of the weather insurance schemes discussed here are 'new model' schemes which have learned the lessons of previous unhappy experience, as spelled out on pages 5-7 above. But beyond this, the following lessons can be learned specifically from the handful of weather insurance schemes we have examined:

Table Weather insurance schemes compared

	Micro (farmer-level) schemes			*Macro (country-level) schemes*
	BASIX, India	*World Bank pilot, Alaba, S. Ethiopia*	*World Bank pilot, Malawi*	*Social safety net project, Ethiopia (countrywide)*
Initiated	2003 in present form, after experimentation with life, agricultural and livestock insurance	Pilot, 2006	Pilot, 2005	Pilot, 2006
Distribution agent	BASIX (NGO)	Ethiopia Insurance Corporation	National Smallholder Farmers' Association of Malawi	WFP
Payment trigger	Weather index	Weather index	Weather index	Weather index
Beneficiary income/ impact	Average beneficiary income range Rs 12000-30000 per annum (i.e. below $1/ day)	Not measured	Not measured	None as yet: potentially massive, since benefits of food-for work become more timely
Beneficiary resource allocation/impact	By comparison with uninsured farmers, less shifts into lower-yield crops	Not measured	Not measured	Not measured
Current status	Being scaled up	Abandoned	Continuing	Being scaled up

- A reliable and trusted distribution channel (which typically is but does not have to be an existing MFO) is absolutely vital. Without this, there is no hope of building up a clientele.
- To work, all microinsurance, and especially its innovative forms such as weather insurance need to be bundled together with something which clients really value (for example credit, healthcare). Indeed, stand-alone insurance schemes may not work: microinsurance is synergistic with other elements in the microfinance programme (see further Appendix 3 below).
- Ownership is key. The organisation which pioneered commercial weather insurance, BASIX, believed in its product, knew that its customers would desert it if it did not keep them regularly supplied with weather information and the opportunity to provide feedback, and thus was able to move down the 'knife-edge' (Figure 1 above).
- Experimentation is extremely valuable—the right technical solution may not and, in microinsurance, typically does not seem to come the first time. Again the experience of BASIX is relevant—they experimentally tried old-style crop and livestock insurance linked to village-bank lending, failed with it, but, rather than give up, tried again with the different model weather insurance, and the second time were rewarded. Success often depends on the willingness to modify rather than jettison a good idea which fails to work in practice.

Appendix 2. 'Smart subsidies' for poverty- reducing institutional changes

It is at least a hypothesis worth pursuing that microinsurance institutions, through some of the strategies described in Table 6, could achieve a greater poverty reduction impact. But to be motivated to do this, microinsurance managers need incentives. What incentives are available?

The same question has been asked in the overseas aid field for many years, by donors seeking to incentivise reforming behaviour by their own 'clients', the governments of developing countries. For many years, in particular during the 1980s and 90s, the technique used for this purpose was ex-ante *conditionality*—i.e. sponsorship, in the form of aid flows, was conditional on policy and institutional reform, originally in the form of liberalisation but later in the form of pro-poor policies. However conditionality was disowned by most donors in the later 1980s in response to the evidence that it was not an effective tool for achieving sustained institutional and policy reform (Collier 1997; World Bank 2000, Chapter 11).

The idea to be explored here is that sponsors could incentivise poverty reduction by microinsurance institutions by paying ex-post in proportion to the number of people actually taken out of poverty—in the same way as, for example, the Millennium Challenge Account and Center for Global Development have suggested incentivising effective aid by paying a premium per unit of 'progress', however defined. In elaborations of this idea by the Center for Global Development or Millennium Challenge Account formulae such as '$100 per child passing through primary school, or per thousand units of vaccined administered' have been suggested (Barder and Birdsall 2006). It has been suggested that the establishment of such benchmarks will incentivise recipient performance without conditionality, resolving the tension between getting results and supporting long-term institutional development.

How can this approach be applied to microinsurance? The ideal would be for sponsors to make a core contract with the supported institution and then to supplement it with a supplementary payment per beneficiary based on income increases and confined to poor beneficiaries only. Since, as noted above, some beneficiaries because of spillovers are not clients, impact monitoring for this purpose needs to go beyond mere monitoring of clients. The question of the right benchmark is for discussion and development at this stage; the provisional suggestion is that supplementary payouts should be made each year according to *the proportion of new clients falling below a specific asset threshold* (e.g. the conventional Bangladeshi threshold of one acre of land or equivalent), on the grounds that this at least has already been measured for appraisal purposes, and indirect effects can be expected to be proportional to this. The setting of such a formula should motivate microinsurance organisations to concentrate their salesmanship and their training efforts on their low-income clientele.

The suggestion therefore is that within each microinsurance institution, basic annual salary should be supplemented by *two* flexible elements: one related to the number of insurance policies sold by the MFI that year and the other related to the number of policies to clients below a certain income benchmark, say the national poverty line.

Thus for each employee (of the MFI (not only the insurance part of the organisation, salary

$$Y = Y_b + Y(N) + Y(N[p]) \qquad (4)$$

where Y_b = 'basic' salary, Y(N) = performance bonus linked to number of insurance policies sold, *Y(N[p])*,

additional performance bonus linked to number of insurance policies sold to individuals below the poverty line. The expectation is that search behaviour linked to selling policies to people below the poverty line will increase with the level of the poverty-related performance bonus Y(N[p]), and as a consequence the poor within the target group will be better protected against income and consumption shocks. In terms of our basic targeting diagram (Figure 2) the payment of a performance-based element in salary according to formula (4) increases the likelihood that the MFI will 'descend the mountain the right way', i.e. increase sales volume in a manner that is also poverty-reducing, e.g. from A towards B rather than from A towards C.

Using the same logic, sponsors of microfinance institutions can tie their sponsorship either to the payment of performance bonuses such as those described in (1), or more ambitiously, to the number of clients actually taken across the poverty line—which requires an impact assessment system measuring this variable to be in position (for the benefits of this to MFIs, see special issue of *Small Enterprise Development*, September 2004).