Risk and underdevelopment

Risk management options and their significance for poverty reduction

Paul Mosley

With Supriya Garikipati, Sara Horrell, Hazel Johnson, June Rock, Arjan Verschoor

Report to Department of International Development (R 7614), October 2003

Contents

Tables

Plates: between pages 72-73
The research process in Uganda and Bangladesh

Preface

In the summer of 2000 the Department for International Development awarded a grant of some £360,000 to a consortium of UK universities – Cambridge, Nottingham, Sheffield and the Open University – for a programme of work in the field of policies for encouraging pro-poor growth. The programme grant had three constituent parts: R7615 *Gender and Labour Markets;* R7617 *Maximising the Poverty Leverage of Aid:* and this component on *Risks, Incentives and Pro-poor Growth.* The other two components, on which separate reports are available, involved substantial fieldwork in Asia and Africa. This component draws on that fieldwork and, to some extent, tries to integrate them. The main theme is whether it is possible to devise institutions and policies which, by protecting against risk, reduce poverty; and whether it is possible to design incentives to the construction of such policies, both at the macro and micro level. Every piece of research reflects the spirit of its time, and readers will observe our preoccupation with debates which were around at the turn of the millennium when this research was conceived, including the conceptualisation of poverty and vulnerability, the mechanisms which drive the 'vicious circle of poverty', the gender distribution of gains from growth, and the ability of NGOs and aid donors, in a globalised world, to successfully channel benefits to the poorest. We hope to have made some contribution to those questions in the chapters which follow.

Highlights

Risk and underdevelopment: risk management options and their significance for poverty reduction

Our main thesis is that:

- **an effective strategy for pro-poor growth depends on effective management of the risks to which poor people are subject**;

  this in turn requires incentives to effective risk management to be provided. In this book, we consider six approaches used in the management of risk in developing countries – participation in the labour market, microinsurance, microfinance, social capital development, agricultural development services and pro-poor public expenditures – and the manner in which they can be integrated and developed for the benefit or poor people. The main focus is on local capital and labour markets, with the frame of reference being provided by the countries studied in other components of this Programme – India, Uganda, Ethiopia and Zimbabwe, with passing reference to Bangladesh and South Africa. However, in the last two chapters our analysis becomes more macro, and examines issues of the 'globalisation of the welfare state' and optimal stabilisation policy.

Highlights from individual chapters include:

- *Risk attitudes* (chapter 2):Many people in our sample countries do not behave according to conventional expected-utility postulates. Risk aversion, and failure to be entrepreneurial and diversify assets, does not correlate well with income, but does correlate with vulnerability. So do indicators of trust and social capital. Experiments to intervene in this vicious circle by providing insurance do induce a ready take-up of insurance, but it does not greatly augment trust. **Implications: the income poor are not necessarily non-entrepreneurial; those who perceive themselves as vulnerable, however, are much less likely to respond to incentives. The most obvious incentive, insurance, does not always have the expected results (but see further chapter 4)**
- *Gender, labour markets and agricultural production* (chapters 3 and 6): the risks and resource constraints facing men and women are different, but **in spite of this and contrary to the conventional wisdom, women (in partnership households) often achieve higher agricultural productivity than men, in part through greater specialisation on agricultural tasks and in part through more effective accumulation of social capital (interpersonal risk management)**. This has important implications for the design of agricultural institutions and development policies (see further chapters 4,5 and 8).

- *Microinsurance and microfinance* (chapters 4 and 5): microinsurance especially in Africa represents a market failure which is crucial from the point of view of poverty reduction; **where microinsurance exists, it increases investment and savings and creates substantial externalities into health, technical improvement and institutional emulation**. We present new evidence from both Africa and India to suggest that microfinance is not reaching the poorest *directly*, **but it does, again, indirectly through labour market impacts.** To target financial services better, **we propose the extension of 'sequenced microfinance' which follows a progression from food aid linked to savings, to training, to conventional borrowing, in order to effectively confront the risks facing the rural poorest.**

- *The management of multiple risks* (chapter 8); a few exceptional institutions have consciously sought to *simultaneously* provide protection against several of the risks examined here, in face of weaknesses in state provision, in order to provide integrated protection, for the poor and vulnerable. We examine two of these, SEWA of northwest India and BRAC of Bangladesh. There is a payoff to integration, we find, for the client as well as for the service provider; advantages which have shown themselves during the recent round of global macro-economic crises to have macro-economic importance. The essential argument is that **a package of quasi-welfare services may provide a relational asset which enables the service provider to grow through a recession – and take at least its clients, in Indonesia much of the small business economy also, with it**. This package of 'quasi-welfare services' is part of an NGO mini-welfare state, which in very many countries is growing as the state proper retreats.

- *Political risks and stabilisation policy* (chapter 9): proper design of stabilisation policy requires consideration of the political risks to which such measures are subject; neglect of these risks can push countries attempting to adjust into a macro-vicious circle of deflation, political violence, depletion of human and physical capital, and increased poverty, as we illustrate from case-study analysis of Zimbabwe, Sierra Leone and Bolivia. Possible counterweights against such a vicious circle include **variations in the mix of public expenditures (favouring sectors which are labour-intensive and/or benefit poor consumers, as discussed in previous chapters); variations in the mix of stabilisation policies; and variations in the *speed and duration* of stabilisation programmes.** These approaches have implications for the conditionality of international financial institutions, including in particular the IMF's Poverty Reduction and Growth Facility.

Executive summary of report

Background and objectives: Chapter 1: Risk, market failure and poverty

We believe that people's understanding of risk, and their behaviour in face of risk, has crucial importance for their ability to escape from poverty. In this report, we seek to illustrate this by tracing the linkage between individual perceptions of risk, institutions and policies for the management of risk, and mechanisms by which poverty is increased and reduced. Our vision at a practical level is to make contributions, deriving from empirical work conducted within this programme and elsewhere, to the design of institutions and policies for risk reduction (including the policies of donors such as DFID), with an explicit bias towards the poor and vulnerable, on whom the worst risks often fall. There is an emphasis throughout, but especially in chapters 3 , 7 and 8, on the gender dimension of risk. Distinctive features of our methodology throughout include an emphasis on risks as *perceived* by those who are subject to them (often poor people) and on models based on *disaster avoidance* – the desire to keep to a minimum the risk of some disaster such as destitution, exclusion from the capital market, or (for a government) collapse into anarchy.

The approach of the book is to focus on four potential strategies for the management of such risks (for the avoidance of such disasters) which can be used as assets in a pro-poor growth strategy: engagement with labour markets, microinsurance, microfinance and social capital-building. Chapters 3 through 6 examine the processes by which these 'assets' have been created in relation to our case-study countries (plus Bangladesh). These and other assets can be combined in a 'portfolio' and Chapters 7 through 9 show how this portfolio can be deployed, and its implications for poverty reduction, at three levels: the peasant household, the giant NGO institution (BRAC and SEWA) and the LDC government in interaction with donors and international financial institutions. Preceding all of this, we use experimental methods in Chapter 2 to understand the structure of attitudes toward risk and the level of interpersonal trust, which are important building-blocks in understanding the vicious circle of poverty and possibilities for escape from it.

Methods and findings

Chapter 2: Risk attitudes and the 'vicious circle of poverty': risk aversion, community orientation, and trust

We examine attitudes to risk and the ability to manage risk as two separate stages in the vicious circle of poverty. We use experimental methods for the assessment of risk aversion and consistency of choice in Uganda, Ethiopia and Andhra Pradesh (India), and for the assessment of community orientation and trust in Uganda only.

In the *risk aversion experiments,* we find that quite a high proportion of households- about one-third – deviate from the expected utility model of choice, and exhibit inconsistent preferences. For these households at least, we prefer a decision-weighting approach. In common with the pioneer work of Binswanger (1980) we find that contrary to intuition, risk aversion is little correlated with income in any of the countries we examined; *it is, however, strongly correlated with perceived vulnerability,* and can be interpreted as a component of a survival algorithm designed to minimise the probability of assets being forced below a 'survival' level In turn, high risk aversion is associated with low investment levels and failure to diversify*.* It is thus possible to visualise, in these countries, a vicious circle in which people invest little and have low yields because they are risk-averse – a proposition developed further in Chapter 7 – are risk-averse because they are vulnerable, and are vulnerable because they have invested little in the past. Policies to reduce poverty therefore need explicitly to tackle vulnerability as such if they are to intervene effectively in the vicious circle. In a final section, the parameters of the 'vicious circle' are estimated for Uganda.

In the *trust experiments,* we follow a template established for Zimbabwe by Barr (2002), but do the replications in Uganda. We find levels of trust broadly similar to those observed by Barr in Zimbabwe; they are higher in the richer than in the poorer village, are in general positively correlated with income and assets, and are also responsive in particular to levels of female education. We devise an 'insurance game' to assess the possibilities of incentivising higher levels of trust and find that demand for insurance is higher in the poorer village, but 'effective demand' – the ability of insurance to elicit higher levels of trust - is greater in the richer village. Effective demand for insurance, defined in this way, responds positively to high levels of risk efficacy, microfinance membership and female education. Insurance is therefore not difficult to 'sell', but making it an effective instrument of social capital creation is another matter - a problem taken up in more detail in chapters 5 and 6.

Chapter 3 Risk, gender and the labour market

In this chapter we explore the influence of risk on the development and contraction of labour markets, and thence on poverty.

Labour supply is higher from households with low asset levels (including land), low income and high vulnerability, and amongst members of large

families[1]. In India it is higher among low-caste individuals, and in Uganda also 'discussions with both male and female respondents revealed that women of mainly lower social classes were the ones involved in selling their labour' (Muzaki 1998: 44). In India also, members of microfinance self-help groups exhibited lower labour supply, presumably because income from the enterprises supported by the self-help group was able to generate income which substituted effectively for labour income.

We also examine the influence of a 'family support' variable, which is intended to capture the risk associated with loss of 'extended entitlements', as suggested by Elson. In Uganda and in India (Andhra Pradesh) *female* labour supply is strongly associated with the 'family support' variable, indicating that individuals are reluctant to supply labour (especially across long distances) if influential family members disapprove. However we do not find that these labour market risks are static; rather, they are 'bargained' within families.

On the demand side of the market the main influences are income, assets, access to credit, and crop-specific influences. The expansion path of labour demand with respect to income is kinked (with no labour hiring at low levels of income, as a response to risk) and highly asymmetric with respect to gender, with the demand for female labour being much more sensitive than the demand for male labour with respect to changes on the demand side, both seasonal and cyclical peaks. We interpret this as a transfer of risk from employers to an already vulnerable part of the labour force. The main scope for achieving impact on poverty through the labour market is on the demand side, through reorientation of the product-mix and experditure-mix, improving access to financial and physical infrastructure.

Chapter 4. Microinsurance institutions

Although insurance is one of the most obvious devices for reducing vulnerability, the market for it often fails at the bottom end; hence, for all the vitality of micro*finance,* microinsurance institutions are ill-developed. One reason is that previous attempts by government to supply insurance to, in particular, small farmers have been disastrous failures at least in a financial sense. Following this initial collapse, the nascent microinsurance movement has emerged in three different forms: private for-profit, single-risk nonprofit, and multiple-risk nonprofit. The lessons which have been learned from these failures we list as: defences against moral hazard (*including* targeting on the poor), cost-covering premiums, ex-post checking of claims (or devices making this unnecessary, such as rainfall insurance), blending of microinsurance with microfinance operations, and in some cases defences against adverse selection also. We examine,at the level of design, six institutions embodying the new principles: SEWA of north-western India, BASIX of Andhra Pradesh, BRAC and Grameen Kalyan of Bangladesh, FINCA and Centenary Bank of

---

[1] There also a tendency for the type of labour supplied to vary by educational level – for example in Uganda 'most female illiterates found a more ready market for their labour in cultivation, whereas those who had attained some education would engage in trade and construction' (Muzaki 1998: 52)

Uganda. We derive a formula for the 'break-even' insurance premium on both financial and economic criteria:

economic: **R* = ([(1-e)V +a +r)/(1-p)] – X)**   **(2')**
financial: **R* = ([(1-e)V +a +r)/(1-p)] – X**

where R*=premium, e=optimum excess (derived in Appendix), a= administrative costs, r= cost of reinsurance, p= percentage of unpaid premiums, X= value of external benefits generated.

We discuss how the value of these premia may evolve over time, and then introduce other design variables, notably marketing effort and risk coverage, to illustrate the options open to the micro-insurance organisation as it evolves. The approach taken here generates the hypotheses that microinsurance will increase investment and social capital, stimulate the demand side of the labour market, and thereby reduce inequality. But before microinsurance can do any of these things, it must first exist, and we show that often a subsidy on the premium, justifiable on the grounds of the externalities it generates, may be required to make the market in insurance work. These externalities – in terms of scheme design, in terms of social capital and even in terms of improved health and education – may be very important, as our empirical sections demonstrate.

These hypotheses are then tested in the empirical section 3, against data for FINCA Uganda and BRAC, Bangladesh. The FINCA scheme operates on a 'partner-agent' basis, with FINCA collecting premiums off microfinance clients who opt into the scheme and the actual organisation of insurance being operated by an NGO, MicroCare, on behalf of a consortium of hospitals, whereas in BRAC the lender is also the supplier of insurance. Evaluation is by comparison between a treatment and a control group; average beneficiary incomes in the Ugandan case, by contrast with the Bangladeshi cases, are above the poverty line.

In both Uganda and Bangladesh we find that:

- Microinsurance probably improves loan repayment.
- Microinsurance reduces vulnerability in the subjective sense of 'peace of mind'
- Microinsurance increases ability to plan, savings levels, and fixed physical investment, with some fungibility into land and domestic consumer durables; it appears to *lower* investment in working capital.
- In relation to *expenditure on school fees* there is a clash between the qualitative findings, which are positive, and the quantitative findings, which are neutral.
- Microinsurance has little effect on labour demand, and therefore little effect on poverty by this indirect route.
- According to our selected indices (use of a treated mosquito net, DPT vaccination, and eating fruit) there is no evidence that insured clients take less care of their health, in other words there is no evidence of a moral hazard problem. Indeed, insured clients, on our data, experience better health than uninsured clients.

Microinsurance *appears* to have little impact on (objectively measured) income instability in Uganda, but this is almost certainly a problem with the empirical formulation of the question. Using qualitative methods, it reduced perceived vulnerability (improved 'peace of mind'), improved bonding social capital, and reduced fungibility of loan proceeds into other uses.

The impact on relations with *hospital staff* is contrasted as between the Ugandan and the Bangladeshi cases:. In Bangladesh, the impact is clearly positive from the interview data, and indeed it is possible to identify a virtuous circle in which insurance membership leads to more frequent consultation and mutual support between scheme members on health matters (bonding social capital) which in turn leads to a constructively critical, rather than a passive, approach by scheme members to medical staff (linking social capital). But in Uganda the results are much more mixed, and both on the qualitative and on the quantitative evidence a majority of patients feel that being a member of the insurance scheme depreciates the quality of care received. What appears to be happening is that the insurer, in a bid to cover its costs, has found it necessary to spread its insurance care from NGOs to low-paid public and private sector workers, leaving NGOs such as FINCA as not equal partners put poor relations. We argue that this points to a flaw in the fashionable 'partner-agent' model: if the bargaining strength of the agent in relation to the partner becomes excessive, that may lead to a deterioration in the quality of service which may damage relations between client and hospital, and may (although the empirical evidence in
the present case is mainly anecdotal) put at risk the ability of microinsurance to supply satisfactory care to poor people. In an appendix, we derive an expression for the value of the optimum excess, or deductible, on the insurance premium (which then fits as a component into the premium formula).

The recommendations which emerge from the above discussion are :
  (1) that the introduction of insurance will probably increase the efficiency
        of
   microinsurance both in a financial sense (by increasing loan repayment
  rates) and in the sense of having a greater potential to reduce poverty via
  higher rates of savings and investment rates;
  (2) that premiums should be based on the formula quoted as (2') in the
        text,
  (3) that both in calculating this formula and in designing microinsurance, it
        is vital to take note of and to maximise externalities, which include
        effects on social capital, on institutional creativity,on the stability of
        community income,and in the cases examined on health also;
  (4) that targeting on the poor, blending of microfinance with
        microinsurance, and marketing effort will all help to keep costs down;
  (5) that microfinance institutions, in cases such as FINCA's where the
        bargaining relationship with the insurer is weak, need to diversify their
        sources of supply, and possibly set up as an alternative provider
        themselves, or make contracts with a more than one insurer in order to
        improve the terms which they are able to bargain on behalf of their
        clients.

Chapter 5. Microfinance institutions

Microfinance, for all its potential as a development instrument, has a much more complex relationship with risk than insurance: in particular, at the same time as building assets as defence against risk, it may undermine the defences especially of the risk-loving and already heavily-indebted and, especially in the event of an adverse shock, may push them into a vicious circle of decreasing access to credit and erosion of human, physical and social capital.

In this chapter we examine three institutions from our case-study countries: the South Indian self-help groups, CARE Zimbabwe and Centenary Bank of Uganda, with sporadic references also to SEF of South Africa. Impact is examined by control-group methods, regression analysis and qualitative interviews. We find that:

- receipt of microfinance is associated with higher levels of income, assets (except in one Ugandan case), employment and income diversification;
- in India, the living standard of women borrowers at lower income levels does not rise as rapidly as the household as a whole, suggesting substantial fungibililty of loan proceeds from women to men; although most loanee households do better than their control group counterparts on various diversity and risk management indicators, the poorest women do a lot worse on empowerment indicators. This not only affects their credibility within the group, but also reflects on their relative power in domestic relations, especially in their say over sale of assets and decisions on allocation of their labour. This differs from the situation in less poor households where women retain control over their loans and are able use it to further productive ventures.
- however, relatedly, the qualitative evidence suggests very substantial fungibility of loan proceeds, both in India and in our African samples, into school-fees – in other words, from physical to human capital investment within the woman's sphere of influence, somewhat offsetting the previous finding.

We then examine the wider impact of microfinance: its ability to produce externalities going beyond the individual client. As with insurance, these are very important, but they are not always positive; there may be negative free-rider effects which may in turn cause depletion of social capital.

Positive externalities include:
i) Microcredit to the nonpoor can reduce poverty by sucking very poor people into the labour market as employees of microfinance clients. This mechanism is important in three of our survey countries in particular (South Africa, Uganda and Kenya);
(ii)Microcredit, whether or not the proximate recipient is poor, often enhances human capital through increased expenditures on education

and related improvements in health, which may then extend to poor individuals through intrahousehold and inter-generational effects. (iii)Microcredit, whether or not the proximate recipient is poor, often improves the household's risk management capacity through the enhancement of social capital, partly achieved by deliberate training and capacity-building efforts and partly through fungibility of loan proceeds into the building up of social networks. This in turn may lead to 'poverty externalities' through the extension of credit groups to include poor people, and through the stabilisation of village income, which reduces the vulnerability of the poorest to risk. In all of our case studies, many male and female beneficiaries are members of farmer groups and/or business associations; they share information on markets, prices and technology and cut costs by pooling resources for transporting goods to and from markets and by sharing storage facilities; often borrowers invest in this form of social capital, on which drawings can be made by poor people outside the borrower population, using the proceeds of their loan.

We examine, in a non-rigorous way, the magnitude of these 'wider impacts' We argue that they almost certainly bring about a larger poverty impact than reliance on the direct impacts. However, we argue also that they can be further broadened by initiatives which include

(i)   insurance as discussed in the previous chapter;
(ii)   the development of demand for labour-intensive products (Chapter 3)
(iii)   consumption loans in kind, preceded by savings mobilisation linked to training (Chapter 8)
(iv)   intragroup equality and mentoring (Chapter 6).

This illustrates the potential complementarity between the risk management options discussed in this book.

Chapter 6. The development of social capital and trust

Social capital has attracted considerable attention as not only a risk-management device, but also, it is claimed, as an indispensable factor of production for the relief of poverty and for economic growth. It is, however, an ambiguous concept: some people use it to mean association in groups, and others to mean the trust created within such associations. Especially in its second meaning, it has a riddle attached to it: unlike physical and human other forms of capital, trust cannot be created by a market process. So what should institution-builders and policy-makers do?

Beginning from the simple 'one-shot prisoner's dilemma', in which trust is wiped out by mutual suspicion, we ask what modifications of this structure could allow trust not to be wiped out. We discover two, *prior experience* and *incentives to trust,* both of them necessarily coupled with repetitions of the basic game in a situation of imperfect information. In the Appendix we treat

experiential and incentivised trust as shift parameters which increase the likelihood of forward-looking behaviour and thence of the formation of social capital. Empirically, we hypothesise that incentives to mutual trust will be provided by equality of perceived well-being, by democratic decision-making processes and most particularly by the ability of any grouping to deliver what it promises – what we call the 'social capital feedback loop'.

In our country case-studies we find that the typical forms of association are burial societies, farmers' associations, microfinance groups, and, quite a long way behind those, health and educational NGOs. Although perceiving the dangers of exploitation, individuals do indeed gravitate towards membership of such associations as a risk-management device especially if any of the processes described earlier as favouring experiential trust (democratisation of organisation; equalisation of perceived well-being..) is working over time in favour of increased trust, as it was in Ethiopia and Uganda. However, membership is endogenous to perceived well-being: in Mbale, Uganda, there seems to be an adverse selection problem, with the weaker individuals gravitating towards the groups which they think will protect them, and the stronger ones fighting shy of involvement. In Uganda individuals joined associations as an opening bid intended to signal their intention to resolve differences by non-conflictual means, rather than court the dangers of a conflictual solution. From then on, the development of trust appeared to be favoured by: charismatic *leadership; institutions* capable of providing insurance against financial or interpersonal shocks; and most of all, satisfactory *performance* (rate of return on social capital) in relation to what was expected. 'Positive feedbacks' such as demonstrated loyalty, better-than-expected performance and the ability to extend public action into new fields entrench the development of trust; evidence of exploitation and underperformance (see Zimbabwe case study?) depletes it. Specifically in Zimbabwe, social capital in the form of communal labour was on the decline; was much weaker, and indeed consisted mainly of food-aid groups, in the poorer district of Chivi by contrast with the richer district of Mutoko; and there was also evidence, mainly anecdotal, of an involution from 'bridging' and 'bonding' types of social capital and indeed from all associational forms into the family as the Zimbabwean crisis deepened.

The argument can be summarised as follows. We have indeed discovered plenty of evidence to support the general proposition that social capital, or 'community governance', is an important factor in development , redressing the risk of market failure and the relief of poverty. However it is not, for the most part evidence with an unambiguous message either for analysis or for policy:

- Social capital can be conceptualised both as association and as trust, and these interact both with one another and with the level of well-being; in general, when the general level of assets is growing (as in Ethiopia and Uganda) levels of association and trust increase and the favoured type of social capital changes (becoming more 'promotional' and less 'protectional'). When the general level of assets is shrinking, as in Zimbabwe, these processes are thrown into reverse and

individuals fall back on those intra-village bonding links that they can draw on.

- Social capital can indeed be seen be seen as a stock of relationships on which people can draw, but these relationships are not necessarily additive nor even 'productive', as has been pointed out by the conceptual literature. From the quantitative evidence for Uganda we can see that trust in one's affinity group is directly related to *distrust* in fellow citizens, and from the qualitative evidence for the same country we can see a potential adverse selection problem, that joining groups may be a refuge for weak free-riders (and thereby lead to group 'involution') rather than a means of advancing a collective interest.

- Whether these components of the 'dark side' of social capital dominate or are dominated by the bright side is an empirical matter, and the general trend of our quantitative results supports an optimistic view that social capital is more often an asset than a liability. However, estimation procedures matter (neglecting the simultaneous nature of relationships between trust, association and assets yields biased results) and so do definitions. Here, we innovate by examining an *experimental* definition of trust, derived from a 'trust game' already utilised by Abigail Barr in Zimbabwe, as well as a more conventional *questionnaire-based* definition.

Possible policy implications

- Our interest is in developing social capital in a poverty-reducing way. In this context, we make a distinction between *experiential* trust, which derives from interaction between individuals, and *incentivised* trust, which derives from institutional or policy interventions to reduce the risk associated with investment in social capital (with being deceived by trusting others) .

- In this context, the distinction between experimental and questionnaire-based concepts of trust turns out to be potentially quite significant. Both concepts are positively responsive to levels of income and wealth and 'group performance'. In addition, the experimental definition is responsive to levels of female education; the questionnaire-based definition is responsive to levels of within-group equality, and to the 'trust gap' between the immediate community and fellow-citizens as a whole.

- There is also some evidence, both from our 'insurance game' and from the evidence in particular of Ethiopian burial societies, of a substantial demand for either formal or informal insurance. We have observed some evidence of the client-specific and external effects of insurance in Chapter 5. However, evidence from our experimental 'insurance game' provides a warning against insurance being able to break into the vicious circle of poverty by increasing levels of trust. On the evidence from eastern Uganda, insurance only increases trust on average in the higher-income village. But the impact on trust is increased in the case of individuals who have multiple linkages with external services (microfinance and extension); as also in the case of educated females.

These complementarities are important in determining whether insurance will be effective.

- These data provide rather weak evidence in favour of female education and increased intra-group equality as instruments which may be able to build trust indirectly, and insurance as an instrument for building it directly. But insurance, although more *demanded* by lower-income individuals, is more effective amongst higher-income individuals; this may have implications fro the ability of an 'insurance fix' to reduce poverty.
- Finally, there is one other resource which has been able to mobilise social capital on a large scale. This (see chapters 5 and 8 of this book) is charismatic leadership – as exemplified by Ela Bhatt of SEWA or F.H. Abed of BRAC). But this –pending further examination in chapter 8 below – is even harder to incentivise than trust.

Chapter 7   Gender, agricultural technical change and poverty reduction: African case studies

In this chapter we examine (with relation to Uganda, Ethiopia and Zimbabwe) the proposition that development is held back and poverty augmented by inadequate defences against the risks affecting the crop production of African rural households. We use a model in which households seek to minimise the risk of falling below a 'disaster' level of assets, and in which men and women bargain the allocation of resources within partnership households, with women's preferences having a bias towards the minimisation of food security risks and men's towards the minimisation of cash income risks. Previous literature, beginning with Ester Boserup's classic, has argued that within such structures female agricultural productivity systematically falls below male productivity, which if true would clearly represent an important cause of poverty and underdevelopment, the more so since, in African agriculture, women do most of the work.

Our own findings are somewhat different: female productivity of maize, the basic food crop, *within partnership households* in Uganda and Ethiopia (also roundnuts in Zimbabwe), is somewhat higher than male productivity, even if productivity in female-headed households is distinctly lower, which can be partly explained in terms of a greater tendency for women to direct resources into investment in those households where they have control over allocation decisions. We seek to decompose differences in productivity into:

- differences in resources (including external inputs such as credit and extension) facing men and women;
- differences in risks facing men and women;
- differences in men's and women's preference-structures in face of risk, which, in the light of our bargaining model, reflect the exit and voice options available to them.

Using quantitative questionnaire data, the experimental data collected for chapter 2, and interviews with outliers and individuals who crossed the poverty line, we find that women have *preference-structures* more productive

to high investment and yields, and also have an advantage over men in access to some resources such as social capital and microfinance, even if male cultivators on average have more land and other physical resources available to them. On the basis of our Ugandan data, these differences offset the *resource* differences in favour of men within partnership households where their fallback positions are strong so as to produce, on average, higher female productivity within such households. But female-headed households, more exposed to risk, paying higher prices for their inputs and in other ways severely resource-constrained, typically have lower yields.

Thus, in principle, a poverty dividend can be expected from credit and extension strategies which redress existing discrimination against women farmers but diffuse short-season improved varieties across the board: a particular advantage, for both poor men and poor women, is the data from experimental plots which suggest that the adoption of improved (open-pollinated and hybrid) seed varieties represents an option which increases yield and reduces risk at the same time. However, examination of the 'poverty transitions' – the people who crossed the poverty line during our survey period – reveals a more complex picture. Across the sample as a whole, higher yields do raise income, but amongst farmers below the poverty line, the link is much weaker. Some farmers (mostly female) did however cross the poverty line both as the consequence of adopting modern varieties and as a consequence of being employed by people who adopted them. High social capital endowments appear to be important in achieving a transition across the poverty line.

The policy implications of this analysis are both broad and narrow. At the 'broad' level, a smallholder green revolution in foodcrops, because it reduces risks for the poor, can be presented as an important pro-poor policy option, somewhat neglected by the World Bank's 2000 poverty report, and this poverty impact can be enhanced by a focus on women producers. However, at the narrower level, there is an important slippage between yields and income at income levels below the poverty line, and poverty impact would be better if this slippage could be reduced. Indirect approaches such as the expansion of the labour, capital and insurance markets (as discussed in chapters 3 -5), as well as a focus on short-season varieties which have the lowest yield risks, could be valuable in this regard.

Chapter 8 The management of multiple risks: BRAC and SEWA

We have discussed different risk-management instruments in separate compartments, but at several points have illustrated complementarities between them. It is therefore of interest to examine cases where complementarity, or 'balanced growth' of risk management functions, has been engineered deliberately. Both of our examples, BRAC of Bangladesh and SEWA of north-west India, are NGOs, albeit rather exceptional NGOs, which provide credit, insurance, training, social welfare , in SEWA's case labour-market services and in BRAC's case also a number of productive and marketing activities. These 'zaibatsu NGOs' now account for a

very substantial role in their local economies, of which a significant part is the provision of integrated welfare services in sectors where the state is weak – in both cases with a bias towards low-income and disempowered women. In other words, they provide mini-welfare states. We wish to understand what is the role of such organisations, actually and potentially, in a pro-poor growth strategy.

Drawing on the literature on business growth and the motivation of NGOs, we seek to understand the dynamics which have driven these particular institutions not only to grow but to diversify and to innovate, in response to their perceptions of the coping strategies of their clients but also in response to perceived financial imperatives and pressures from aid donors and sponsors. We can see three clear advantages of integration for service providers (mutual support between functions, faster growth, and the retention of customer and donor loyalty) ; but whether the customer also gains is less clear, if one accepts the Townsend et al. critique that serving the needs of aid donors may crowd out the needs of the poor. We examine the interaction between gains to supplier and customer, drawing in particular on a data-set from SEWA clients over the period 1993-97, and ask: what added value to the poverty reduction effort have the organisations been able to provide through integration of services, in particular to fill the gaps exposed by our chapter 4 (on microinsurance) and chapter 5 (on microfinance services). We lay particular emphasis on the following roles:
- Altering the balance of power, and thus the terms of trade, between buyer and seller in the labour and capital markets;
- Filling the gap at the bottom end of the capital market through product Innovation;
  - Motivating risk management through the formation of human and social capital.

Although we discover a number of role-conflicts internal to the organisation resulting from integration, the verdict is positive: within SEWA 'integrated service' clients gain more over time than consumers of individual services. Particularly appreciated appear to be the services which protect homeworkers and other self-employed women against municipal and police harassment. The policy lessons from the two organisations go beyong these things; in particular, the BRAC and SEWA models of social protection, which began as early defences against the social costs of adjustment, are now being exported, and have proven macro-economic utility asa buttress against the import of global recession.

Chapter 9. Political risk, stabilisation policy and global financial governance

In this chapter the focus is on a subset of the risks arising from globalisation, namely the political risks associated with stabilisation. The need for such stabilisation can occur at unpredictable times – as the

east Asian financial crisis showed - , and the traditional (IMF) therapy for it is deflation of public-sector demand (public expenditure and the money supply), leading to a recovery of foreign exchange reserves. The risk attached to this approach is that if political opposition to this approach cannot be contained, countries undergoing stabilisation may be plunged into a vicious circle of deflation, political violence, depletion of human and physical capital, and increased poverty, such that any economic advantages from the initial deflation are washed away by the supply-side shock arising from political violence, which of course is endogenous to the initial deflation. The challenge therefore is to design a stabilisation package which is sensitive to the risks of violence and political breakdown and 'insures against those risks'.

We approach the problem by relating the risk of violence and political breakdown to four groups of factors:
(1) initial conditions, including inequality and social capital;
(2) institutions capable of managing the risk of conflict (including some discussed in previous chapters);
(3) exogenous shocks;
and (4) short-term actions designed to minimise the risk of conflict.

Amongst institutional factors (2) we see as particularly important the possibility of varying the *expenditure mix* in a pro-poor direction, and amongst short-term actions (4) we see as crucial the mix of stabilisation instruments and the speed of the stabilisation process – fast stabilisations, however strong the economic arguments in their favour, are often politically disruptive.

The function relating the success of stabilisation to these conditioning factors turns out to be highly nonlinear, with many countries managing to achieve peaceful stabilisation, some (such as Indonesia) lapsing briefly into chaos and then recovering, and a few (such as Zimbabwe, Sierra Leone and Venezuela) getting trapped into a deepening spiral of ungovernability, decapitalisation and rising poverty after a botched stabilisation provided the initial trigger. We examine some of these outliers in case-studies.

We argue that the most promising counterweights against falling into a 'macro-vicious circle of poverty' include *variations in the mix of public expenditures (favouring sectors which are labour-intensive and/or benefit poor consumers, as discussed in previous chapters); variations in the mix of stabilisation policies; and variations in the speed and duration of stabilisation programmes.* (There are also less obvious ones, including the devolution of poverty-reduction functions to non-state agencies as discussed in the previous chapter).These approaches have implications for the conditionality of international financial institutions, including in particular the IMF's Poverty Reduction and Growth Facility.

Dissemination

Unpublished papers

S. Humphrey and A. Verschoor, 'Decision-making under risk in rural Uganda', unpublished paper, Universities of Nottingham and Sheffield, presented at University of Sheffield seminar, November 2002, at revise and resubmit stage with *Journal of African Economies.* (Output from this project R 7614).

P.Mosley, John Hudson and Arjan Verschoor (2003a) *Aid, poverty reduction and the 'new conditionality',* unpublished paper, Universities of Sheffield and Bath, at revise and resubmit stage with *Economic Journal* (Output from Project R7617).

P.Mosley, (2003a) 'Pro-poor politics and the modern political economy of stabilisation', unpublished paper, University of Sheffield ,Forthcoming, *New Political Economy*, issue 2/2004. (Output from Project R7617)

P.Mosley(2003b) 'Gender and seasonality in African labour markets 1910-2000', unpublished paper, University of Sheffield. Presented at Business History Conference, Cambridge, 31 May. (Output from Project R 7615 and this project R 7614).

P.Mosley (2003c) 'Risk, gender and smallholder agricultural production in Uganda', unpublished paper, University of Sheffield. (Output from this project R7614).

P.Mosley and Arjan Verschoor(2003a) 'Risk attitudes in the 'vicious circle of poverty', paper presented at CPRC conference on Chronic Poverty, University of Manchester, 7-9 April (Output from this project R7614).

P.Mosley and Arjan Verschoor (2003b) 'The development of trust and social capital in rural Uganda: an experimental approach', paper presented at Development Studies Association conference, Strathclyde University, 10-12 September. To be submitted also to Royal Economic Society Conference, 2004 (Output from this project R7614)

P. Mosley and Farhad Noorbakhsh(2003) ' Political risk and stabilisation policy', unpublished paper, Universities of Sheffield and Glasgow. To be submitted also to Royal Economic Society Conference, 2004 (Output from this project R7614).

In addition, it is intended to submit the main manuscript attached to this executive summary as a book for publication by Oxford University Press.

Outputs already published

P.Mosley, 'Microinsurance: scope, design and assessment of wider impacts', *IDS Bulletin,* (October 2003) 143-156. (Output from this project R7614). Discussed with survey sponsor (FINCA Uganda) and at Ford Foundation IMPACT conference, Polokwane, South Africa, 5-9 May 2003.

Presentations

First drafts of chapter 4 have been shared with FINCA and Centenary Bank of Uganda and BRAC of Bangladesh. It is intended at a later date to arrange a presentation for senior staff of FINCA and other NGOs in Uganda on the design of microinsurance.

Chapter 1. Risk, market failure and poverty

1.Introduction

We believe that people's understanding of risk, and their behaviour in face of risk, has crucial importance for their ability to escape from poverty. In this book, we seek to illustrate this by tracing the linkage between individual perceptions of risk, institutions and policies for the management of risk, and mechanisms by which poverty is increased and reduced. Our vision at a practical level is to make contributions, deriving from empirical work conducted within this programme and elsewhere, to the design of institutions and policies for risk reduction (including the policies of donors such as DFID), with an explicit bias towards the poor and vulnerable, on whom (Beck 1991:43-44) the worst risks often fall.

Interconnections between risk and poverty: individual markets

In standard economic explanations of the poverty of both individuals and nations, such poverty derives from a lack of resources, exacerbated by non-developmental attitudes, or inability to gain access to crucial inputs and institutions. In early writings on development, the 'missing resource' was most often capital, defined in Marshall's *Principles* as 'that part of a man's wealth which he devotes to acquiring an income' (Marshall 1890:71). In the 'new growth theory' approaches which emerged from the mid 1980s onward (Romer 1986; Levene and Renelt 1992; Barro and Sala-I-Martin 1995) the emphasis is on *human* capital – knowledge - as a form of investment which provides the key to technical progress, but in which people may under-invest because of the risk that they cannot capture the returns on that investment. More recently still, *social* capital – the benefits which derive from membership of social networks – has come to be acknowledged as a key developmental

resource, most notably by the recent *World Development Report* on poverty (World Bank 2000, chapter 7). Social capital also, as described in more detail in our chapter 6, has been inserted into aggregate explanations of growth alongside the more conventional factors of production such as physical capital and labour, and has been argued to have at least as much leverage as those (e.g. Whiteley 2000: table 3); but with social capital there is even more risk that for poor people, the market may simply not take shape, as social contacts typically cannot be bought, or can be bought only by those who already have capital of some other kind. So risk, on this view, acts as a brake: it stops markets in crucial inputs from being formed, or prevents the benefits from those markets getting to poor people. In the case shown in Figure 1.1, the *expected* rate of return to capital (the average of the possible rates of return which might be expected in the future) is shown by line A,and the level of investment expected (the amount of investment which is 'expected' to be profitable) is OX; but there is a risk that it might be less than this, and we can assume that the *worst possible* rate of return is that represented by line B ; so if people are very risk-averse and make this pessimistic assumption about the returns that are likely to prevail, they do not invest, and the market collapses completely.

Rate of return

'Exoected'
rate of return

A

Amount of
investment

Cost of finance
= break-even
rate of return

O

X

B
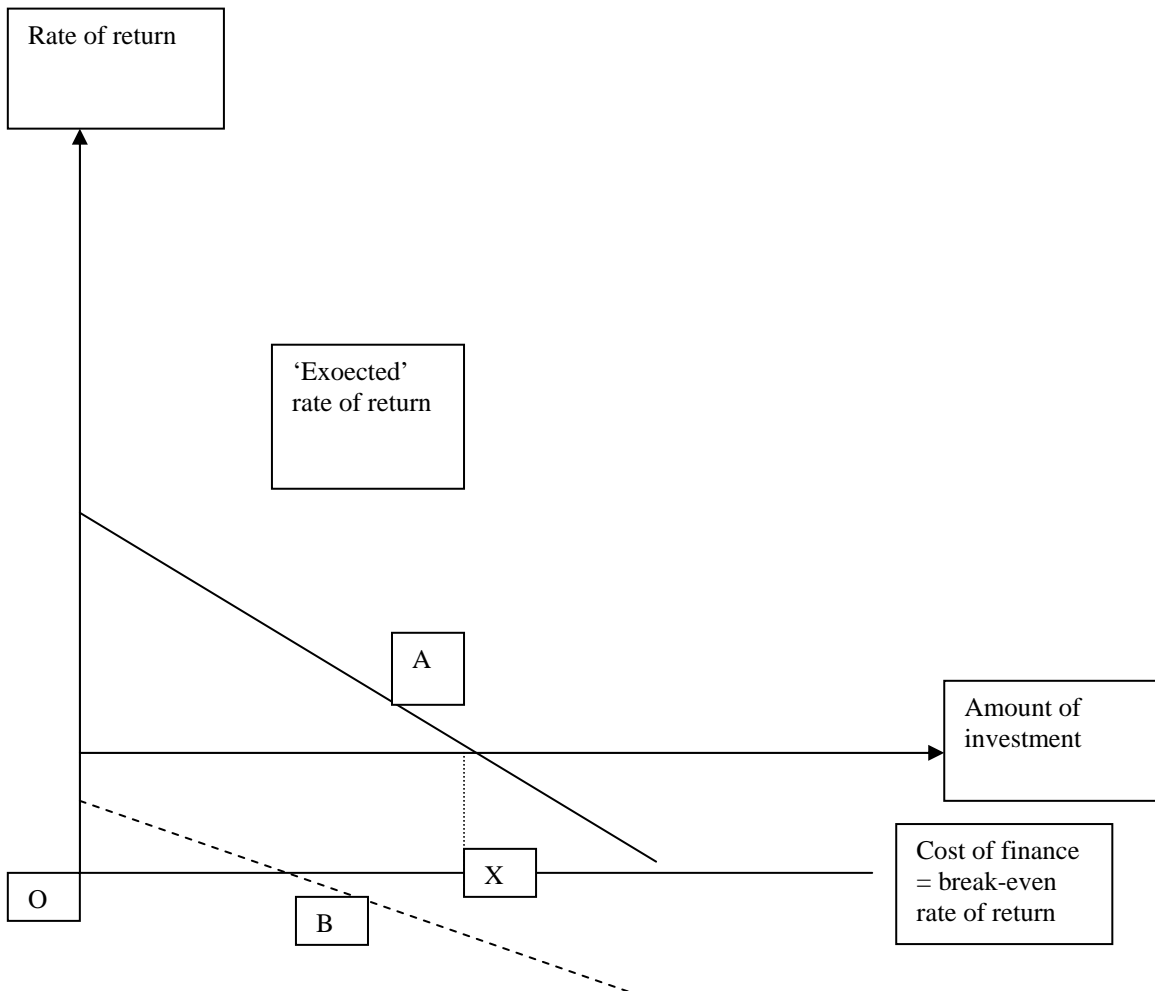
Figure 1.1. Risk and rate of return on investment

Financial capital, for example, stays away from the poorest *countries* because the risks of investing there are perceived as too high[2]. Very poor *people* cannot invest in much or any physical capital, because lenders to them cannot, in the absence of collateral, protect themselves against the possibility that they cannot repay. Poor people in particular under-invest in human capital because it is lumpy – particularly at the secondary-school level and above –

---

[2] 70% of foreign direct investment to LDCs goes to the top 10 middle-income countries and only 9% goes to the 53 low-income countries in total (World Bank, *World Development Indicators 2003*).

and the returns from it provide little support to current subsistence. Many forms of social capital, in the sense of access to networks, can be bought, and in this sense discriminate against the poorest. People with AIDS, the disabled, and many old people and refugees, certainly in the poorer developing countries of Africa and Asia, are excluded not only from all of physical, human and social capital, and the means of accumulating them (see in particular Woolcock 1998 and *Journal of International Development* 2002 for further illustration of the AIDS case), but often also the market for labour, even though it is often the only resource which poor people have available to sell. Thus the risks imposed on them by their location, age or physical state are augmented and not reduced by the market, and often the 'social safety net', such as it is, cannot reach them either.

In a number of observed cases, market failure has occurred, not just in the sense of vital markets which poor people cannot get into, but in the sense of a cumulative process of market collapse, often occasioned by some kind of external shock. One common example of such a shock, during the 1980s and 1990s in Africa, was trade liberalisation. Observing the impacts of a range of trade liberalisations, Winters observes:

> The overriding conclusion of the field research is the critical role of markets in determining the poverty impacts of trade and other liberalisations. Where conditions for the poor have improved this has usually been associated with better performance of and access to markets. Where they have worsened faulty or missing markets are to blame' (Winters 2000:)

As argued earlier, risk prevents or inhibits the formation of markets, and what matters is not the objective value of this risk but its value as perceived by potential buyers and sellers, as in the case of Akerlof's 'market for lemons' (1970) in which the market falls apart because people discover a risk which they did not initially suspect : consumers buy a product believing that it is of a specified average quality, discover to their cost that this average quality does not materialise, respond by withdrawing from the market, which forces market price down, which forces suppliers to withdraw in their turn, and so on until (in the limit) until the market collapses. The leading illustration in Akerlof's paper

is used cars of which a given proportion are useless ('lemons'); but other key markets in developing countries where the problem of quality uncertainty also prevails – as illustrated by Akerlof in his original article – are markets for key inputs, where classic problems of asymmetric information prevail. Lenders do not know, although borrowers know, what proportion of borrowers will repay their loans and employers do not know, although employees know, what the productivity of their employees will be, - thus they receive a 'negative surprise' which may cause markets to undergo progressive processes of collapse. It is these markets – in particular markets for capital and labour - on which we focus here.

Worse still, risks in one market may interact with risks in another. The worst-off in developing countries are afflicted by multiple risks, as prioritised by two samples of poor people themselves in Table 1.1:

Table 1.1. Risks as assessed by the poor in two countries

	Percentage of households reportedly affected by type of event	
	Ethiopia 1994-5 (rural sample)	Bolivia 1999(urban sample)
Harvest failure (due to drought, flooding etc)	78	
Health problems		85
Policy problems (resettlement, taxation, consequences of liberalisation etc)	42	49
Labour problems	40	
Livestock problems	39	
Land problems	17	
Asset losses	16	?
War and civil disturbance	7	
Crime/banditry	3	34

Source: Dercon and Krishnan 2000 for Ethiopia; Mosley 2001 for Bolivia.

The interaction of these risks with risk-averse attitudes can provoke a *vicious circle of poverty,*   a concept which forms an important part of the classical development literature (e.g. Myrdal 1966) and has recently reappeared in a new and much more risk-conscious form in the 2000 World Development

Report. . On this view, the poorest people and households are exposed to the highest levels of risk – which we visualise as the possibility of an event which will reduce well-being[3] - but because of being poor are likely to hold attitudes and take actions which prevent them escaping from poverty[4]. The version of this spiral presented in Figure 1.2 – not by any means the only version which exists, but the simplest which involves risk explicitly – distinguishes between *attitudes* which are likely to flow from a state of poverty (risk aversion), *resource allocation behaviours* which flow from those attitudes, *asset levels* which derive from the behaviours, and *coping abilities* (sometimes referred to as 'risk efficacy') which derive, inter al. from the asset levels. . Even at the simplest level, therefore, there are at least five links in the chain, involving a range of highly controversial concepts – including assets, the range of whose definition has as we have seen been progressively widened to embrace social as well as physical and human capital, and of course poverty itself. And within each of these links poor people are *active agents* rather than simply 'the excluded', juggling a portfolio of assets in order to get as close as possible to a desired state.

---

[3] Other definitions exist. The World Bank (2000:139) refers to risks as 'uncertain events that can damage well-being – the risk of becoming ill, or the risk that a drought might occur'. Sebstad and Cohen (2000: 9) define risk as 'the possibility of a loss, or the loss itself'

[4] This is the World Bank's version of the vicious circle (2000: 146):

'Extreme poverty deprives people of almost all means of managing risk by themselves. With few or no assets, self-insurance is impossible. With poor health or bad nutrition, working more or sending more household members to work is difficult. And with high default risks, group insurance mechanisms are often closed off.

The poorest households thus face extremely unfavourable tradeoffs. When a shock occurs, they must obtain immediate increases in income or cut spending, but in so doing they incur a high long-term cost by jeopardising their economic and human development prospects. These are the situations that lead to child labour and malnourishment, with lasting damage to children, and the breakdown of families.'
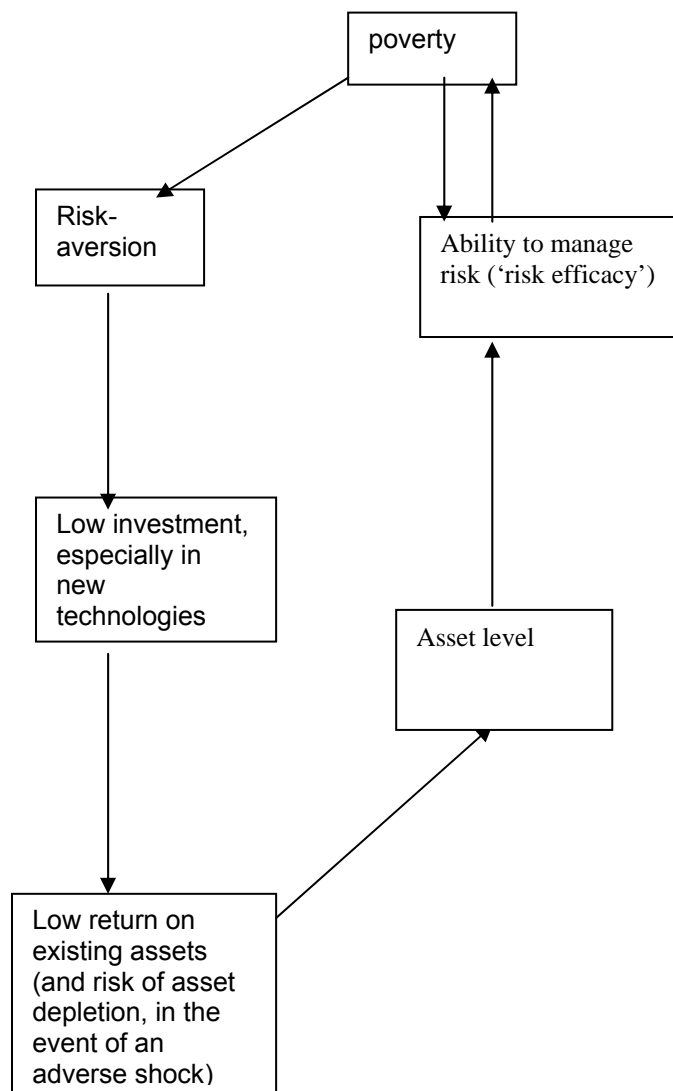
Figure 1.2. A standard 'vicious circle of poverty' based on risk-aversion and inability to manage risk

The contribution of the vicious circle approach, then, is to show how *attitudes* to risk may interrelate with asset accumulation behaviour (or lack of it) *in several different markets.* We emphasise the word 'may ': all of the linkages in this chain are hypotheses which may be true or false in the case of any particular household or enterprise.

A large literature now argues, with particular reference to industrialised countries, that all of these risks, and especially those related to technology, the environment and personal security, have increased, and that we all now live in a 'risk society' where risk forms much more a part of personal calculation than previously (Beck 1991; Giddens 1993) But as O'Neill (2002:16) pertinently remarks,

Those who saw their children die of tuberculosis in the nineteenth century, those who could do nothing to avert swarming locusts or galloping infectious disease, and those who struggled with sporadic food shortage and fuel poverty through history might be astonished to discover that anyone thinks that ours rather than theirs is a risk society. So might those in the developing world who live with chronic food scarcity or drought, endemic corruption or lack of security. If the developed world is the paradigm of a 'risk society', risk societies must be characterised simply by their *perceptions of and attitudes to* risk, and not by the seriousness of the hazards to which people are exposed, are the likelihood that those hazards will harm them.

There are two aspects of the developing-country risk society to which we wish to draw attention. One of them is the difference between risks as perceived and risks as they objectively are, to which O'Neill draws attention. The other is the difference between the risks faced by males and females.

Perceived versus actual risk

Inherent in the above discussion is the idea that resource allocations and market failures – and thence, eventually, poverty levels – are driven by perceived risks; what causes markets to collapse or not exist is what investors perceive demand to be rather than what it is. This makes it important in turn to understand the processes by which these perceptions, in turn, are driven. The psychology literature (e.g. Slovic et al. 1982; O'Riordan 1995) has shown that such perceptions are often driven by simple *heuristics* or information-processing rules, which in turn are influenced by a range of factors including trust in the source of the information provided. Of relevance here is the range of sources from which risk derives: some risks derive from natural hazards such as floods and drought, some from illness and injury, some from ill-health and some from human behaviour, including the behaviour of governments. In the post-colonial environments with which we are concerned in this report it is

important to be aware that for a very long historical period 'non-developmental', poverty-augmenting behaviour has been driven by a very rational perception of the damage which the policy authorities might do to well-being. Witness the following two anecdotes from colonial Zimbabwe:

(i)   – from 1925 - "Some time ago I was discussing with one of the Nuanetsi chiefs the question of supplying him with a grade bull to improve his cattle. He replied that he did not want a grade bull, because he thought that if he improved his cattle they would become desirable in the white man's eyes and would be taken from him"[5]

(ii)   – from 1944 – "(African cultivators fear) that any (technical) success will be a reason for refusing their demands, which are insistent, for an extension of the reserves. One Native, a member of an authorised Native Council and therefore a man of some standing, said… 'My fear is that if I were to go to a demonstrator and be taught, my land would be cut and I would be given a very small area to plough… We feel that if we follow these people there is a danger that some of our land may be taken away from us"[6]

As we have argued in our report elsewhere in this programme, this motivation for resisting poverty-reducing technical options still prevails in Zimbabwe half a century and more later. Failure to improve productivity, whether through grade bulls, hybrid seeds or whatever, can still be seen, on the small commercial farms of that country, as a 'survival algorithm' likely to decrease the chances of land-grabs by a still predatory government. In these illustrations, *the market for innovative behaviour collapses because of fears (perceptions) of a counter-move,* and we take up the invitation to treat risk as a game in several chapters below, particularly in chapter 4 on insurance and chapter 7 on small-farm productivity.

Gender allocation of risks

In a range of contexts, again relating to other parts of this programme, it has also been suggested that the risks faced by men and women are systematically different, with implications for their possibilities of escape from poverty. Elson (1999), for example argues that many possibilities of empowerment for women, particularly in developing countries, are accompanied also by gender-specific increases in risk:

---

[5] National Archives of Zimbabwe: S138/38: Superintendent of Natives, Fort Victoria, to Chief Native Commissioner, 12 January 1925.
[6] Southern Rhodesia, *Report of the Native Production and Trade Commission 1944,* p.25.

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. 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 markets have assumed that women 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 decisions 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.

Risk is particularly important in evaluating the implications of a reduction in the gap between the proportions of men and women whose labour force status is that of employers and self-employed. It is tempting to conclude that these two categories of engagement in the labour force are particularly likely to be empowering because they seem to be associated with greater control over production than the status of an employee. Even if this is the case, however, they do not confer control over market forces: hence risk-reducing institutions, such as chambers of commerce, business clubs, trade associations are extremely important. Such institutions are often 'bearers of gender' in the sense that they are constructed around male norms (and may even formally exclude women as members).

In other words, exit from the social relationships of the traditional economy may carry its own risks, perceived and real. If women are more risk-averse than men, and as a consequence accumulate less assets for a given level of technical options, they are likely to have lower productivity and worse well-being. This is the intrahousehold version of the 'vicious circle of poverty' depicted by Boserup:

> Often, men apply modern scientific methods in the cultivation of cash crops, while their wives continue to cultivate food crops by traditional methods. Thus, in the course of agricultural development, men's labour productivity tends to increase whereas women's remains more or less static. The corollary of the relative decline in women's labour productivity is a decline in their relative status within agriculture, and, as a further result, women will want either to abandon cultivation and retire to domestic life, or to leave for the town. (Boserup 1970, p. 53)

To summarise so far: perceptions of risk in the typical case act as a brake on investment and development; risk perceptions may be influenced by quite complicated experiential and historical processes; and those perceptions may vary between men and women, with implications for the intra-household as well as the community- and country-level distribution of income. We now consider, in the light of the analysis so far, possibilities for exit from poverty, and the impact on the possibilities of alternative policy options.

3 Anti-risk and anti-poverty expedients

In terms of our analysis so far, it is possible to visualise a number of policy and institutional expedients which provide potential exit routes from poverty via the management of risk ; these form the subject of the chapters which follow.

Firstly, poor people may seek to escape from poverty by selling their labour: for many of the worst-off, this is the only option. This is the theme of Chapter 3.

Second, they may seek to insure directly against any of the hazards mentioned, for example, in Table 1, by insurance. Insurance provision for the poor in developing countries is still scarce, but a number of exciting experiments in such microinsurance provision now exist, and these are reviewed in Chapter 4.

Third, they may seek to accumulate assets as a buffer against the risk of shocks to their livelihoods . Microfinance seeks to reduce the barriers to entry into the capital market for poor people, particularly women[7], by providing them with assets, both physical, human and, through group formation, social. Although the literature on microfinance is very large, the question of whether it will increase or reduce the risks to which its clients are subject remains unresolved. This is the main focus of Chapter 5.

Fourthly, they may invest in social networks, which can generate mutual trust which in turn can be drawn on as an asset. The process by which this happens is still somewhat mysterious, especially for economists, since although membership of social networks can often be bought, trust (which is the opposite of interpersonal risk) cannot. We present our findings on the accumulation of social capital in Chapter 6.

---

[7] 79% of microfinance clients globally are women (personal communication, Helzi Noponen)

These assets – access to labour markets, access to insurance, finance and social networks – are just four examples of processes by which risk can be managed; how well these processes work and for whom is crucial to the prospects for pro-poor growth. The following three chapters provide illustrations, in widely varying contexts, of the manner in which these processes may be juggled within a 'portfolio' to produce results which may be important for the process of poverty reduction.

Chapter 7 examines the process of the management of this portfolio at a *household* level. In relation to three of our case-study countries – Uganda, Ethiopia and Zimbabwe - it examines the effect of risk-management strategies by peasant households on foodcrop yields, on diversification and thence on poverty. The gender theme is introduced through Boserup's hypothesis, quoted above, which suggests that female yields may be systematically lower than male, and that this may, depending on the nature of intrahousehold allocation processes, both increase inequality between male and female and aggravate the problem of low yields and rural poverty.

Chapter 8 illustrates the management of multiple risks by *institutions* – in both cases NGOs. BRAC of Bangladesh and SEWA of India have elected to tackle not one but a whole range of the poverty-inducing risks described above, and to use a number of instruments – in both cases microfinance and microinsurance, in the case of SEWA labour-market interventions, and in the case of BRAC a whole range of human capital-related and product market-related interventions. In the process they have achieved considerable national and global influence, and in turn consideration of the manner in which they have sought to attack poverty forces us for the first time to consider which of the key livelihood risks are of local origin and which of them have roots in the operation of national and global policies.

These national and global policies, finally, are at the forefront of Chapter 9, which is about the management of an anti-risk portfolio at the *national* level . It specifically asks what instruments are available to governments of developing

countries to protect themselves against economic risks to their own tenure of office, and what the role of pro-poor strategies within such a portfolio might be. (These strategies include smallholder agricultural development, labour market interventions and financial-market interventions, as discussed in previous chapters). The thesis is that several micro-instruments of poverty reduction can serve as instruments for the protection of the state – especially a democratic state - , and that this has implications for international financial institutions and donors.

Before all of this, there is a chapter on risk attitudes (Chapter 2) which, as shown above, potentially occupy an important role in the vicious circle of poverty and in the decision processes of low-income households, but which in developing countries have been little researched since Binswanger's pioneering enquiries of the late 1970s. We analyse the structure of attitudes towards risk and the extent to which these attitudes are influenced both by objective economic conditions and by subjective states such as 'vulnerability'. We also perform experiments designed to help understand processes which may be key to anti-poverty strategy, in particular the formation of trust and the relation between private and community-related motivations. Much risk resides in the relations between people, and in the relations between people and institutions. Our inquiry into how these risks can be managed and what their side-effects might be, initiated in the following chapter, pervades the whole of the rest of the book.

Chapter 2   Risk attitudes and the 'vicious circle of poverty'

1. Introduction and early literature

An intuitive explanation of the intractability of poverty in face of policies to reduce it consists in the argument of the 'vicious circle of poverty': poor people's attempts to escape from poverty are frustrated by the fact that they are poor. The idea of the vicious circle of poverty takes many forms, since the attribute of poverty which makes escape difficult may be poor health, lack of skill, lack of self-confidence or support mechanisms, remoteness from markets and institutions, lack of physical assets or borrowing power, or combinations of the above. But one key element in many versions of the spiral, in any country or environment, is *risk aversion*: if very poor people are risk-averse, they will be unwilling to invest in the acquisition of modern technology because that involves taking risks, and thus they will remain poor, with processes of capital investment and innovation being confined to those people who are economically secure and in possession of sufficient defence against risk to be willing to invest and innovate, as illustrated in Figure 1.2 earlier. This has obvious distributional implications (Weeks 1972): if the poor do not invest and the rich do, gains in enterprise income will be restricted to the rich, with the implication of growing inequality over time. Thus, if we are to understand the dynamics of poverty, we need to understand attitudes to risk, how they are distributed between individuals and if possible what influences, policy and other, have a bearing on those attitudes. That is the function of this chapter.

The general idea of the vicious circle of poverty comprised a standard element in explanations of poverty and underdevelopment in the 1950s and 1960s (notably in the shape of Gunnar Myrdal's (1964) 'principle of circular and cumulative causation'), receded from sight in the next two decades in the

face of a certain amount of rubbishing by economists of the right[8], but then resurfaced late in the 1990s as a part of the new literature seeking to explain mechanisms of impoverishment and poverty-persistence. Notable within this new literature is the recent *World Development Report* on poverty, which proposes a 'vicious circle' focussed less on the risk *attitudes* of the poor than on their behaviour, in particular their restricted ability to *manage* or *cope with* risk, as already examined in the previous chapter (World Bank 2000:146, see also Figure 1.2 above)

> Extreme poverty deprives people of almost all means of managing risk by themselves. With few or no assets, self-insurance is impossible. With poor health and bad nutrition, working more or sending more household members to work is difficult. And with high default risks, group insurance mechanisms are often closed off. When a shock occurs, they must obtain immediate increases in income or cut spending, but in so doing they incur a high long-term cost by jeopardising their economic and human development prospects. These are the situations that lead to child labour and malnourishment, with lasting damage to children, and the breakdown of families.

Of course, these two components of the vicious circle- risk aversion and inability to cope with risk – can be are expected to interrelate. since low assets and low return on them can be expected to lead to low investment in new technologies; but this again is an empirical matter.

In principle vicious circles of poverty may occur within any sector of the economy –and in Chapter 9 we will encounter them at a global level. But the focus of most early research was on the attitudes and behaviour of small farmers. Throughout its 'years of high theory'[9] , lasting from Rosenstein-Rodan's (1943) essay on the industrialisation of Eastern and South-Eastern Europe to the middle 1960s, development economics worked with the assumption that traditional agriculture operated with a surplus of unproductive labour, contrary to the neo-classical premiss (see for example Schultz (1963)) that all workers and other factors of production were paid, as their wage, the value of their marginal product. The controversy between these two

---

[8] Notably Bauer,(1975) and Lal (1983), whose argument was based on the proposition that some poor people and countries manage to escape from the vicious circle.

approaches became particularly sharp at the end of the 1960s, and in the process risk aversion came to be emphasised as one reason why labour, and other factors of production, might not be hired up to the level of their marginal product. Lipton, for example, in his essay on 'The Theory of the Optimising Peasant', argued that small farmers, rather than seeking to equalise the value of expected marginal products of factors of production, would practise a 'survival algorithm ' (1967;337) – a decision rule which has a high chance of keeping the livelihood of the farm household intact -, in the process sacrificing efficiency in resource allocation. The poorer the household, Lipton speculated, the more urgent the need to protect against risk in this way and the higher one's 'risk premium', or the subjective value attached to protection against risk:

> The risk premium is an increasing function of risk and a decreasing function of assets (Lipton 1967:335).

In other words, the arrow going from poverty to risk aversion in our germinal 'vicious circle' diagram (Figure 1.2) denotes an orthodox direct relationship – the poorer you are, the more you seek to avoid risk. The commonsense basis for this relationship is clear both from Lipton's paper and from the surrounding literature – the poorer you are, the less will be the *assets* which are available to protect you against catastrophe, and hence the more risk-averse your *attitudes* are likely to be[10]. Lipton presented this approach as a challenge to expected-utility maximisation – the standard rationality professed by neo-classical microeconomics :

> Compared with a lower-mean, lower-variance policy, MVPE(i.e. marginal value product equalisation, as in expected-utility theory) substantially reduces its practitioners' prospects of surviving to complete the sequence. *The more 'underdeveloped' the peasant, the stronger are both objections to the logic of MVPE*[11].

---

[9] Krugman's term(1993)

[10] As support for this view Lipton cites the 1954 book by Kalecki, *Theory of Economic Dynamics* (London 1954), which also presents the proposition in axiomatic form.

[11] Lipton 1967, page 330; italics ours. This statement is presented in terms of MVPE (marginal value product equalisation), which represents conventional 'optimising' behaviour under certainty. Under *uncertainty,* the corresponding optimising postulate becomes MEVPE (marginal *expected* value product maximisation). Later in his article, however, Lipton makes clear that his strictures apply to MEVPE as well.

In most writing of the 1960s and 1970s this is the manner in which the argument is presented: a chain of reasoning based on commonsense, rather than on empirical observation. (Indeed the same approach, that the poorest *must* be the most risk-averse, continues into the 2000 World Development Report[12].) The copious evidence produced at this time in support of or in opposition to the hypothesis of surplus labour or 'disguised unemployment' did not directly examine the issue of attitudes towards risk, although it did sometimes assume (e.g. Bliss and Stern 1982 in Palanpur, north India, based on research done in the mid 1980s –) that risk aversion was probably the reason lying behind some of their findings in the field – for example, might be the reason why ploughing labour and other factors of production were hired to less than the value of their marginal product. At this stage, attitudes towards risk and the behaviour which flowed from them, - including the 'vicious circle of poverty' – were elided into one another rather than being regarded as separate stages of a process of impoverishment, and risk-averse attitudes, increasing with the level of poverty, were assumed rather than measured. Once measurement began, it exposed the unexpected.

2. Experimental approaches: Binswanger and the move towards 'non-expected utility theory'

What changed the course of research in this area were the studies by Binswanger (1980, 1981), which represent some of the outstanding early applications of experimental economics. Binswanger, according to his own account (1981: 867), 'chose an experimental approach when it became clear that we could not obtain reliable estimates of risk aversion by the usual interview techniques of eliciting certainty equivalents' and applied the now standard approach that attitudes to risk cannot be inferred from hypothetical questions about behaviour in face of such risk (e.g. 'would you prefer (a) £1000 now or (b) an equal probability of £2000 or zero determined by the toss of a coin?'), but rather must be derived from observation of actual behaviour

---

[12] 'As households move closer to extreme poverty and destitution they become very risk averse: any drop in income could push them below their survival point'. World Bank 2000, p. 145.

under experimental conditions with real money being paid to the subjects of the experiments if the gambles made in the laboratory turn out successful. The design of these experiments required skill: because many respondents were illiterate, the experiment had to be simple; and yet it remained important to choose a procedure which ranked choices as risky in a way which was robust to the definition of risk which one might choose to adopt, and which did not impose any restriction on the choices made by experimental subjects.

Working in semi-arid, risky-rainfall areas of Andhra Pradesh close to the ICRISAT main laboratories at Patancheru, Binswanger used risk attitudes thus measured(formally a measure of *relative risk aversion)* as the dependent variable and a range of explanatory variables, not confined to income and wealth but including also family characteristics (age, gender, caste and schooling) and characteristics of the experiment (the payoff of the gamble simulated and the subject's experience, or degree of luck, within the experiment) as independent variables to explain those attitudes. When he regressed the level of risk aversion, as estimated experimentally, on various possible determinants including in particular income the results turned out as follows:

Table 2.1. Determinants of risk attitudes in Binswanger experiments

(Dependent variable is partial relative risk aversion; figures in parentheses)

Variable	Regression coefficients		
Prize	*Case 1:*	*Case 2:0.5 rupees*	*Case 3: 500 rupees*
Intercept (village dummy)	2.23 (1.03)	-1.89	0.42
Log of net assets	-0.3188 (-1.01)		
Net assets (in thousand rupees)		-0.0055 (0.73)	-0.001 (0.34)
Schooling	-0.1705 (1.15)	0.061 (0.98)	-0.037 (1.58)
Age of respondent	0.0121 (0.90)	0.017 (1.20)	-0.0025 (0.46)
Sex (1 for female)	0.2227 (0.42)	0.81 (1.33)	-0.027 (0.122)
Caste rank	0.0063 (0.95)		
Land rented(hectares)		-0.092 (1.23)	0.008 (0.000)
Gambler dummy		-1.08 (0.83)	0.21 (0.58)
Luck in experiment	-0.1993**(3.03)	-0.24(1.42)	-0.04(1.67)

Number of observations	220	228	111
R^2	0.1624		

Source: Case 1:Binswanger 1981: Table 2; cases 2 and 3: Binswanger 1980, table 6

This innocent-looking table contained the highly controversial finding that, across a large income range and in particular below the poverty line, risk aversion was positive, but insignificantly correlated with well-being (in this particular table, the log of net assets) – in contradiction of the intuition of Lipton and many others that it would increase with the level of poverty. (The only variables to which risk aversion was responsive were experimental rather than environmental ones – in this table, luck with the experiment and in others[13], the size of the gamble). On this view, there is no behavioural rationale for a vicious circle – if risk aversion is indeed unconnected with well-being and randomly spread across a large range of incomes, there is no presumption for believing that the poorest are less disposed to incur the gamble involved in entrepreneurship and investment, either in physical or in human capital[14]. The 'commonsense theory' of Figure 1.2 and the empirics of Table 2.1 are thus in conflict, and an initial task confronting any researcher or policy-maker in this area is to bring them into some sort of relationship.

Binswanger's results are of course twenty years old and confined to one region of one country, and theory and (to a surprisingly limited extent) its testing within developing countries have moved on since the early eighties. The structure of the rest of the chapter is as follows: in the following section we present our new results on risk aversion and its implications for three countries; in Section 4 we examine the extent to which the results conform to expected-utility theory; and in section 5 we present results of people's level of *trust and community orientation,* which link in an interesting manner to risk

---

[13] E.g. Binswanger (1980), table 3.
[14] Binswanger inferred that differences in behaviour – in particular, reluctance to invest in modern inputs – were due rather to 'limitations on credit or on access to modern inputs' (1980:395). This has relevance for the argument of our Chapter 5 on microfinance.

aversion and have implications, discussed in the concluding section 6, for the design of anti-poverty institutions and policies.

3. New experimental results: risk attitudes, vulnerability and poverty
The design of the experiments

With the help of gambles including marbles and coloured bags, we investigated attitudes to risk among semi-subsistence small farmers (median plot size ranging from two to three acres) in two areas in rural Uganda, two areas in rural Andhra Pradesh, India[15] and one area in rural Ethiopia. Table 2.2 summarises the research locations and sample characteristics. Adopting official poverty lines (from the sources mentioned underneath the table) we calculate that 43.1 per cent of the respondents are income-poor in the Ugandan survey areas, 45.1% in the Ethiopian one, and 50.5% in the Indian ones. They mainly grow maize (Uganda), rice(India) and coffee(Ethiopia). Price fluctuations are cited as the main threat to livelihoods by the Ugandan respondents, drought by the Ethiopian ones, and health hazards are cited as a major threat by all.

---

[15] Interestingly, Vepur, one of the Indian research locations, is only 40 miles from ICRISAT headquarters at Patancheru from which Binswanger launched his surveys in 1980.

Table 2.2. Research locations and sample characteristics

Location	Uganda		Ethiopia	India(Andhra Pradesh)	
	Sironko township, Mbale district, east Uganda	Bufumbo township, Mbale district, East Uganda	Afeta Peasant Association, Mana wereda (district) in the Jimma administrative zone of Oromiya region	Vepur village, Mahabubnagar district	Guddimalakapura village, Mahabubnagar district
	October 2001 and February 2003	**October 2001**	**February 2002**	**April 2002**	**April 2002**
Exchange rate per UK£	**2500 Ugandan Shillings (UGS)**		**12.5 Ethiopian Birr(ETB)**	**71.9 Indian Rupees(INR)**	
GDP pc as % of UK GDP per capita	**1.6**		**0.5**	**2.1**	
Gini(source:WDI) UK:36.8 Brazil:60.8	**37.4**		**40.0**	**37.8**	
Average income per day per household(standard deviation)	**3750 UGS** **(3007)**	**1720UGS** **(1479)**	**2.5ETB** **(1.85)**	**30 INR** **(22.5)**	**38INR** **(16.0)**
Average household	**7**	**7.1**	**5.8**	**6.0**	**6.0**

size					
Average daily wage(female/male)	1000/1500	1000/1500	2.5/4	15/30*	15/30*
Daily poverty threshold	852UGS	852UGS	2.7ETB	40.6INR	40.6INR
Average age	38.2	40.6	45.0	36.4	36.4
Sample size	109	96	100	109	118
Female(%)	63(57.8)	38(39.6)	35(35.0)	56(51.4)	61(51.7)
Male(%)	46(42.2)	58(60.4)	65(65.0)	53(48.6)	57(48.3)

Source: Surveys as specified in first row, plus for poverty lines etc:*Uganda:* Appleton, Simon, 2001, 'Changes in Poverty and Inequality' pp 81-122 in: Ritva Reinikka and Paul Collier(eds.) *Uganda's recovery – the role of firms, farms and governments,* Washington DC: World Bank.*Ethiopia:* World Bank Report: Ethiopia: Focussing Public Expenditures on Poverty Reduction Vol III: Public Expenditure Review of Oromiya Region, World Bank, December 20 2001, page 3.*India:* Planning Commission, Press Release, February 22, 2001.

Notes.* During the survey in Andhra Pradesh, the area was suffering from a drought, which triggered a general wage collapse – it was common to find women working for as little as Rs2 and men for as low as Rs 8.

In designing the experiment, we faced, as Binswanger did, the problem of designing a procedure simple enough to deal with the fact that many participants are illiterate, and yet detailed enough to elicit a picture of small farmers' risk preferences – including the possibility that those might deviate from the expected utility model. Participants were presented with various pairs of lotteries (Table 2.3) one (R for 'risky') with a higher expected value but riskier than the other (S for 'safe'), and were asked to state their preferred lottery out of each pair. In addition two hypothetical questions were added that elicited certainty equivalents. The representation of risky prospects took place in essentially the same way in all five locations. When explaining problem (1) in Uganda, for example, prospect *R1* was represented as a red bag containing four coloured marbles. The experiment organiser, standing on a stage, placed one yellow marble into the bag and explained that, should this bag be selected and the yellow marble subsequently drawn, it would be worth 5000 Ugandan shillings (UGS). Two green marbles (each worth UGS 2000) and one blue marble (worth nothing) were added to the red bag. Prospect *S1* was

represented by a (blue) bag containing four green marbles, each worth UGS 2000. Each of the problems was also presented in the form of a coloured illustration that participants had in front of them on a sheet of paper (Ethiopia and Uganda) or on a display board (India). These illustrations showed the contents of the red and blue bags, with appropriate values attached to each differently coloured marble. Participants then pointed to the bag they preferred and a helper recorded their choice[16]. We did not let any of the participants write anything themselves, because, as earlier discussed, many of them are illiterate or semi-literate and may well have felt awkward holding a pen. We started the experiments with a dummy question which was explained until participants grasped what was expected of them.

Next participants were told: 'When you have finished the questions that we are about to put to you, we will randomly select one by drawing a number from this bag which contains pieces of paper numbered consecutively[17]. We will then look at how you chose in this problem and play out your chosen

---

[16] In India participants were asked to step into a booth when their name was called, where they would be asked to point to the bag of their choice. Our enumerators suggested this device, because it would ensure anonymity of choice, and because frequent periodic elections in this part of the world mean that participants are very used to polling booths.

[17] In the Ethiopian and Indian experiments, question numbers were written on pieces of paper and put in a bag (or box in India) only after participants had stated all their preferences, and one of the participants was invited to draw a number; enumerators found that this way of doing it enhanced the experiment's transparency and credibility in the eyes of the participants.

Table 2.3. Assessment of choice under risk:The lotteries

	Option 1			Prob(1)	Option 2			Prob(2)	Option 3			Prob(3)
	UGS	ETB	INR		UGS	ETB	INR		UGS	ETB	INR	
R1	5000	20	25	0.25	0	0	0	0.25	2000	8	10	0.5
S1	2000	8	10	1								
R2	5000	20	25	0.25	0	0	0	0.75				
S2	2000	8	10	0.5	0	0	0	0.75				
R3	5000	20	25	0.75	0	0	0	0.25				
S3	5000	20	25	0.5	2000	8	10	0.5				
R4	10000	44	55	0.5	0	0	0	0.5				
S4	4500	20	25	0.75	0	0	0	0.25				
R5	4500	20	25	0.75	0	0	0	0.25				
S5	4500	20	25	0.5	3500	16	20	0.25	0	0	0	0.25
R6	10000	44	55	0.5	0	0	0	0.5				
S6	4500	20	25	0.5	3500	16	20	0.25	0	0	0	0.25
R7	10000	40	50	0.25	0	0	0	0.75				
S7	3000	12	15	0.75	0	0	0	0.25				

alternative by selecting a coloured marble from this bag, which contains
(marbles as appropriate). If you win you will be paid in cash on the
spot[18].Because you will not know which of these lotteries will be played for
real money until the sequence of lotteries is complete you should consider
each of them carefully and as if they are all for real money.' Both beforehand

and repeatedly throughout the experiment, it was emphasised that because the identity of the 'real payment' lottery would not be known until all experiments had been completed, any lottery could be for real money. Participants were thus invited to visualise all problems as if they were being played for real money.

Half our sample got the questions in one order, the other half in the reverse order. We disguised what we were testing by having a problem order (not the order presented in Table 2.3) that does not place similar questions next to each other. We worked with groups of approximately 10 participants at a time, and one helper per participant. They were spatially separated to discourage conferring, and were told that any talking, apart from asking questions of clarification, would lead to their being excluded from the prize-winning part of the experiment. There were some sore losers in these lotteries, one of whom threatened the Uganda investigator with a machete at one stage, but we are glad to report that with the exercise of some fortitude all ended peacefully. A session with one group typically lasted between three and three and a half hours, with often at least 60% of the time spent explaining the experiment (introductory examples, playing a real gamble with volunteers, playing the dummy question, and so forth). Locations were school or community halls, and in one case (Ethiopia) a field under the shade of trees.

Poverty, vulnerability and risk aversion

In expected utility theory, risk aversion is related to the concavity of the agent's utility function, and can be expressed as a combination of some or all of: its first- and second-order derivatives, initial wealth, and the stochastic variable that determines increments to wealth (e.g.Laffont 1989). If we assume that the utility function is twice differentiable, the Arrow-Pratt approximation allows us to disentangle the respective effects on welfare of risk and preferences, as follows. Let U(W) be a suitably behaved concave utility function in wealth, and let Z be the prize of the lottery, α the probability of winning the prize, and λ the reservation price. A measure of risk aversion ρ

---

[18] In India winnings were paid in vouchers, redeemable at the local bank (with no transaction costs to

equal to minus the second divided by the first-order derivative of the utility function can then be deduced by developing a Taylor expansion of U(W-λ) and U(W+Z-λ) around U(W) and solving for ρ (for details see Gollier, 2002)[19]:

$$\rho = (\alpha Z - \lambda) / (\lambda^2/2 + (\alpha Z^2/2) - \alpha\lambda Z) \qquad \textbf{(1)}$$

Putting a number to an individual's attitude to risk with the help of such a measure becomes possible once he or she has stated the certainty equivalent of a stochastic variable. We have elicited certainty equivalents with the help of these two questions, supplementary to those asked in Table 2.3:

Imagine you own the lottery and are about to play it for real money. What is the minimum amount I would have to give you so that you forego playing?

8. $5 with p=0.25; 0 with p=0.75

9. $1.5 with p=0.75;0 with p=0.25

Following Hartog et al (2002) we calculate measures of the reservation price λ and thence of absolute risk aversion from these Willingness to Accept (WTA) questions by substituting into the Arrow-Pratt formula developed as (1) above; we call risk aversion measured from responses to question 8, AP8, and as measured from responses to question 9, AP9.

The Arrow-Pratt measure of risk aversion assumes the validity of Expected Utility Theory. Given the extent to which EU theory is, in practice, violated in our sample (Humphrey and Verschoor 2003 and Section 4 below), a measure of risk aversion that does not hinge on its validity would be preferable. We therefore develop a simple and intuitive measure of risk aversion based on the

---

the participants).

[19] Multiplying ρ by wealth gives a measure of relative risk aversion (that is, a dimension-free measure of an individual's willingness to accept a gamble when wealth and the size of the prospect both increase by the same proportion). Although tempting, we stop short of doing this because, as a result, the measurement error of risk aversion would be compounded by that of wealth (cf. Hartog et al. 2002)

number of times that participants in our experiment, when given the choice between two lotteries, say they preferred the risky to the safe lottery. Participants were in effect faced with two kinds of probability when asked to state a preference for a lottery: the probability that this lottery would be the one played 'for real' (one divided by the number of lottery pairs) and the probability of winning a prize of a certain size within this lottery (listed in Table 2). By sometimes choosing a safe lottery and sometimes a risky, they could therefore manipulate the probabilities of winning various prizes in ways that would not be open to them when presented with only one lottery. It should in principle be possible to infer both an overall risk premium and probability preferences from the patterns of responses which participants exhibited. As a first cut, we simply count the number of times they exhibited a preference for the risky lottery. Our risk aversion measures take the value one (1) for participants who preferred risky lotteries least frequently (so, for instance, RA3=1 for participants who state a preference for a risky lottery less than three times) and zero otherwise.

When we replicate the original Binswanger regressions we find, both for South India and for our other two countries, results broadly similar to his. Table 2.4 summarises the results of 36 risk-aversion regressions (binary logistic regressions in the case of the RA measures) on income, wealth and other household and personal characteristics, following the model of Binswanger's regressions reported in table 2.1. In only one country, Ethiopia, is any of our risk aversion measures correlated with income, and then only one(RA5) at the 10% level. In Uganda, per capita wealth is correlated with three RA measures, but not with any of the Arrow-Pratt (expected-utility-based) measures. Education is insignificant everywhere, and gender is also insignificant everywhere except in Andhra Pradesh.

Table 2.4. Risk aversion, income and wealth:significant variables in regressions

	Uganda(Sironko and Bufumbo)	Ethiopia(Afeta)	India(Mahboobnagar, A.P)
Female=1(a)	None	None	RA2** RA3**
Age(a)	None	RA5*	AP8* AP9*
Literate=1	None	None	None
Income pc(b)	None	RA2*	None
Wealth pc(b)	RA2** RA5* RA6*	None	None

Source: OLS replications of the Binswanger regression (see Table 2.1) with same independent variables and risk aversion measures AP8, AP9, RA1-6 as dependent variables. A risk aversion measure is inserted in the table if a coefficient on an independent variable is statistically significant (* at 10%, ** at 5%, *** at 1%).

Notes; (a) Significant coefficients are negative *(b)* Significant coefficients are positive

Does this mean that the concept of an attitude-based vicious circle of poverty, as depicted in Figure 1.2, is dead? Not necessarily: it may be that the link from 'poverty' to 'risk aversion', as depicted in that diagram, depends on the concept of poverty that is used, and that what drives attitudes of risk-aversion and entrepreneurship is not so much objectively-measured income[20] or wealth as subjective vulnerability. We were able to test this proposition in Andhra Pradesh and also in Sironko, Uganda, by conducting a resurvey of, repectively, 170 and 82 of the participants in the original risk experiment in

---

[20] The World Bank study of *Voices of the Poor* found that income was not found by most poor people globally to be a significant concept by which to measure their feelings of deprivation (Narayan et al. 2000)

February 2003. For these participants we constructed an index of perceived vulnerability based on four indicators: memories and expectations of deprivation, expectations of short-term income dynamics, perceived risks associated with investment and entrepreneurial behaviour, and self-respect and perceived status[21]. In each survey location, when this index is inserted into the Binswanger regression as independent variable in place of income and wealth variables (Table 2.5), it is significant (at the 5% level) for all of the RA risk aversion measures - that is, those which do *not* require conformity with expected utility theory. We thus have, for two samples in two widely-differentiated rural communities, an indication that it may be subjective rather than objective factors which drive attitudes towards risk. Whether those attitudes in turn drive behaviour – which is necessary if the vicious circle is to be completed – is an issue which we examine in section 5.

---

[21] There is as yet no consensus as to what constitutes an ideal index of vulnerability (Gamanou and Morduch 2002:I). We include here a perceived measure for three of the concepts of vulnerability which they review (past variability, risk of future change in poverty status, and ability to cope) and add a fourth measure attached specifically to risks associated with entrepreneurship. We do *not* include assets in this measure but rather estimate their influence separately (cf. Table 2.4). However, in Table 2.5 below (and also in Chapters 6 and 8) we do consider the effects of interactions between assets and subjective vulnerability measures.

Table 2.5 Results of regression analysis: perceived vulnerability and other variables as determinants of risk aversion

Independent variables:	Regression coefiicients on specified dependent variables (Student's t-statistics in parentheses):				
	Uganda				India(Andhra Pradesh) Binswanger-Level 5
	RA2	RA3	RA4	RA5	
Constant	-2.038* (2.92)	0.248 (0.043)	0.354 (0.059)	1.409 (0.502)	0.75 (0.51)
Age	0.003 (0.020)	-0.017 (0.573)	0.004 (0.021)	-0.024 (0.367)	0.0059 (0.24)
Gender	0.534 (1.246)	-0.620 (1.328)	-0.414 (0.421)	-1.118 (1.387)	-0.35 (0.79)
Dependency ratio	1.622 (2.031)	0.663 (0.307)	-0.414 (0.421)	-1.057 (0.262)	2.89** (2.41)
Education	-0.093 (0.843)	0.352 (0.458)	0.548 (0.751)	0.619 (0.480)	0.27 (1.39)
Perceived vulnerability Index	0.033* (3.435)	0.041** (4.464)	0.038* (2.812)	0.103*** (7.104)	-0.25** (2.07)
Assets					-1.11E-06 (-0.65)
Income					2.67E-05 (1.34)
Irrigation Dummy(1 if land irrigated)					-0.39(1.31)

Nagelkerke R^2	0.127	0.123	0.082	0.289	0.064
Number of observations	82	82	82	82	170

OLS estimation.

Sources: for all variables as in Tables 2.1 and 2.4 except:
Perceived vulnerability index. This index uses scores that reflect respondents' degrees of agreement with a number of statements about themselves that fall into four broad categories: memories and expectations of poverty throughout their and their children's lifetime; expectations of short-term income movements; perceived risks attached to entrepreneurial behaviour; and self-respect. On each of these criteria the response is coded on a five-point scale. The higher the index, the higher is someone's perceived vulnerability (range: 0-100)

1.Memories and expectations of vulnerability(range:0-30)
Respondents were asked to think of poverty as having an income inadequate to cover expenditures on food, clothes, housing, medical care, schooling and important ceremonies (circumcision, burial, marriage and so forth). Possible scores:

- I will be poor next year [0,1,3,5,6]
- I have been poor for most of my life[0,1,3,5,6]
- My children have been poor for most of their lives[0,1,3,5,6]
- I will be poor for the rest of my life[0,1,3,5,6]
- My children will be poor for most of the rest of their lives [0,1,3,5,6]

2. Expectations of short-term income variations(range:0-20)
Scores are based on the extent to which respondents believed their income would be subject to a downward shock over, respectively, the next year and the next five years. Possible scores:

- My income will be higher/lower next year [0,2,5,8,10]
- My income will be higher/lower in five years'time[0,2,5,8, 10]

3. Perceived risk of entrepreneurial behaviour (range:0-20)
Scores are based on respondents' degree of agreement with the following statements.Possible scores:

- If I were to buy more hybrid seeds, I might get into financial difficulties[0,1,2,4,5]
- If I were to hire more workers, I might get into financial difficulties[0,1,2,4,5]
- If I were to improve my land, I might get into financial difficulties[0,1,2,4,5]
- If I were to buy more land, I might get into financial difficulties[0,1,2,4,5]

4.Self-respect and perceived own status(range:0-30)
Scores are based on respondents' degree of agreement with the following statements. Possible scores:

- I am an important person in my community[0,2,4,8,10]
- I am an important person in my family[0,2,4,8,10]
- I am an important person in my own eyes[0,2,4,8,10]

4. Expected utility theory: conformity, violation and the 'survival algorithm'

We now wish to ask whether there is any link between risk aversion and preference structure – whether violation of expected utility has any role in conditioning the link between vulnerability, risk aversion, and subsequent actions which have a role in determining poverty levels. Binswanger interpreted his findings within the context of expected utility (EU) theory, under which individuals choose between options on the basis of the utility of the certainty equivalent value of the future outcomes which might result from each option, with the level of the risk aversion inherent in the shape of the utility function and measured by the Arrow-Pratt coefficient: an axiomatically derived approximation of its degree of concavity (see equation (1) above). However, since Binswanger many experimental economists in high- and a few middle-income countries have discovered behaviours in face of risk which depart altogether from the standard EU axioms.[22] Debate continues not only about the descriptive accuracy of EU axioms, but also about which of several non-EU theories is best[23]. We explore elsewhere the question of which theories of rational choice are confirmed by our data (Humphrey and Verschoor 2002, 2003). Here we focus on Lipton's provocative sentence:

---

[22] These standard axioms are: *ordering* (individuals are willing to state preferences across all pairs of alternatives, and these preferences are transitive, in other words, having once preferred A to B, and B to C , they do not then prefer C to A), *continuity* (there are no kinks in indifference curves) and *independence* (for any three prospects A, B and C, if A is preferred to B then an x per cent probability of A combined with a (1-x) per cent probability of C will always be preferred to an x per cent probability of B combined with a (1-x) per cent probability of C, *whatever the probability x may be.*(in other words, once third options are introduced, they do not, however they are presented, alter the structure of an individual's preference between any two basic options). It is this independence axiom on which most debate has focussed, and in relation to which violations of EU theory have been most often noticed, starting with with the famous 'Allais paradox' (Allais 1953). This conjecture suggested that, given a choice between two lotteries of equivalent expected value, individuals would not always choose the 'riskier' one (with the higher probability of getting nothing) or always choose the 'safer' one, but might flip-flop between the two depending on the size of the payoffs in the lottery – which according to the independence axiom should be irrelevant. This conjecture, which has often been confirmed empirically, is one example of the more general 'common consequence effect', which is that under an expected-utility approach choices between 'risky' and 'safe' gambles should not vary according to the value of the 'common consequence' if things turn out badly. This 'common consequence effect' is tested in our experiments below.
[23] Starmer in his recent review(2000:1) claims that these models 'now number well into double figures'

Compared with a lower-mean, lower-variance policy, MVPE(i.e. marginal value product equalisation, as in expected-utility theory) *substantially reduces its practitioners' prospects of surviving to complete the sequence.* The more 'underdeveloped' the peasant, the stronger are both objections to the logic of MVPE[24]

The question we now ask is, do cultivators themselves *perceive* the adoption of an expected-utility approach as 'substantially reducing their chances of survival'?

A convenient and frequently-deployed test to discriminate between EU theory and decision-weighting models is the common consequence effect. Common consequence effects are violations of the independence axiom of EU theory observed over decision problems of the type described below (based on Figure 2 in Humphrey and Verschoor 2002):

Choice(1)	*R1:*	5000,prob0.25;	2000, prob0.5;	zero, prob 0.25	[2250]
	S1:		2000, prob 1		[2000]
Choice(2)	*R2:*	5000,prob0.25;		zero, prob 0.75	[1250]
	S2:		2000, prob 0.5;	zero, prob 0.5	[1000]

- Each decision problem is a choice between a relatively safe and a relatively
  Risky alternative. All outcome are in Ugandan Shillings (UGS). In problem (1), for example, the choice is between *R1* and *S1.* The numbers in square brackets show the expected value of each lottery.

Choice (2) is generated from choice (1) by deleting from the intermediate outcome, in both the relatively safe and the relatively risky alternative, a probability of 2000UGS. Formally stated, the independence axiom requires that for any two prospects in which *x* **p** *y* (the symbol **p** denotes strict

---

[24] Lipton 1967, page 330; italics ours. This statement is presented in terms of MVPE (marginal value product equalisation), which represents conventional 'optimising' behaviour under certainty. Under *uncertainty,* the corresponding optimising postulate becomes MEVPE (marginal *expected* value product maximisation). Later in his article, however, Lipton makes clear that his strictures apply to MEVPE as well.

preference) the introduction of a third prospect *z* with probability 0<p<1 does not disrupt the original preference relation between *x* and *y,* so that [*x,p;z,(1-p)*] **p** [*y,p;z, (1-p)*]. Therefore, in this context, it requires that, having once preferred R1(S1), an individual should then prefer R2(S2). The specific violation of the independence axiom commonly observed in laboratories in high income countries in relation to choices (1) and (2) is that R2 **p** S2 is significantly more frequent than R1 **p** S1. By contrast, in Lipton's survival algorithm, asset-poor small farmers avoid prospects in which a probability of failure looms large, which tendency, if sufficiently strong, would cause R1**p**S1 to be significantly more frequent. This is precisely what we find in the second panel of Table 2.6 in each of our research locations: the manner in which the gamble is presented *does* influence the choice which is made.

Table 2.6. Common consequence effect and expected utility violation

Location: Pattern of choices:	Uganda	Ethiopia	Andhra Pradesh
EU-consistent: **(1)**R1**p**S1, then R2**p**S2	33	20	50
(2)S1**p**R1, then S2**p**R2	107	43	86
EU violators:			
(3)R1**p**S1, then S2**p** R2	44	25	58
(4)S1**p**R1, then R2**p**S2	21	12	33
Proportion of EU violators ((**3**)+(**4**))(n/100)	31.7	37.0	40.1
Proportion of EU violators who showed: Above-average risk aversion (on RA5 measure) Above-average vulnerabilty			
Number within whole			

sample who preferred R1 to S1(who rejected high probabilities of failure) as a percentage of those who preferred R2 to S2	142.6***	140.6***	130.1***
Chi-square statistic	(16.7)	(9.0)	(13.3)
Number of observations (n)	205	100	227

Table 2.6 also shows that the violation rate of EU axioms as manifested by the common consequence effect ranges from 32% to 40% in our research locations. These rates are broadly similar to those observed in experimental laboratories in European and North American universities (Starmer 2000) and slightly higher than the 26% violation rate reported in Finkelshtein and Feinerman (1997) on the behaviour of agriculturists from a middle-income country (Israel). Thus, for a majority of small farmers EU axioms *are* descriptively accurate, but for at least a third they are not, and those who do not comply tend to be the vulnerable and the risk-averse who as we have seen are those who avoid the possibility of failure at all costs. This is not to say that EU violation causes risk-aversion, only that it appears to be associated with it. As we shall now see, a much larger proportion of small farmers violate an even more crucial economic axiom than consistent expected utility maximisation, namely the axiom of self-interestedness, and this too may have implications for escape from the vicious circle.

5. Interpersonal risk, trust and defences against mistrust
Intellectual background

As we have discussed, everyone in a developing country, and poor people especially, are exposed to a very wide range of risks. But a particularly interesting subset of those risks are those which attach to the behaviour of individuals. If people subjectively attach a high level of risk to the behaviour of others in their community (i.e. do not trust them), then the cohesion and organisation of that community will be threatened and markets will fail; which,

as we have seen, is a key driver of the vicious circle of poverty. Conversely, if markets do fail, institutions and ethical codes which nurture trust may be able to provide a counterweight, as Arrow acknowleged thirty years ago:

> In the absence of trust… opportunities for mutually beneficial cooperation would have to be foregone…norms of social behaviour, including ethical and moral codes (may be) reactions of society to compensate for market failures (Arrow 1971:22)

In this book our main discussion of trust and social capital is in chapter 6. However, as a prelude it is useful to extend our experimental procedures from lotteries (games against nature) to games between human beings, in order to try to understand levels of trust, some of its determinants and possibly ways in which it can be influenced. Our point of departure is a global set of experiments from fifteen developing countries reported in Henrich et al. (2000) which between them undermine another of the key axioms of economics: that of the self-interested Rational Economic Man. The experimenters are unable to find him (or her):

> The canonical model (i.e. that individuals are entirely self-interested) is not supported in any society studied. Second, there is considerably more behavioural variability across groups than had been found in previous cross-cultural research, and the canonical model fails in a wider variety of ways than in previous experiments (Henrich et al. 2000:73)

The point of departure is provided by a trust experiment originally carried out by Abigail Barr, who modified the original Henrich procedures for use in Zimbabwe. Specifically, Barr's trust game (Barr 2003) is adapted for the conditions of Zimbabwean villages from a prototype developed by Berg, Dickhaut and McCabe('BDM',1995) whose purpose was to study the determinants of willingness by individuals to make investments in others; both authors use the game to study the influence of experience of social interaction on trust. The structure of the trust game is very simple: individuals play in pairs selected by the experimenter. Within each pair, player 1 is allocated a stake, of which s/he can if she chooses invest a proportion in the other player, whose identity is not known to her. The amount invested by the first player is then tripled and handed over to the second player. The second player then decides whether she wishes to hand anything back to the first

player. That is the end of the game. Because the game is as short as this and because players do not know who they are playing with, there is no possibility for people's reputations or knowledge of one another to contaminate the results. All first players who venture an investment in the other player are aware that they are open to exploitation by that player, but also that they are increasing the size of the common pool which is available for redistribution (Barr, 2003).

The trust experiments: design

The data for this study are from Uganda, a country with similar per capita GDP to, although a very different historical background and productive structure to, Zimbabwe; and were collected In August 2003 from fifteen groups of twelve or thirteen people (a total sample size of 186) in two villages on which we already hold extensive data on economic characteristics, risk attitudes and social histories (Horrell et al 2003) which potentially might offer insight into the correlates and determinants of trust . Salient features of these villages, Sironko and Bufumbo, are reported in Table 2.7:

Table 2.7. Characteristics of the research locations

	Sironko	Bufumbo
Height above sea level	1100m	1600m
Type of agricultural land	Lowlands at the foot of Mount Elgon, marshy plain in the South, savannah grassland in the North, few volcanic soils	Highlands on the slopes of Mount Elgon, volcanic soils
Agricultural calendar: Major rains Major harvest Minor rains Minor harvest	 March-June July Aug-Sept October-November	 March-June July Aug-Oct November
Average rainfall	1580mm/year	2168mm/year
Population size	6400	15285
Population density	300/km^2	550/km^2
Casual agricultural labourers (% of population)	27.3%	1.3%
Main crops	Bananas, maize, groundnuts, beans	Bananas, maize, beans, coffee, tomatoes, cabbages, onions
Typical plot size	2-3 acres (see further Table 7.)	1-2 acres (see further table 7.)
Large farms (>20 acres)	5%	0%
Average household income (monthly per equivalent adult)	Sh 83039($43)	Sh 43492($22)
Tribes	Iteso (immigrants from Kumi) and Bugisu (indigenous)	Bugisu (also called Bamasaba in Bufumbo)
Religion	Predominantly Christian (Catholic, Protestant, pentecostal)	Islam(80-90%)
Roads	Good quality tarred motor road south to Mbale and north to Kapchorwa, poor quality dirt roads otherwise	Dirt roads, often steep, four-wheel drive only in bad weather
Schools	One secondary school, four primary schools	One secondary school, eight primary schools
Clinics	Two private health centres in Sironko.	
Electricity	85%	0%
Extension services	Uganda National Farmers' Association, Mbale (not very active in Sironko)	Uganda National Farmers' Association, Mbale (very active in Bufumbo)
Non-agricultural employment opportunities	Trade, hotels and bars in trading centre, ginnery, processing plant for maize, abattoir, mechanics	Trade (mostly in Mbale town), beekeeping
Access to credit	Centenary Bank (individual loans) PRIDE, FOCCAS (group micro-credit for women)	Restricted access to credit. Group microcredit only (Centenary Bank has withdrawn)

Source: Muzaki 1998; background reports compiled on request by Mbale local government officers. Particular thanks to Patrick Natanga (formerly extension officer in Bufumbo)

Within these settings, we organised eight sessions of the trust game involving 67 pairs of players (33 in Sironko and 34 in Bufumbo)[25]. The Bufumbo sessions were on Wednesday 27 and the Sironko sessions on Thursday 28 August, 2003. As previously explained, the identity of each Player 1 was secret to each Player 2 and vice versa, and all players were mandated to inform nobody, not even their families, how they had played. A full rubric for the games we organised is provided in the appendix to this paper.

---

[25] A remaining 52 members of the sample (26 pairs) played an 'insurance game', a modification of the trust game, on which we report below.

Table 2.8 presents an overall picture of the decisions of first and second players in our trust game in relation to those designed by BDM in the United States and by Barr in Zimbabwe.

Table 2.8 Trust game: Responses by first and second players in the United States, Zimbabwe and Uganda

	US: Berg et al. 1995	Zimbabwe: Barr 2003	Uganda: This study
Number of playing pairs	32	141	67
Initial endowment size	10 US $	20 Zimbabwe dollars	4000 Ugandan shillings (c.$2)
Proportion of first players who invested zero	0.06	0.09	0.07
Mean investment for first players	5.16US$	8.58 Zim$	0.9 US$
Mean investment as proportion of stake	0.52	0.43	0.49
Mean response (expressed as a proportion of investment)	0.89	1.28	0.99

We can first of all report, almost routinely, that trust is alive and well in Eastern Uganda as in the locations of the other surveys reported by Hemrich et al –. Both the mean investment of first players (49% of the available stake) and the mean response by second players (99% of the first player's initial investment) are in between those observed by Barr in Zimbabwe and those observed by BDM in the United States.

Determinants of trust

In seeking to understand the determinants of trust, BDM and Barr both use the trust game to investigate the influence of 'social history' on trust – in the Barr case by comparing first and second player responses as between communities who had lived together a long time and communities which were recently resettled and thus lacked a social history. Our own interest is at this stage focussed on the influence not only of social history but specifically of the experience of poverty – since if that inhibits the formation of social relations that is an additional twist in the spiral – and also of policy variables which may incentivise mutual trust, and in particular insurance. A fuller discussion of trust-building is provided by Mosley et al.(2003), chapter 6.

Our point of departure is the distinct patterns of response which are observable *within* the Uganda sample as between the richer village (Sironko) and the poorer village (Bufumbo), as portrayed in Table 2.9. In Sironko, people are more trusting, and their responses cluster around a modal interaction in which the first player invests Sh2000, and the second player reciprocally gives back also Sh 2000, or one-third of this amount tripled. In Bufumbo, the poorer village, people are less trusting and their responses cluster around a modal interaction in which the first player invests Sh1000, and the second player reciprocally gives back also Sh 1000, or one-third of this amount tripled. In Bufumbo first players are much more willing to insure themselves against the possibility of being exploited by the second player, in a manner to be described later .

Table 2.9. Sironko and Bufumbo: initial conditions and behaviour in the trust game

	Whole sample	Sironko	Bufumbo	t-stat for difference between sample means (and associated significance level)
Initial conditions				
Risk efficacy (assets) index	1.06	1.10	1.02	0.91
Average landholdings in acres	2.45	2.89	1.90	3.12*** (0.002)
Mean income per equivalent adult (Ushs; 1$ = 1,850 Ushs)	61,613	83,039	43,492	3.04*** (0.003)
Average trust game scores(proportions of Sh4000 initial stake) (N = 134 or 67 pairs of players)				
Player 1(s)	0.49	0.54	0.44	1.69* (0.096)
Player 2(r)	0.47	0.78	0.26	5.02*** (0.000)
Proportional response(r/s) for all $s_i > 0$	0.99	1.43	0.66	5.27*** (0.000)

Source: trust experiments 27 and 28 August; for interview protocol see Appendix.

.   All this points to a possibility that higher levels of income may be not only (as argued for example by Narayan and Pritchett (1999) a consequence of higher levels of trust but also a cause of them. Indeed, although what matters for risk-aversion, on the analysis of Mosley et al (2003), is

vulnerability, what appears to matter for trust, on the basis of the *prima facie* evidence presented in Table 2.9, is income, which along with land-holdings is the key discriminator between the two villages. *Average* vulnerability is not very different between the two villages; essentially, as illustrated by Table 2.7, Sironko is a more developed and differentiated economy, with, in particular, a much larger underclass of casual, extremely vulnerable unskilled labourers, and as a consequence its average vulnerability score is marginally *higher* than Bufumbo's, even though average levels of income and landholding are also much higher.

In order to better understand the various influences bearing on trust, we consider the following determinants of trusting and trustworthy behaviour in a regression analysis.

- Measures of well-being, in particular income and physical assets. As we have noted, Narayan and Pritchett (1999) assume that the link between trust and income is exclusively one from trust to income. By contrast, our experimentally obtained data, in which income and assets are in effect pre-determined variables (see below), allow us to isolate a direction of influence the other way about.

- Measures of human capital. That education helps to create social capital is a finding so far mainly examined and confirmed in industrialised countries. Appleton (2001) quantifies the individual return on education for Uganda. In a portfolio model of capital accumulation, human and social capital are likely to be complementary: it pays more to invest in networks when one's level of education gives access to more rewarding employment opportunities (Glaeser et al. 2002). There may therefore be an important indirect payoff from the enormous investment put into schooling by the Ugandan government in recent years.

- Measures of association. The large database on our subjects compiled in the two years preceding the experiments on which we currently report contains various indicators of the degree in which households and individuals are linked with other households and

individuals and with society at large. The indicator most relevant for our present purposes is a measure of *bonding social capital*. It captures the number, nature and intensity of reciprocal links between households. For details of its construction see Horrell et al. (2003).

- Measures of incentivised trust. A reasonable expectation of reciprocity – Player 1's expectation of Player 2's response – would increase the likelihood of trusting behaviour. We will explain below in what way we consider this reasonable expectation to be formed by determinants from the previous three categories. By contrast, in the next section we examine what happens to trust and trustworthy behaviour when, through an external intervention, a *guarantee* of reciprocity is substituted for a reasonable expectation.

Econometric identification in this type of analysis requires careful estimation. With social capital (trusting and trustworthy behaviour; intensity of association) and 'effort' (risk-taking and thence income, expenditures and assets) contemporaneously determined, recovering model parameters is seldom achieved (cf. Durlauf 2002). However, experimentally obtained data permit a convenient short-cut (cf. Glaeser et al. 2000). Subjects' outside-the-laboratory circumstances and characteristics, though still as a matter of course *influencing* their behaviour once inside the laboratory, become fully contextual, therefore pre-determined, and may be treated as exogenous for estimation purposes[26]. But the short-cut should not be taken too hastily. Whilst trustworthy (Player 2) behaviour responds to a known initiative, trusting (Player 1) behaviour second-guesses a response. Player 1's beliefs about Player 2's secret preferences for reciprocity will in part be based on levels of actual reciprocity she has observed in her village, and in part – because the experiment is unlike anything she has ever experienced in her village – on her knowledge of what she herself would do in secret: in other words, trusting behaviour is in part a projection of one's own trustworthiness (cf. Orbell and Dawes 1993), and in part the sort of *leap of faith* required when 'mere

---

[26] The downside of the *de facto* exogeneity of certain choice variables is that experimentally obtained trust data are not particularly suitable for explaining the formation of associations. In Section 4 we

prediction' is an inadequate basis for action (cf. Lewis and Weigert 1985: 970, 976). Econometrically this boils down to using the coefficients obtained from a regression of Player 2 behaviour in order to form an empirical analogue of the unobserved Player 1's expectation of Player 2 behaviour. Trust in the sense of 'projecting one's own trustworthiness' is then imputed by inserting Player 1 characteristics (naturally apart from her actual offer) into the Player 2 regression equation: this exercise tells us what our model predicts a typical Player 1 with precisely these characteristics would do if she were in Player 2's shoes. The regression of Player 1 behaviour then becomes a second-stage regression with as its only argument the *expectation* of reciprocity constructed as just described, an expectation which itself depends on the individual-specific determinants of trustworthy behaviour that we have postulated. Trusting behaviour in the sense of 'a leap of faith exceeding mere prediction' corresponds with the (positive) residuals that this regression implies.

Table 2.10 reports the results of this regression analysis, with the first player offer (s), the second player response (r) and the ratio of the two (r/s), as in the Barr analysis, as dependent variables. Contrary to what we had surmised when comparing Bufumbo and Sironko in Table 2.7, income and assets now appear, once associational social capital and education are held constant, as *negative* influences on trustworthy behaviour and therefore, through Player 1's expectation of Player 2's behaviour – itself significantly positive – as a negative influence on trusting behaviour. This evidence on its own does not permit one to conclude that one success factor in becoming rich in this society is a willingness to take advantage of others, but nor is such a reading of the evidence ruled out. Our measure of bonding social capital, as expected, is a positive influence on trust and reciprocity, and so is *female* education (but not male education – tried but not reported on here). It is possible that female education proxies for a social capital indicator that captures membership of self-help groups: educated women tend to belong to these more often. When we included both female education and a self-help group membership dummy neither was significant, and when we included this dummy on its own, it was significant. Because of our priors we report female education in the table. The

---

therefore complement the analysis with questionnaire-based trust data – which of course come with their own limitations (cf. Glaeser et al. 2000).

difference between Bufumbo and Sironko that we noted in a more superficial comparison in Table 2.7 survives a more rigorous comparison: the coefficient on the Bufumbo = 1 dummy is large and hugely significant.

Table 2.10. Correlates of trust: regression analysis

| | Dependent variable and estimation method | | | | |
| | Player 1 offer (s) | Player 2 response (r) | | Proportional response (r/s) | |
Independent variables	2SLS	OLS	OLS	OLS	OLS
Constant	1626.3*** (9.533)	1963.4*** (3.382)	1982.7*** (3.768)	1.996*** (7.333)	1.932*** (7.659)
Bufumbo = 1		-1967.1*** (-5.375)	-2207.4*** (-6.158)	-0.798*** (-5.124)	-0.868*** (-5.617)
Player 1 offer		0.585*** (3.136)	0.527*** (2.918)	-0.000* (-2.136)	-0.000* (-2.378)
Expectation of Player 2 response	0.276*** (2.693)				
Assets: Total (risk efficacy index)		-636.9 (-1.582)		-0.297* (-1.764)	
Income per equivalent household member			-0.005** (-2.432)		-2.03E-06* (-2.082)
Bonding social capital		410.8** (2.141)	352.4** (2.067)	0.147* (1.821)	0.123 (1.647)
Female educational level		1494.7*** (2.680)	1321.5** (2.510)	0.377 (1.640)	0.291 (1.316)
R^2	0.117	0.592	0.620	0.474	0.489
N	67	67	67	67	67

Source: data from trust experiments, August 2003, in association with Uganda database.
Note: the variable 'Player 1 expectation of Player 2 response' is computed as: 1982.7 – 2207.4*(Bufumbo =1; Sironko = 0) – 0.005*(monthly income per equivalent adult) + 352.4*(bonding social capital) + 1321.5*(female education), inserting Player 1 characteristics into the best-performing Player 2 regression. For details of and the rationale behind this procedure see the text.

The 'insurance game'

Many of these apparent determinants of trust are not easy for policy-makers or outside authorities to influence, and it is therefore natural to look for expedients which might augment people's degree of trust. One obvious possibility is insurance: if first players were protected in some way against the possibility of exploitation by the second player, they might have more

incentive to invest in her, and such protection is what insurance, in principle, provides. Accordingly, for some groups of players (who did not play the trust game and are kept separate from those who do) we modify the Barr/BDM game into an *insurance game:* first players are told that if and only if they commit to investing Sh1000 or more in the other player, they can lay off some of the potential loss by paying a Sh 1000 premium to an 'insurance company' (the administration of the game), in the event that any amount invested in the second player and not returned is guaranteed to come back to them – net, of course, of the insurance premium. The existence of an insurance facility thus potentially acts as an incentive to first players to increase their trust in others[27], much as tax exemptions are used to incentivise charitable donations. Does this form of incentive work in practice?

The initial results, as illustrated in table 2.11, are unexpected and somewhat depressing. There is plenty of willingness to insure, but across the sample as a whole, greater trust (in the sense of first-player offers) is shown by those who are not offered insurance! For anyone whose purpose is to incentivise mutual trust it is important to understand this paradox.

Table 2.11. Insurance game: the impact of insurance (first player offers as a proportion of initial stake).

	Overall	Sironko	Bufumbo
Pure trust game (no insurance available) N = 134 (67 pairs of players)	0.49	0.54	0.44
Insurance game (insurance available) N = 104 (52 pairs of players)	0.43	0.51	0.34
t-stat for difference between sample means (and associated significance level)	2.193** (0.035)	1.720 (0.105)	2.136** (0.049)

Insurance game background data:
Number of players: 104 individuals, 52 pairs of players: 26 in Sironko, 26 in Bufumbo
Takers of insurance: 52% in Sironko, 82 % in Bufumbo
First players offering zero: 5.9 %

---

[27] Note that if the first player chooses to buy insurance s/he sacrifices not only a 'tax' on gains, in the shape of the insurance premium, but also the possibility of maximum gains, since it is no longer possible to invest the maximum stake of Sh 4000 in the second player – Sh 1000 must be sacrificed to pay the insurance premium.

Again we begin the search for a solution by making the contrast between the 'less developed' and the 'more developed' village. We observe that in the poorer village, Bufumbo, the *demand* for insurance is higher but what may be called the *effective demand* (its ability to elicit higher levels of trust in the players) is lower, with player 1 offers in the presence of insurance being considerably and significantly lower than what they are in its absence: so in Bufumbo, by contrast with Sironko, the offer of insurance appears to act as a perverse incentive. Is it poverty, or risk-aversion or some descriptive effect which is bringing this about? Note first that once insurance is taken out, less is available for Player 1 investment (cf. footnote 5 above). In the second place, incentivising trust gives rise to complex motivational dilemmas with possibly detrimental effects for the society's moral fabric (cf. Titmuss 1970), for example as follows. At a superficial glance it would appear that the rational strategy for a Player 1 who has taken out insurance is to invest the full remainder (Sh 3,000) of his initial endowment, since this can be done without taking any risks. However, such a strategy acts as a signal to Player 2 that probably insurance has been taken out, and that therefore she need not return any of the money offered. By investing Sh 3,000 Player 1 therefore reduces the likelihood that she will obtain a return on her investment rather than just her money back. By implication, Player 2, guessing that Player 1 may well reason like this, may even interpret a lower offer as an albeit weaker signal that probably insurance has been taken out[28]. Moreover, as is routinely found in ultimatum games (Guth and Tietz 1990, Roth et al. 1991, Henrich 2000), subjects dislike being taken advantage of to such an extent that they tend to forfeit even certainties of individual gain when this implies a perceived unfair distribution of gains among players. The notion that Player 2 may free-ride on her taking out insurance may therefore further suppress Player 1's offer. The risk of exploitation is much higher in Bufumbo than in Sironko: approximately 30% of Players 2 in Bufumbo and less than 5% in Sironko returned zero, both in the trust game and in the insurance game. The similarity of these percentages across the two games suggests that Players 1

---

[28] These considerations are not far-fetched. Anyone supposing that illiterate and semi-literate small farmers in a poor-country context do not engage in such mind games would be mistaken: from the

have overall been effective in avoiding signalling that they had taken out insurance. The way giving this signal was avoided in Sironko was that all Players 1(100%) who took out insurance offered Sh 2,000 to Player 2. In Bufumbo 50% of Players 1 who had taken out insurance only offered Sh 1,000! All the others offered 2,000, with one brave exception offering 3,000, who, true to form, was duly returned zero by his Player 2 counterpart. All of this suggests that the ability of insurance to elicit trusting behaviour is particularly tricky in a context in which the hazard one is insured against is other people's non-cooperation, and that insurance may crowd out people's pure preferences for altruism and reciprocal behaviour (cf. Titmuss 1970). In Table 2.12, we therefore run regressions with 'effective demand', our measure of the leverage of insurance (the player 1 offer in the insurance game, net of the average player 1 offer in the absence of insurance) as the dependent variable. Income and assets, as we had surmised, are weakly significant influences on insurance leverage – the offer of insurance only begins to elicit higher levels of trust once a certain income threshold is crossed[29]. But, interestingly, social capital in the sense of associational membership *detracts from* and does not add to the effectiveness of insurance. As illustrated by the bar chart of Figure 2.1, those individuals who were most strongly incentivised by insurance had very few associational memberships, whereas those who were strongly networked often had many. Interviews with the 'outliers' strongly supported the initial impression that (experimentally offered) insurance and (actual) social capital might be acting as substitutes for one another. Respondent 235, for example (who appears as a highly incentivised outlier on Figure 2.1), told us, 'I can only be trusting if I know there is an [insurance] organisation behind me, *because I cannot rely on any [informal] association to protect me* (interview 28.08.03;emphasis added). The implication would appear to be, firstly, that one cannot rely on insurance as a magic lubricant for markets which have seized up to break into the vicious circle of poverty – even if the pent-up demand for it is considerable, it would not appear to automatically increase trust and investment rates, particularly

---

debriefing interviews we know that our subjects reasoned precisely along these lines (Paul: Sara told me this when we phoned her from your office).

among the poor. And secondly, the effectiveness of this lubricant is apparently *diminished* and not increased by high levels of social capital – which, in a way, can be seen as a substitute for formal insurance.

Figure 2.1:(a) mean values of insurance-induced trust by number of associational memberships
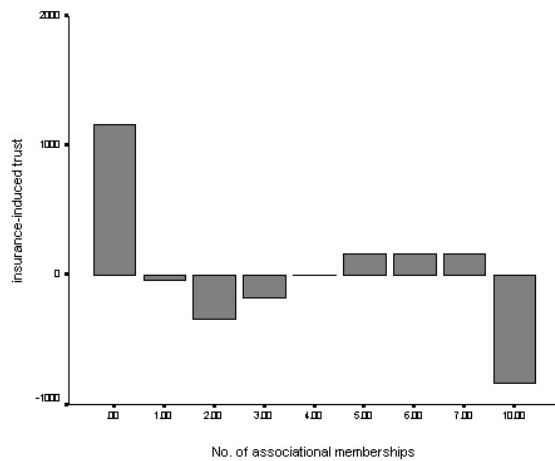
(b)mean values of insurance-induced trust by income category

---
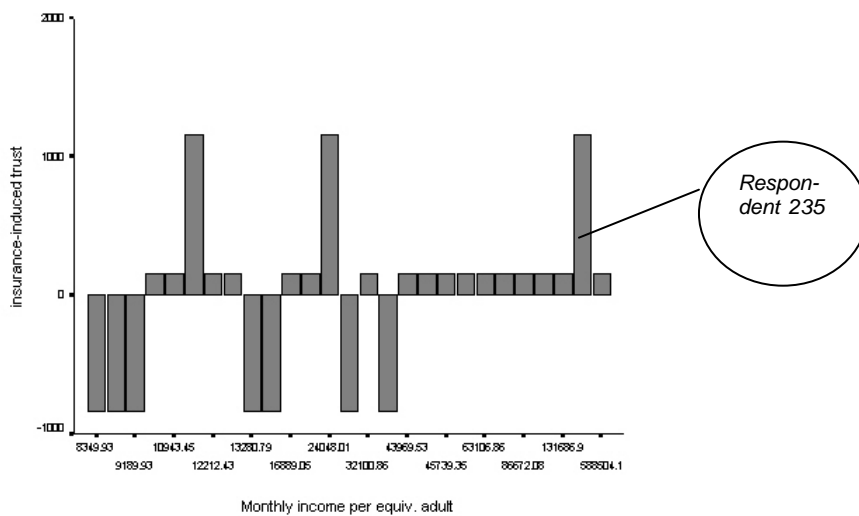
[29] Indeed, effective demand for insurance appears to be kinked (Figure 2.1 below) – there is very little demand for it at low levels of income.

Table 2.12. The 'leverage' of insurance in the insurance game: regression analysis

Regression coefficients on independent variables:	*Dependent variable: 'insurance effectiveness' (player 1 offer under insurance, less mean of player 1 offers under no insurance). OLS analysis; Student's t-statistics in brackets. * denotes significance at 5% level. Number of observations = 34 (i.e. those taking out insurance within insurance game)*			
Constant	-45.5 (0.34)	-98.4 (0.54)	-116.7 (0.53)	187.5 (0.91)
Monthly household income per equivalent adult	0.0009 (0.89)			0.001* (2.02)
Risk efficacy measure (composite asset index)		90.10 (0.80)	151.9 (1.33)	
Composite social capital (associational membership) index			-88.1* (1.95)	-75.9 (1.47)
R^2	0.031	0.013	0.126	0.141

Source: 'insurance games' 27/8/03 and 28/8/03 (for rubric see Appendix)

6. Impacts of attitudes and poverty levels on behaviour

Effective risk management requires protection against idiosyncratic shocks. In the absence of insurance markets, reducing exposure to external shocks usually takes the form of livelihood diversification among farmers in developing countries (Ellis 2000). The uncertainty in income streams associated with any specific type of productive activity can be offset by that of other activities within the household portfolio, to the extent that correlations between components of the portfolio are low. In this section we examine whether this form of diversification is a feasible option for individuals whose livelihoods are vulnerable and whose levels of risk aversion are high. As in the previous section, the inquiry is confined to the villages of Sironko and Bufumbo in eastern Uganda.

In table 2.13 we present poverty headcount statistics for various groups, using a poverty line of 25,563 Ugandan shillings per adult household equivalent member per month. The second column of the table reports the value of the poverty headcount index for groups of asset-poor households, with asset-poverty defined as values of physical, human and social capital, respectively, below the sample median. A measure of coping ability (lack of assets) has been constructed as a composite index of deprivation. The probability of being income-poor is significantly higher for each asset-poor group (at the 1% level), apart from the low social capital group. The table also presents the results of t-tests for the equality of sample mean numbers of crops, livestock and income sources and analogous mean values for each income-poor group. Out of a total of twenty-four possible inequalities sixteen mean values for poor groups are significantly lower, and two are higher. There are plausible explanations for the two minority findings. In Bufumbo the regional effect appears to dominate the effect due to poverty on number of crops grown. The higher mean number of crops grown by less educated households may be explained by the observation that low levels of education tend to block access to non-agricultural income sources[30] and lead to a dependence on agriculture alone. These two exceptions confirm the general rule that where a household has only one (female) income earner and where levels of human, physical and social capital are low, the ability to diversify and to acquire the most liquid form of durable capital asset (cattle) is also lower. Adoption of hybrid seeds is also much lower both here and in Andhra Pradesh among the vulnerable and risk averse[31]. This evidence that risk-averse attitudes – as well as low levels of assets – feed back into behaviours which make escape from poverty difficult constitute a further important twist in the vicious circle of poverty.

---

[30] Physical and social capital may be converted into liquid assets in time of hardship; human capital not only raises permanent income but also increases access to non-agricultural income sources (quantified for Uganda in Appleton, 2001)

[31] For Ugandan evidence see page xx above. In Andhra Pradesh risk-averse attitudes in a multiple regression similar to those in Table 2.1 had a regression coefficient of 0.009, significant at the 5% level, on adoption of hybrid seed.

Table 2.13. Sironko and Bufumbo: poverty levels and diversification

	P_0	Contribution to sample P_0	Number of crops	Number of livestock	Number of income sources	Hybrid seed adoption	N
Whole sample	43.1	100					297
Female-headed	60.0	11.7	Lower*	Lower**			25
Sironko	37.6	43.0	Lower***	Lower***	Lower**		55
Bufumbo	48.3	57.0	Higher**		Lower***		73
Below median:							
Physical capital	72.5	84.4		Lower***	Lower***		108
Human capital	53.0	61.7	Higher*	Lower*	Lower***		79
Social capital	44.7	56.2		Lower***	Lower***		72
Composite index: low coping ability	64.1	64.0		Lower***	Lower***		82

Poverty may thus increase the desire for diversification, but, on the evidence of this table, it inhibits it at the same time by making it harder to achieve.

7. Conclusions

We have now completed a first tour of the 'vicious circle of poverty' at the level the village economy in three countries, and in the process observed that it is not at all an inescapable trap but rather a set of potential linkages which, within particular poor households, may be self-reinforcing and therefore constitute an important part of the mechanisms which perpetuate poverty. Figure 2.2 is the original vicious circle diagram from the first chapter, with correlation coefficients on the individual linkages added in respect of our two villages in Uganda. Some of the links are weak, with the weakest being the anomaly originally exposed by Binswanger, that there is in general very little

relationship between risk-aversion and the income measure of poverty; but in both countries there are strong and significant linkages from low return on assets, to asset levels, to ability to diversify and manage risk, to income poverty.

Figure 2.2. The 'vicious circle', with correlation coefficients for Uganda (
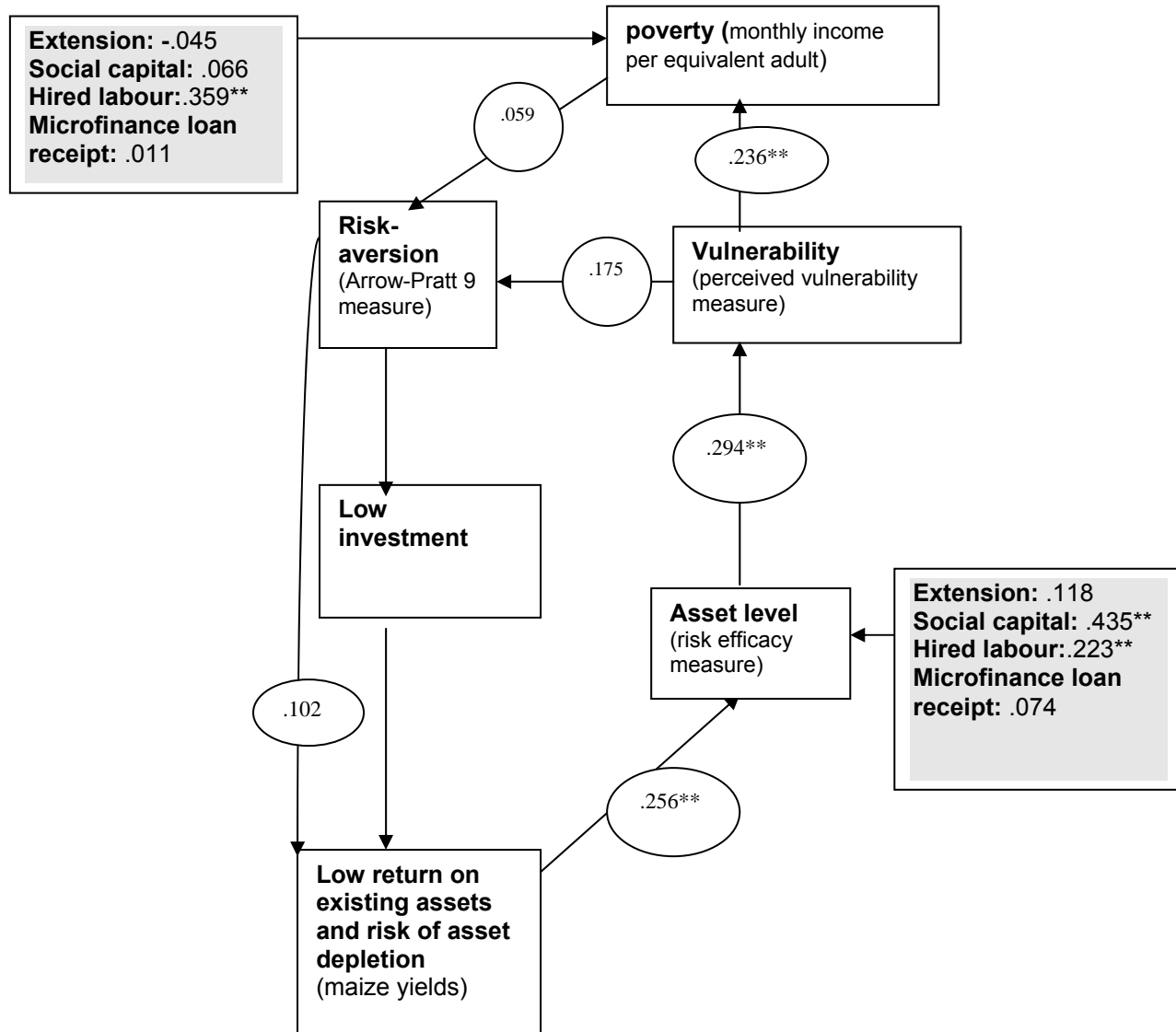
Source: Uganda Surveys, 2001-3, but also:
For vulnerability index, please see rubric to Table 2.5.
Note: Coefficients presented are simple Pearson correlations: * denotes significance of a correlation at the 5% level and ** denotes significance at the 1% level

From the analysis of this chapter we have observed that some of the anxieties of early underdevelopment theorists about motivation were justified, in the sense that a substantial minority of actors do not conform to the standard expected utility axiom of microeconomics. Their patterns of choice, and risk aversion in general, are better explained by the rank-dependence principle . The evidence from Uganda, at least, suggests that it may be forward-looking *perceptions* of people's vulnerability to risk on behalf of themselves and their families, rather than their incomes or asset levels, which best explain their attitudes of risk aversion or otherwise and thus help to determine their return on assets, their capacity to manage risk, and ultimately their level of income poverty.

An important dimension of risk is interpersonal risk, and recent poverty research has been much focussed on the interpersonal dimension of social exclusion – the inability to develop social capital or relationships of interpersonal trust - which may derive partly from poverty itself. We research this dimension of the vicious circle by adapting a *trust game* much used already by the profession to refute one of the other fundamental axioms of economics – namely that behaviour is governed purely by short-term self-interest. In keeping with previous researchers, we find quite high levels of trust in out Ugandan villages; these were significantly higher in the richer and more cosmopolitan village, and appear, like physical capital accumulation, to be correlated with income and assets, not only with previous 'social history'. However, there is not very much relationship between the interpersonal trust discovered in this game and the risk-aversion measured in the expected utility game.

It is, of course, important for those who wish to alleviate poverty to have some awareness of what kinds of intervention in the vicious circle might be effective. Five promising ideas are:

(i)   an expansion of labour markets, labour being the only resource which the poorest people are able to sell;

(ii)   insurance against some of the hazards which are responsible for livelihood uncertainty;

(iii)   microfinance provision, especially for low-income women;

(iv)   provision of agricultural extension and other measures to raise small-farm yields;

(v)   development of community networks and informal support mechanisms, often in association with some of the above initiatives.

All of these, except for insurance, are already in operation in at least some of our case-study communities, and purely for reference we enter the correlation with household income for each of these interventions (for our Ugandan sample) also on Figure 2.2. For insurance we simulated the impact by inserting an insurance option into the 'trust game'. Even at this experimental level, we received a warning that the provision of insurance does not constitute a vaccination against mistrust or market failure – people are very willing to insure themselves, especially in the poorer village, but this insurance only elicits higher levels of trust within the richer income groups, and the expected complementarity with social capital turns out negative. As we shall discover, none of the other options, for all that they have positive correlations with income and wealth, is a magic bullet either. The next five chapters examine each in turn.

Appendix. Instructions for the 'insurance game'

(NB: to visualise the original 'trust game', simply omit the portions in italics. The rubric for the original trust game is deliberately as close as possible to that used by Abigail Barr and Michael Shambare in Zimbabwe (see Barr 2003), and we are grateful to Dr Barr for the use of her field notes.)

Note to researchers – Players 1 and 2 once selected should be separated in two rooms/locations before you begin this game. The risk of collusion is greater due to the tripling effect which makes this worth while. First instruct the player 1's in a group, then take all of their offers. Ask them to wait while you play with the Player 2's and then call back the Player 1's to pay them off.

General instructions

Thank you all for taking the time to come today. This game may take up to an hour, so if you think you will not be able to stay that long without leaving please let us know now. Before we begin I want to make some general comments about what we are doing here today and explain some rules that we need to follow. We will be playing a game for real money that you will take home. You should understand that this is not our own money. It is money given to me by my university/ the University of Sheffield in England to do a research study. This is research – which will eventually be part of a book; it is not part of a development project of any sort. Before we proceed any further, let me stress: if at any point you decide you do not wish to participate in the game for any reason, you are of course free to leave whether we have started the game or not.

If you have heard about a game that has been played here in the past you should try to forget everything that you have been told. This is a completely different game. We are about to begin. Please listen as carefully as possible, because only people who understand the game will actually be able to play it. I will run through some examples here while we are all together. *You cannot ask questions of one another or talk about the game while we are here together.* This is very important and please make sure that you obey this rule, because it is possible for one person to spoil the game for everyone, in which case we would not be able to play the game today. So not worry if you do not completely understand the game as we go through the examples here in the group. Each of you will have a chance to ask questions in private with (me/Paul) to be sure that you understand how to play.

Insurance game instructions

The game is played by pairs of individuals. Each pair is made up of a Player 1 and a Player 2. Each of you will play this game with someone from your own village. However, none of you will know exactly with whom you are playing. Only (Sarah)[32] knows who is to play with whom and she will never tell anyone else.

---

[32] Sarah Khanakwa, the excellent survey coordinator.

Sarah will give Sh 4000 to each Player 1 and another Sh4000 to each Player 2. They could give Sh 4000, or 3000, or 2000, or 1000, or nothing. Whatever amount Player 1 decides to give to Player 2 will be tripled by Sarah before it is passed on to Player 2. Player 2 then has the option of returning any portion of this tripled amount to Player 1. To protect her/himself against the possibility that the money will not come back, Player 1's are allowed to pay an insurance premium of Sh1000 to us *if they decide to make a payment to Player 2,* and if that payment does not come back, we will refund that payment, net of the premium. Then the game is over.

*Player 1 goes home with whatever he or she kept from their original Sh4000, **plus** anything returned to them by Player 2, **plus** any payouts from the insurance fund, **less** any insurance premium paid. Player 2 goes home with their original Sh4000, **plus** whatever was given to them by Player 1 and then tripled by Sarah, **minus** whatever they returned to Player 1.*

*Here are some examples (*you should work through these examples by having all the possibilities laid out in front of people, with Player 1's options from Sh4000 to 0 and a second column showing the effects of the tripling. As you go through each example demonstrate visually what happens to the final outcomes for each player. Be careful to remind people that Player 2 always also has the original Sh4000):

1. *Imagine that Player 1 gives his entire Sh4000 to Player 2. **He does not take out insurance** (he cannot – he has given everything to Player 2) Sarah triples this amount, so Player 2 gets Sh12000 (3 times Sh4000) over and above their initial Sh 4000. At this point Player 1 has nothing and Player 2 has Sh16000. Then Player 2 has to decide whether they wish to give anything back to Player 1, and if so how much. Suppose Player 2 decides to return Sh 3000 to Player 1. At the end of the game Player 1 will go home with Sh3000 and Player 2 will go home with Sh13000.*

2. *Now let's try another example. Imagine that Player 1 gives Sh3000 to Player 2. **He also pays an insurance premium of Sh1000**. Sarah triples the Sh3000 which is handed over, so Player 2 gets Sh9000 (3 times Sh3000 equals Sh9000) over and above their original Sh4000. At this point, Player 1 has nothing and Player 2 has Sh13000. Then Player 2 has to decide whether they wish to give anything back to Player 1, and if so how much. Suppose Player 2 decides to return nothing to Player 1. **Player 2 claims on his insurance policy, getting back the Sh3000 he paid over.** At the end of the game Player 1 will go home with Sh3000 and Player 2 will go home with Sh13000.* (Note: Player 1's gain from being insured is Sh2000, compare the corresponding example from the trust game*)*

3. *Now let's try another example. Imagine that Player 1 gives Sh2000 to Player 2. **He pays an insurance premium of Sh1000.** Sarah triples this amount, So Player 2 gets Sh 6000 (3 times 2000 equals 6000) over and above their original Sh 4000. At this point, Player 1 has*

*Sh1000 and Player 2 has Sh 10000. Then Player 2 has to decide whether they wish to give anything back to Player 1, and if so how much. Suppose Player 2 decides to return Sh3000 to Player 1. **This is more than the amount paid over to player 2, so the insurance company does not pay up.** At the end of the game Player 1 will go home with Sh5000 and player 2 will go home with Sh7000.*
(Loss from being insured (gain to insurance company)- Sh 1000)

4. *Now let's try another example. Imagine that Player 1 gives Sh 1000 to player 2. **He does not take out insurance**. Sarah triples this amount, so Player 2 gets Sh3000 (3 times Sh1000 equals Sh3000) over and above their initial Sh4000. At this point, Player 1 has Sh3000 and Player 2 has Sh7000. Then player 2 has to decide whether they wish to give anything back to Player 1,and if so, how much. Suppose Player 2 decides to return Sh2000 to Player 1. At the end of the game Player 1 will go home with Sh 5000 and Player 2 will go home with Sh5000.*

5. *How let's try another example. Imagine that Player 1 gives nothing to Player 2. There is nothing for Sarah to triple. Player 2 has nothing to give back and the game ends there. Player 2 goes home with Sh4000 and Player 2 goes home with Sh4000.*

Note that the larger the amount that Player 1 gives to Player 2, the greater the amount that can be taken away by the two players together. However, it is entirely up to Player 2 to decide what he should give back to Player 1. The first player could end up with more than Sh4000 or less than Sh4000 as a result. In this version of the game, s/he can protect herself against 'exploitation' by taking out an insurance policy. But there are limits to what an insurance policy will protect – if the second player returns nothing, the first player's maximum take-home pay is only Sh3000, against the Sh4000 with which s/he started.

We will go through more examples with each of you individually when you come to play the game. In the meantime, do not talk to anyone about the game. Even if you are not sure that you understand the game, do not talk to anyone about it. This is important. If you talk to anyone about the game while you are waiting to play, we must disqualify you from playing.

[Bring in each Player 1 one by one. Use as many of the examples below as necessary.]

6. *Imagine that Player 1 gives his entire Sh4000 to Player 2. Sarah triples this amount, so Player 2 gets Sh12000 (3 times Sh4000) over and above their initial Sh 4000. At this point Player 1 has nothing and Player 2 has Sh16000. Then Player 2 has to decide whether they wish to give anything back to Player 1, and if so how much. Suppose Player 2 decides to return Sh 6000 to Player 1. At the end of the game Player 1 will go home with Sh6000 and Player 2 will go home with Sh10000.*

7. *Now let's try another example. Imagine that Player 1 gives Sh3000 to Player 2. **He pays Sh 1000 as an insurance premium**. Sarah triples this amount, so Player 2 gets Sh9000 (3 times Sh3000 equals*

Sh9000) over and above *their original Sh4000. At this point, Player 1 has nothing and Player 2 has Sh13000. Then Player 2 has to decide whether they wish to give anything back to Player 1, and if so how much. Suppose Player 2 decides to return Sh1000 to Player 1. This is less than the Sh3000 he handed over, so the 'insurance policy' pays out the shortfall of Sh2000. At the end of the game, therefore, Player 1 will go home with Sh3000 and Player 2 will go home with Sh12000.*
Gain from insurance - *1000*

8. *Now let's try another example. Imagine that Player 1 gives Sh2000 to Player 2,* **and pays Sh 1000 as an insurance premium**. *Sarah triples the Sh 2000 paid over, So Player 2 gets Sh 6000 (3 times 2000 equals 6000) over and above their original Sh 4000. At this point, Player 1 has Sh1000 and Player 2 has Sh 10000. Then Player 2 has to decide whether they wish to give anything back to Player 1, and if so how much. Suppose Player 2 decides to return nothing to Player 1. Player 1 claims Sh2000 on his insurance policy. At the end of the game Player 1 will go home with Sh3000 and player 2 will go home with Sh10000.*
Gain from insurance - 1000

9. *Now let's try another example. Imagine that Player 1 gives Sh 1000 to player 2.* **He pays Sh 1000 as an insurance premium.** *Sarah triples the Sh 1000 handed over, so Player 2 gets Sh3000 (3 times Sh1000 equals Sh3000) over and above their initial Sh4000. At this point, Player 1 has Sh3000 and Player 2 has Sh7000. Then player 2 has to decide whether they wish to give anything back to Player 1, and if so, how much. Suppose Player 2 decides to return Sh2000 to Player 1.* **This is more than the amount handed over, so the insurance policy does not pay out.** *At the end of the game Player 1 will go home with Sh 5000 and Player 2 will go home with Sh5000.*
Loss from insurance(gain to insurance company) - 1000

10. *How let's try another example. Imagine that Player 1 gives nothing to Player 2. There is nothing for Sarah to triple. Player 2 has nothing to give back and the game ends there. Player 2 goes home with Sh4000 and Player 2 goes home with Sh4000.*

Now can you work through these examples for me:

11. *Imagine that Player 1 gives Sh3000 to Player 2. So, Player 2 gets Sh 9000 (3 times Sh3000 equals Sh9000) over and above their initial Sh4000.* **Player 1 also takes out an insurance policy, costing him Sh1000**. *At this point, Player 1, therefore has nothing and Player 2 has Sh13000. Suppose Player 2 decides to return Sh5000 to Player 1. At the end of the game Player 1 will have how much? [*the initial Sh4000 ,less Sh3000(given to Player 2)=Sh 1000 plus return from player 2 of Sh5000, less Sh 1000 insurance policy=Sh5000. If they are finding it difficult, talk through the maths with them, demonstrating with the actual money*]. And Player 2 will have how much? [*Their original Sh 4000 plus Sh 9000 after the tripling less Sh5000 which they return to Player 1= Sh8000.*]* **And how much does the insurance policy pay out? –** *[*nothing, because player 2 gets back more than the amount he paid in.*]*

12. *Now let's try another example. Imagine that Player 1 gives Sh3000 to Player 2.* **He pays Sh 1000 as an insurance premium***. Sarah triples this amount, so Player 2 gets Sh9000 (3 times Sh3000 equals Sh9000) over and above their original Sh4000. At this point, what do the two players have? (*[*Player 1 has nothing, because the Sh1000 which remains to him has to be paid out as an insurance premium, and Player 2 has Sh13000*]*. Then Player 2 has to decide whether they wish to give anything back to Player 1, and if so how much. Suppose Player 2 decides to return nothing to Player 1. What will the insurance policy pay out?* [*It will pay out the original stake of Sh3000*] *At the end of the game, therefore, Player 1 will go home with Sh3000 and Player 2 will go home with Sh12000.*

Gain from insurance – Sh2000

After this 'training' play the game with the first player as follows:
You are Player 1. Here is your $4. [*At this point Sh 4000 is placed on the table in front of the player.*] *While I am turned away, you must hand [the Professor] the amount of money you want to be tripled and passed on to Player 2. You can give Player 2 nothing, Sh1000, Sh2000, Sh3000 or Sh4000.* **You can also decide, if you wish, to take out an insurance policy. If you decide to do this, you pay a premium of Sh 1000 and you get back any money which you hand over and do not receive in return – less the premium***. Player 2 will receive the amount which you hand over tripled by me plus their own initial Sh4000. Remember that the more you give to Player 2 the greater the amount of money at his or her disposal. While Player 2 is under no obligation to give anything back, we will pass on to you whatever he or she decides to return.*[Now the player hands over whatever he or she wants to have tripled, and his insurance premium if he decides to take one out, and the tripled amount is passed to player 2]

[Note to researcher: Finish off all Player 1's and send them to a third holding location – they must not return to the group of Player 1's who have not played and they must not join the Player 2's.Once all Player 1's have played you can begin to call Player 2's. Player 2's can be paid off immediately after they play and sent home.]

After dealing with *ALL* the first players, deal with the second players as follows:

You are Player 2. First, here is your Sh4000. [Put the Sh4000 in front of Player 2.] *Let's put that to one side.*[Move the Sh4000 to one side but leave it on the table.] *This pile represents Player 1's initial Sh 4000.*[Put this Sh 4000 in front of the researcher.] *Now I will show you how much Player 1 decided to give to you. Then I will triple it. Then you must hand back the amount that you want returned to Player 1.* [Take Player 1's offer out of the pile representing Player 1's stake and put it down in front of Player 2, near but not on top of

Player 2's Sh4000. Then add to Player 1's offer to get the tripled amount. Receive back Player 2's response.*] Remember, you can choose to give something back or not. Do what you wish. While I am turned away, you must hand [the professor/mzungu] the amount of money you want to send back to Player 1. [Now the player hands back his return for Player 1]. You are now free to go home, but do not visit with any of the waiting players.*

Chapter 3 Risk, gender and the labour market

Chairman: What resources have the Native (Africans) today from which you could find funds to promote their interests?
Chief Native Commissioner: The biggest source today, I think, is cattle. And the price of maize today is higher than it has been for some considerable time. They are fortunate in having surplus crops for sale.
Chairman What other sources of wealth have the natives?
Chief Native Copmmissioner Labour.

National Archives of Zimbabwe: ZBJ 1/1/1, Evidence to the Native Production and Trade Commission, 1944, p.7.

1 Introduction

It is easy to see the labour market, as the Zimbabwe Chief Native Commissioner did, as the ultimate refuge against livelihood risk; indeed, as we discuss in chapter 8 below, the most ultra-poor group on which we focus in this book, the destitute women of the Bangladesh Vulnerable Groups Development Programme, rejected the food-aid-cum-training provided by that programme on the grounds that 'it was riskier than wage-labour' . However, as we explore in this chapter, participation in the labour market has its own risks. We ask: supposing that some part of the level of poverty is determined within the labour market, how might that change as a consequence of changes in the risk attached to labour demand and supply, and how are these effects distributed between men and women? In terms of the generic model of Chapter 1 (figure 1.2), we have fairly strong evidence from our Project 1 that households' assets and borrowing power 'drive' the demand side of the labour market, and wish to understand the role of perceived risks to these in shaping this linkage. Diane Elson, as we saw (1999) has suggested that ' risk-reducing mechanisms have been much more a feature of male [than of female] forms of market participation', and the question for discussion here is the influence of risk on the labour market, and of risk-reducing mechanisms, where they exist, on the gender distribution of benefits from that market.

2 Risk and labour supply

In orthodox economic theory, labour supply is a response to a difference in utility between what can be earned in work and out of work, and hence, other things being equal, labour supply (a person's decision to work) responds positively to the wage offered in work. But when paid work is taken on this may affect the worker's entitlement to benefits within the household[33],

---

[33] These perceived benefits which are lost on entry into the labour market can be of any kind, material or non-material. In industrialised countries and some developing countries (for example South Africa) the material benefits may may be lost, depending on the system, include welfare state benefits such as pensions; but these typically are not available in our case-study countries. Nonetheless it is interesting to note that increased risk is seen as a threat to supply by potential entrants in contexts very different from those of our case-study countries. Take the case of New

and if s/he perceives a risk of losing some of these, this will tend to discourage involvement in the labour market and of itself reduce the supply of labour. On the evidence of our surveys, the benefits which may be at risk from entry into the labour market are various, including in specific cases loss of output on the family farm, loss of status, and in specific contexts, notably Zimbabwe, loss of personal security[34]. The development literature has considered at some length the possibility that the labour supply decision – notably the migration decision – might be influenced by risk, but the risks given greatest prominence have typically been risks attached to the possibility of not finding sustainable employment. Here, we focus on the risk at the opposite end of the labour supply decision – the risk of losses within the family and village environment attached to taking on paid work[35], which will be gender-specific if women more than men fear that they will lose support from within the family which is crucial to them if they take on outside work. And if they defy these threats of withdrawal of social support, they may find themselves stigmatised, sexually and in other ways.

As one of the respondents to Alison Evans' study of rural households in eastern Uganda (50 miles from the region that we surveyed) commented:

> Employers, who were generally but not exclusively male, stated that it was easier to deal with male workers because there were 'fewer misunderstandings between men. Many referred to the rumours and innuendo that would start in the village if a woman, and particularly a married woman, worked for another man for payment. The few male employers that did hire female labourers generally hired women that were either widowed, separated or divorced. On the supply side, men and women both stated that doing manual work for another was no better than begging, and was a reflection of a poor and 'disorganised' home. However, for a married woman, working for a

---

Deal clients in Britain, as reported by France and Hoogvelt:
'The central finding of our research is that for some New Deal clients the real barriers to work are not the ones officially identified and targeted. There is nothing wrong with these people's attitudes or motivations. They all desperately want to work. Rather gthe big issue for them is RISK. Living on the very margins of existence, with no safety-net, no rich parents or inheritance to come, no steady income, they are asked nonetheless to take a great leap in the dark and in doing so give up even the minimum welfare that keeps them afloat. For policy-makers and service providers, therefore, this should be the starting-point of intervention: *the management of this risk...*
(France and Hoogvelt 1999: para 17.2)

[34] See case study pp.   below.
[35] One of the best-established of these 'risk-aware' approaches to migration is the Harrod-Todaro model under which labour supply is determined by the wage differential between the urban and rural environment, but for any given wage differential is less in proportion to the risk of not finding work (proxied by the rate of unemployment):
$L_s = f(\alpha W_u/W_r)$ (1)
where α is a proxy for the perceived probability of finding work – for example the rate of unemployment.
 So by extension of this approach, we argue that labour supply depends on the perceived living-standard differential between the labourer's origin and his/her destination, where *both* wage at origin and wage at destination are subject to a risk discount:
$L_s = f(\alpha W_u/\beta W_r)$ (1a)
where α, β are the subjective discounts attached to the potential employee's living standard at destination and at origin respectively. This is the starting-point for our modelling on the supply side (see below). The novelty here is the coefficient β - the risk discount attached to the loss of benefits at origin.

male employer was considered particularly damaging, not only to her own reputation, but also the reputation of her husband. The concern was expressed in the following terms: "when a wife goes for casual labour and is paid by another man, she is dissatisfied with her home and is seeking a new husband' (Evans 1996: 114-115)

Sarah Muzaki, in her 1998 dissertation, notes that in the same part of Mbale district as our surveys were carried out, 'it was argued by some men and women that a true women does not move too far unless she behaves like a loose dog. This saying is popularly used to define an unruly and immoral woman'.

These prejudices and constraints reflect a determination by male heads of household to preserve their control over the paid and unpaid labour-power within their household and, collectively, their village. As a consequence, they bear much more heavily on labour migration to points outside the village than on labour within the village. As Muzaki notes in Mbale,

> Gender differentials were evident in the mobility of men as compared to women. Men reported that they moved as far as 5 or 6 miles to do (casual work). The longest average distance for women was 1-2 miles. Asked why women did not move to faraway places like their male counterparts, one woman answered, 'with a woman, however much she goes out to work, she knows she has to consider monitoring what is happening in her home. For us women, you work while knowing very well that children have to eat…You cannot say that because you are doing *kandalaasi* (casual labour), therefore the home people will not eat.'(1998, page 72)

These constraints on long-distance female migration appear to have been far more severe in Uganda and our other African case-study countries than in Andhra Pradesh.

There were, therefore, *social risks* (risks of loss of family support) bearing on female wage-labour participation in the labour market; but this did not mean that women will not use it as far as possible to offset the *economic* risks and vulnerabilities to which they were exposed. These, of course, are aggravated with lack of assets, with membership of a large family, and with lack of land (particularly serious because this also restricts access to capital). We therefore visualise all household members as having to offset these risks in their labour supply behaviour, constrained by the social risk of lack of family support, which, for the reasons described, is particularly severe in the case of females, especially in households which are male-headed.

In Table 3.1 we test these propositions by estimating the impact of 'vulnerability', 'crop-specific' and 'social' factors on labour supply (measured as the total number of labour-days supplied by all household members). The equation estimated is derived from the reduced form of a bargaining model described in the Appendix. Labour supply is higher from households with low asset levels (including land), low income and high vulnerability, and amongst

members of large families[36]. In India it is higher among low-caste individuals, and in Uganda also 'discussions with both male and female respondents revealed that women of mainly lower social classes were the ones involved in selling their labour' (Muzaki 1998: 44). In India also, members of microfinance self-help groups exhibited lower labour supply, presumably because income from the enterprises supported by the self-help group was able to generate income which substituted effectively for labour income.

The variables at the bottom of the table represent attempts to capture the risk associated with loss of 'extended entitlements', as suggested by Elson. In Uganda and in India (Andhra Pradesh) *female* labour supply is strongly associated with the 'family support' variable, indicating that individuals are reluctant to supply labour (especially across long distances) if influential family members disapprove. As this is the main structural difference between the male and the female labour supply functions, it is interesting to speculate what factors might be responsible for differences in family support. In India, family support interacts strongly with caste and in Uganda with income – in each case negatively, suggesting that where a household is sufficiently desperate for money, the risk of social dispproval is often discounted.

Table 3.1 Labour supply in relation to perceived intra-family risks
(regression coefficients on independent variables: t-statistics in parentheses below coefficients)

	Ethiopia(Afeta)			India (Mahboobnagar A.P.)		
Independent variables	HH labour supply	Male labour supply	Female labour supply	HH labour supply	Male labour supply	Female labour supply
(Constant)	-0.514	-0.054	-0.206	31.65** (2.53)	0.98 (0.23)	13.29* (2.33)
Risk efficacy measures:						
Household asset index				-0.203** (3.49)	-0.129** (3.82)	-0.067* (2.45)
Perceived Vulnerability		-0.104* (1.79)	0.042 (0.72)	2.75 (0.56)	3.51 (1.19)	-1.99 (0.88)
Social support and social relations: Credit access/SHG membership (India)				-21.28 (1.35)	-1.67 (0.18)	-13.51* (1.91)
Income	-0.132* (2.03)	-0.115 (1.76)	-0.06 (0.94)			
Wage rate[37]						
Household composition (member of large household)						

---

[36] There also a tendency for the type of labour supplied to vary by educational level – for example in Uganda 'most female illiterates found a more ready market for their labour in cultivation, whereas those who had attained some education would engage in trade and construction' (Muzaki 1998: 52)

[37] Not entered in these regressions; but in other Project 1 regressions negative (i.e. a 'backward-bending supply curve of labour')

Activity-specific measures: Sowing				33.95** (2.59)	52.36 (1.74)	2.04** (2.31)
Picking coffee beans	0.543** (12.82)	0.342** (5.98)	0.183* (1.89)			
Maize harvesting	0.337** (7.98)	0.227** (3.99)	0.063 (0.98)			
Harvesting(all)				45.01** (3.67)	51.21** (5.37)	34.78** (3.43)
Non-seasonal farm labour(digging/repair fences/houses)	0.073 (1.92)*	0.043* (0.84)	-0.068 (1.21)			
Ploughing/clearing land				67.82** (4.02)	40.77** (5.81)	
Family support			0.134 (1.32)		17.09* (2.19)	17.77** (4.50)
Community support						
Caste				-28.74** (3.67)	-3.15 (0.68)	-14.74** (4.23)
R^2	0.58	0.24	0.11	0.67	0.81	0.67
N	295	295	295	302	255	288

Sources: Surveys, 2000-2002.

Notes. Ordinary least-squares estimation. *Household, male and female* labour supply are defined as the total number of labour-days supplied by all household members, male household members and female household members respectively.

Thus, to summarise so far, labour is in all of our case-study countries the basic recourse of the economically vulnerable, who have relatively low levels of assets and few crops to sell; and even this recourse is only taken up by those (mainly but not exclusively male) who have support from others in their families. A high proportion of the female labour supply is made available by heads of female-headed households who are not subjected to this intrahousehold constraint. It is to be emphasised that the numbers of women who have entered the labour force either through becoming heads of households, or through push factors which have perforce increased 'family support', has increased over time (Figure 3.1 gives an impressionistic summary of the evolution of the supply side over time in Uganda)

Figure 3.1. Excerpts from the evolution of the Ugandan rural labour market

(all findings from Mbale district, E.Uganda)

1920s 'In colonial times European extension agents… tried to induce the underemployed male villagers to cultivate commercial crops (by supplying forced labour at a low statutory wage)…Also women alongside men were conditioned to offer free unremunerated labour to construct roads' (SM, p.42)

1960s 'Women's participation in the labour market was reported to have been minimal in the 1960s' (SM,p45)

1970s 'Women's participation rose during the 1970s, a response to the economic, political and social problems the country was going through… Women of lower social classes were the ones involved in selling their labour' (SM, p44)

1992 The female share of total labour hours was 12% of the total sample in Nakalanga village (AE, page   ). Most women (73% of those sampled) were engaged in activities like weeding, harvesting and processing. None were engaged in ploughing and clearing bushes (SM, p.69)

1997 The female share of cash labour-hours was 34% within a sample in Iganga (a neighbouring region of Eastern Uganda) (Mosley 2000)

2003 The female share of cash labour-hours had increased to 40%. Some women were now engaged in ploughing and clearing bushes (Present author. Resurvey, Bufumbo and Sironko, August 2003)

Sources: SM= Muzaki(1998), AE = Evans(1996)

3 Risk and labour demand

In economic theory, the demand for labour is determined by the value of the marginal product – the value of the amount which an additional worker will contribute to production. However, an employer's perception of this amount will be influenced, once again, by risk factors. Firstly, the productivity of labour is unpredictable, as it cannot always be supervised, and the extent to which workers will take advantage of this is also unpredictable – the subject of many illustrations in game-theory textbooks. Secondly, although wage-labour may be needed in order to enable a rural household to produce beyond the subsistence level, its hiring usually requires capital (especially if the purpose is agricultural production, since the proceeds from harvest only accrue several months after the labour of sowing, planting, land clearing and so forth is done). Borrowing attracts the additional risk that the hirer, as a consequence of making an incorrect forecast of productivity, may be unable to afford repayments on her loan, such that she may also be expelled from the capital market . Hence we expect that both these risks – uncertainties surrounding productivity and uncertainties surrounding ability to repay - will impinge on the expected productivity of, hence the demand for, labour.

We can obtain an initial picture of the influence of ability to borrow on labour demand from Figure 3.2: in both Uganda and Zimbabwe, the demand function for labour is 'kinked' in relation to income, with a demand for cash-labour only emerging when the hirer is some distance above the poverty line.

Figure 3.2. Three African samples: the relationship between labour hiring and income, 1999/2000 cropping season

(a) Uganda (32 labour hirers out of 76 households sampled)

Labour expenditures

Poverty line

Regression line: labour expenditures = 0.18 (income – 150,000)

Household income (Ush/month)
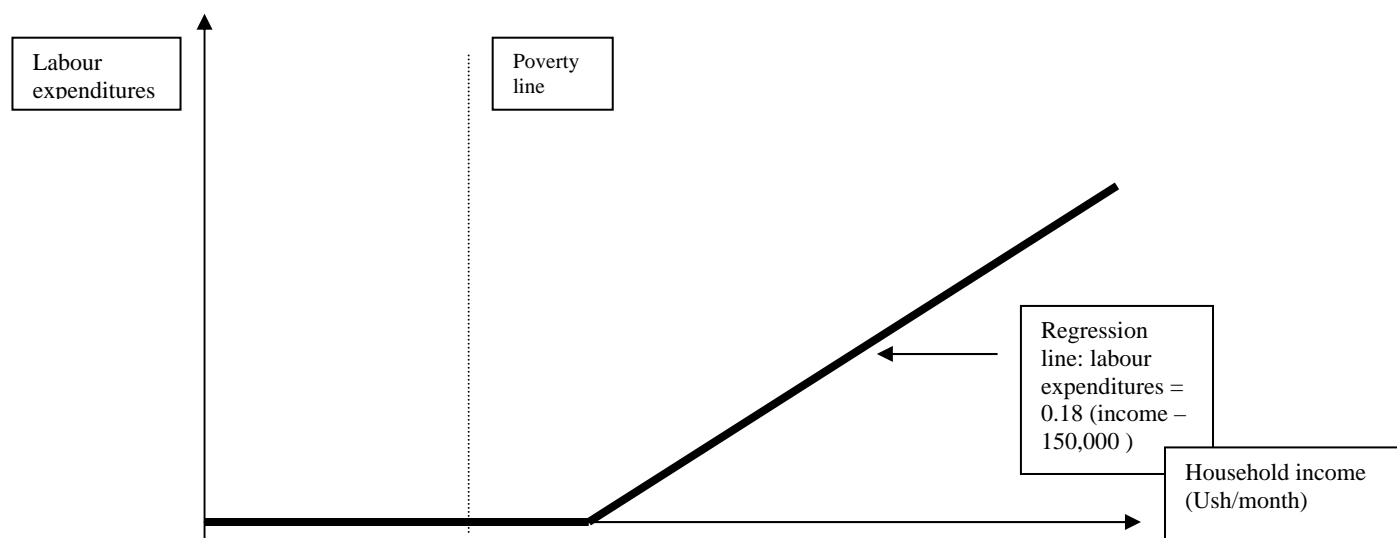
(b) Zimbabwe (9 labour hirers out of 68 households surveyed)

Poverty line

Regression line: labour expenditures =0,18 (income –1800)

Household income (Z$/month)
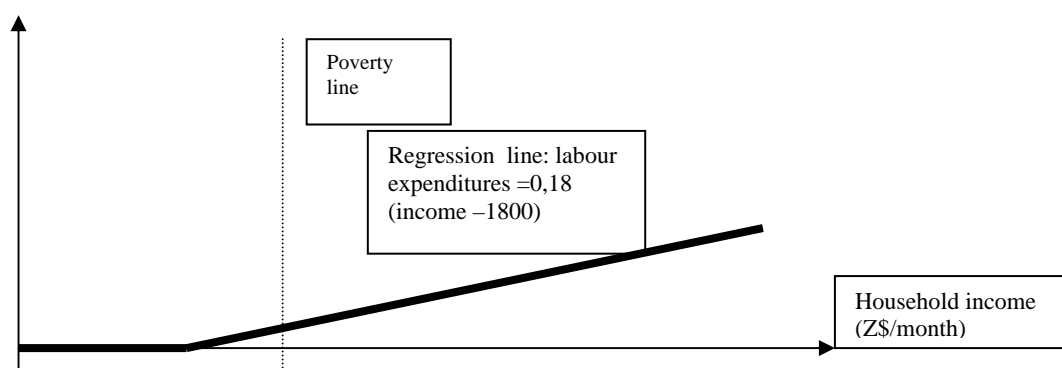
In the cases where the demand function is kinked there are at least two possible explanations:
   (1) straightforward exclusion from the capital market – at least some poor people would like to be able to borrow but are simply refused permission to do so, even by microfinance organisations.
   (2) risk-aversion born of a fear of moral hazard – there is a general problem of being able to predict the productivity of labour which cannot be supervised (employers feel defenceless against 'countervailing action' by the employee), and because poor people cannot bear the costs of this game going wrong, they do not hire.

It would be useful to get a correct explanation of what is causing the observed nonlinearities in the demand function, for two reasons. In general terms, if the kink could be evened out, then the demand for labour would increase, and *pro tanto* poverty would decline. Beyond this, if we can find out which of these two explanations is true, that may give us clues as to the required policy. If for example, the 'kink' turns out to be due to exclusion of particular categories from the capital market, there may be a microfinance solution that will work (see further chapter 5 below). But if it turns out to be due to risk aversion accompanied by fear of moral hazard, more fundamental risk-reduction devices may be needed, either on the insurance or on the social capital side (see further chapters 4 and 6 below).

In Zimbabwe, the risk aversion story appears to provide the more plausible interpretation of the data. As rural income has collapsed and the hazards to personal security have increased, both domestic and Zimbabwean capital has exited (in some cases by forcible expropriation) and the hiring of labour has become both financially and politically riskier. This has a social capital dimension, which is developed in chapter 6: trust relationships have suffered in an environment where any worker taken on may be presenting a government-backed claim for forced resettlement the following month. As a consequence the rural labour market has imploded (Chipika and Chipika, 2003), which in turn has added a twist to the spiral of poverty: for as labour coefficients decline, so the ability of any growth in the economy to propel individuals across the poverty line diminishes, and any benefit accrues mainly to the (usually nonpoor) entrepreneur. What is occurring in Zimbabwe at the moment, therefore, is a vicious circle of decapitalisation, erosion of community and thinning of labour markets, in which women casual workers are especially the losers, because, as will shortly be shown, the demand for their labour is more elastic to the employer's income than is the demand for male labour.

Secondly, an important influence on demand is the crop-mix: some crops are more labour-intensive than others. As illustrated by Table 3.2, which draws on two of our case-study countries - Uganda and Zimbabwe – and a range of other African countries, the labour-absorptive capacity of horticultural crops, plantation crops such as coffee, and hybrid varieties of cereal crops is much greater than that of traditional foodcrops, even holding constant access to capital.

Table 3. 2 Labour demand by crop type

Location/ Crop	Cameroon: Muyuka (1997)		Kenya: Bungoma (our survey, 1997)		All Kenya (Smith survey, 1989)	Uganda: Iganga/ Soroti		Malawi: Dowa/ Mwanza		Zimbabwe: Chiweshe (2000)	Lesotho: Butha-Buthe (1997)
N	72		61		450	93		153			98
	Unpaid	Paid	Unpaid	Paid	Total labour input	Unpaid	Paid	Unpaid	Paid		Total labour input
Maize: local *Hybrid*	0.6 0.7	0.2 0.5	0.5 0.6	0.2 1.1	0.3 1.1	1.3 1.2	0.3 0.6	0.4 0.7	0.3 0.8		0.4 2.1
t-stat[1] for differences between sample means (traditiona	*4.61***		*4.63***			*0.49*		*2.50**			*3.95***
Maize/beans mixture			0.4	1.2	1.6	1.0	0.8	1.3	1.0		2.4
Sorghum: *Local* *Hybrid*			0.5 0.6	0.3 1.2		0.4 0.5	0.1 0.7				0.6 1.0
t-stat[1]			*1.5*			*2.30**					
Groundnuts						0.5	0.2	0.6	0.2		
Millets			0.5 0.4								
Cassava: *Local* **Hybrid**	0.5 0.15 0.6	0.5				0.6 0.7	0.2 0.9	0.4 0.5	0.3 0.7		
t-stat[1]	*3.37***					*2.25**		*0.28*			
Coffee	0.7	0.5	0.9 1.4		1.7						
Tea			0.7 1.1		0.9	0.6	1.0				
Pineapple					2.3						
Bananas	1.6	0.2				2.0	0.6				
Other horticulture	1.5	1.0	0.9 1.8		3.7						2.7
All crops	0.9	0.6	0.8	1.0		0.9	0.4	0.7	0.4		

Sources: all data from 1997 survey (questions 1.2, 2.1 and 4.3) *except:* column 3 from World Bank (1989), annex 2.

Note:[1] t-statistic is defined for difference between sample means and is calculated

$$\frac{X_1 - X_2}{\sqrt{\frac{s_1^2 + s_2^2}{n_1 \quad n_2}}}$$

* denotes significance at 5% level, ** denotes significance at 1% level.

Both employment and self-employment in small-farm agriculture have traditionally been gender-stereotyped, so that across much of Africa not only have particular crops (such as foodcrops) and tasks (such as planting and

harvesting) traditionally been seen as female operations, but also certain wage-paid tasks (such as coffee picking in Ethiopia, in our sample) have traditionally been seen as female (see further chapter 7 below). However, under the stress of commercialisation and structural adjustment the traditional division of labour has been breaking down .(However), specialisation of operations by gender, therefore, appears to have become eroded under the impetus of commercialisation and structural adjustment. This exactly accords with the findings of Katrine Saito, who comments (1994:ix) that 'the gender-specific nature of African farming is disappearing as women are growing crops (such as coffee and other cash crops), taking on tasks (such as land clearing) traditionally performed by men, and making decisions on the daily management of the farm and household.'

Information on the trend over time in factor proportions is scanty but for Uganda and Zimbabwe, at least, we have a little information on trends in factor proportions, and this little suggests that both the propensity of small-farm agriculture to take on female labour and the elasticity of substitution between male and female labour have been increasing over time. Whether this is good news for poverty reduction depends of course on what happens to women's incomes as the demand for female labour increases, and we shall be examining the evidence on this in section 5 below.

4 Gender, seasonality and market adjustment

As emphasised by Ellis (1998) the demand for labour in rural areas is highly seasonal, requiring a search for alternative livelihoods, as we have seen, during the 'hungry season' when wage-labour is not available. The agricultural calendar for our sample regions is as set out in Table 3.3:

Table 3.3: the seasonal calendar in the sampled regions

(Rainy seasons are shaded)

	Ethiopia			Uganda		India (A. Pradesh)			Zimbabwe	
	Maize	**Coffee**	**Teff**	**Maize**	**Coffee**	**Rice**	**Cotton**	**Maize**	**Maize**	**Millet**
Jan		Picking dry coffee		Land preparation		Planting	Picking		Weeding	Weeding
Feb				Land preparation		weeding			Weeding	Weeding
Mar	Ploughing			Planting		weeding			Weeding	Weeding
Apr	Sowing	Land preparation and digging		Planting and weeding		Harvesting (winter crop)			Harvesting	Harvesting
May	Weeding		First round ploughing	Weeding		Harvesting (winter crop) Raising nursery (monsoon crop)	Land preparation	Land preparation		
June	Weeding		Second and third round ploughing	Weeding		Land preparation and planting (monsoon crop)	Sowing	Sowing		
July	Weeding	Planting	Sowing	Harvest		Land preparation and planting (monsoon crop)		Sowing and weeding		
Aug		Planting	Sowing	Harvest (plant second crop)		Weeding	Weeding	Weeding		
Sept	Harvesting		Weeding	(weed second crop)	Harvest	Weeding	Weeding		Ploughing	
Oct	Harvesting	Preparing for picking	Harvesting July	(weed second	Harvest	Harvesting	Picking starts	Harvesting	Ploughing	Ploughing

			sowing	crop)							
Nov		Picking red coffee	Harvesting August sowing	(weed/ harvest second crop)	Harvest		Harvesting Nursery and land preparation(for winter crop)	Picking	Harvesting	Sowing	Ploughing
Dec		Picking dry coffee		Land preparation	Harvest		Planting	Picking			

As shown in Table 3.4 for three of our sample countries, not only is the demand for labour influenced by the factors mentioned earlier (income, assets including land, crop type, and risk aversion) but in addition, in all countries that we investigated, the demand for female labour is *much* more sensitive with respect to employer's income, and indeed with respect to these seasonal fluctuations, than the demand function for male labour.

Table 3.4: Ethiopia and Uganda: demand for male and female labour

	Ethiopia		India(Andhra Pradesh)		Uganda		
Dependent variable	Male labour	Female labour	Male labour	Female labour	Total household labour	Male labour	Female labour
Constant	-0.36 (1.25)	-0.122 (2.09)	-38.4** (-2.46)	-92.6* (-1.65)	535.8	279.9	-17.8
Purchasing power Employer's annual income ($)	0.10 (1.30)	0.86* (10.71)	0.0001 (0.34)	0.001** (2.18)	0.004 (0.30)	0.002 (0.35)	0.0136** (2.01)
Household assets					-1.84 (0.014)	1.57 (0.02)	
Credit variable							
Size of landholding(acres)	0.015 (0.18)	-0.096 (1.27)	2.67** (2.36)	30.23** (6.01)	47.4 (0.75)	26.5 (0.79)	18.9 (0.75)
Household labour	0.075 (0.98)	-0.23** (3.14)	3.95* (1.92)	8.94 (1.26)	-120.8 (1.32)	-68.0 (1.40)	
Ploughing	0.11 (1.45)	-0.013 (0.177)	28.26** (2.23)				
Harvesting	0.198* (2.40)	0.085 (1.07	19.99* (1.92)	92.54* (1.79)			
Picking coffee beans	0.68* (9.20)	-0.076 (-1.05)					
Other crop dummies							
Risk aversion: Arrow-Pratt 9	-0.001 (0.016)	0.030 (0.443)				-3.65 (0.11)	29.78 (0.90)
Risk aversion: Binswanger level 5			0.158* (0.298)				
Perceived vulnerability						-2.57 (0.58)	
R^2	0.63	0.66	0.77	0.69	0.08	0.09	0.115
Number of observations	85	85	52	52	43	43	47

Source: Survey 2003, questions   .
Notes. Ordinary least-squares estimation. * denotes *total* labour demand.

Interestingly, this tendency for female labour to be much more responsive than male to booms and slumps appears to have been evident for a long period in Africa, and indeed not to be confined to Africa. If we examine themarket for agricultural labour in Kenya and Zimbabwe over the course of the twentieth century we find the same tendency for female labour, but not nearly so much male, to be taken on in the boom and laid off in the slump (Figure 3.4).

Figure 3.3. Kenya, Uganda and Zimbabwe: child and female labour in relation to periods of excess demand for agricultural labour
Total employment on right scale, child and female employment on left scale
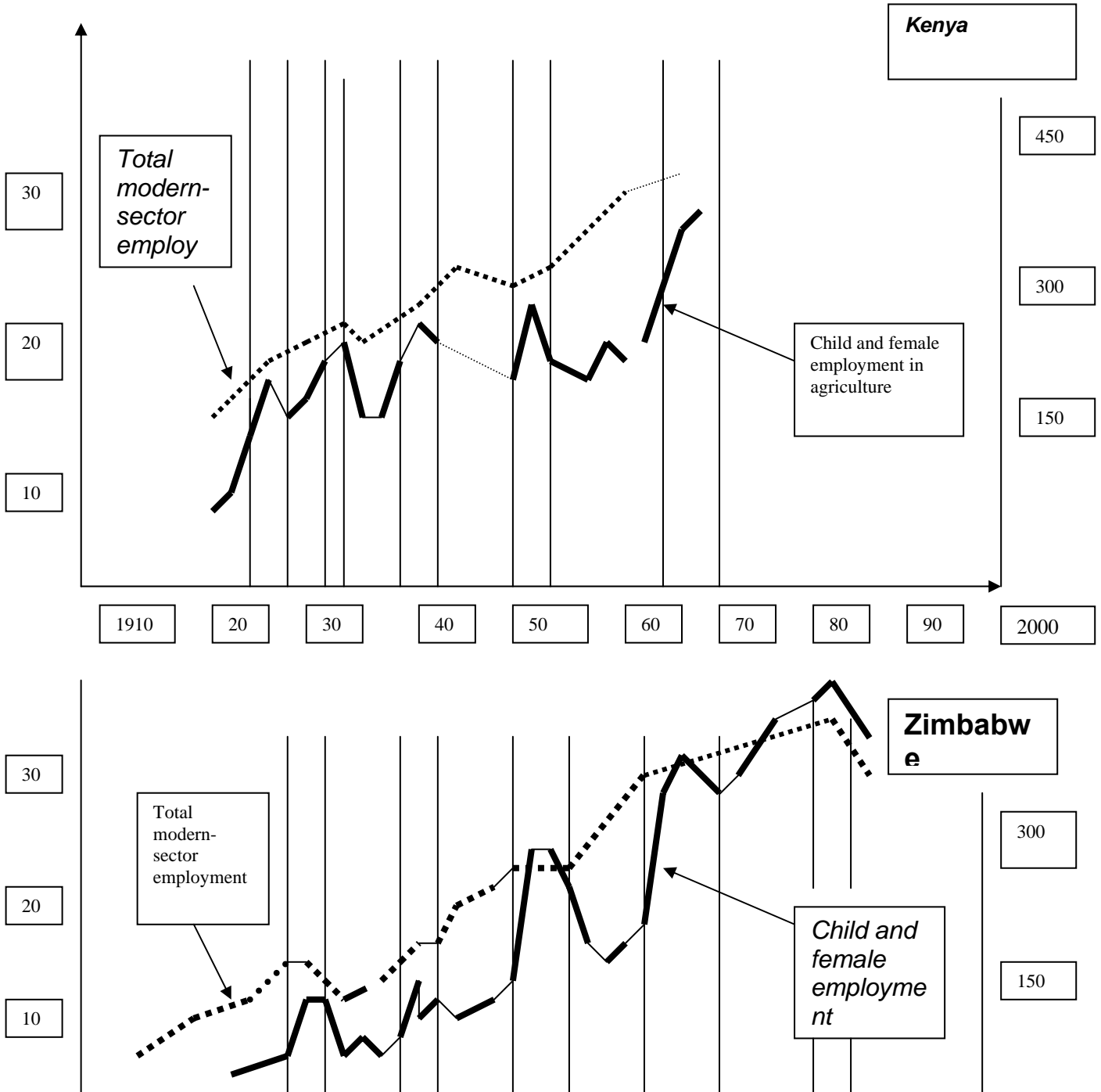
Sources: Kenya: Labour Department (subsequently East African Statistical Department), *Monthly Labour Returns; Agricultural Censuses.*
 Zimbabwe: Annual Reports of the Chief NativeCommissioner; subsequently Central Bureau of Statistics, *Monthly Statistical Digest.* Some interpolations from Kazembe (1986)

If anything, as illustrated by table 3.4, the tendency increases over time with the advent of green –revolution agricultural production technologies[38]. The thesis here is that this form of market adjustment (very high, and probably increasing, casualisation of female labour) is itself a form of risk-limiting behaviour –which reduces to a minimum the burden of fixed costs associated with the hiring of labour – and at the same time a form of incomplete risk-sharing (Dercon and Krishnan, 2000): a means of transferring the burden of risk on to one particularly vulnerable group, namely female wage-workers[39], who may themselves have been made more vulnerable through loss of traditional entitlements as described by Elson.

Thus, escape from poverty through the medium of an expanding labour market has been possible in Ethiopia and Uganda (there are some case-studies of escapees in Chapter 7) whereas descent into poverty has been accelerating in Zimbabwe. In both directions, momentum has been added by consequential changes in social capital and equality, both of which grow and shrink with the thickness of the labour market; and in Zimbabwe also by policy measures, especially land redistribution, which are conceived as pro-poor but have yielded the opposite effect. And in both directions, there is a 'cyclical gender asymmetry', as women casual workers are disproportionately taken on during the boom and disproportionately laid off during the recession. For this reason, although many of them have now become nonpoor in a headcount sense, they have remained vulnerable.

5 Policy and labour-market risk

What possibility do policy measures have to influence the distribution of gains through the labour market? The possibilities discussed in this chapter are listed in Table 3.5. We see the following variables as being able to influence the supply and demand for total and female labour, and as thence having the potential to impact on poverty. Cross-references to fuller treatments in later chapters are added.

---

[38] Interestingly, almost exactly the same tendency occurred in Britain during its agricultural revolution in the late eighteenth and early nineteenth centuries, as recorded for a farm near Sheffield ('The Oakes') by Burnette (1999). Before the agricultural revolution, in the 1770s, there were peaks in the demand for both male and female labour; after the agricultural revolution, in the 1830s and 40s, the seasonal peaks in the demand for male labour are substantially smoothed out but the peaks in female labour demand persist, if anything in intensified form.

[39] Not all women: the better-off are making their own adaptations (especially in Uganda where they have access to their own land) and in many cases have higher productivities especially as a consequence of adaptations of the crop-mix (Saito 1994; see also chapter 7 below).

Table 3.5: Potential policy influences on poverty operating through the labour market

	Influences on overall poverty, and channel of impact	Influences on *female* poverty, and channel of impact	Remarks
1.Crop and activity mix	Downward if there is a shift from a more to a less labour-intensive crop, e.g. maize to horticulture (Table 3.2 above)	Varies by type of crop and changing over time. Traditionally, demand for female labour most intensive on estate crops (such as coffee) and on 'light' activities such as planting and weeding, but a shift from male to female labour occurring within cereal crops and 'heavy' operations such as ploughing (see Ch7)	Because demand for female labour more volatile than for male labour, vulnerability especially of female workers may increase even if their (headcount) poverty is declining
2. New agricultural technology	Typically, modern varieties more intensive than traditional varieties in weeding, harvesting and soil preparation labour, hence impact generally positive (see Ch7)	Historically, labour absorption effects male-biased, especially in Asia (cf. Singh 1990)	Eventual poverty impact conditioned by effects on consumer prices and farm-non farm linkages as well as labour market effects.
3.Microfinance **(a) loans** **(b) consumption smoothing devices, incl.savings**	First-round effects on borrowers often small because targeting is imperfect. Possibility of substantial second-round effects through workforce in environments where 'thick' labour markets exist (esp. Uganda sample) (see Ch5) Often more successful in their first-round poverty impact than loans (Ch5)	Generally positive (globally, 80% of microfinance of borrowers are female, this proportion appears to hold good within our samples)	As with new crops, *vulnerability* may increase even when poverty is declining Can usefully be complemented by training and used as a way-station towards loan finance (ch8)
4.Microinsurance	Boosts investment and thus employment (Ch	First-round effects to date thin but female-biased, in	Generates general externalities through

	4).	part because of focus on health sector. Second-round effects, in principle, unbiased.	stabilisation of local income, also 'product-specific' externalities e.g. health (Ch4)
5. Infrastructure	Reduces input and marketing costs and thus, in principle, positive. Also increases the 'elasticity of substitution' i.e. the possibility for employers to respond to changing factor prices	*Prima facie* neutral.	Poorest often the most remote and most cutoff from marketing facilities, so rural feeder roads and electrification in principle favourable to poverty reduction (cf. South and South east Asia)
6. Public expenditure (i)balance between labour- and capital-intensive sectors (ii) balance between beneficiaries (iii)Special employment/employment guarantee schemes, especially social funds (iv) Conflict prevention	Reduces poverty economywide (Project 2) Highly associated with poverty reduction possibilities cf. Ethiopia, Zimbabwe		Shift from secondary to primary health expenditures relevant to both labour-intensity and balance between beneficiaries.
7. Social capital development	Boosts investment via reduction of interpersonal risk. Apparently very important near the poverty line	Some evidence in Uganda that social capital investment particularly benefits women in microfinance and extension.	

The table is a little dense, because as the Chief Native Commissioner commented, those who are very poor often have nothing to sell but their labour, and therefore any pro-poor strategy, statutorily, must go through the labour market: it cannot go through any other route. However the essential messages are three:

(i) In principle, poverty can be reduced through the labour market by three routes, *substitution* (reducing the real wage)*, removing supply-side obstacles,* and *boosting demand.* Evidence from this chapter and elsewhere suggests that in the environment of poor developing countries, the third is much the most important route and the first two may be ineffective.

(ii) Boosting demand can be done by reducing the risks associated with hiring (or with complementary processes such as borrowing) as well as simply by reducing the costs of employers, or increasing their marginal value product. There is reason to believe that these risks fall more heavily on women than men, and therefore that a risk-

reducing approach to the demand for labour is in principle a pro-female approach.

(iii)   Shifts by government (and NGOs) towards a 'pro-poor' pattern of expenditure, widespread increases in agricultural productivity and reductions in civil disorder are three measures which boost the demand for low-income labour through a number of channels. These are examined in more detail in Chapters 7 through 9 below.

Appendix: labour supply as the outcome of a bargaining model

We begin from the proposition that, within a rural household unit, men and women are in a bargaining situation with some elements of common interest and some elements of conflict. The standard neoclassical model of labour supply that maximises a household joint-utility function, so assuming common objectives between household members, has been found wanting even in developed countries (Fallon and Verry 1988) and versions which allow different functions for husbands and wives are preferred (Ashworth and Ulph 1981). Indeed, models which view household decisions as a result of more realistic intra-family bargaining suggest outcomes which differ from the standard model in areas such as work, marriage and child bearing (Manser and Brown 1980; McElroy and Horney 1981; Ott 1995). In particular, bargaining models demonstrate that decisions affecting the total welfare of the household and its intra-family distribution are interrelated and may lead to Pareto-inefficient outcomes (Humphries 1998). Such an approach is even more relevant in the context of African households where decisions are observably more explicitly the outcome of bargaining between partners; in particular, women may be deterred by intra-family pressures from applying their labour where its productivity is highest (Jones,1983; Elson, 1995).

Let us therefore set up the bargaining framework: suppose that there are two individuals in a household, m (male) and f (female). Each person has a certain level of initial resource, and if both individuals try to use those resources separately, without entering into any cooperative arrangement, they can reach the utility levels ($U_{m,(0)}U_{f(0)}$) denoted by the point B. This is known as the *fallback* or *breakdown position,* as it is the position which both parties can fall back on if negotiations, or indeed the relationship, break down. Let the curve UU' – the utility-possibility curve – summarise all the welfare levels which the two parties could achieve by cooperation. By a combination of Pareto and individual-rationality arguments, the range of possibilities acceptable to both the male and the female is limited to the arc AC, and on this arc the equilibrium suggested by Nash is that which maximises the product of the two individuals' utility gains:

$$\pi = (U_m - U_m^*) . (U_f - U_f^*) \qquad\qquad (1)$$

This equilibrium position – the midpoint between A and C – is of course sensitive to each party's breakdown position: for example, on the diagram if the woman's breakdown position improves from U_f to $U_{f(1)}$, the equilibrium position moves from S to S'.

Figure 3.5 Impacts of perception and breakdown position on the Nash bargaining solution
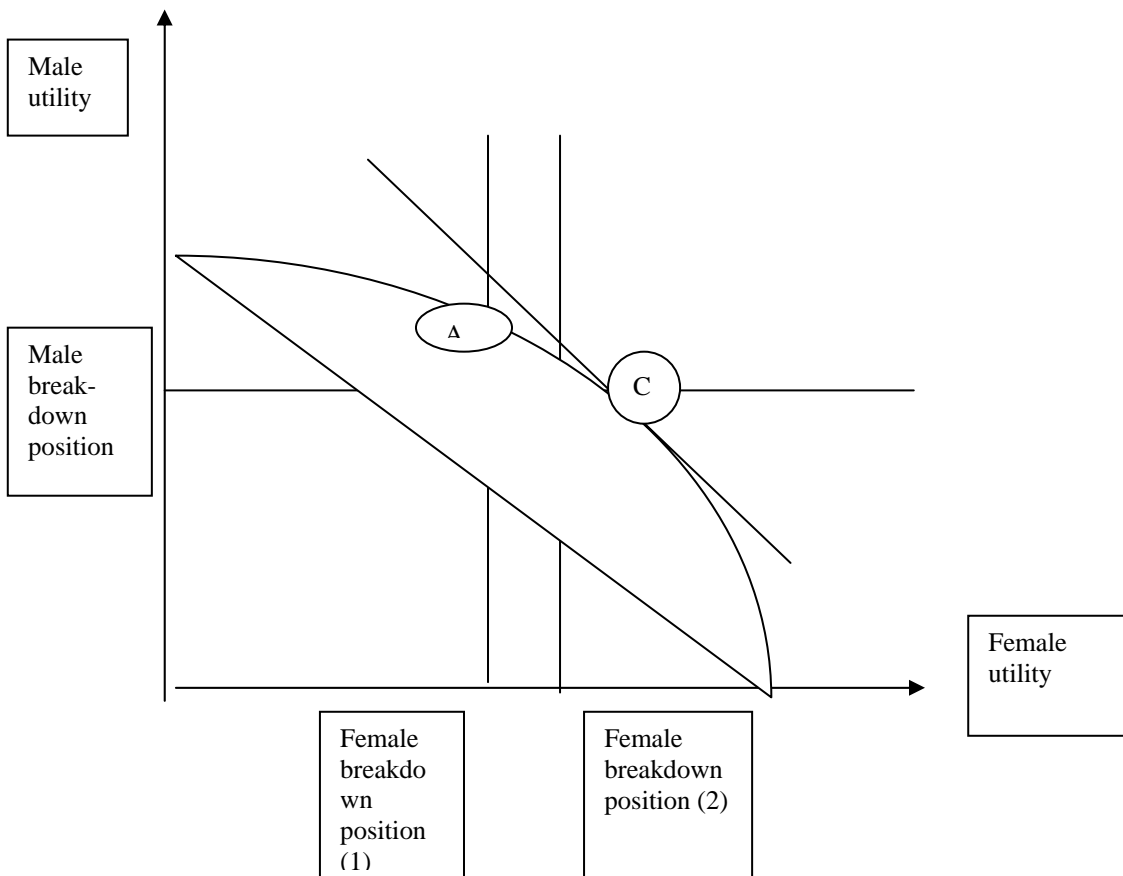
Elements why may determine the distribution of bargaining power between the sexes include:

- 1 capital-market constraints, deriving from women's lack of collateral (page xx above), which cause men to take responsibility for the bulk of entrepreneurship and employment, which in turn makes them more likely to hire male employees (see 4 below);

- 2 land-holding;

- 3 limitations on physical strength, which account for the 'traditional' (and now eroding) division of agricultural labour in which men do the land clearing and stumping (and other heavy jobs for which the first employees are most often hired in) whereas women have the dominant role in planting, weeding, harvesting and, especially, food processing and preparation. In the extreme case, if either the man or the woman is exhausted or in poor health that may reduce her feasible maximum work output;

- 4 education, and other skills providing a key to off-farm income;

- 5 limitations on availability: under the social custom which makes women responsible for the bulk of child care, and hence confines them to such labour as is compatible with child care women work a 'double day' with labour-force participation plus domestic duties, which may exclude them from the best income-earning opportunities. Hence it is normally difficult for women to accept offers of work remote from the household; and if, as a consequence, men account for the bulk of rural to urban migration,

women have increased responsibility for domestic duties, making them less mobile still;

- 6 issues of social capital and trust, well illustrated by Alison Evans in her study of Nakalanga and Kimanto in Eastern Uganda (close to our Iganga sample):

To summarise, the key determinants of the woman's breakdown position include:
- *Control over assets:* land ownership, education, credit access, access to networks and other forms of social capital, access to support from government and NGOs
- *Freedom of manoeuvre*: number of children, state of health

Sen(1990) has however argued that this is not the complete story, because cultural conditioning may drive a wedge between people's perception of their worst-case option and their actual worst-case option. He identifies two further components of women's breakdown position: their perceived contribution to the family, and their perceived self-interest. Women often perceive their contribution to the household as being less than men's because it is less in the form of money, even though they work longer and harder hours; and anything which changes this perception for the better will improve women's breakdown position. By the same token women may collude in outcomes which discriminate against them because they are less aware of their own self-interest (or seek to maximise a larger utility such as the household's, while the male is seeking to maximise his own utility). Hence it may be more rational to assume that the in the equilibrium Nash bargaining solution the two parties maximise the deviation of their *weighted breakdown* positions:

$$\pi^* = (U_m - U_{m(o)})_{p(m)} \cdot (U_f - U_{f(o)})_{p(f)} \qquad (2)$$

where the subscript p stands for 'perceived'. The ratio p(m) to p(f) can be taken as an index of the degree of awareness of the true situation on the part of each partner.

To operationalise this approach into a labour-supply function for women we optimise the function (.2) by setting its derivative with respect to female labour supply equal to zero:

$$\frac{\partial \pi}{\partial L_f} = (U_m - U_{m(o)})_{p(m)} \cdot (U_f - U_{f(o)})_{p(f)} = 0 \qquad (3)$$

With some manipulation[40], this can be converted into a labour-supply function:

---

[40] Notation for this footnote:

U_m, U_f	Utility(male and female)	W	wage rate
CR	Credit access	E	educational level
C	crop mix (ratio of horticultural crops and hybrids to others)	L	land holdings
SC	Social capital index (participation in cooperatives, farmers' associations or political parties)	N	number of children
L_s	labour supply	L_d	labour demand
Y	agricultural sector income	β	adjustment coefficient of supply to difference between supply and demand

By (.3)

$$L_f^* = \alpha_0 + \alpha_1 C + \alpha_2 CR + \alpha_3 L + \alpha_4 N + \alpha_5 E + \alpha_6 SC + \alpha_7 w \qquad (4)$$

This is the function estimated in table 3.1 above.

$$\frac{\partial \pi}{\partial L_f} = (U_m - U_{m(o)})_{p(m)} \cdot (U_f - U_{f(o)})_{p\ (f)} = 0 \qquad (4.3)$$

i.e., using the product rule,

$$(u_m - u_{m(0)}) \ (w - \frac{\partial \pi}{\partial L_f} (L, E, CR, SC, C, H)) + (wL_f - U_{f(0)} \frac{\partial \pi}{\partial L_f} (L, E, CR, SC, C, H)) = 0$$

i.e. $wL_f = \frac{1}{\partial \pi / \partial L_f} (L, E, CR, SC, C, H) + \frac{\partial U_f}{\partial L_f} \cdot (U_m - U_{m(0)}) \ (w - \frac{\partial \pi}{\partial L_f} (L, E, CR, SC, C, H))$

i.e.

desired female labour supply $L_f^* = \frac{1}{w} [\frac{1}{\ } (L, E, CR, SC, N, H) + \frac{\partial U_f}{\ }$

$- (U_m - U_{m(0)}) \ (w - \frac{\partial \pi}{\partial L_f} (L, E, CR, SC, C, H))$

Now, let labour demand $L_d = \alpha(Y, C)$ (.3a)

The dependence of labour-intensity (demand per unit output) on the crop mix has not been formally demonstrated in this chapter, but is documented in Table 3.2 above.

and let the adjustment of supply to excess demand be determined by a linear parameter β, dependent on the wage rate:

$$L_{f(e)} = \beta(w)(L_d - L_{f*}) \qquad (3b)$$

Hence, 'effective labour supply' $L_{f(e)}$

$= \frac{1}{w} [\frac{1}{\partial \pi / \partial L_f} (L, E, CR, SC, N, H) + \frac{\partial U_f}{\partial L_f}$

$- (U_m - U_{m(0)}) \ (w - \frac{\partial \pi}{\partial L_f} (L, E, CR, SC, C, H)) - \beta(w)\alpha(Y, C) \qquad (3c)$

This can be linearised as

$$L_{f(e)} = \alpha_0 + \alpha_1 C + \alpha_2 CR + \alpha_3 L + \alpha_4 N + \alpha_5 E + \alpha_6 SC + \alpha_7 w \qquad (4)$$

This is the reduced-form relationship estimated in Table 3.1 above.

Chapter 4. Microinsurance institutions

1.Introduction

We have argued that risk is a fundamental cause of underdevelopment. Insurance makes it easier for people to tolerate risks, by replacing the uncertain prospect of large losses with the certainty of a small, regular payment. It thus reduces vulnerability, and thereby may stop markets from falling apart. It has the potential to encourage trust and develop social capital, as we have demonstrated experimentally in chapter 2. Insurance is one of the basic institutions which can protect people from drifting towards financial exclusion if their existing coping strategies are failing. By protecting people's livelihoods in this way, it should encourage investment among lower income groups[41]. And yet, as the recent 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 hyperbolic though this description of the situation is, there is no doubt that the provision of one of the potentially most poverty-reducing of all 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 chapter, we examine what this contribution might be and how its effectiveness might be optimised.

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, and substantial informal use of informal emergency loans, rotating savings and credit associations and other insurance-substitutes, which probably increases in intensity as one moves down the income scale. A component of this demand appears to be gender-specific, as argued by Elson in the passage quoted in the previous chapter. Nonetheless, 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[42]. Finally, we may note 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 the poverty and inequality which microinsurance seeks to reduce are public

---

[42] 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.

goods. 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 [43]; 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 because of an insurable shock; and may have other external benefits also, such as, in the examples highlighted in this chapter, benefits to the health of persons other than the insured. This combination of externality and hidden information creates a compelling case for external agency to fill the gaps to which the World Bank refers.

External agency has indeed entered the market in the past, often in the form of crop yield guarantee schemes for smallholders. The results have often been disastrous, which explains much of the scepticism currently expressed towards microinsurance. 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))[44] A review (Hazell, Pomareda and Valdes 1986: introduction) reports 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 this 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. World Bank 1989; Hazell, Pomareda and Valdes *ibid. ;* 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.

What has actually emerged in developing countries after that first wave of failure, which it might be premature to call 'the microinsurance movement', is something rather different from the neo-liberal minimalist affair foreseen by the World Bank and others. It has, essentially, three components, each of which springs from a distinctive historical root. The first is experimental schemes set up by NGOs or the state to insure against *single perils* such as property, health and life insurance risks; the scheme operated by FINCA Uganda, to be examined below, is a good example of these. These attempt to draw on the lessons from the failure of multiple-risk schemes, and aim at least 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[45] . The second strand is profit-making schemes set up by the

---

[43] As McCord comments (2000: 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…'

[44] For further unhappy stories of state-financed ventures, see Box 2 in Brown (2001) headed 'The dismal history of crop insurance'.

[45] 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

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 downmarket 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 a registered trade union, and has aimed since the 1970s to provide 'work and income security, food security and social security' (Sinha 2002: 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 bias in favour of female clients characterises the *Grameen Kalyan* (Grameen Welfare) 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: 1), and the similar health insurance scheme of the Bangladesh Rural Advancement Committee (BRAC). 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[46]. Indeed, rather than the private sector expanding at the expense of the public, the NGO sector is expanding at the expense of both[47]. The overall social protection dimension of microinsurance is covered in more detail in Chapter 8, which examines SEWA and BRAC in some detail.

Illustrations of the distribution of microinsurance institutions by region and type are provided in Table 4.1. As discussed by Brown and Churchill(2000) progress during this second phase has been most marked in the fields of life, health and property insurance, with agriculture a long way down the list. This ordering, and in particular the salience of health, reflects the ordering put on specific risks, at least in urban areas, by the respondents to the *2000 World Development Report* (Narayan et al 2000: ; see Table 1.1 above)[48], but the current gap in insurance schemes to cover drought and flood risks is noteworthy.

---

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.)

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

[47] David Walker, 'The aid game', *Independent,* 24 July 2001, claims that 'the non-profit sector is 4.7% of [OECD] GNP,and that 5% of official development aid is now channelled through NGOs.

[48] 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 Table 1.1 above and Mosley(2001), 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)

Table 4.1. Classification of microinsurance organisations

	Group 1 Not-for-profit, single risk	Group 2 Not-for-profit, multiple risk	Group 3 Private sector for-profit
Asia	Grameen Life, Bangladesh ASA, Bangladesh BASIX Agricultural, India	SEWA, India BRAC Health, Bangladesh Groupe de Recherche et d'Echanges technologiques (GRET), Cambodia	Gono Bima, Bangladesh National Life, Bangladesh
Latin America		IPTK, Bolivia	COLUMNA de Seguros, Guatemala
Africa	FINCA Health, Uganda CERUDEB weather insurance, Uganda(in preparation) K-REP/Chogoria Hospital, Kenya Bima ya Afya, Tanzania		King Finance, South Africa

Our task in this chapter is to examine how well, in the light of 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 which risks to cover, and then propose a formula for the setting of the insurance premium. In section 3 we examine the performance of some microinsurance schemes to date, and in two cases present some quantitative impact assessment results. The concluding Section 4 presents our policy recommendations.

2. The design of microinsurance: pricing, externality and incentives

(i) Coverage and incentives

To reconcile the objectives of viability and poverty reduction, the hurdles which have to be overcome are the following:

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 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 4.2) the solutions to these design problems which have been adopted by a group of six microfinance institutions mostly within our case-study countries. Of the schemes described, four (Grameen, BRAC, SEWA and FINCA) fit within the 'not-for-profit multiple risk' and two (BASIX and CERUDEB) fit within the 'not-for profit single risk' classification. We note, in particular, the following points of common experience:

(i) All of the schemes are typically confined to named insurable risks such as life, hospitalisation 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[49].

(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. In the Appendix below we examine how the value of this excess should be computed.

(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 planned CERUDEB agricultural insurance scheme. 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, by contrast with the old Indian crop insurance schemes, this payout is only made if there is evidence of good crop husbandry.

(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; 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.

---

[49] In particular, the payout is split into three tranches, and payment of the last two tranches is only made on evidence of good husbandry during the sowing and cultivation periods.

- 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 which overcomes, for new members, the barriers of cost and unfamiliarity associated with membership. Often pre-existing *groups* of microfinance members have joined the scheme as a cluster. In this sense, social capital is an input into, as well as hopefully also 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: 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 concessional or, in the case of BRAC, free insurance to the 'ultra-poor'[50]. The cost of this appears to be minor[51] .There may also be a certain amount of self-targeting, in the sense that it may be (as discussed in Chapter 2) 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 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 itself acts as a multiplier – as an additional defence against moral hazard, as in the case of microfinance.

---

[50] The World Bank (1996) defines the ultra-poor as those who have no land or house of their own, sell manual labour with no other means of income, have no savings, are unable to have three meals a day, can not afford to purchase minimum clothing and have no ability to spend money on education. For operational purposes institutions in Bangladesh have used the definition of ability to afford food consumption less than 1805kcal per diem, and/or cash income less than $15 per month and land holdings less than 50 decimals(half an acre). For further discussion see chapter 8 below.

[51] Within the BRAC centres which we sampled, only 1.5 per cent of insurance clients were ultra-poor (interview, Narsindhi upazila office, 14.08.03). This may understate the percentage across the organisation as a whole.

Table 4.2. Five 'new-generation' microinsurance schemes : summary description

Scheme	*SEWA, Gujerat,India Multiple: life, health and housing*	FINCA Health	*Grameen Kalyan, Bangladesh Health*	BRAC Health	*Centenary Rural Development Bank (CERUDEB), Uganda Weather*	*BAS(X,Hydera bad, India Agricultural production*
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)		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. *Operates full-service model:* Grameen Kalyan is the insurer.	Health insurance offshoot of microfinance NGO. *Operates full-service model:* BRAC is the insurer.	Commercial bank. *Proposed scheme operates full-service model,* with insurance being provided by the bank	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 Customers of BRAC c and other NGOs pay a discounted premium	One compulsory scheme (Mbale) for Bank customers only: a second voluntary scheme (Hoima) open to all	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
Defences against moral hazard	Single risk which the insured cannot normally influence	Copayment (Sh2000 registration fee), exclusions*,	Single risk which the insured cannot normally	Single risk which the insured cannot normally	Single risk which the insured cannot easily influence	Peer monitoring of claims; claims assessed and verified by a village committee which

		payments limited to cases where patients hospitalised	influence	Influence; 75% no-claim discount		includes a BASIX representative. At least 50% of indemnity value must come from member's own deposit in village fund
Defences against adverse selection		1Life insurance compulsory for all borrowers 2. >60% of all members must enrol before coverage is extended to a village bank			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.	
Annual premium ($/annum)	Three options: I:$1.53 II: $3.67 III: $7.44	$46(Ushs 80000) per 4 family members	Taka 100-120/$2.50 (non-members); Taka 50/$1 (members)	100 taka plus 2taka/visit (members); 250 taka plus 5 taka/visit (non-members)	6% of basic loan amount for rainfall insurance	
Targeting devices and 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 rot, civil commotion, affray, political or illegal act by a member; alcoholism or drug addiction.

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: xii) that 'savings are more effective than insurance for providing protection against common stresses (whereas insurance provides protection against larger losses that occur more frequently)'. The role of savings and other forms of microfinance is discussed in Chapters 5 and 8.

In the hope of stimulating such learning we take as point of departure a simple model of pricing, based on the 'break-even' condition that the typical microinsurance organisation is a nonprofit 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)

and from (1) and (2) the break-even insurance premium solves[52] as

$R^* = ((1-e)V + a + r)/(1-p)$ (2)

A procedure for deriving the optimal excess e is presented in the Appendix.

It can be expected that the optimal premium r* will fall as the volume of business increases, with the spreading of set-up[53],administrative and promotion costs over a larger and larger number of accounts (Figure 1a). This basic downward-sloping relationship, exhibiting economies of scale, will shifts upward with the range of risks covered, with 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

---

[52] 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
$R^* = (1-e)\varepsilon\rho + a + r)/(1-p)$ (2'')

danger in such a case is that if demand is mainly latent and in any case very steeply price-responsive, as in the case of Figure 4.1a, the market for insurance may be non-existent (as in the case of demand function AA') such that the infant insurer becomes very fragile, and is at risk of never becoming viable and never learning the lessons of experience, because he never has the resources with which to do that[54].

In such a case, subsidy may be needed, in the short term to move the insurer's cost curve down to the point where he becomes viable, and over the longer term to give him time to move down the cost curve and build up a clientele . Luckily, such a subsidy 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. This information is free to the successors, since they can find out without cost the model which the 'fittest survivors' follow, 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.

(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)[55], 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[56]. 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 in the surgery and as a consequence discuss more frequently the quality of the healthcare they are

---

[54] 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).

[55] 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)

[56] For a general discussion of the social capital concept in relation to the data from our institutions, please see Chapter 6 below.

receiving, as a consequence 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

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

Let the combined value of these externalities ((i) plus (ii) plus (iii) plus (iv) be X; in that event, the economic criterion for break-even, by contrast with the financial criterion (2) will be

$$R^* = ([(1-e)V + a + r)/(1-p)] - X) \qquad (2')$$

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 (2) 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 (2''), 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:

Table 4.3. 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	For optimal value, see Appendix
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 fro insured patients, see 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 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)

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 4.1. 'Break-even' insurance premia
(a)financial criterion only

Break-even insurance
premium

Break-even premium(financial criterion)
$R^* = (1-e)\varepsilon\rho +a +r)/(1-p)$ (2'')

A

Size of insurer's portfolio

(b)financial and economic criteria

Break-even premium(financial criterion)
$R^* = (1-e)\varepsilon\rho +a +r)/(1-p)$ (2'')

Break-even premium
(economic criterion)
$R^* - x$

Size of insurer's portfolio
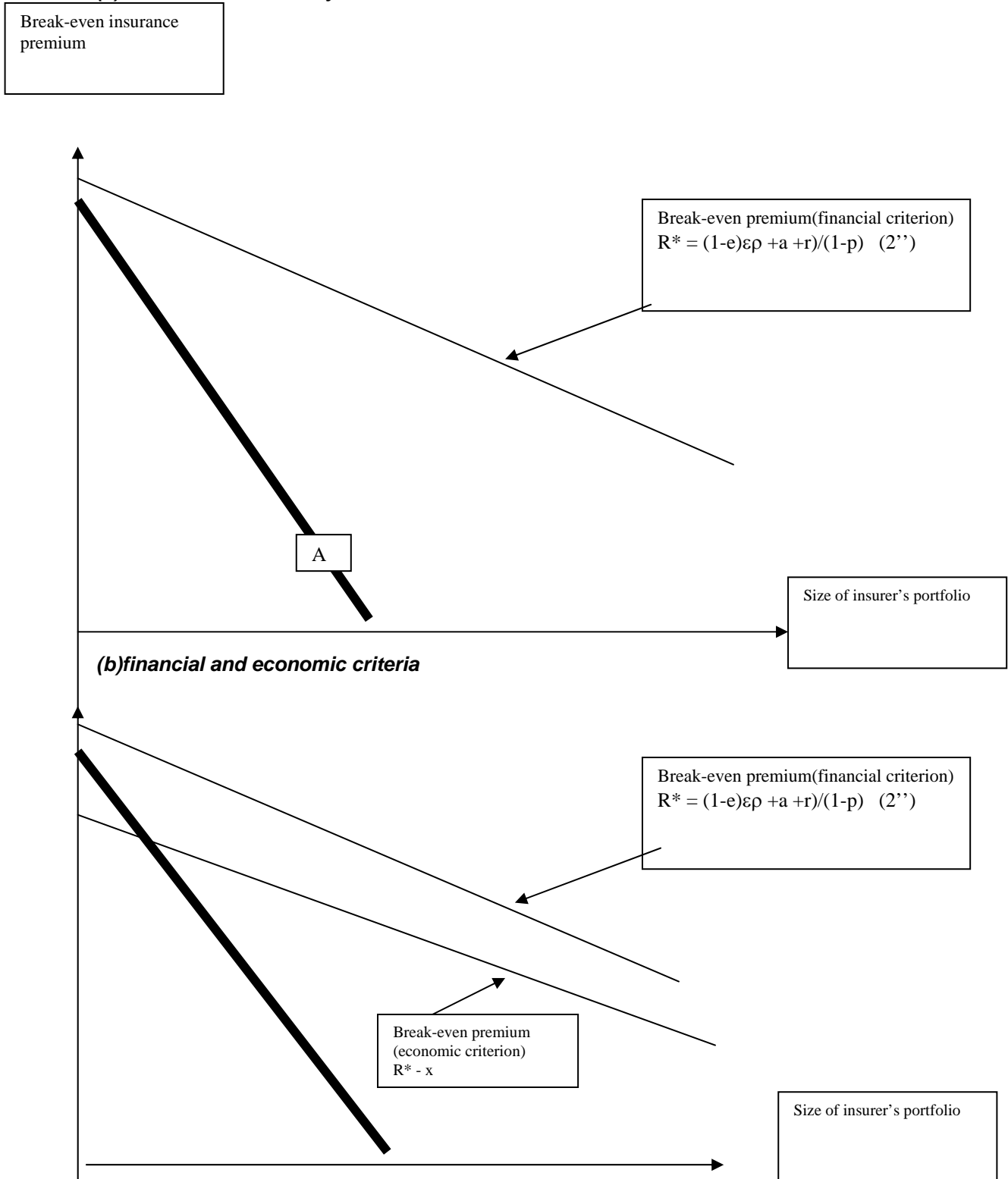
We can now introduce additional instruments, and examine the strategies by which different institutions have sought to balance viability against a focus on the poor:

(i)   *Marketing strategies and demand expansion* – which if successful, can move the demand curve outwards, and enlarge the 'triangle of profitability'. The experience of several institutions suggests that the

insurance concept is not well understood by clients, so that even if their latent demand is strong on the grounds of risk aversion, their effective demand is weak. Some of this weakness arises from misperception by clients of the risks to which they are exposed[57]. Imaginative marketing strategies have been used by some organisations to overcome this blockage[58]. But often what has caused a big surge in demand has been nothing to do with marketing policy, but rather 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 from 30,000 to 100, 000 in a single year.

(ii) *Product diversification* – which again can achieve a boost to demand if it becomes saturated within particular market sectors. 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 life and livestock insurance; and SEWA, which began by offering a basic life insurance product, into insuring healthcare for clients, their spouses and now (2003) their children. However the diversification process is risky, because (Mosley 1987) there is evidence among the first-generation schemes of a tendency for the cost of providing insurance to rise exponentially as the range of risks covered increases.

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 4.2.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

---

[57]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.

[58]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 4.2. 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 4). 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 ot 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.

(represented on the vertical axis). 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)).

To summarise the hypotheses emerging from the discussion so far:
(i)   By exchanging an uncertain for a more certain prospect insurance reduces vulnerability and uncertainty about the future for poor people, and thereby encourages investment by them. (Thereby it takes them back towards their desired path, which at low incomes is heavily biased towards risk reduction)
(ii)   By encouraging investment, it also encourages the hiring of labour,
        and in this way reduces poverty by an indirect route.
(iii)   Insurance creates bonding social capital – by reducing the intra-group inequality of income and building trust, and also by building closer relationships between the insured.
        (Thereby it protects them through providing moral support, and specifically emergency loans, in time of crisis) .
(iv)   Insurance creates linking social capital – by incentivising better relations between microfinance groups and providers of services such as health, education and other public goods.
(v)   Insurance, by facilitating financial planning and protecting against
        unforeseen shocks, improves loan repayment rates and thereby the profitability of microfinance institutions.

        But these are only hypotheses. Does microinsurance deliver these benefits on the ground? We now examine this question.

3. Impact: on institutions and individual clients

We have survey data on microinsurance impact for only two organisations (BRAC Bangladesh and FINCA Uganda), and therefore most of the hypotheses considered above can be considered only for those two institutions, although in BRAC only one round of survey data is so far to hand and econometric analysis is not yet possible. However, we have data on profitability and repayment rates (set out in Table 4.4) for four of the schemes examined, setting on one side Centenary Bank drought insurance, which has not started yet, and BASIX agricultural insurance, which has been at least for the moment been set aside.

Table 4.4. Four schemes: recovery rates and measures of financial sustainability

Scheme	SEWA, Gujerat,India	Grameen Kalyan, Bangladesh	BRAC Health	FINCA Health, Uganda
Sustainability: premiums paid/claims received	87.8% (1994-99) 123% (1999/2000)	72%(2001)	c. 40%(2003)	'About break-even' (2003)
Sustainability: income/total expenses (claims, operations, reserves, etc	176% for their total insurance operations (1999/2000)	Not known	Not known	73%(2002) (page 22 below)
Repayment rates among insured by comparison with uninsured	Not known	About 10% higher	About 2 percentage points higher; also, percentage of missed instalments 8.5% in control group by contrast with 0.2% in 'treatment' (insured) group	About 0.1 percentage points higher (table 4.6 below)
Members mid-2003	90,000		3,000	600
Pricing methods	Premiums copied from United India Insurance when SEWA took over insuring their members		Premiums very similar to Grameen model, plus a premium for larger families and discount for ultra-poor	
Other special features			Uptake highest where BRAC services have been in position longest and where intensity of fieldworker contact is greatest	

Sources: SEWA, Sinha(2001)
　　　　Grameen Bank, Daiyan(2001)
　　　　FINCA, McCord(2000), updated from 2003 surveys
　　　　BRAC, field test April 2002, Narsindhi upazila, plus first round of survey and further interviews, May-August 2003

From table 4.4, there is in Grameen, BRAC and FINCA some evidence, not yet enormously strong, that the existence of insurance improves repayment rates. The insurance schemes themselves are not yet profitable, although SEWA currently has a surplus of premium income over claims paid and FINCA Uganda claims to be close to this situation.

Assessment on qualitative and simple quantitative criteria: FINCA Uganda and BRAC Bangladesh

(i) Institutional background

Globally, there is quite a strong feeling that a major threat to the timely payment of microfinance loan instalments consists of unforeseen health bills, which may in addition fall most heavily on poorer customers. A case for insurance can therefore be made both on repayment-efficiency and also on equity grounds.

The BRAC health insurance scheme was initiated on a pilot basis in 2001. BRAC had long experience of the provision of healthcare (indeed, its greatest early success was its oral rehydration programme, which had reached 13 million households by 1990), and of insurance, in the rather primitive form of death benefits paid out of a premium compulsorily attached to microcredit interest rates; but it was only the year before last that the two came together. The scheme closely follows the precedent of the rival Grameen Bank's health insurance scheme, with concessionary rates for voluntary organisation members, free insurance for the ultra-poor, and a separate maternal and child health premium rate. There are no 'exclusions' in the sense of medical conditions which the scheme will not insure, but cover is confined to treatment provided by BRAC's own physicians. In other words, this is a 'full-service' model of insurance: the provider of financial services is also the insurer.

The FINCA health insurance scheme was started in 1998 by the then general manager of FINCA Uganda, Michael McCord, in collaboration with a former mission hospital in southern Kampala (Nsambya Hospital). McCord explains his enthusiasm to get the scheme up and running (2000: 5) in the light of the fact 'that the greatest deterrent to on-time repayment within (FINCA's) client groups is illness', thus echoing the remarks of Sheikh Abdud Daiyan of Grameen Bank quoted earlier. The scheme is particularly interesting as one of the few operational microinsurance schemes in Africa, where by contrast with South Asia few successful prototypes exist; it owes much to McCord's determination as an NGO manager to push the scheme through rather than be deterred by the standard arguments for infeasibility (financial risk, objections from regulatory bodies, deterrence of customers by high premia, etc.). By contrast to the case of BRAC (and Grameen) the scheme operates what is known as a 'partner-agent' model, in which insurance is *not* provided by the supplier of financial services: FINCA collects the premiums as an add-on to loan instalments but then hands them over to a separate company which operates the insurance, initially a subsidiary of the hospital which treated FINCA's clients (Nsambya Hospital Health Care) but now a consortium of former medical advisers to DFID known as MicroCare, which covers four hospitals in Kampala and two in south-western Uganda[59]. MicroCare, as its name implies, began with the intention of working exclusively with microfinance institutions, but this approach proved unviable, and MicroCare is now actively looking to move upmarket by targeting other organisations with

---

[59] When MicroCare was formed FINCA delayed shifting its clients to this company because it was flirting with setting up its own full-service model (McCord 2000:17)

large numbers of uninsured employees, low-income or otherwise[60]. This company issues a magnetic-strip identity card to all clients, on which all data of claim and treatment history are recorded and which must be produced in return for any insured treatment[61]. Only specified medical treatments are insured, as specified in Table 4.5. From the inception of the scheme to 2001, DFID, which was already providing financial support for Nsambya and other hospitals in Uganda, provided underwriting cover for the incipient scheme, of which McCord (2000: 10) comments: 'Their role is what (made) this scheme possible': FINCA Uganda, with only a few thousand clients, does not have remotely BRAC's ability to reinsure a scheme itself.

---

[60] Contracts have recently been signed to provide health insurance for various groups of low-paid workers in the public and private sectors: for example security guards and workers on flower farms. Most of these workers are male, which lowers the costs of claims because of the additional costs of claims for HIV and reproductive health services: claims by females within Microcare currently run at Sh40000 per annum, twice the rate of claims by males. Interviews, MicroCare, Kampala, 10 February 2003 and 26 August 2003.

[61] The identity card carries a high-resolution digital picture of the client on the front and scanned pictures of the family members on the reverse. Microcare has set up check-in terminals at the client hospitals – not all of them adequately staffed, see below ; client photos are stored on these terminals and come up automatically when the client magnetic-strip card is swiped through, to minimise fraudulent use of the card.

Table 4.5. FINCA and BRAC health insurance: basic design features

	BRAC Health, Bangladesh	FINCA, Uganda
Product coverage	Curative care in hospitals, also maternal and child health care for an additional premium. Drugs made available at a discounted price to scheme members	Operations, tests and X-rays, drugs, basic dental, optical consultation, maternity
Limitations	Covers care in local BRAC hospitals only, not referral.	Limited to $233 per (4-month?) cycle for any one illness, and up to 3 weeks in-patient care per 3 months for chronic diseases
Exclusions	None.	Continuous medication for chronic diseases(e.g. diabetes, high blood pressure) Treatment and consequences of alcoholism and drug addiction Injury or illness resulting from intentional participation in riot, civil commotion, affray, political or illegal acts Cosmetic surgery, hearing aids, and complex dental surgery other than as a result of accident
Eligibility	Any, but members of BRAC and other NGOs pay discounted premiums (see below)	Must be FINCA borrower At least 60% of any FINCA group must buy the insurance (to balance adverse selection with marketability)[62]
Pricing (premiums)	General medicine: 100 Taka ($1.80/person/annum) for members of BRAC and other NGOs, 200 for non-members. Maternity care: Additional 50 taka for members of BRAC and other voluntary organisations, 70 for non-members.	Basic cost: Ush 80,000 for 8 months for 4 people[63] ($13/person/annum) Ush 20,000 for each extra adult Ush 13,000 for each extra child under sixteen
Pricing (co-payments/ deductibles)	2 Taka for each outpatient visit (20 for non-VO members, 0 for ultra-poor); no further charge for in-patient treatment	Sh 1, 500 for each outpatient visit during business hours Sh 2, 000 for each outpatient visit outside business hours Additional charge on admission for in-patient treatment

The premia quoted above appear to have been picked out of the air, without proper actuarial calculations[64]: evidence to be presented in section 4 below suggests that even the FINCA, never mind the BRAC premium are in fact too low *on average* even against the objective of maximising poverty reduction. The BRAC scheme is currently (August 2003) covering only 40% of its costs. The FINCA/Microcare scheme is currently covering some

---

[62] We were told verbally both by clients and by MicroCare staff that this stipulation was in practice not always applied.

[63] As a weekly premium on loan repayments, this works out at Ushs 5, 800 per week.

[64] Interview, Microcare Kampala, 10 February 2003.

73% of its costs of (claims plus operations) from premiums[65] , by contrast with the situation in 1999 when 'coverage of operations plus claims from premiums averaged just over 30% over the first nine months of the test - i.e.35% and 32% over the first four and next five months, respectively'. The FINCA scheme in 1999 was suffering from diseconomies of small scale (hence in part the high premium) which Microcare has now alleviated through its expansion[66]; but even though the goal of self-sufficiency has been virtually achieved, some quality of care appears to have been lost, as will be discussed below.

ii) Sampling procedure

        Our impact assessment materials are derived, for BRAC, from the first round of a sample survey of 200 individuals (100 insurance clients and a control group of 100 non-clients) executed in May 2003, and for FINCA, from two sample surveys executed in February 2003, with a follow-up in August of the same year. FINCA *Survey A*, carried out on 12 and 13 February 2003, consisted of *interviews* with a clustered random sample of 61 clients : 42 within the Nateete Twekembe A/B and Tukolelewamu groups covered under the insurance scheme, and a control sample of 19 clients taken within the Mukisa A and Nateete B groups who were FINCA borrowers but not covered under the insurance scheme. The intention, which seems to have been quite well realised (table 4.5) was that the control would approximate as closely as possible to the treatment group in all relevant aspects of well-being and opportunity except for the fact of not receiving insurance – certainly they are of similar income, education and household size, but average loan size is slightly larger in the control group. The second Uganda survey, *Survey B*, was carried out on a larger sample, of 384 clients, but involved no interviews. There were 185 clients in the treatment group of insurance beneficiaries and 199 in the control group of non-beneficiaries.

Table 4.6 presents the summary quantitative results; we then proceed to examine the results in association with interviews carried out in both locations.

---

[65] Interview, Microcare Kampala, 10 February 2003.
[66] 'If you link yourself to one particular NGO you will never get the necessary volume of customers': managing director, MicroCare, interview, 12 February 2003.

Table 4.6. BRAC and FINCA Uganda: Characteristics of treatment and control groups

	Uganda (Sample A, n=61 unless stated) Data in thousands of shillings, Sh2000=$1		BRAC Bangladesh (n= 200) Data in Banglkadesh Taka, Taka 45=$1	
	Treatment group(n=42)	*Control group(n=19)*	*Treatment group(n=100)*	*Control group(n=100)*
Asset value			620035 (1108087)	252418 (294159)
Monthly income (convert to $)	479.0 (479.6)	454.4 (407.9)		
Monthly total Expenditure	363.3 (256.9)	409.3 ( )	8355 (6488)	8125 (12028)
Current savings: *sample A** *sample B(n=384))*	115.7* 168.8 (160.6)	45.1 140.6 (145.4)	14185 (21178)	11304 (20368)
Savings growth since last cycle, *Sample B(%)*	26.6 (46.4)	18.1 (52.3)		
Monthly educational expenditure	128.4	113.4	421 (747)	415 (717)
Investment in: Housing Equipment Vehicles All fixed capital Working capital	485.3* 79.9 156.3* 686.2* 297.7	231.3 35.4 0 270.7 625.1*		
Education : *modal level*	Secondary(not completed)	Secondary(not completed)	No education	No education
% with no education			59	61
% with 7 or more years of schooling			15	9
Household size	8.0 (3.14)	7.42 (3.83)	5.8 (2.6)	5.3 (2.3)

Health status (as perceived by insured borrower) -insured client -client's children	3.35 (1.06) 3.27 (0.76)	3.25 (1.05) 2.62 (0.91)		
Quality of relations with hospital staff (number score)[67]	2.54 (0.96)	2.84 (0.37)		
Financial performance Loan size(Ushs): *Sample A* *Sample B, n=384*	356.7 (256.9) 533.7 (389.6)	494.7 (822.4) 378.8 (356.6)		
Loan growth since last cycle(%) *sample B*	38.5* (57.0)	4.3 (40.5)		
Arrears rate(%) *Sample A?*	1.46	1.57		
Attitude questions(Uganda only):				
Would you say that you are less likely to get into financial trouble since you joined the scheme?	Yes: 71%			
Has joining the scheme given you more peace of mind?	Yes: 83%			
Do you find it easier to invest in your business since you joined the scheme?	Yes: 51%			
Have you hired more labourers since you joined the scheme?	Yes: 7%			
Have relations with the hospital improved since you joined the scheme?	Yes: 54%			

Source: Uganda Surveys A and B, Feb. 2003; Uganda Survey C, Aug. 2003, for investment, health and educational data; BRAC Survey A, August 2003. At time of survey, $1 = Ushs 2000 = Taka 55, approximately.

* Distinction between sample means significant at 5% level.

Notes: [1] Education levels were measured for each respondent according to the following seven categories: none/primary, not completed/primary, completed/secondary, not completed/ secondary, completed/ tertiary/ higher degree.

Our initial findings are as follows:
Savings: physical and human capital investment. Both in Uganda and in Bangladesh, being a member of the insurance scheme was associated with significantly higher *rates of saving* (out of an almost equivalent level of income), with *higher rates of savings growth*, and with *higher rates of*

---

[67] Average of number score: 4= very good; 3=good; 2= so-so; 1=bad; 0 = very bad.

investment , We interpret this in terms of the state of being insured motivating greater peace of mind, and hence a greater willingness to sacrifice current consumption in order to put money in the business. The state of being insured, apparently, does not *crowd out* precautionary saving, but rather *crowds in* enterprise-related saving. Some of the interview evidence casts light on this motivation.

In Bangladesh, one client stated in a group interview, to general assent, 'We are now better able to plan our savings' (Interview Narsindhi 14/08/03). One respondent was happy to put a figure on the value of her incremental savings (10,000 taka/$200 over the last six months).

In Uganda, out of 42 scheme clients interviewed, 21 **(**51.2 %) stated that being a member of the scheme had enabled them to increase their *level of physical capital investment*[68]. Investment in all categories of fixed investment – vehicles, equipment, and housing – ran in the insured group at more than double the levels encountered in the uninsured group. Being insured appeared to induce a switch from working capital – which remained at a much higher level in the control group – into fixed capital investment.

Our interview data provide some insight into the rationale behind such switching:

(e.g. respondent 3: 'I am more likely to invest, because I have savings from the surplus of my business that I would otherwise spend on medicare' and more specifically respondent 12(a chicken farmer) 'Before I joined the scheme 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[69].' Respondent 13 (owner of hairdressing salon)'I find it easier to operate the salon (now that I have the insurance).., because of this I bought two new driers and a new carpet. The salon looks better. Respondent 19 'I can now afford a sewing machine to expand my business').But very frequently, benefits from insurance were invested in land purchase or improvements to the home:(e.g. respondent 21; 'she has (initially) bought building materials to improve sanitation by constructing bathrooms and toilets'.

Sometimes, as illustrated by the table, insurance motivated additional investment in *human* capital investment . This was confirmed by several respondents in Bangladesh, and also by Uganda respondent 4: 'I feel as a result (of this scheme) I have put my children in better schools as an investment' . Some respondents expressed this as a motivation so strong that it prevented other forms of investment out of the 'surplus' created by insurance, such as Uganda respondent 17, who said: 'No, it is not easier to invest in the business because more costs are incurred on items like the education of the children'. Perceived *health status,* on Uganda, was slightly higher for the insured – and substantially higher for the client' s children – in the treatment by comparison with the control group. Interview evidence suggests that the insured were often those women with most awareness of their own health, which motivated them to seek ways of controlling its cost.

Relatedly, on ***peace of mind.*** In Bangladesh, only 26% of respondents in the insured group, by comparison with 55% in the control group, stated that they

---

[68] No client suggested that the level of capital investment had been reduced – for example as a consequence of having to pay insurance premiums.

[69] All of the quotations in this paragraph are from interviews carried out with members of the Mukisa, Rubaga and Nateete I and II groups, Kampala, 12 and 13 February 2003.

had anxieties about the cost of managing their medical treatment. Bangladesh respondent 1 (8/4/02) stated 'I do not have to worry about selling land if I have to meet sudden medical expenses. If the health of my children is good, they can concentrate and I can concentrate'. In Uganda, out of 42 scheme clients interviewed, 31 (82.9 %) stated that being a member of the insurance scheme gave them *more peace of mind.* E.g. respondents 8 and 9 'Since I don't have a husband, Thinker (sic) takes the responsibility. Thinker is my number one friend'. That most of the clients in this and other microfinance schemes are women is highly relevant since it is clear that the main benefit they derived from the scheme is to have medical treatment for their children on demand without concerns of cost.

As earlier discussed, on ***predictability of expenditures and protection against financial trouble,*** a majority of scheme clients interviewed in Uganda, (29 out of 42 or 70.7 %) stated that being a member of the insurance scheme had *reduced their likelihood of getting into financial trouble*. Several clients argued there was now less fungibility, or need to raid the family business for emergency health costs: for example,. respondent 11 stated: 'now I don't need to pick money from my business for treatment'. In other words, expenditures were now more *predictable:* as movingly described by respondent 20: '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'. 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'. However, qualitative and quantitative findings are here in conflict: although the interview data strongly suggest that under insurance expenditures are easier to plan, there is little evidence from the quantitative data (e.g. top row of Table 4.6 above) that the expenditure patterns of the insured became more stable. And some insurance clients, for certain, were not able to escape dependence on informal borrowing: respondent 12, for example, stated that 'when the business is not giving me the expected weekly output, I use some of the money I get from another group to which I belong to at least pay the weekly (insurance) payment'.

As a general proposition, therefore, the availability of insurance appeared to diminish clients' need to depend on informal, and arguably more fallible,insurance arrangements (Alderman and Paxson 1990, Ligon et al.2002).There was some evidence that once insured,
clients deserted traditional rotating savings and credit associations[70].Indeed,in
    Bangladesh both informal and more formal groups (mosques, youth
    clubs, sports clubs… which had hitherto provided ad hoc support for
    health expenses to members, did not resent and actively disseminated

---

[70] Of 44 clients interviewed, 14 had been members of traditional savings clubs in 2001; of these seven had left by the time of interview in 2003, but three had joined new savings clubs in addition to their FINCA membership, leaving ten who were savings club members in 2003.

information about the insurance scheme. The traditional groups, in both countries, were widely seen as neither having enough resources nor being flexible enough to pay out in case of need. In Uganda, one insurance client stated:

(We) were previously members of a savings club (Nezikokolima). We pooled money, usually per day was 1000 shillings ($0.50), then according to ascending order of numbers, we gave it to the member whose number came first,.. then to the seventh person. In those days we could just pay visits to the [outpatients] and take [our sick children] some little money for passion fruit and milk but not medical expenses'. (interviews, clients 17 and 23, Kampala/Nateete groups 1 and 2, 27 August 2003)

This brings us to the question of the impact of insurance on *social capital development.* Here the evidence is fascinatingly contrasted between the two samples according to the type of social capital involved. There is little doubt that in both Uganda and Bangladesh, the protection of insurance reduced group members' anxieties about group members being able to afford instalments, motivated them to cover for one another, and increased the degree of intragroup trust and cohesion – so-called 'bonding' social capital. Uganda respondent 35 described the process thus:
'(Within the group) the relationship has become closer (sc. as a consequence of insurance). When (particular clients) fail to pay up the loan requirements (insured) members come and top up the balance pending. As a group they have been groomed to work together and treat each other as sisters so that they take care of each other and support each other in social, financial and other aspects of life' (interview, Nateete/Kampala, 27 August 2003).
This closeness appeared to be reinforced by insurance members giving one another business: in the Uganda sample, 18 % of the sales of the sample of insured clients, nearly one dollar in five, went to other individuals within the solidarity group. Respondent 33 described the process:

My business is at a place where we normally met for the insurance scheme. So most members buy from my shop which is nearby. We normally support one another as members to encourage others to join the scheme and enjoy the same facilities…….>>(interview, Nateete/Kampala, 27 August 2003).

Interestingly, in both Bangladesh and Uganda the process of within-group bonding was often combined with social entrepreneurship – a local opinion leader would join the scheme, convince a number of associates to join on the basis of her experience and thereby recruit new members into the scheme[71]. In addition, in Bangladesh the fact that the premium was concessional for members of members of both BRAC and other voluntary organisations encouraged contacts between members of different voluntary organisations – so called 'bridging' social capital.

More broadly, there was some evidence that trust within microinsurance groups could be nurtured by *suspicion of* , rather than trust in, people in general. Not only, as one might expect, was FINCA insurance members'

---

[71] Respondent 8 in Nateete, Kampala commented: 'The relationship has become closer because our chairperson is trying to educate us on how important the scheme is. So most of us have joined the insurance scheme which has enabled us to have no difficulty in paying off the loan' (interviews, 27 August 2003).

degree of trust in one another much greater than their degree of trust in Ugandans as a whole, but their mutual trust increased as their distrust in Ugandans as a whole *decreased*[72]. As Gambetta(1988: 161) remarks in relation to the Sicilian mafia, trust is not additive and indeed 'can be seen as a positional good – one can [on this view] trust others and be trusted by them only to the extent that trust is subtracted from somewhere else'. This finding has important implications for attempts to build community and social capital, which will be taken up in chapter 6.

On *relations with the group and the hospital (* so-called 'linking' social capital*),* however, opinion was seriously divided in Uganda. Out of 42 scheme clients interviewed , 22(53.6 %) stated that being a member of the scheme had *improved their relations with the hospital service.* In some cases this was because they felt the hospital gave them more respect as 'card' patients than as 'cash' patients: for example respondent 12 explained that 'before (the scheme) I used to be asked questions in front of other patients; but since the scheme, we who have cards are given a separate room', in other cases because being part of the scheme had led them to take a more informed interest in the healthcare they were getting in return for their premium and thereby to achieve a negotiable, rather than a dependent, relationship with hospital staff[73]. However, as earlier discussed, there were some quite powerful contrary voices, to the point that the average opinion of 'relations with medical staff' (table 4.5 above) was actually higher amongst the non-insured than amongst the insured. The issue now for discussion is what the basis for these critical consumer opinions was, whether they harm the 'fundamentals' of income, savings and investment rates, and whether they are sensitive to the design of the scheme. By contrast, in Bangladesh interview data suggest that being insured is associated with *greater* client satisfaction with medical staff – with particular appreciation of the availability of a 'one-stop shop' facility. The process by which this happened reveals some interesting external impacts. According to respondent 3:

'Now that we are insured we can afford to go to the medical centre even for non-emergencies. As a consequence, we meet the medical staff more and meet one another more in the surgery. This in turn enables us to exchange views about the treatment we are getting, and to pass those on to the medical staff. We used to receive the treatment we are given quite passively. No longer.'(interview, 14/4/02)

---

[72] Mean levels of trust in co-members were 3.80, and mean levels of trust in Ugandans as a whole were 1.97, on a five-point scale derived from the *World Vales Survey* which ran from 5 ('trust them completely') to 1 ('don't trust them at all'). When the level of trust in members of the group was regressed on the *gap* between trust in group members and in Ugandans as a whole it yielded the result:

trust in members of the borrower group = 3.02 + 0.42**(trust gap between borrower group and
(4.22)
'Ugandans as a whole'), r^2 = 0.31, n =44 observations.

[73] This tendency of scheme membership to stimulate an informed interest in finding out, and indeed scheming to improve, the quality of medical care is something that appears even more strongly in BRAC, Bangladesh (quote fieldwork interview 4/02…)

Let us take the pulse of the Ugandan criticisms. Many of them were 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 we saw from table 4.3 above, 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 excluded; the definition of 'continuous' is clearly ambiguous but there is a clear policy of not excluding any patient according to diagnosis[74]. 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: respondent 24, for example, 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[75]. 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 Microcare clients are treated as though they are not paying any money and also the nurses take too long to attend to Micro-Care clients. Discouraged from going back to the hospital'. It was also complained (eg 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 '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 (Table 3 above); but this is one more illustration of the proposition that misperceptions can be powerful.

---

[74] '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.

[75] 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'.

iii) Econometric analysis of impacts: FINCA Uganda only

The regressions of Table 4.7 enable us to examine more precisely the influence of the insurance scheme in relation to other potential influences on investment. For physical investment (but not human capital investment in school fees) Table 4.7 suggests that the insurance scheme is a significant influence: specifically, holding income and loan size constant, being a member of the insurance scheme accounts for an increase in investment of some 300,000 shillings (£100) per month, holding constant the level of income, education and loan size. As noted earlier, attitudes to the hospital staff in Uganda appear however to be *worse* among insurance scheme members (there is a negative coefficient of scheme membership on social capital) and this appears (equation 2) to have a slightly, but insignificantly, negative effect on investment.

Table 4.7 – Uganda: regressions with forms of investment as dependent variable (sample A)

	Dependent variable			
	Estimated physical capital investment		*Human capital investment (school fees)*	*Social capital: attitudes to medical staff*
Constant	33283 (0.19)	90422 (0.30)	52834 (1.74)	3.361** (8.81)
Income	0.79** (6.61)	0.78** (5.85)	0.300** (7.01)	-7.53e-07** (3.25)
Insurance membership dummy	380914** (3.27)	375889** (3.45)	3370 (0.12)	-0.28 (1.31)
Education	-32147 (0.73)	-32643 (0.73)	23596**	-0.032 (0.39)
Savings			-0.86** (6.20)	
Loan size	-0.0007 (0.007)	0.0015 (0.01)		
Perceived instability of income				-0.045 (0.36)
Attitudes to medical staff		-17336 (0.23)		
Number of observations	61	61	61	61
R^2	0.646	0.715	0.760	0.649

OLS analysis. Sources: survey data for sample A only.

The strong perception that service quality has deteriorated for insurance patients in Ugnada throws into question the standard arguments which prefer the 'partner-agent' model over the 'full-service' model in which a supplier of

microfinance also provides the insurance. Michael McCord, the director of FINCA Uganda at the time the health insurance scheme was developed and the key architect of the scheme, justifies separation of powers as follows:

Microfinance institutions (MFIs) have an efficient delivery channel to the very poor and a desire to offer quality insurance products to their clients, but do not have the expertise and reserves to develop and manage an insurance product. Insurers have the product and the reserves, but do not have an efficient delivery channel to this sector. These respective assets and needs are what make a partnership between MFIs and insurers so potentially perfect…(McCord 2000, page 9).

The argument to be pursued here is that this argument holds well so long as there is sufficient balance between the insurer (agent) and the (MFI) partner to enable the MFI partner to have some bargaining leverage over the agent; but that once this leverage slips beyond a certain point, the agent acquires a degree of monopoly which may destroy the arguments in favour of the partner-agent approach. FINCA, for example, has found that, as a consequence of relentless attempts by the partner (Microcare) to increase volume and cut costs to expanding the market for its insurance policies, it is now no longer an equal partner within the kind of mutual relationship which McCord describes, but rather the supplier of the lowliest, and not the most respected, clients to a rapidly growing private health insurance business with no charitable or ethical overtones.

As we argue formally in the Appendix, this appears to be the consequence of the partner-agent model becoming asymmetric, so that the partner becomes able to impose his own terms on the agent as regards quality of product , in a way that appears not to occur under the full-service model with, for example, BRAC Bangladesh. Although the first-round costs of this in terms of patient well-being are clearly considerable, they do not appear, on the available evidence (Table 4.5), to feed through into second-round impacts on savings and investment, which continue to be higher among insured than among uninsured borrowers. Finally, we examine whether the scheme's defences against moral hazard are robust; in other words whether the existence of insurance inflicts indirect costs by causing patients to take worse care of their health. The evidence, such as it is (Table 4.8) is that there no significant difference between insured and non-insured clients in respect of three important dimensions of 'preventive behaviour': the use of an impregnated mosquito net, vaccination against DPT and awareness of the importance of eating fruit. In all cases the difference between the treatment and the control sample was insignificant, although marginally more of the control sample were aware of the advantages of eating fruit. Nor is the health of the treatment group, as perceived by insured borrowers, worse than that of the control group, as it would be if insurance induced clients to take less good care of their own health, and their children's health is significantly better. We tentatively conclude that few patients consciously abuse the scheme through avoidance of preventive measures[76].

---

[76] The remark of the general manager of COLUMNA, Guatemala, comes to mind:
'Thinking about how to take advantage of an insurance policy seems to be something that declines with income and education' (quoted in Brown and Churchill (2000), page   )

Table 4.8: FINCA Uganda: Health and 'Moral hazard' variables: comparisons between treatment and control groups (Sample A only)

	Treatment group (n=42)		Control group (n=19)	
	Mean	*Standard deviation*	*Mean*	*Standard deviation*
Health practices Do you use an impregnated mosquito net to protect against malaria?	0.59	0.49	0.52	0.51
Are your children vaccinated against DPT?	0.95	0.21	0.94	0.22
How important would you say eating fruit is?	0.90	0.29	0.94	0.23
Health status (as perceived by insured borrower) -insured client	3.35	1.06	3.25	1.05
-client's children	3.27	0.76	2.62	0.91
Incidence of particular diseases:				
TB	0.14	0.35	0.08	0.28
HIV/AIDS	0.10	0.30	0.08	0.29
Diarrhoeal diseases	0.23	0.43	0.08	0.29
Malaria	0.83	0.37	0.91	0.28

Source: Survey, Feb. 2003. Replies to questions 1 and 2 are coded yes=1, no=0. Reply to question 3 is coded 1 if a coherent and sensible answer is given, 0 otherwise.

(iv) Wider impacts

As indicated above, much of the justification for microinsurance rests on the external and market-improvement effects; and these therefore need to be chronicled. Again, we have at least second-hand evidence on this from all the schemes in our sample which are still up and running, and this is summarised I n Table 4.9.

Table 4.9. Estimated 'wider impacts' from microinsurance schemes

Scheme	*SEWA, Gujerat,India*	*Grameen Kalyan, Bangladesh*	*BRAC Health*	**FINCA health, Uganda**
Poverty and risk attitudes	Average annual claimant Income in 2000; Rs 26072 ($543) illliteracy: 83% against 51% state average housing: 30% Kutcha against 12% state avaerge	Most clients below Bangladesh poverty line. Existing rate of exit fcrom poverty (70% over a cycle of 10 loans) is believed to have been increased by the scheme.	Most clients below Bangladesh poverty line.	Average income of sampled group Sh 479000(c$2000)/month: hence vulnerable nonpoor; but a number of poor clients.
Education				Spending on school fees higher in insured than in uninsured group
Health				Perceived health of children significantly higher in insured than in uninsured group
Social capital			Positive impacts on 'linking' social capital via increased motivation to monitor quality of healthcare	Positive effects on 'bonding' social capital presumably via improvement in within-group stability of income; some incentive (though not as strong as in BRAC q.v.) to monitor quality of healthcare. Some negative effects on 'linking' social capital as a consequence of FINCA clients feeling they are suffering discrimination within the scheme
Income stability				No measurable impact; but measure fallible.
Other special features (moral hazard cost)				.No significant moral hazard effects.

Source: SEWA: ILO 2001 – table 22. FINCA health: Tables 4.5-4.8 above.

The wider impacts fall, as earlier discussed, into four distinct categories, and Table 4.9 tells us something about what needs to be done to make these effects operational:

(1)effects operating via *stability of income and expenditure,* which transmitted scheme benefits from clients to non-clients*.* These appear, in both countries, to have raised physical investment ;

(2)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. Some of these criticisms appeared to be based on misperceptions about what was covered under the insurance scheme; 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[77], 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.

(iii)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 inescapable; in Uganda, 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.

(iv)Finally, there are effects operating through the provision of *an institutional model.* (We have not attempted to quantify these in Table 3).

---

[77] See for example McCord(2000), Brown and Churchill(2000)

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 their precedent.

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 Figure 4.1) 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. Conclusions

Microinsurance, then, is on the tentative evidence presented here a fundamentally good idea, but a good idea many of whose benefits consist of externalities ('wider impacts') which do not typically come into being as a consequence of a market process. As a consequence there is a case for subsidy; however, there is also a case for regulation, since by virtue of the very fact that the protective motive appeals particularly strongly to the poorest people, the customers of microinsurance schemes are at risk of exploitation within an unregulated market. It will require much finesse on the part of such regulators to protect vulnerable customers while at the same time enabling innovators to offer them an insurance product on a small and experimental scale.

Impact assessment, presented in an experimental spirit in section 3, suggests that in some cases the expected benefits of microinsurance do not materialise; in particular, there is little evidence in Uganda that the advent of microinsurance has enabled a downward extension of the market for financial services, and positive within-group social capital effects are counterbalanced, in some cases, by a deterioration in relations with hospital staff, which casts some doubt on whether the fashionable 'partner-agent' model is always the right one to apply. However, even though much of the evidence at present available is subjective, there is little doubt that the microinsurance schemes examined have contributed enormously to the peace of mind with which low-income clients are able to afford, in particular, their children's healthcare. This will have spin-offs which we have not even tried to calculate here. We hope, however, that future researchers will feel moved to try and assess this spin-offs, and the incentives, going beyond mere subsidy, which are needed to try and maximise them.

On the basis of the analysis set out above, the following policy modifications would appear worth trying:

(i)   *Premiums and deductibles.* We recommend the formula cited as (2') page 11 above as a basis for calculating *overall* premiums, allowing for the possibility of offering discounted prices to very poor clients, as in BRAC, which are recouped by a loading on the premia charged to others[78]. On the basis of not-yet-ideal data we find on this basis that the overall premium charged to clients of FINCA Uganda is about 25% too low[79]; in our judgement its average value should be raised and the tariff should be put on a multi-part basis to cross-subsidise the poorest clients and persuade them, and indeed those who are at present are completely financially excluded, to join the scheme.

(ii)   *The 'partner-agent model' versus the 'full-service' model.* As we have observed from the experience of FINCA and BRAC, the 'partner-agent' model offers in principle the advantage of marrying the expertise of an insurer in insurance with that of a microfinance provider in recruiting customers for it; but in practice, this advantage may not be realised if the balance of bargaining power between the partner and the agent is 'unequal'. In the Appendix, we define the conditions under which this will happen and the partner-agent model is superior.

(iii)   *Maximising the incentive to provide externalities.* Microinsurance reduces poverty in part by reducing the vulnerability of *clients* (of the insurance scheme itself, and often of an associated microfinance institution), and in part by providing *external benefits* to others:
  • (i)to other *institutions* , by providing information to them free of cost on 'what works';
  • ii) to other *borrowers* – in particular by reducing inequality (increasing mutual trust) and providing increased motivation to improve the service provided – in this case healthcare.
The question is what will maximise the incentive to increase externalities in these senses. In both contexts we can take inspiration from the analysis of our social capital chapter (chapter 6 below) which examines the circumstances under which social capital is accumulated in the absence of a market for it; (experience esp. of hardship, equality, leadership, incentive devices, etc)

---

[78] There are other ways of achieving cross-subsidisation, for example the SEWA system of 'down payments' under which richer clients are able to buy life membership of the scheme, and thereby to capitalise the insurance scheme and cross-subsidise the poorer clients.

[79] Large footnote, with tabular analysis computing the elements of the formula.

Appendix . Calculating the optimal insurance contract: moral hazard and the 'optimal deductible'

This appendix seeks to answer the questions: how should insurance be designed so as to (i) minimise moral hazard costs, (ii) maximise social capital-building effects?

Globally, the time-honoured defence against moral hazard is the *excess* or *deductible,* i.e. a deduction from the payout designed to give the insured an incentive not to depend entirely on insurance for compensating against adverse income shocks. How this works was illustrated originally by Rothschild and Stiglitz (1976) in the diagram reproduced as figure 4.3.

Figure 4.3. State-space diagram for welfare under different states of nature
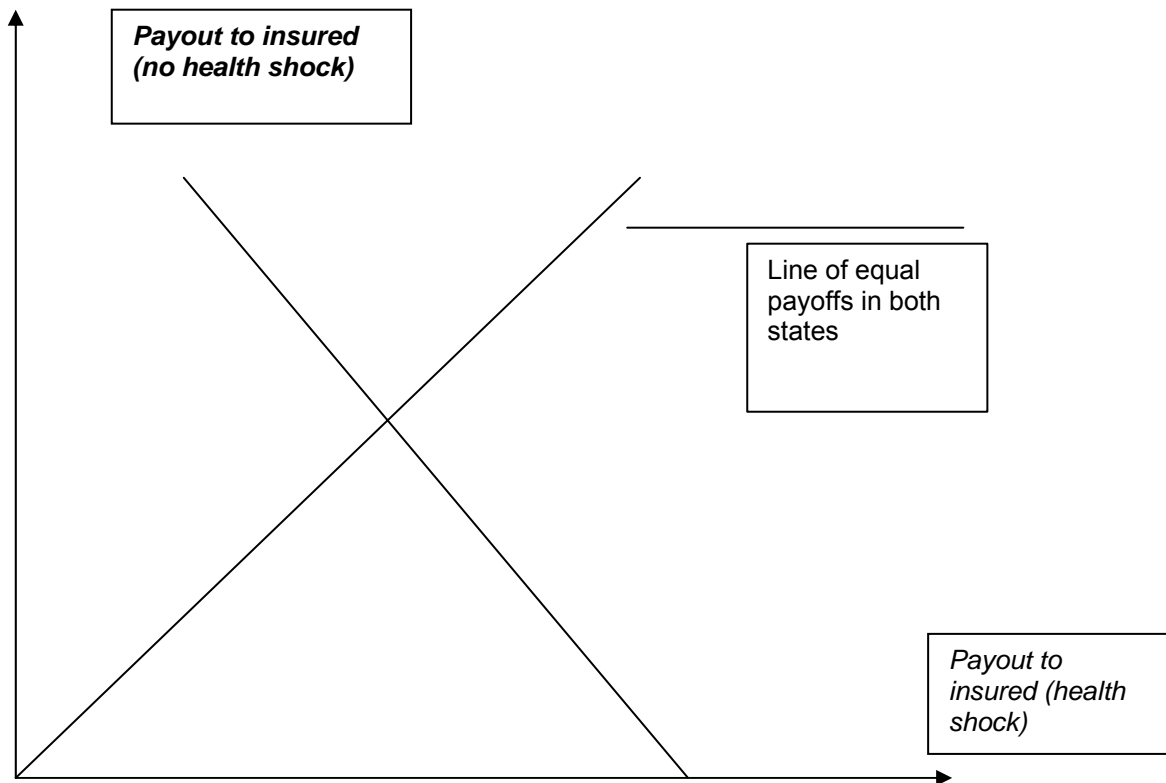
The sequence of moves is:

(1) The insurer (FINCA or BRAC in the present case) offers a contract of form (x,y) under which the representative client pays premium x and receives compensation y if she falls ill.

(2) The client chooses a strategy, either *careful* (using an impregnated mosquito net, accepting DPT vaccinations, etc.) or *careless.*

(3) Nature chooses whether the client or insured members of her family fall ill, with known probability 0.2. In such a case, the dominant strategy of the insured client, as shown by Figure 4.4, is *Careless:* her payoff is as high as under careless behaviour whether or not a health shock occurs, because of the resource costs of being *careful* – an amount ε. But if this amount ε, plus an arbitrarily small inducement, is subtracted as a deductible (excess) from the insurance payout, the client's dominant strategy changes to *careful,* assuming no other changes in the insurer's behaviour.

Figure 4.4. Payoffs to 'careful' and 'careless' behaviour under insurance

Player: Nature Insured	Good health	Adverse health
Strategies: Careful	X, Y-X-ε	X-V, Y-X-ε
Careless	X, Y-X	X-V, Y-X

Notation: X= insurance premium.

Y = normal welfare in good health; reduced by an amount V in a year of adverse health, which is then paid back as an indemnity to insured clients.

ε = cost (in resources and time sacrificed) of implementing individual and community strategies against ill-health (impregnated mosquito nets, DPT vaccinations, other forms of self-insurance)

Increasing the likelihood of careless behaviour reduces the slope of both players' indifference curves (on the diagram of Figure 4.3), because it decreases the utility of points to the southeast of the 45 degree line (good-health situations) and increases the utility of points to the northwest (adverse-health situations). In figure 3, the insurer's isoprofit line swivels from the solid line $\pi_l = 0$ to the dotted line $\pi^*_l = 0$. It swivels around point X because at that point the insurer's profit is independent of the probability of ill-health, because there is no ill-health at point X. The client's indifference curve also swivels, from the solid line $\pi_c = 100$ to the dotted line $\pi_c = 100 + ε$. It swivels around the intersection of the $\pi_c = 100$ curved with the 45 degree line, because on that line the probability of ill-health does not affect the client's payoff. The ε difference arises because the client gets to choose the action *Careless,* which she slightly prefers.

Figure 4.3 shows that no full insurance contract will be offered. The contract C_1 is acceptable to the client, but not to the insurer, because it earns negative profits, and the contract C_2 is acceptable to the insurer, but not to the client, who prefers X. The client would like to commit herself to being *careful,* but she

cannot make her commitment credible. But although no full insurance contract such as C_1 or C_2 is mutually agreeable, other contracts can be used. Consider the partial insurance contract C_3 in figure 3, which has a premium of (26) and an average payout of 100. The client would prefer C_3 to her endowment of X= (12, 0) whether she chooses *Careless* or *Careful.* We can think of C_3 either as a co-insurance contract – with some of the burden of insurance pushed on to the client – or as full insurance with a deductible (excess) of 20%. Under such partial insurance contracts, the client chooses the *Careful* strategy: moral hazard has been effectively deterred by taxing it. The 10% figure is estimated from data provided by our sample respondents on the time and resource cost of the adoption of *two* specified health practices; an impregnated mosquito net and DPT vaccination. It is our best estimate of the 'tax rate' ε which is needed to tip the client's balance of advantage in favour of investing in her own good health whether she is insured or not, and this estimate of ε has been factored into our premium formula (2').

Chapter 5. Microfinance institutions

1. Introduction

Microcredit is one of the key institutional innovations in development of the last half-century. It counters market failure at the bottom end of the capital market by exposing small-scale borrowers to peer pressure, so that they find it difficult to default; and in many cases it has been very profitable. The spread of microcredit has been so rapid (some 20 million low-income borrowers, and possibly 60 million savers, at the most recent count) as to encourage the claim[80] that half of world poverty can be eliminated by this means alone. Microcredit has been demonstrated not only to raise incomes amongst those around the poverty line, but also to have material effects on schooling, health, fertility, community relations, and even domestic violence. Its benefits – especially its first-round benefits – are centered on women, who almost universally have better repayment rates and account, according to one recent estimate, for nearly four-fifths of microfinance borrowers[81].

Through these direct and indirect routes, microcredit represents an important potential point of entry into the vicious circle of poverty, and many organisations have now capitalised on this potential – international financial institutions, developing-country governments, commercial banks, and most of all NGOs, for very many of whom it has served as a financial motor.

However, it does not so obviously represent a hedge against *risk* as labour or insurance. Although by the means we have described loan finance certainly serves the promotional purpose of increasing incomes and assets, it is far less obvious that it also serves the purpose of protecting livelihoods against risk. A household which becomes over-indebted with microfinance debt can indeed find itself pushed into its own vicious circle, from difficulty in servicing debt, to the failure of non-destructive coping strategies, to decapitalisation and the erosion of the means of coping. It thus both counters risks and creates new ones. In this chapter we examine the balance between these two functions, and whether and at what cost that balance can be tilted in favour of the poorest clients. The country case studies are from India (Andhra Pradesh) , Zimbabwe and Uganda, with some complementary illustrations from South Africa in section 4.

2. Frame of reference and methodology

The original classic financial product of the microfinance industry is a small loan (typically $100 or less in the first instance), paid back in weekly instalments, in public, in the client's village, often under peer pressure from co-members of a credit group – all of these being devices to counter the problem of asymmetric information between lender and borrower – priced at a rate which factors in a full risk premium, and gradually enlarged in size in proportion as the recipient reveals herself as being able to manage the debt. Experience has revealed the multiplicity of poor people's financial needs, and

---

[80] Microcredit Summit…. For an examination of this claim see Mosley and Hulme(1998)
[81] Helzi Noponen, IMPACT conference, Polokwane, 8 May 2003.

research such as Table 5.1, from Mosley and Rock(2002), suggests that as income levels decline, demand for financial services gravitates away from lending towards saving and insurance. As we move from the 'vulnerable nonpoor' to the 'extremely poor' category, the proportion who would save if a savings facility were available rises, across the four African institutions studied, from 47% to 82%.

Table 5.1. Four African institutions: financial services actually used and desired, by income level, 1997-2000

| | Savings facility | Income groups: | | | | | |
| | | Extremely poor (<80% poverty line) | | Moderately poor (80-120% poverty line) | | Vulnerable nonpoor (>120% poverty line) | |
This study:		Number having cash savings	*'Repressed demand':* Additional number who would save if a savings facility were available*	Number having cash savings	*Repressed demand* Additional number who would save if a savings facility were available	Number having cash savings	*Repressed demand* Additional number who would save if a savings facility were available
Uganda: CERUDEB	Voluntary savings	5	0	10	1 (10%)	34	17 (50%)
Kenya: K-REP Rongo	Compulsory group savings	9	3 (33%)	2	1 (50%)	3	1 (33%)
Zimbabwe:CARE Zvishavane *Desired*	Compulsory group savings	16	7 (43%)	*12*	*11 (91%)*	20	11 (55%)
S. Africa: FSP Phokoane	No savings facility	16	18 (112%)	1	0	13	7 (54%)
SEF Tzaneen		3	1 (33%)	3	2 (66%)	28	9 (32%)
Weighted average			(83.4%)		(79.5%)		(47.8%)

Source: Mosley and Rock(2003), table 8.

In Asia and urban Latin America at least, the availability of savings facilities is now beginning to develop to meet the demand – Bank Rakyat Indonesia, for example, now has twenty-seven million savers against three million borrowers – but in rural Latin America and especially in Africa, it is still seriously defective in relation to the needs of low-income borrowers, as is the supply of insurance everywhere – as discussed in the previous chapter. The significance of this finding is that poorer clients, especially, have a high intensity of demand for assets that offer a *risk-free* yield – which savings and insurance do (see symposium in *Small Enterprise Development,* March 2001), as long as the deposit-taker is properly regulated and reinsured, and loans do not. In a situation where NGOs are typically licensed only to take forced savings and ' there are almost no insurance markets in (the poorer) developing countries' (World Bank 2000: 143), the implications for institutional development will be very clear.

As the range of functions which microfinance is expected to deliver has broadened, so has the range of methods used to assess its effectiveness. Simple-minded comparisons, such as Hulme and Mosley(1996) between the change in well-being, on various indices, of a treatment group of borrowers

and a control group of non-borrowers[82] have been complemented by studies which:

(i)   examine external effects transmitted from borrowers (or lenders) to non-borrowers – such as effects on health, on education and knowledge, on interest rates affecting non-clients, or, as we saw in Chapter 3, on labour markets;

(ii)   use qualitative methods to examine perceptions of well-being and of causal process, as well as objectively measurable indicators; these are particularly important when examining the vexed issue of who controls the loan or financial product;

(iii)   examine the macro-dimension of microfinance and in particular the ability of such finance to protect against globalisation risks to the macro-economy, such as Patten and Rosengard (2001) and now Marconi and Mosley (2003)

(iv)   integrate the functions of impact assessment, impact monitoring, and market research into one exercise, so that the information emerging from impact assessment improves the productivity of financial services.

Within the regions covered by this study, the provision of microfinance has been very diverse: absent in our Ethiopian research region, still provided on on a group basis but in retreat in Zimbabwe, provided by a whole cluster of institutions (both individual and group) in Uganda, and in India barely beginning to emerge from a state-controlled system. A summary description of the institutions which we study, and the socio-economic context in which they operate, is given in Table 5.2 :

Table 5.2. Research Locations and Sample Characteristics (Household Survey)

	India: regional rural banks (state-financed) and self-help groups(independent roscas with access to state and NGO refinance)	**Uganda**: Centenary Bank (individual lending) and PRIDE/FOCCAS (group lending)	**Zimbabwe**: CARE Zimbabwe
Location	Vepur and Guddimalakapura Mahabubnagar (district) Andhra Pradesh (State)	Sironko and Bufumbo villages, Mbale district (for further detail see Table 2.7)	Zvishavane (Masvingo district)
Locational characteristics	Average rainfall c. 1000mm p.a. Drought prone – 36 years of drought since 1924 Seasonal migration Main crops Paddy, Groundnut and Jowar	1580mm/year in Sironko, 2150mm/year in Bufumbo	Drought prone – c.800mm.p.a., severe droughts in 1992 and 2002
Monthly per capita poverty threshold[1]	1560 Indian Rupees (INR) /$32	Ug.Sh. 800000/$55	Zim $1600/$40
Survey Time	July to October 2001	Oct-Dec 2001	Sept-Oct2000
Sample	302 Households. Stratified Random Sampling: Active Age	300 households, stratified random	90households, stratified

---

[82] The present author takes full blame for the methodological shortcomings of the Hulme and Mosley study.

	Group, 50% Female	sampling	random sampling
Average land holding	1.4 acres (dry), 2.2 acres (wet)	c. 1.5 acres	c.2 acres
Average monthly per capita income($)[2]	297	2483	705
% People income poor	71	19	31
% People asset poor	49		

1) Planning Commission, Press Release, February 22,2001.

2) In all cases income is net of costs but not net of loan repayments. The weights used to calculate per capita income are as follows: 1 for adult (age 15 or above), 0.75 for children age between 11 and 14 (inclusive) and 0.50 for children age between 13 and 2 years.

3) Ten de facto female-headed households were dropped from the final analysis.

Of the institutions which we examine, Centenary Rural Bank is a commercial bank with an 'ethical' mandate to make sure that financial services are diffused to low income groups, FOCCAS, PRIDE and CARE Zimbabwe are orthodox group-lending NGOs, the regional rural banks are institutions set up by the local administrations and state-owned commercial banks of India to provide financial services to the rural poor, and the 'self-help groups' are a rapidly-growing innovation – which requires further discussion. The Indian 'self-help group'(SHG) programme, initiated during the period of Indian liberalisation in the early 1990s, is a distinct 'Indian innovation' to the extent that the existing state banking apparatus is effectively used to provide credit to the SHGs; the groups themselves however are loosely build on the traditional precepts of the *rosca* (rotating savings and credit association), encountered worldwide. Typically the group consist of 15 women, who come together from poor but similar socio-economic backgrounds. The members begin their credit activity with saving small amount of money (typically 1 rupee per day), which might be supplemented with government grants and interest-free loans. This is conceived as a common fund mainly providing need-based loans to its members, in reality however it is simply a rotating fund. Six months of regular saving ensures eligibility for bigger loans (at times progressive) from NGOs, banks and other financial institutions (which are in turn re-financed by the National Bank for Agriculture and Rural Development [NABARD] and the Small Industries Development Bank for India (SIDBI). This is usually accompanied by a training exercise mainly in book keeping. The emphasis is on group lending and reliance on group-liability to ensure loan repayment. While for all practical purposes the SHGs are autonomous groups, they have overarching local and regional federations defining their administrative identities. Though SHG remains a small fraction of the total credit delivered to the rural sector, this is expected to change rapidly. The NABARD (1999) anticipates the SHG- bank linkage program to 'cover at least one third of the rural population by the year 2008 through one million SHGs'.

2. *Impact analysis: direct impacts*

Income, assets and other variables: control-group analysis

Table 5.3 summarises the results of the comparisons of client and control group households using various crisis preparedness indicators described before. On income, and employment indicators the surveyed households, on *all* indicators, do better than the control group households; but in Zimbabwe

these improvements are bought at the expense of greater variability in income, an illustration of the proposition that microfinance augments some risks while reducing others. In our India sample, the analysis is stratified by income[83]: Destitute and Moderately Poor households have better access to non-agricultural source of incomes than their control group counterparts, although much of this for the former comes from remittances. The Very Poor SHG households are far more entrepreneurial when compared to their control group. This of course could be an overestimation due to some selection bias creeping in – however the results are quite overwhelming and at least part of it can be attributed to the improved access to credit[84]. This finding is further strengthened by the fact that nearly 10 per cent of the sample suggested that productivity gains are to be had with better labour employment capability and that the main impediment in doing this is the seasonal cash crunch common among marginal peasants. This also implies that loans secured by women are at least partly going into family farms – mostly owned by men (in the current sample, on an average, women own 0.10 acres of the 4 acres of household land). Further analysis reiterates and confirms this. While this is not in itself a bad thing – if this is translated into making life difficult for women wanting to make loan repayments – then it can percolate into household processes and holds serious illfare implications for the loanee women.

Investment in physical assets, human and capital assets has similar positive results in India and in CARE Zimbabwe (but not in CERUDEB Uganda). In Andhra Pradesh, the Moderately Poor SHG households definitely do better than their counterparts in the control group – while the Non Poor SHG households, which was hitherto not very different from its control group, is seen to be investing more than them in human capital. The more heartening result is that the Destitute SHG group seems to be doing better than its control group on human as well as social capital index.

---

[83] (see next page)

Destitute	*< 50% Poverty Line and < 0.5 acres of wet land*
Very Poor	*50% - 80% Poverty Line and < 1 acre of wet land*
Moderately Poor	*80% - 120% Poverty Line and < 2.5 acres of wet land*
Non-Poor	*> 120% Poverty Line and > 2.6 acres of wet land*

Note: Adapted from Mosley & Rock (2003)

Household income is calculated net of costs but not of loans. The various components of household income used are: Value of crops; value of livestock (lifetime of the animal is assumed); remittances received minus those made; wage income; income from other sources (business, rent). The sum of these components net the costs associated with growing crops (including rent) and running the business (where appropriate).

Official poverty line for Andhra Pradesh has been used: Rs. 262.94 per capita per month ($5.24). (Planning Commission, Press Release, February 22, 2001). The appropriateness of the official calculations however are intensely debated, see for instance Deaton & Drèze, 2002; Deaton, 2001; and Deaton & Torazzi, 2000. Deaton estimate for rural AP, based on modified price indices, is 309.62 per capita per month (Deaton, 2001). Of course the proportion calculated as poor is extremely sensitive to the poverty line used and using Deaton's estimate would imply better ability of the SHG to go down the income scale.

[84] At the aggregate level, these results broadly parallel those derived from the time-series results derived by NABARD (Puhazhendi 2000; Puhazhendi & Satyassi, 2000; Puhazhendi & Badatya, 2002). Broadly, the conclusions of these studies are that the SHG-bank linkage program has had some very significant economic and social impacts on its members, including ' within-sample employment 17 per cent higher, net income per household higher, assets 72 per cent higher and savings per capita 200 per cent higher after the introduction of self-help groups than before (Puhazhendi and Satyasi, 2000:iii) However, there are several methodological problems with these studies. Impact is inaccurately defined, as 'the difference in the magnitude of a given parameter between the pre and post- SHG situations', ignoring the possibility that these changes could be due to reasons extraneous to the SHG, and household welfare is conflated with client welfare.

Table 5.3 . Income, expenditure, investment and employment: comparisons between treatment and control group

	India (Andhra Pradesh)				Uganda	Zimbabwe
	Destitute	Very Poor	Moderately Poor	Non Poor		
Income change					Higher*	Higher*
Diversity[85] Mean % of household income from non-agricultural sources	Higher*					
% Households with access to such a source			Higher*			
Income variability					Lower	Higher
Entrepreneurial behaviour[86] Mean expenditure on fertilisers & pesticides		Higher*				
% Employing labour		Higher**			Higher	
Mean number of labour days employing	Higher*	Higher*	Higher*			
Investment in physical, human, & social capital[87]						

---

[85] *Diversity:* In India, two variables are used to indicate the diversification of the household into non-agricultural sources of income. The mean percentage of household income from non-agricultural sources is compared across the SHG and control group households and then the percentage of households with access to such a source is compared. Non-agricultural sources include livestock income but not income from on-farm wages; income from migrant members of the household has been included irrespective of whether these are off-farm or on-farm.

[86] *Entrepreneurial behaviour.* While there are several dimensions to entrepreneurship significant differences between the SHG and control group households were noted in only three of these. These are, mean expenditure on fertilisers and pesticides; those employing labour; and the mean number of labour days employed (weights used: women = 0.75 and children below the age of 14 = 0.5, children below the age of 12 = 0.5 was also tried but did not significantly change the results).

[87] *Investment in physical and human capital: Investment in physical, human and social capital..* To capture the crisis coping ability of the household a physical asset index was created. Various relative weights were applied to household's assets (as deemed valid at the time of the survey) like land owned (weights: wet acres 2.5), homestead (weights: number of rooms + construction material; for instance a house with three rooms made of concrete walls and titled roof received 3+4+1 points and a house with three rooms made of thatch walls and roof received 3 points and so on), livestock (cattle: 6, sheep 2.5, goat: 2.5, chicken & other birds: 0.5, pigs: 2), notable durables like, agricultural machinery (tractor: 15, plough: 1.5 and so on), and vehicle (jeep:15, cycle: 1.5). All the components were combined in a way that gave them approximately equal weight.

Crisis management is also possible if one has access to extra-household and extra-parochial networks. These are most useful when risks are idiosyncratic, but are nevertheless valuable even in cases like droughts because access to a network that may be helpful is better than none. To capture the access of a household to such networks a composite social index was created. This gave the household one point each for making a contribution to another household and for receiving such a contribution from another household; one point if the respondent perceived others in the community to be helpful in finding waged work; one point if the respondent perceived the household to be positively affected by auxiliary programs and extension services operating within the area (excluding SHG).

Investment in human capital has many manifestations but literacy was the only one we were able to capture with reliability. Literacy and ongoing schooling of household members to a certain extent captures inter-temporal expectations of poverty (preparing for future possibilities of diversification). A

Mean value of physical assets index			Higher*	Lower	Higher*
Mean value of human capital index	Higher**		Higher*		Higher*
Mean value of social capital index	Higher **		Higher*		

Note: [1] Weights used: women = 0.75 and children below the age of 14 = 0.5, children below the age of 12 = 0.5 was also tried but did not significantly change the results. The independent samples T-test denotes whether the difference between the means of the study variables of the two groups is significant. * Denotes significance at 10%, ** at 5% and *** at 1%.

Impacts on women within the household.

Table 5.4 differentiates between the impacts of microcredit on male and female households in the Andhra Pradesh sample. Once again the SHG and control group households are strikingly different – but this time the striking feature is the unexpected reversal of fortunes. Access to credit should have improved the intra and extra-household status that these women enjoyed; instead we see that except for the Non Poor SHG household, on not a single indicator is the position of these women better than that of their control group counterparts. If possible, even more striking is the result that the Destitute SHG households suffer the most. Even worst, given the significant implications of 'outcomes' for women's welfare, Destitute and Very Poor SHG women do much worst than their control groups. This result of lower status for poorer SHG women is further followed up when we examine women's time use. It is only the Non Poor women who do well on all the three categories of time use (waged work being inferior work – a significantly Lower T-statistic perhaps indicates empowerment). This cause appears to be that household wealth, women's control over her loan, and group decisions all significantly influence the decision on whether or not to use the loan for own business. Together these results tell us that it is the Non-Poor women and to some extent the Moderately Poor ones who do so (Garikipati, 2003).   Poorer women, by contrast, for various compelling reasons (mainly poverty) part with their loan money for the larger good of the household, but in the process lose control over it and badly damage their ability to repay loans. This not only affects their credibility within the group, but also reflects on their relative power in domestic relations, especially in their say over sale of assets and decision on allocation of their labour.

'human capital index' was created that gave the household 10 points if its most literate member had been to primary school and 20 for secondary school, 30 for high and 40 for higher. This was preferred over awarding points to individuals and dividing the total by the number of household members, essentially because illiterate parents (and not uncommonly grandparents) could pull down the household average and access to educated daughter or son was very valuable from the point of inter-temporal poverty.

*(footnote 8 continued)*Since one of the aims of the original survey was to collect systematic information on intra-household processes, division of household chores and responsibilities, and women's time use, it was a relatively straightforward to create relevant empowerment indices. Several contextual details however need to be noted in interpreting these. Three indices have been created, each reflecting a dimension of the women's life that might contribute in a predictable way towards improving her position within or outside the household or is a reflection of her intra and extra household position. While the details of how these indices were created are presented in Box 1, here I would like to highlight the reasons behind the inclusion and/or exclusion or some not very obvious variables.

Table 5.4. India, Andhra Pradesh: female empowerment and time use, treatment in relation to control group

	Destitute	Very Poor	Moderately Poor	Non Poor
EMPOWERMENT INDICES				
% With positive EXTERNAL				
Mean rank EXTERNAL	Lower*		Lower**	Higher*
% With positive PROCESSES(2)	Lower***	Lower**		
Mean rank PROCESSES	Lower**	Lower**		
% With positive OUTCOMES for women's income(3)	Lower**	Lower*		
Mean rank OUTCOMES	Lower*			
WOMAN'S TIME USE[1]				
% Women in non-wage work				Higher*
Mean time in non-waged work		Higher*		
% Women in waged-work			Lower**	Lower*
Mean days spent in waged-work			Lower**	
Mean time in non-productive work				Higher*

Note: 1.Only where available. The independent samples T-test denotes whether the difference between the means is significant. * Denotes significance at 10%, ** at 5% and *** at 1%.
2. *Processes*: *Women's control over loan:*
This is an index that takes values in increments of 5 depending on women's perception of her control over the loan. A score of 100 denotes full control and a score of 0 denotes no control. In the sample the range was 0 to 95
3).Household Income Household income is calculated net of costs but not of loans. The various components of household income used are: Value of crops; value of livestock (lifetime of the animal is assumed); remittances received minus those made; wage income; income from other sources (business, rent). The sum of these components net the costs associated with growing crops (including rent) and running the business (where appropriate).

In our African samples, the relative impact on women's welfare looks more optimistic, but it is necessary to warn that we do not have data on women's wellbeing by income level, and the bulk of the data is qualitative. These qualitative survey results are again much more emphatic than the quantitative results in support of the proposition that loans increased the value of assets over which women had control[88]. All of the interviewees reported having

---

[88] This is the opposite pattern to the findings of Kabeer (2001) on Bangladesh, in which the *quantitative* results were much more optimistic in support of the proposition that microfinance was positive for female empowerment and managerial control over investment expenditures.

greater access to and control over cash. Of the married respondents, 17 (85%) of these women reported that they now had greater financial independence from their husband and greater autonomy over household and personal cash expenditures. Many women (e.g. Uganda 10060, 10071*, 10090*, 10072; Zimbabwe 300100*, 300108*) reported being able to 'buy meat or fish' without having to ask their husband's permission', and interviewee Uganda 10062 reported that she 'can now manage to meet some of her own needs like clothing without having to demand money from her husband*'. Eight (47%) of these women reported that they were now able to buy a dress when they needed one without having to ask their husband's permission. One respondent also reported being able to 'send grains to the mill, and thereby reduce her domestic burdens, without having to ask her husband's permission'. At the community level women are able to make contributions to funerals, and other community level social activities, and perceive themselves as having greater respect from community members:

> Before I joined (the SEF) TCP they (members of the community) never treated me friendly because I didn't have money. But after joining TCP
> their behaviour changed for the better because they can see that I now have money for my family's needs.
> (A widowed client).

> Yes, things have changed for the better. I have respect now that I can
> assist the community in times of crisis, such as funerals'. (A widowed
> CARE – Zimbabwe client.)

 Several women also stated that they had 'gained self-respect as a consequence of no longer working for other people'. The latter finding on increased status within the broader community is also true for poorer male beneficiaries.

However, the same evidence also indicates the potential for social norms on the gender division of labour to undermine the sustainability of microfinance benefits accruing to women, as a consequence of gender-specific risks. In South Africa and in Zimbabwe, female loanees have had to drop out of their credit group and withdraw from their business activities in the interim between the quantitative survey (April 2000) and the qualitative survey (October 2000) to take care of babies (e.g. Zimbabwe 300109) or to care for sick family members (e.g. Zimbabwe 300101, 300104). Two of these respondents had, however, rejoined their groups at the time of the qualitative enquiries. In all of these cases, the women not only reported having to draw down their savings, but also having to withdraw from community-based savings clubs, as well as their respective farmers' groups and or business associations, as they could no longer afford the membership fees.

Income and assets: regression analysis

We now examine, for each of the case study institutions, the level of impact (income change in each member of the sampled borrower group as a proportion of average income change in the control group) and the correlation between such impact (treatment group change in income as a percentage of control group change in income) and income and asset levels. In previous research (Mosley and Hulme 1998) we found that across eight institutions studied, the impact of microfinance schemes had a tendency to correlate positively with income, *with a tendency for impact to approach or even (according to the case) fall below zero as income fell well below the poverty line.* We see these relationships as *impact frontiers* (Mosley and Hulme, 1998), which divide feasible from infeasible combinations of income impact and poverty reduction possibilities. This tendency we rationalised in terms of better-off individuals with greater economic security being better able to afford those riskier investments[89] in fixed capital, in labour hiring and in innovative ways of doing things which alone provided the gateway to high impact; poorer individuals, by contrast, were by direct observation and by the imperative of survival more likely to favour 'protectional' strategies which protect their livelihoods, involve minimal levels of risk and as a consequence also offer minimal levels of yield.

Does this pattern recur in the case of the institutions sampled? This idea is tested in table 5.5 which presents regressions of loan impact on income. We are able to deduce significant relationships between income and impact for CERUDEB and CARE Zimbabwe[90], and significant relationships between assets and impact for CERUDEB only. Selection bias is corrected for by the use of two-stage least squares estimation technique. As noted by Morduch (1999: section 6.2, p.1601) 'it is not easy to find instruments for the estimation of microfinance impact regressions'; we experiment here with expenditure on equipment, expenditure on schooling and labour hiring (which associate strongly with microfinance participation) as instruments for the income gains suspected of being in simultaneous relationship with membership of microfinance programmes. The positive relationship between impact and income evident in previous work generally survives, except in the case of CARE Zimbabwe, where a relationship which was significant using ordinary least-squares became insignificant when one uses two-stage least squares, i.e. corrects for selection bias. The results for education (with labour use only used as the instrumental variable) are a disaster, as noted above, with insignificant coefficients throughout, and we suspect the presence of a data problem, which is further discussed in section 4 below.

---

[89] 'Promotional' investments, in Sen's terminology.

[90] There may be a tendency for the increase in impact to tail off as income increases (as apparent from the negative coefficient on income squared in regressions 1 and 4); but this tendency should not be made too much of, as the coefficients are significant only at the 10% level.

Table 5.5 Microfinance institutions (Africa sample): impact regressions, estimated by different methods

Institution, period and sample size	Impact data for borrower sample:				R²
	Mean loan impact per borrower($)	Regression coefficients on impact of:			
		Constant	Borrower income	Borrower income squared	
Group A: OLS analysis, dependent variable defined as impact on borrower household income					
1. Uganda CERUDEB /Mbale (1998-2000)	80	0.57	0.017* (2.38)	-0.00016 (1.54)	0.26
2.Zimbabwe CARE (1998-2000)	22	-127	0.018* (2.41)		0.01
Group B: 2SLS analysis, Impact dependent variable defined as impact on borrower household income . Instruments for income: purchases of tools and equipment, labour hiring, educational expenditure					
4.Uganda: CERUDEB/ Mbale(1998-2000)	80	18.75 (2.07)	0.0013* (2.33)	-0.0009 (1.88)	0.17
5.Zimbabwe: CARE/Zvishavane(1998-2000)		-127	0.018 (0.41)		0.01
Group C: OLS analysis, impact dependent variable defined as impact on borrower household assets					
6.Uganda: CERUDEB/Mbale(1998-2000)		1.058 (0.91)	0.0047* (1.68)		0.23

Source: 2000 survey (see Mosley and Rock 2002), Part F: questions 1,2.
Notes (1) in each regression, 'impact' is the change in income (groups A-C) or educational expenditure (group D) in each member of the client sample as a proportion of the average change in the same variable within the control group over the period stated.
(2)Instruments used in 2SLS regressions are purchases of tools and equipment, expenditures on labour hiring and on schooling. (group B); purchases of tools and equipment and labour use (group D)

3.Wider impacts I : the labour market

On the evidence of the preceding section, therefore, the *direct* impact of microfinance loans is generally positive, in Africa virtually confined to nonpoor borrower families, even in India biased against women within the lower-income families, and has a weak tendency to increase with income. If microfinance is to reach the very poor, therefore, it has for the most part to be through its 'wider impacts' – those influences which affect persons other than the borrower. We now examine three of these 'wider impacts' on low-income clients. These are :

(i)   consumption effects derived from becoming employed by a loan-supported enterprise paying higher wages than those previously enjoyed;

(ii)   human capital enhancement effects derived from changes in
         schooling and health made possible by the loan-supported
         microenterprise;
(iii)   social capital enhancement effects derived from changes in the
         personal relationships of loanees and their dependents.

We examine the first of these in this section and the second and third in
Section 4.

The labour market. For all individuals covered by the sample who were poor
at the beginning of the loan period, Table 5.6 gives an estimate, derived from
interviews with those members of the Uganda and South Africa samples that
were poor and/or labour hirers, of the proportion that moved out of poverty
during that loan period, and the net income gain derived, as a consequence of
income derived from the loan-supported enterprise[91] and from labour.   Finally
an impressionistic, qualitative estimate of other indirect benefits generated by
the microfinance loan, derived from the same source, is added. The raw data
for each poor client is presented in full in Appendix 2 of Mosley and Rock
(2002)[92].

The initial impression conveyed by Table 5.6 is that labour hired by the micro-
enterprise may represent an important channel of escape from poverty – as
one might expect, given that labour is often the only resource to which poor
people have access. However, the significance of labour hiring as a factor in
poverty reduction varies significantly from environment to environment.
Amongst clients of CERUDEB Uganda, being hired by borrower enterprises
accounted for almost twice as many *exits* from poverty over the survey period
as being the manager of a borrower enterprise; but the change in the net
income of people who had been poor over the survey period (the change in
the poverty gap) was actually greater for borrowers than for their employees.
In Kenya, the opposite situation applied: there was only one exit from poverty
amongst workers and four amongst loan-supported entrepreneurs, but the
average income gain amongst the latter group was so low that the change in
the poverty gap was higher for workers than for entrepreneurs. In the parts of
South Africa and Zimbabwe that we surveyed, rural labour markets were
much feebler and the gains from loan-supported labour correspondingly
smaller; but even there, the gains to labour hired by the loan-supported
enterprise provide a substantial 'multiplier' effect to the 'gains within the
borrower's family' recorded in Tables 5. 3 and 5.4 , corresponding
respectively to 20% (a multiplier of 0.20) and 54% (a multiplier of 0.54) of the
gains from loans only obtained by the borrower family. The corresponding
value of the 'labour multiplier' for Uganda is 0.35 and for Kenya, 1.35.

---

[91] That is, the income gain by borrowers as a proportion of the income gain by the control group.
[92] For full data arrays on all variables, please contact the authors (j.rock@sheffield.ac.uk)

Table 5.6. Estimated poverty impacts of microfinance loans (income definition only)

(1)Institution	(2)Regression relationship for poor clients only	(3)Clients below poverty line at some point during 1999-2000:				(4)= (3bi)+(3bii) Composite income impact, direct + labour market	(5)Other 'wider impacts'
		(a)Upward transitions across poverty line due to:		(b)Net income impact (change in poverty gap) due to:			
		Loan	Loan-supported labour	(i)Loan	(ii)Loan-supported labour		
South Africa-SEF (sample interviewed=12)	Y=18.75 +0.016L (OLS) (Table 5,equation 7)	7	2	20.5	4.1	24.6 ('labour multiplier'= 0.2)	5/12 interviewees report improvement in children's ability to attend school and/or quality of school work (one reports a deterioration). 4/12 interviewees report improvement in nutrition and/or health standards. 6/12 interviewees joined community organisations (generally rosca's or burial societies)
Uganda-CERUDEB (sample interviewed=24)	Y= 1.06+ 0.004L (2SLS) (Table 5, equation 6)	6	10	13.2	9.7	22.9 ('labour muliplier'= 0.35)	7/12 interviewees report improvement in their children's access to schooling or quality of their schoolwork. 5/12 interviewees report themselves better able to afford health expenses, in particular for children. 10/12 interviewees affiliated themselves to community organisations after receipt of loan. Some interviewees report a decline in moneylenders' interest rates.
Zimbabwe-CARE(sample interviewed= 24)	Y=-127+0.018L (2SLS) (Table 5,equation 5)	3	2	3.1	1.7	4.8 ('labour multiplier'= 0.54)	7/12 interviewees report themselves better able to afford school fees 6/12 interviewees report improvement in children's health as a result of improved nutrition 7/12 interviews reported joining community organisations

Note: *Impact* on a sample member is change in income of that member divided by change in average control group income; but note that in columns 3b and 4, sample is expanded to include those hired by microfinance organisations as well as clients.

Sources: regression relationship (col.2): from table 5 above.
        Gain to poor clients (cols.3a and 3b): from Mosley and Rock (2002) Appendix 2.
        Composite impact (col. 4): horizontal sum of cols. 3 and 4.
        Other 'wider impacts': (col.5): from Mosley and Rock (2002) Appendix 2 below.

        To understand more about the determinants of this particular 'wider impact', it is useful to recall the shape of the 'demand function' for labour in relation to the hirer's income from Chapter 3. In a majority of cases, we remember, the demand function is kinked – zero up to a threshold level of income ranging from just below the poverty line in Kenya to well above the poverty line in Zimbabwe, thereafter broadly linear, with a marginal propensity to spend income on hiring labour varying from 0.17 in Zimbabwe to 0.26 in Kenya. Below the threshold, loanees felt a reluctance to hire labour, often very emphatically expressed - 'I would sooner work all night rather than hire labour from outside the family', one Zimbabwean interviewee told us – reflecting the presence of a very considerable perceived risk associated with the initiation of financial relationships going outside the family and the village. Even if the standard labour contract was casual, as it generally was at low levels of income, it was often perceived as carrying obligations extending a long way into the future – i.e. as a quasi-fixed cost – which could only be dissolved at considerable cost to personal relations within the village; some employers feared being attacked by the family of an employee if they sacked him or her. Where a loanee's income is well above the norm (say eight to ten times the poverty line) s/he would sometimes hire a permanent employee – e.g. Uganda 1001 and 1004, who had a small-scale construction business as well as his farm, hired an employee on permanent terms mainly to carry out construction work on the farm. Most of the labour hired for cash by our samples, casual and permanent, was male, which is of significance in relation to a situation where in agriculture at any rate most of the work is done by women[93].

---

[93] The share of cash labour done by women in our samples was: 28% in Kenya; 42% in SEF, South Africa; and only 5% in Uganda.
Here, we do not investigate the reasons for male-female differentials in labour hiring but in previous work we have found inter-regional variations in this ratio to be determined by the following influences: type of sector (horticulture and estate crops such as tea seem to be less reluctant to hire women); male/female differences in land, education and social capital within the household; male/female differences in access to finance within the household; opportunities open to women as defined by number of children, state of health and access to infrastructure. (Mosley 2000 p.36/37).

Substantial though these labour market impacts are, there is no doubt that in Africa as a whole, by comparison with Asia, the transmission of poverty reduction multipliers has been constrained by the relative 'thinness' of African labour markets (Collier et al 1994): the majority of microfinance borrowers in Africa do not hire labour at all, and therefore have no capacity to confer this particular type of impact.

This raises important issues of institutional design and policy for both microfinance operators and policy-makers. Although the low density of labour hiring in Africa has sometimes been exaggerated [94]there is little doubt that in the regions which we examined, for example, one of the most powerful methods of enhancing the poverty impact of microfinance would be to find some means of expanding the propensity of loan-supported enterprises to take on low-income labour; we shall examine ways in which this might be achieved in section 5 below. At the level of institutional design and targeting, poor households do not hire labour for cash, which carries the implication that microfinance institutions targeted *purely on them* cannot reduce poverty through the labour market – only through direct impacts on the borrower household, plus 'wider impacts' yet to be examined. Depending on how 'thick' the rural labour market is, this opens up the possibility that in some environments poverty impact may be maximised by targeting microfinance on the 'vulnerable non-poor' (as is the current situation at least in our Africa samples), allowing the labour market to assume the brunt of the poverty reduction job. This appears never to have been proposed as an explicit strategy; but it appears to approximate quite closely with what happened in BRI Indonesia (Sutoro,1990), where most *borrowers* (although probably not most of the 25 million savers) are above the poverty line and the direct poverty impact of lending is close to zero, but where the overall poverty impact is very substantial – possibly higher than for any other microfinance institution. Under what circumstances will this alternative, non-targeting, strategy be more effective?

As table 5.7 suggests, the answer appears to depend on one's definition of poverty as well as on the exit coefficients from poverty associated with 'labour' and 'self-employment' in particular institutions.

---

[94] Cf. the influential paper by Udry (1996), which baldly reports that 'there is no labour market in the villages (which we examine)' (*op.cit.* page 1013),

Table 5.7. 'Direct' and 'indirect' transitions out of poverty in Centenary Bank (Uganda) and Small Enterprise Programme TCP (South Africa)

	Institution	
	Uganda: CERUDEB	**South Africa: SEF**
Institutional type	Commercial Bank	NGO
Average annual client income, 1999/2000	$3398	$1805
Annual income, poorest client, 1999/200	$132	$84
Targeting on ultra-poor?	No	Yes
Outcomes(1999/2000): ***(i) using headcount poverty definition***		
Upward transitions across poverty line (P_0) due to; loan loan-supported labour *Simulation:* *Suppose all resources to SEF (SEF programme doubled in size and CERUDEB programme shrinks to zero):* *Transitions across poverty line due to loan* *Transitions across poverty line due to loan-supported labour* *Total upward transitions*	6 10	7 2 14 4 18
Suppose all resources to CERUDEB (CERUDEB programme doubled in size and SEF programme shrinks to zero); *Transitions due to loan* *Transitions due to loan-supported labour* *Total*	12 20 32	
Is targeting helpful?	**No**	
(ii) using poverty gap definition		
Net income impact (change in poverty gap)1999/2000 due to: Loan Loan-supported labour *Simulation:* *Suppose all resources to SEF:* *Change in P_1 due to loan* *Change in P_1 due to loan-supported labour* *Total change in P_1*	13.2 9.7	20.5 4.1 41.0 8.2 49.2
Suppose all resources to CERUDEB: *Change in P_1 due to loan* *Change in P_1 due to loan-supported labour* *Total change in P_1*	26.4 19.4 45.8	
Is targeting helpful?	**Yes**	

Source: Table 5.6 above.

Table 5.7, derived directly from Table 5.6, attempts to answer the question: suppose that resources could be switched between the two very different institutions CERUDEB (commercial bank, non-poverty targeted) and SEF(NGO, loans targeted on the poorest within the community) so that all the resources allocated to loans to our CERUDEB sample in 1999 were in fact switched to SEF which practises explicit poverty-targeting, would the *total* impact on poverty improve? On the basis of our sample data, if we use the poverty gap definition of poverty (P_1) the answer would be (narrowly) 'yes' but if we use the headcount definition of poverty P_0 the answer would be (by quite a large margin) 'no'. This is because Centenary Bank (the 'non-poverty-focussed' institution) lends to few poor borrowers but to several clients whose *employment* of poor people lifted them out of poverty during 1999/2000; SEF borrowers, by contrast, are typically sole traders with no desire or capacity to take on labour, hence their poverty reduction by the indirect route is small.

The implication of the above would appear to be (*if* resources could be transferred in the manner simulated, *if* impacts are scale-neutral so that double the resources yields double the impact, *if* the sample and year are representative, *if* poverty reduction by any given route is considered to be as good as any other, and *if* these results are robust to other institutions) that special targeting to the ultra-poor may not help the cause of poverty reduction, because it narrows the labour market channel out of poverty at the same time as it widens the entrepreneurship channel. Note however that all this depends on the definition of poverty used. The very poor SEF beneficiaries are few (only 9 in all) but the depth of their poverty is such that their estimated cash gains outclass the scale of the gains made by CERUDEB beneficiaries, even though the poor CERUDEB beneficiaries are greater in number. On this yardstick, therefore, the *cash value of poverty reduction* (change in the poverty gap) achieved by transferring resources to the more targeted institution is (slightly) greater than that achieved by abandoning 'targeting for the poorest'. On this methodology , therefore, the utility of the targeting approach depends on the definition of poverty used.

4. Human and social capital 'wider impacts', survival strategies and poverty

There are other 'wider impacts' going beyond the labour market. In a number of cases, fortunately, the results on loan impact obtained from qualitative and quantitative methods of enquiry back one another up but two significant exceptions relate precisely to these dimensions of impact. On *educational expenditures*, the regressions are insignificant (Table 5.5 above,, equations 8 and 9) but the unanimous evidence from interviews is that spending on schooling (not just fees but also associated inputs and consumption expenditures) is a crucial use of increased income: the first thing on which money is spent in the event of any income increase, the last thing (if possible) to be cut in the event of an income shortfall and often, whatever the formal loan purpose cited on the application form , the basic reason for which

the loan was taken[95]. SEF respondents 10058 and 10068 reported that 'for the first time, it is possible to pay school fees' and Uganda 10084 and 10065 that 'since borrowing I can now buy new school uniforms for my children every year'. SEF respondent 10058*[96] likewise reported that following receipt of an enterprise loan her daughter 'was able to carry a lunch box to school and sometimes pocket money'. The following year her income fell, but she did not take her daughter out of school. However, she reported, 'she has no shoes, her school bag is torn and she sometimes has to carry books with a plastic bag. Her school work has deteriorated and I now see many errors in her work' – but the option of taking her out of school was never seriously considered, even though it was clear from the interview that both mother and daughter often went hungry. Taking all interviewees as whole, female loanees (see also in this context, for Bangladesh, Khandker et al, 1998) tended to place a particularly high value on asset measures of well being, such as improvements in household nutrition and increased opportunities for children's education: Uganda respondent 10065 who reported that 'she has managed to send her two girls to 'more modern' schools as compared to those in the village', 10090 who also reported that she could 'now send her daughter to a 'better' school', and respondent 10077 who has five children and reported that 'all her children now go to school as she can now manage, unlike in the past when some had to stay home for lack of school fees'; and SEF respondent 10068 who reported that she now sends her children 'to a better school for a better education'. It seems highly probable that one reason why the regressions did not pick up this relationship between microfinance and schooling expenditure is that the questionnaire used in the regressions referred to school *fees* whereas, as we have seen, it was often the non-fee element in educational expenditures which was varied in response to changes in purchasing power.

The interview evidence confirms also that *health* benefits derived from the receipt of loans : SEF borrower 10043* commented that: 'health improved as we were able to eat better food and drink tea with bread daily. Diseases caused by lack of vitamins were reduced' , Uganda 10071 stated that 'when children are sick, they manage to treat them as compared to 2 years ago', and Uganda respondent 10084* said that 'since I began getting loans, I cannot remember a time when I was not in a position to attend to a sick child'.

Two of the four organisations examined –the Indian SHGs and CARE Zimbabwe - use a solidarity or co-operative group model for lending operations, in the first case working wholly or partly through historically established groups and in the latter forming new groups. In all of these cases they sought to develop what is known as 'bonding social capital' - links of solidarity between clients, which of course contribute to the peer pressure required to compel loan repayment. To this, the self-help groups add 'intra-group training' designed to enable group members to advise one another to build up their enterprises. However, it is important to emphasise that the contribution of microfinance to social capital-building goes beyond this, and is

---

[95] By the same token, it is often also the first expenditure to be cut when income falls or a loan is cancelled.

[96] Asterisks denote cases in which we consider that a loan to a nonpoor direct beneficiary yielded indirect benefits ('wider impacts') to a poor individual inside or outside the household – see discussion on page 19 below.

not confined to group-lending institutions. As noted in table 5.6 above, recipients of both individual and group loans invested loan proceeds in forms of social capital *outside* the organisation from which they received the loan   - membership of community associations such as farmers' clubs, burial societies and rotating savings and credit associations . Beyond this, borrowers from PRIDE and FOCCAS in Uganda undertake collective agricultural work parties on their own crops; SEF and CERUDEB borrowers share information on markets, prices and technology; CERUDEB members cut costs collectively by pooling resources for transporting goods to and from markets; and CARE Zimbabwe members, share storage facilities, none of which activities amounted to an 'association' but which certainly augmented social capital in the sense of membership of collective networks from which an expected increase in income can be derived . As will be argued in detail in the next section, they also augment risk management capacity..

From the point of view of assessing poverty impact, the key point is that each of these types of impact potentially conveys *externalities to poor non-borrowers which do not appear in a conventional poverty impact assessment*: health and nutrition investments by microfinance beneficiaries who are nonpoor in terms of average family income may confer benefits on undernourished children, and social capital investments by borrowers who are nonpoor in terms of average family income may, depending on who benefits from the enlargement of networks, enable the support of the various groups in which an investment is made to widen their reach so that poorer people are brought within the net, either as members or as beneficiaries from public action initiated by the group. By contrast with the labour market we have not sought to quantify these wider 'wider impacts', but we have starred * case studies within the narrative above where we believe these nonpoor-to-poor transmission effects to apply.

The externalities are not necessarily all positive. The existence of groups gives individual members the opportunity (which is not present in individual lending organisations such as CERUDEB) to free-ride by asking richer group members to pay their loan instalment for them in the event of a misfortune. If the group accommodates this request, well and good, but if she retaliates it may cause a chain reaction such that the entire group collapses and ceases to be able to compensate for market failure. This situation may be represented as a simple prisoner's dilemma for a group of two persons only:

Client 1 Client 2	Pay full instalment	Do not pay full instalment
Pay full instalment	1,1	-1,**2**
Do not pay full instalment	**2**,-1	0,0

If the payoffs are as stipulated, both group members will perceive (mutually incompatible) possibilities for free-riding off the other, such that the dominant strategy equilibrium will be the conventional one in the bottom right-hand corner, no group member will pay her share, and the financial underpinning of the group will collapse. In this case the existence of the group has provided perverse incentives, or contagion effects, which infect the entire group and lead to its downfall.

We are now in a position where we can more thoroughly discuss the effects of microfinance on *risk and vulnerability* at a given level of income – a dimension of poverty not so far discussed, but particularly emphasised by the 2000 World Development Report (World Bank 2000: Chapter 8). In Figure 5.1 – a diagram first developed for the *Report,* which we have already encountered in the previous chapter - , we visualise households as seeking to achieve a balance, or desired trajectory, between vulnerability (on the horizontal axis) and yield, or as the Report called it, 'opportunity' (on the vertical axis). The three zones A, B and C connote progressively more affluent – and therefore, we expect, more risk-welcoming - groups of customers, since poorer households have a lower *tolerance* of risk and vulnerability - essentially, less physical, human and social assets to protect them against it. The social assets, as argued by Narayan and Woolcock(2000) will diversify as we move up through the zones, from networks of a purely 'bonding' variety – such as microfinance solidarity groups, or other associations of the poor within a given sector and locality – to 'bridging' and 'linking' social capital which represent the possibilities for making associations, respectively, with groups in other localities and at higher levels of the administrative and political hierarchy [97]. The line AC can be seen as an over-time, normative version of the 'impact frontier' discussed on page 9: it is the trajectory which low-income households will seek to maintain in order to balance vulnerability and income over time. Specifically, as their income and assets build up along the vertical axis, their *risk efficacy*, or risk tolerance, will increase - they will be able to accept higher levels of risk and vulnerability, because they have more reserves to fall back on. By the same token, while they are trapped within zone A, they will seek at all costs to steer a risk-avoiding course, even if this means forgoing profit opportunities, in order to avoid the worse risk of decapitalisation, expulsion from the capital market and destitution: one of the key findings of the Cohen and Sebstad (2001) study is the absolute determination of most bank customers to hold on to their line of credit, even at a cost in terms of physical capital assets which in time of crisis have to be sold in order to sustain loan repayments. Richer customers in zones B and C are more likely to pursue trajectories which court the risk of severe negative shocks to their income, but they are already, by hypothesis, better equipped to withstand such shocks. They have more assets; they have physical energy and therefore can work harder in case of need; they are better able to afford the costs of migration, they have access to options such as laying off labour - which of course may itself be a source of a negative shock to the poorest; they have, by hypothesis, more diversified social connexions; and they have, should uncollateralised microfinance be unavailable, better access to emergency credit in case of need.

Indeed, we can now introduce the capital market explicitly, in the guise of a range of microfinance options which hold out the promise of enabling poor people to escape out of zone A into the sunlit reaches of zones B and C. The market has both an upper and a lower boundary, represented by the northeast-sloping parallel lines on Figure 3 – if the lower boundary is breached, the client is expelled from the capital market and can no longer

---

[97] Referring back to table 5.6, it was the richer clients who took active roles in community associations which were in active negotiation with government agencies; but often they campaigned on behalf of poorer individuals and localities outside the neighbourhood, thereby conferring the externality referred to on page xx below.

borrow, and if the upper boundary is breached the client is able to leave the capital market voluntarily, since by assumption s/he can finance her enterprise out of retained profits and no longer needs to borrow. These boundaries can be seen as the banks of a river – the client's wish, especially if poor, is to steer a livelihood course along the centre of the river or (to the extent of her risk-aversion) slightly to the left of the centre, to avoid at all costs the right bank where the crocodiles are, and to use microfinance as one of a portfolio of instruments which make this strategy achievable.

How can this balancing act best be achieved? It is conventional to distinguish between *ex-ante* risk reduction and mitigation and ex-post adaptation or coping – as with health, prevention and mitigation are better than cure, but institutions to bring these effects about, such as insurance, often represent market failures especially amongst lower income groups, and even amongst coping strategies, some are simply not available to the very poor. Our hypothesis is that clients will seek at all times to get as close as possible to their favoured risk/yield balance ,where possible, using the option of ex-ante reduction , and where not possible, using the option of ex-post adaptation.

Both ex-ante and ex-post strategies can be pursued not only by building up physical and human capital in the various forms which have been discussed but also by means of:

(a) a search for risk-minimising financial options such as savings and insurance, discussed earlier;
(b)asset diversification;
(c)attempts to build up social capital networks, to be further considered in Chapter 6. One important dimension of social capital is trust, and to the extent that expansion of social networks augments the mutual trust of people within those organisations is , the risks and vulnerabilities inherent in their relations with other people are diminished.

Figure 5.1: Risk and yield in microfinance
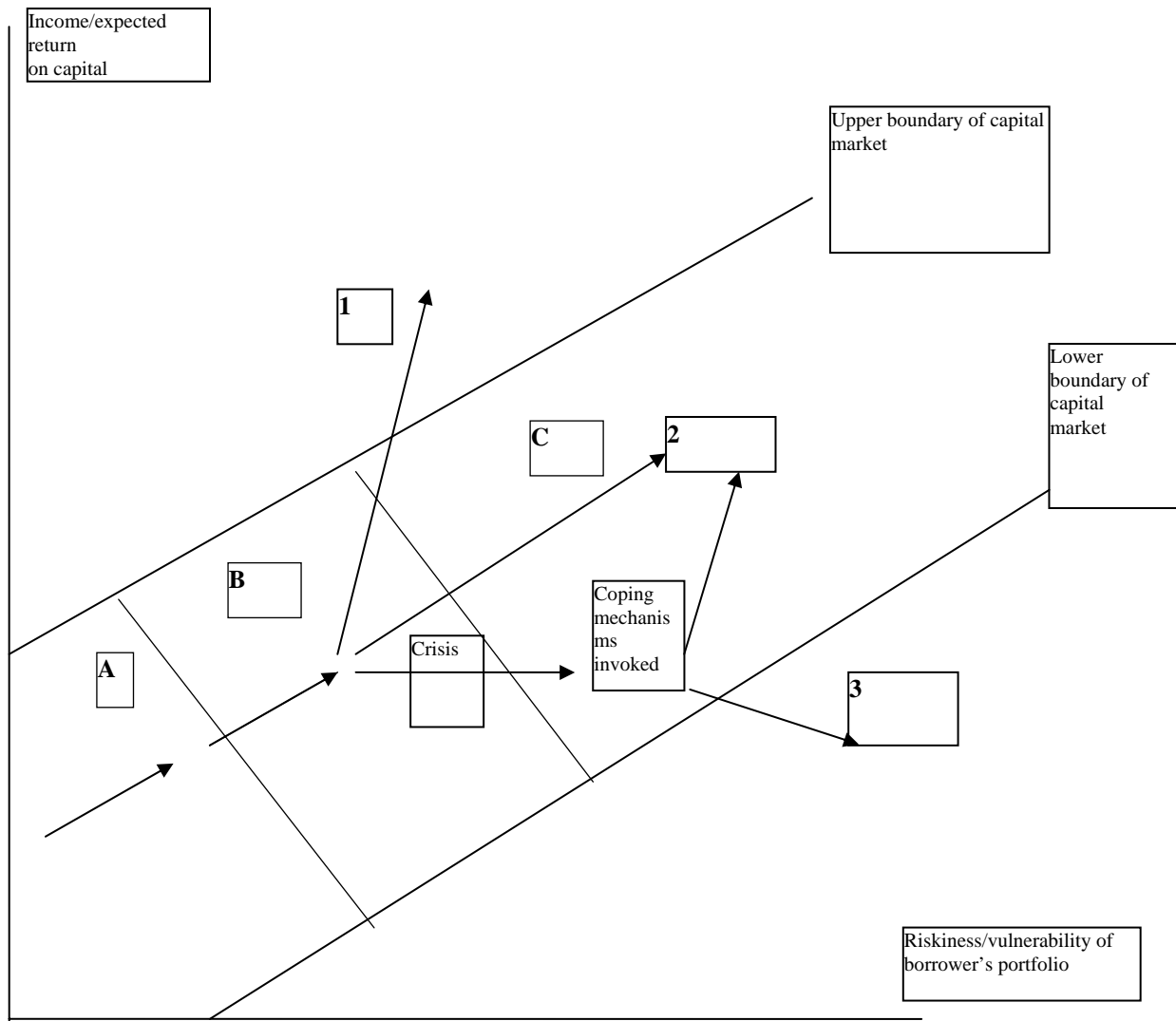
Key to symbols:

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'.

B : moderate risk, moderate yield, financial services demanded mainly for working capital with very small fixed capital investment, social capital mainly 'bonding' but some ventures into 'bridging' into neighbouring communities and federations.

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 'bonding' and 'bridging' with some 'linking' to local government and development agencies other than the lender.

Possible outcomes for individual borrowers:

1: the 'super-ladder': yields so high (or augmented by a windfall) as to enable the borrower to dispense with microfinance services.

2: the normal ladder: borrower balances yield and risk through a sequence of loans, with stable or increasing levels of labour and capital input.

3: 'the snake': coping mechanisms unable to cope with increased levels of risk; borrower quits the capital market.

Let us examine the operation of these coping strategies, by gender, in the case of our samples. *Asset diversification* can be found in: Uganda 10084, who diversified from agriculture into cattle trading; 10023 who integrated backwards from coffee farming into a coffee grinding mill; SEF 10058 who moved from vegetable retailing into beer-brewing; and 10079 who added beer retailing to her existing brewing business. *Acquisition of physical assets* as a result of access to loans can be found in: Uganda 10011 and 10028 who each purchased a coffee pulper, 10045 and 1005 who purchased ox ploughs, and 10052, 1008, 1009, 10065 who each purchased a vehicle. Loans in general did not finance the acquisition of large investments by female loanees in their own right. To the extent that women borrowers did acquire assets in their own right, these were mainly in the form of household durables, such as kitchen utensils. A notable exception to this rule, however, can be found in Uganda: 10077 who invested in a flour milling business, and 10062, 10065, 10071, 10072 who all purchased plots of land. Two factors suggest themselves as possible explanations for these exceptions to the rule found in Uganda: in contrast to Ethiopia, for example, where gender property rights strongly favour men, in the area under study Ugandan women respondents all reported having equal property rights with their spouse[98] and thus do not face the risk of losing all of their investments in fixed household assets in the event of divorce or widowhood; and, secondly, the loan size for Ugandan women respondents was on average 58% larger than the average loan size of women loanees in the other institutions examined, thus enabling them to invest in more costly assets[99]. However, even where women borrowers did not acquire large investments in their own right, many of them contributed to the acquisition or enhancement of the productivity of existing fixed household assets: such as Zimbabwe 300117 who purchased livestock vaccine to treat sick animals reportedly belonging to her husband.

It is common also to see *social* capital accumulation used as a strategy of risk mitigation. As discussed on page xx above, the potential for such social capital accumulation arose from a combination of pre-existing associations, the institution-building efforts of microfinance organisations and the allocation of the loan proceeds themselves. The significance of social capital as a risk management instrument is that it provides, within the household's economic portfolio (Chen and Dunn 1996) both an explicit counterpoise to the downside risks of microfinance membership and a degree of liquidity which most forms of physical and human capital do not possess. Several of these informal associations which microfinance members joined,

---

[98] These findings on gender property rights in the area under study cannot be generalised for the whole of Uganda.

[99] Several of the women respondents in Care Zimbabwe and SEF, although in their third and fourth loan cycles, insisted that the small size of the loans they were able to access locked them in to low-income generating and highly competitive activities – selling fruit and vegetables and , for the South African institutions, beer brewing, forcing women traders to seek to regulate the market by agreeing to trade on alternate days. In addition to these self-imposed trading restrictions, women brewers in South Africa reportedly had no control over the price of their beer which, in line with tradition, was set by village headmen.

whether overtly financial or not in scope, provided interest-free loans (after the manner of the 'internal account' of Latin American village banking organisations such as ProMujer) which could help protect the line of credit of those who fell into difficulties with their lender: interviewee Uganda 1065, on becoming a member of the Bulako Farmers' Group, stated: 'The group assists me if my crop is not ready and I have to service a loan. I then pay back later (without interest).' They also, and importantly, provided *moral* support for one another, encouraging one another to believe in one another's ability to manage a business, to provide for their families, and to survive within the financial system. In this way, they provided a substitute for the formal insurance which, as earlier noted, is severely lacking in Africa.

Sometimes, it is once again necessary to note, coping strategies not only are constrained for the poor, but may fail altogether – they are washed on to the dangerous bank of the river[100] . After SEF borrower 10043 experienced a decline in assets due to illness, she remained a member of her solidarity group but 'we continue to share information on prices, (but) did not help each other in any way, even when we fell short in repaying loans'. It is probably significant that all group members were better off than her. These failures of solidarity, the 'dark side' of social capital, may then be aggravated by extremely risky actions taken at a time of high vulnerability – a last desperate gamble undertaken to try and recoup all past losses. One destitute SEF borrower , (10023: 2000 per capita cash income: $8) used her loan to build up a vegetable stall, and at the same time built up her social capital by joining the community burial society and *stokvel*[101] . We have already encountered her: this is the borrower whose daughter, during the currency of her loan, was formerly able to carry a lunch box to school, but who now, after its cancellation, 'has no shoes, her school bag is torn and she sometimes has to carry books with a plastic bag. Her school work has deteriorated and I now see many errors in her work'. At this point she put what little money she had into a taxi business, which failed. She has now left both the stokvel and the community burial society, 'since I cannot afford to belong'. Both her physical and her social capital have been depleted, as illustrated on Figure 5.2.

Indeed, a household's choice of risk-coping strategy is often constrained by its resource shortage in general, and in particular by the failure of attempts to draw on its social capital resources. There exists in principle a large range of ex-post risk-coping strategies[102], but much though a

---

[100] Metaphors vary. The snakes and ladders analogy has been used in Figure 3, and one Bolivian client quoted by Rhyne (2001: 190) describes managing a small business as being like 'trying to climb a soapy washboard'.

[101] Rotating savings and credit association.

[102] Data on this issue for the Uganda Women's Finance Trust already exist, by virtue of the work of Wright (1999), who executed one of the contributory studies for the Sebstad and Cohen study; indeed this is one the better-documented institutions in Africa, having also been studied by Rutherford et al. (1999). The most serious risks to livelihoods encountered in the Wright study of Uganda included illness, death of a close relative (often through HIV/AIDS), retrenchment and job loss. Coping strategies observed included diversification of income sources, disposing of assets, drawing on savings deposits, informal pooling and borrowing among friends and relatives, expenditure cuts, working longer hours, and joining solidarity groups.

household might wish to choose a strategy which leaves its asset base intact, - in particular drawing on its 'more liquid' social capital - this strategy may, as we have seen, fail, and poorer households with fewer assets are often forced to reduce either their human capital by reducing school fee payments (e.g. Uganda respondent 10087), their physical capital by selling assets (e.g. South Africa SEF respondent 10023) or both. Table 5.8 below illustrates that within each sample examined, the poorer the income group, the greater the likelihood of one of these damaging responses. In terms of the metaphor of Figure 5.1, a household in this position wishes to reduce its short-term risk (e.g. to avoid default) but by doing this takes actions which increase its long-term vulnerability – it cannot escape being washed in an eastward direction, towards an eddy on the dangerous bank of the river. In this context, it is necessary to nuance the argument of the 2000 *World Development Report* that:

> '…as a risk management tool, the key strength of microfinance is the knowledge that loans will be available in time of need, making it possible for households to dispense with less effective and desirable strategies' (World Bank 2000: 157)

The 'less effective and desirable strategies' that the Bank mentions are child labour and money under the mattress; but decapitalisation , whether in terms of physical or in terms of human assets (e.g. withdrawing a child from school) is surely even more relevant and important, and over-exposure to microfinance may, in the absence of any formal or informal insurance mechanism, augment rather than diminish this source of vulnerability.

Figure 5.2. Risk and yield in microfinance: borrower experiences

Income/expected
return
on capital

Upper boundary of capital market

1 Uganda 10023

Lower boundary of capital market

2 Uganda 10023

C

S. Af. 10079

B

Coping mechanisms invoked

A

Crisis

3 S.Africa 10023

Riskiness/vulnerability of borrower's portfolio
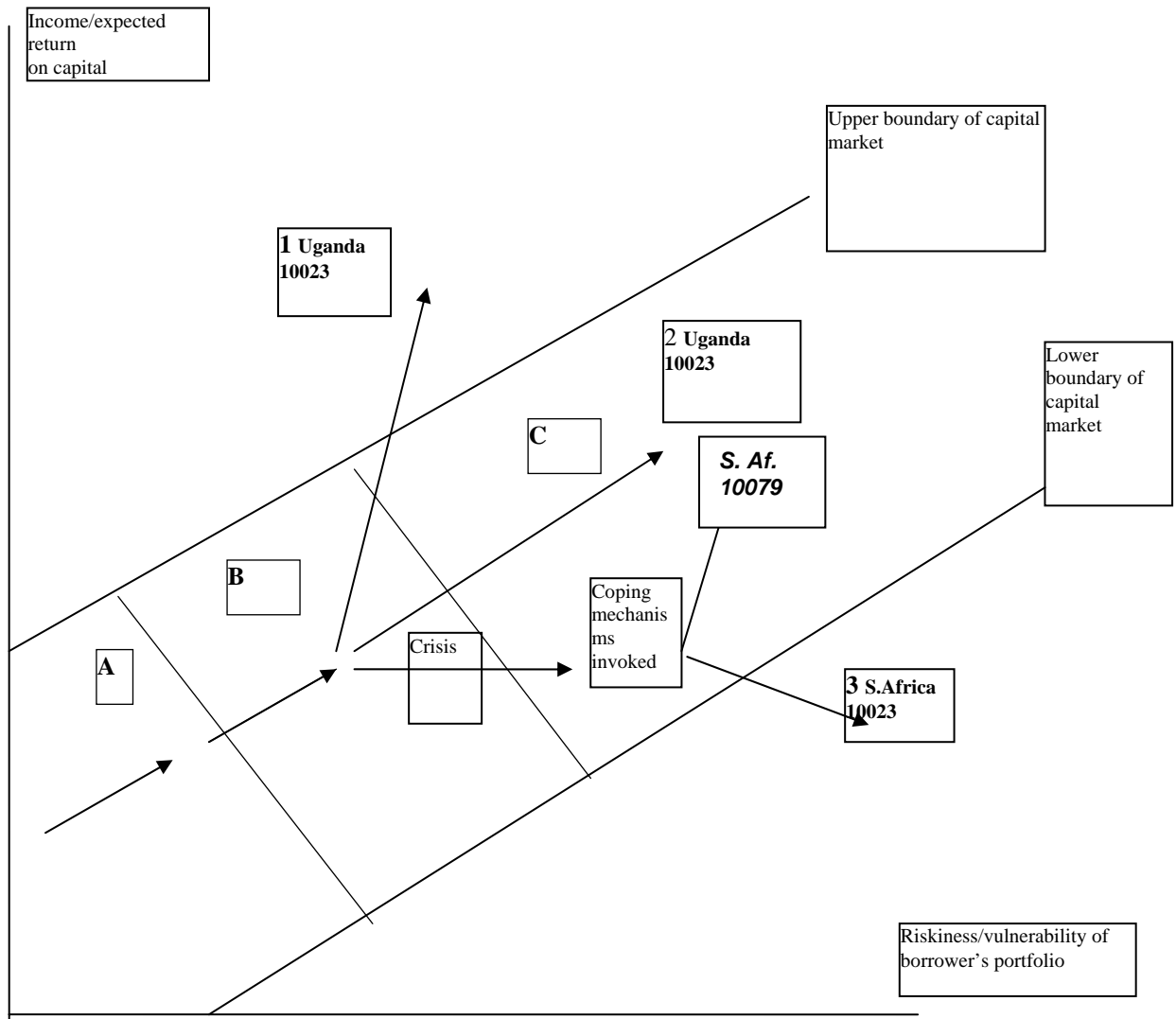
Table 5.8: Coping strategies, by income group

.

Income group		Choice of coping strategies:							
		Cut consumption expenditure	Cut schooling expenditure	Look for extra work	Lay off labour	Sell off assets	Borrow from family/friends	Borrow from commercial bank	% asset-depleting (col 2 +col 5)
CARE Zimbabwe									
Destitute/ extremely poor (<$45/ month)				15		21	37	3	21
Moderately poor ($45-$100 per month)				3		3	1	1	3
Vulnerable nonpoor ($100-200 per month)						3	1		3
Well-off (>$200/ month)		1				2	4	1	2
CERUDEB Uganda									
Destitute / Extremely Poor (<$45/ Month)		7	8	10	6	11	7	12	19
Moderately Poor ($45-$100/ month)		7	4	12	8	10	9	14	14
Vulnerable Nonpoor ($100-$200 per month)		6	6	23	7	25	17	27	13
Well-off (>$200/ month)		8	4	19	7	27	13	24	11

Source: Surveys, April-August 2000, Part B: question 4.

Under uncertainty, therefore, 'benefit to the poorest' takes on a broadened meaning, consisting not just of improvements in the expected value of material well-being, but also of reductions in insecurity; and we have argued in this section that these can be achieved partly by modifications in the financial product which is offered, and *partly, and crucially, as the consequence of fungibility of loan proceeds into forms of human and social capital asset which are open to individuals outside the direct borrower group.* Where this strategy is successful, three benefits result: individual microfinance clients are saved from drawing down their physical and human assets, poor non-clients are made less vulnerable by being drawn into these protective social networks, and the income of the community as a whole is

stabilised. But to repeat, the strategy is not always successful, and the probability of its failure probably rises with the individual's poverty. Awareness of the potential for this kind of vicious circle directs our attention once again towards the gaps in the existing institutional and policy structure. We consider these in the final section.

5. Conclusion

As we have become increasingly aware, what development policy now seeks to combat is not so much poverty as, rather, a range of different poverties. These differ both in their objective characteristics and in the manner they are perceived: and, in both senses, anti-poverty policies need to be varied so as to respond to the different problems which the word poverty represents. In this study we have worked with three concepts of poverty, two of them 'objective' – headcount poverty and the poverty gap – and the third the idea of vulnerability, which we have argued cannot be captured by the objective concept of variance and, for all our attempts to render it operational by means of the concept of 'risk efficacy', ultimately rests in the mind of those who experience it.

We have also referred in passing to a range of instruments which, it may be hoped, might be able to increase the poverty impact of microfinance in the poorest countries. These are:

(1) measures to improve the '*microeconomic management of microfinance*' - market interest rates, savings facilities, mobile banking with frequent repayment to minimise transactions costs, incentives to repay ;

(2) measures to boost *social capital*, whether through solidarity groups or otherwise (pp. xx-xx above).

(3) measures to associate the risk associated with a given level of return – classically *insurance*, but also savings and measures to adapt the flow of repayments more evenly to the expected flow of repayments, which may vary according to season (Pages xx-xx above).

(4) Measures to augment the demand for low-income labour by borrowers (Tables 5.6 and 5.7 above).

To these options, although this has not been seriously tried yet in Africa, we would add

(5) measures to provide smaller loans in kind, initially for consumption but linked to training and leading gradually into small business development, to poorer people – after the manner of the Income Generation for Vulnerable Groups scheme in Bangladesh, as discussed below.

In Figure 5.3 we illustrate the manner in which these various instruments might be expected to reduce the various poverties referred to above. The

analytical structure is familiar -it is simply a combination of Figures 5.1 and 3.xx arrayed side by side. As we move northward within the left-hand half of Figure 5.3, the asset base –one measure of poverty – of microfinance clients increases. And as we move northward within the right-hand half, the absorption of labour – and thus the level of poverty within the labour force – diminishes.

Our expectation concerning the possible effects of the anti-poverty measures listed above is depicted diagrammatically on Figure 5.3:

(1) Measures to improve the micro-management of microfinance – essentially the incentive structure – will raise the entire impact frontier, reflecting the 'productivity' of the system in terms of wealth generation per unit of exposure to risk. This increase in productivity occurs because higher interest rates and more profit –motivated staff screen out more bad projects, and provide a stronger incentive to seek out good ones. Thus there should be an increase in productivity (thence client wealth) at a given level of vulnerability to risk, as in arrow (1) on the diagram.

(2) *Effective* measures of insurance reduce the level of risk for a given level (strictly, in return for a slight reduction, namely the premium) of the rate of return; hence the leftward movement of arrow (2) on the figure. It is to be borne in mind that various measures may substitute for insurance, including seasonally adapted repayments, compulsory saving, and credit itself in the shape of an incentive to diversification; and that a number of insurance schemes historically have failed, see Mosley and Krishnamurthy (1995); but many microinsurance schemes now being trialled give hope of reversing the trend, see contributions to symposium in *Small Enterprise Development* (March 2001)[103].

(3) Measures to boost social capital increase rates of return in the guise of 'another form of investment' – and one which according to one account, Whiteley (2000) has contributed more to growth at the macro-economic level than either physical or human capital. As discussed earlier, social capital may be seen as a form of 'liquid insurance substitute', and thus there is a complementarity between this option and measures of type (2).

(4) Small consumption loans, probably more than the other types of scheme proposed, enable very poor people to move from one sector of the capital market to another – essentially from zone A, where few can borrow without accepting an intolerable level of vulnerability, to zone B, through the device of subsidising basic consumption in order to release resources for investment, whilst at the same time providing training designed to ensure that productivity is increased through the use of those investible resources.

(5) Measures to stimulate rural labour markets lift the demand curve for labour, as in arrow (5) in the right-hand part of the diagram – and smooth out the kink in the demand function, so that poorer people feel motivated to borrow for labour hiring as a consequence of associating that activity with lower levels of risk.

---

[103] Ideas for one possible form of insurance, namely crop insurance, are provided in brief in the *Small Enterprise Development* symposium referred to and in more detail in Mosley and Rock (2002), appendix 1, pages 74-87.

We have considered how the first three of these have been institutionalised in Africa . The fourth is well represented by IGVGD (Income Generation for Vulnerable Groups) and CFP(Challenging the Frontiers of Poverty) in BRAC, Bangladesh (further discussed in Chapter 8 below), in which very poor clients are supplied initially with a combination of food aid and training in an activity with a low capital requirement such as chicken farming or sericulture; then required to make small savings deposits for a period; then provided with a micro-loan; and then, as that is paid back, 'graduated' in the classical manner through a series of larger loans into the mainstream BRAC programme. There is no equivalent of IGVGD in Africa, though we have encountered one or two botched attempts to incorporate some of its features.[104] The fifth is achieved, outside of microfinance, by any activity which augments the labour demand coefficient of the activities which it finances, such as rural non-farm informal activities and green revolution agriculture , in the latter case because hybrid foodcrop seeds, with greater demands on weeding, soil preparation and harvesting labour (Mosley 2002) have a higher demand for labour per hectare than traditional varieties.

In principle, all of these measures should take institutions, by differing routes, closer to the 'desirable trajectory' depicted by the dotted line in Figure 5.3, in which microfinance clients increase their wealth through a process which 'steers close to the left bank of the river', thereby sparing very low-income clients risks which at high levels of vulnerability they are very little able to tolerate. This dotted line may be visualised as an idealised form of the impact relationships of table 5.5 - not the impact level which actually prevails, but the impact frontier which would correspond to a pattern of microfinance supply which accurately meets the demands of the very poor.

---

[104] For a description of one of these see Mosley and Rock (2002), pages 62-64.

178

Client's asset base/client poverty

Demand for labour/

Upper boundary of capital market

'idealised' client's trajectory

1Efficiency improvements, 4 social capital improvements (most)

Conventional microlending

Lower boundary of capital market

2 Savings/Insurance

5 Small emergency loans scheme s

3 IGVGD- type schemes for ultra-poor

Riskiness/vulnerability of borrower's portfolio

5 Labour market development

(a) The client household

(b) The labour market

Figure 5.3. *A priori* poverty impacts of various possible anti-poverty initiatives

(ii)   Merits and limitations of possible instruments

We conclude by setting out, in Table 5.9 below, a picture of the relative advantages and disadvantages of the anti-poverty options discussed above.

Table 5.9. Measures to increase poverty impact of microfinance: relative advantages and disadvantages

I *Design feature*	*'Host institution' for assessment*	*Mechanism of operation/Estimated efficiency/poverty impact*	*'Opportunity cost' (for profitability or other objectives)*
1. Improvement of micro-incentives; mobile banking, savings, market interest rates	All (but no voluntary savings except in CERUDEB, and no incentives to repay as yet)	Raises impact curve through more effective screening of loans	Administrative cost
2 Insurance	CERUDEB for climatic risks	Income instability reduced, hence new lower-income borrowers attracted into scheme .Reduces risk for given yield and thus encourages technical innovation	Some possible inhibition of clients' own spontaneous risk defences e.g. irrigation.
3 Social capital development	All except CERUDEB use some form of group finance. CARE Zambia and SEF (in particular) also encourage group capacity-building	In addition, much fungibility of microfinance loans into social capital	
4 Blending of food aid with microfinance (a la IGVGD)	No proper replication in Africa, but attempts exist to incorporate particular components. e.g. in CARE Zambia (see Mosley and Rock 2002 p. 63)	Moves financial services further down the income ladder, see Figure 5.3	Credit in kind restricts choice; some evidence from Bangladesh that members of this type of scheme opt into consumption elements and opt out of investment elements
5. Employment subsidies/labour market information systems	Not yet tried	Moves the labour demand function 'upward' and lowers threshold at which labour hiring takes place	Administrative cost
7.Explicit targeting	SEF	Some concerns (see Table 5.7 and discussion surrounding it)	
8. Interest rates keyed to loan size	Not yet tried		

There exist conventional wisdoms about the essential nature of poverty in Africa, with which this survey is concerned, in relation to other places. For

example, Ellis, in his review of rural coping and livelihood diversification strategies, argues that:

> whereas in Asia, a prevalent feature of rural poverty is near or actual landlessness so that poor households must rely on off-farm and non-farm income sources for survival; in Africa, the main factors contributing to rural poverty are locational and reflect not so much lack of access to land, but location-specific: lack of access to an array of services and opportunities (roads, schools, market services, input supplies, power, non-farm activities), as well as environmental constraints (1998:10)

Whereas this analysis needs to be nuanced by location (landlessness is a serious problem in parts of Kenya, South Africa and Zimbabwe, all of them covered by this survey), nonetheless an important criterion for microfinance is not only its ability to raise incomes as such, but also its ability to convey this 'array of services and opportunities' to poor people and thereby reduce their vulnerability.

The comparative advantage of microfinance hitherto has been in reaching the group variously and euphemistically described as the vulnerable non-poor, the working poor or the entrepreneurial poor. It does also reach the extremely poor (ibid.), but in some contexts at least, we have argued, more through the labour market and through human and social capital externalities than by direct lending. To reach further, especially in an African context, it will almost certainly need to make use of devices such as those described above, which are aimed at the improvement of risk efficacy rather than simply the reduction of extreme poverty. Three of these (managerial measures, measures to develop social capital, and measures to boost labour markets such as social funds[105]) have demonstrated their validity empirically in some African contexts; but the others, in particular microinsurance and IGVGD-type schemes, have not had any serious trial in Africa. The fact that, unlike the other options, they are explicitly directed at the expressed wishes of the poorest people to put economic security ahead of other criteria suggests that they deserve one.

---

[105] On social funds see White (2002)

Figure 5.4. Empowerment indices

Constructing indices that reflect women position in and outside the household and impacts on her welfare

1. Asset ownership affecting women's power in the household (ASSET)
This index reflects women's physical and human assets ownership that might improve women's position in household bargaining. It excludes participation in wage labour. Scores are based on woman's ownership of physical, human and social capital.
- Ownership of land: Number of acres owned by the woman.
- Ownership of cattle: Equals 1 if woman owns cattle
- Ownership of goats: Equals 1 if woman owns goats
- Ownership of chicken: Equals 1 if woman owns chicken
- Ownership of homestead: Equals 1 if house is registered in woman's name
- Education: Equals 1 if woman has attended primary school, 2 if secondary and 3 if high and 4 if any higher

ASSET = Sum of the above. Range: 0 – 5.75.

2. Internal determinants of women's power and processes (PROCESSES)
This reflects the intra-household processes that govern household income. Scores are based on the extent the woman participates (is allowed to) in these processes.
- Role in sale of crop: Equal 2 if woman decides to sell, sells it and keeps the money; and 1 if woman does not decide and/or sells but keeps money from sale
  - *Role in sale of cattle: As above*
  - *Role in sale of chicken: As above*
- *Female role in financial decision: Equal 2 if female has both most say in financial decisions and final say in a recent financial decision was either hers/or joint. Equal 1 if she does not usually have most say in financial decisions but the final say in a recent financial decision was hers.*

PROCESS: Sum of the above. Range 1 – 5.

3. Outcomes of position and processes (OUTCOMES)
Index reflects the final outcome resulting from an interaction of asset ownership and household processes. Scores are based on the extent these outcomes are favourable to the woman.
- Personal spending money: Equal 1 if woman spends any money (that she keeps) on herself (excludes money from own waged work)
- Husband's spending money: Equal 1 if husband spends less than 10% of his earnings on self
- Role in domestic chores: Equal 1 for each of fuel and water collection, cooking and washing clothes, utensils if shared. Equal 2 if not done by woman
- Role in household responsibilities: Equals 1 for each of deciding on children's education, which crops to grow, buying seeds, renting land and borrowing money if shared. Equal 2 if done by woman.

OUTCOMES: Sums of the above. Range: 2 - 17.

Chapter 6. The development of social capital and trust

Virtually every commercial transaction has within itself an element of trust, certainly any transaction conducted over a period of time. It can be plausibly argued that that much of economic backwardness in the world can be explained by the lack of mutual confidence. K.Arrow(1972)

1.Introduction

'Social institutions', the World Bank firmly asserts in its 2000 *World Development Report,* 'greatly affect poverty outcomes. They do so by affecting the productivity of economic assets, the strategies for coping with risk, the capacity to pursue new opportunities, and the extent to which particular voices are heard when important decisions are made. Social institutions can help poor people get by and get ahead' (World Bank 2000: 117). In this chapter we examine the capacity of a range of social institutions to reduce poverty by reducing risk. In particular, we wish to explore the possibilities for reducing risk through the construction of social capital. This is, of course, a much-debated concept . The Social Capital Initiative of the World Bank defines it as 'the institutions, relationships, attitudes, and values that govern interactions among people and contribute to economic and social development' (Grootaert and Bastelaer 2002: 2). This institutional definition (taking institutions as both organizations and accepted norms, values and behaviours) is rather broader than that in the first draft of the 2000 World Bank report (1999: page xx) which defines social capital as 'the ability of individuals to increase their well-being through involvement in social networks'. Such networks, on this view, are an asset on which a return is expected, by analogy with physical and human capital – 'one that can be called on in a crisis, enjoyed for its own sake, and leveraged for material gain' (Woolcock and Narayan 1999:226). Without this asset, they continue, individual prospects for escape from poverty are bleak; 'a defining feature of being poor is that one is not a member of – or may even be actively excluded from – certain social networks and institutions that could be used to secure good jobs and decent housing' (*ibid.).* Some of the starkest claims made for social capital relate to the recent experience of recession and *perestroika* in Russia, in which, it has been alleged, 'those who have access to social capital get ahead; those who do not get sick and die' (Kennedy et al 1998: 2039).

There are, of course, many escape routes from poverty, many factors of production which can help. But social capital, on this view, is special: at the least, a necessary condition for escape from poverty. One of the most influential studies espousing this view is Putnam's comparison of Northern and Southern Italy (1993). From this study social capital emerges as the crucial factor of production which launches whole regions towards sustained economic development and leaves others stranded. In Italy, the 'north-south divide' defied persistent attempts, especially after 1945, to bridge it through investment in physical and human capital (infrastructure, heavy

industry and technical education), rendering attractive Putnam's hypothesis that what really mattered for economic development was the divide between levels of *social* capital – the high media exposure, community involvement and political participation in the north contrasted with the low levels of association, exchange of information and consequently enterprise found in the civil society of the south. This hypothesis has led to some jostling between the social sciences – since on this view, as Whiteley (2000:443) puts it, 'politics appears to have a more important influence on economic development than does economics'. Certainly, cross-section regressions conducted by Whiteley and others[106] show a healthy influence of social capital measures on growth in relation to other kinds of capital; and one notable single-country study for Tanzania, by Narayan and Pritchett, shows 'that a 'one-standard-deviation increase in the village social capital index… is associated with at least 20% higher expenditures per person in each household in the village' (1999:890) . However, Whiteley (and Knack) define social capital rather differently from the World Bank. The World Bank equates social capital with the formation of networks and associations (first draft) and social institutions (second draft)[107], whereas the regressions of Whiteley and Knack's regressions invariably use some measure of trust[108] as the dependent variable. The latter approach highlights the importance of social capital for 'strategies for coping with risk', since trust is the negative of interpersonal risk: if you trust someone, you attach little risk to your dealings with them. But it is not immediately obvious how these strategies should be constructed: as Glaeser et al (2002) argue, 'there does not exist a commonly accepted theoretical framework within economics for theorising about the determinants of investment in social processes that enhance trust, predictability and collaboration'. Neither higher income, nor any other independent variables identified in the literature, appear to 'cause' higher levels of social capital[109]. This is a second sense in which 'social capital is special': not only, like human and physical capital, does trust have important leverage on development, but unlike physical and human capital, trust cannot be bought in any market. And as Onora O'Neill points out in her Reith Lectures(2002; 6/7) it is 'hard earned and easily dissipated'. Our main task here will be to understand how this precious resource, if it cannot be bought, is in fact earned: there is now a big literature on what social capital achieves, but a far smaller one on how to create it, and so our particular emphasis here is on how that can be done, with especial emphasis on its role as a buffer against risk.

---

[106] See for example Temple and Johnson (1996). Knack and Keefer (1997), Knack (1999) Whiteley (2000)

[107] The Narayan and Pritchett study, which is by World Bank employees, uses as independent variable a composite index of social capital which contains both associational and trust components.

[108] For both Whiteley and Knack and Keefer, the social capital variable is the World Values Survey indicator, which asks the questions 'Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people? and then 'How much do you trust various groups of people (family, friends, nationals etc.). Knack and Keefer explicitly also examine the relationship between associational measures of social capital and economic growth, and find it insignificant.

[109] There obviously exists the possibility of a two-way relationship between well-being and trust, which can be seen as an aspect of the vicious circle of poverty. But Narayan and Pritchett, in their study of Tanzania previously referred to, insist that ' the association (between social capital and household expenditure) is leading to higher incomes because of higher social capital, *not because higher incomes lead to greater associational life' (*Narayan and Pritchett 1999: 877, emphasis added)

But before outlining the perspective on social capital being used in this analysis, a nod towards the critics of the concept is due. Here we only address one of the many criticisms. It has been argued, for example by Ben Fine (2000), that social capital is not capital. This argument is based on counterposing understandings of capital within mainstream economics with those from the political economy tradition. Mainstream economics (recall Chapter 1) conceptualises capital as any form of asset that provides utilities to the owner of the asset; in this understanding, social capital, however defined, can be seen as such an asset. A political economy understanding sees capital as embodying social relations in specific historical contexts that enable capitalists to make profits. In such a conception, social networks and associated norms and values are simply part of the social relations of capitalist production and distribution. Thus all capital embodies social relations and is therefore social.

We point out this criticism in particular because it is pertinent to understandings of poverty and to the causes of poverty,and therefore important for policy development. The current conception of poverty employed by the World Bank and many other international institutions is multi-dimensional (Narayan et al, 2000), including both income and quality of life measures. Quality of life indicators have a bearing on and relationship to capability approaches to poverty analysis (Dreze and Sen 1990), which in turn underlies the focus on social exclusion in recent years.

These broadening conceptualizations of poverty are, however, not all equally concerned with answering the question 'why are people poor?' While the answers to 'why are people poor?' are many and various (and this research endeavours to provide new insights), political economy reminds us that the corollary to the question 'why are people poor?' is 'why are people rich?'. Although answers to these questions can still be based on utility functions, including Sen-ian analyses using concepts of endowment, entitlement and capability, political economy adds further dimensions: it attempts to analyse why people's endowments, entitlements and capabilities are different, and it also reminds us that individual economic behaviour is embedded in wider social relations - i.e. that focusing only on individual behaviour ignores the relations between individuals and collectivities in their social and historical settings. Looking for an answer to why some people are poor and others rich is based on an analysis of social relations of production and distribution, in which the benefits to some are based on the dis-benefits to, otherwise the exploitation of, others. This is an important reminder of differentiation within the poor and between the poor and wealthy, and of the social relations and social institutions that underpin these differences. There may therefore be serious conflicts of interest in trying to build institutions that reduce risk and provide exits from poverty.

The question is whether there is a useful bridge between these different lines of thinking. Mainstream economics has tried to address these issues by looking at the role of institutions, and by including social differentiation into economic analysis, particularly with respect to gender. In

other words, there is an attempt to marry analysis of individual economic behaviour to an understanding of the social context in which individuals act. Furthermore, the social (as distinct from the economic) is acknowledged as influencing behaviour and its outcomes. Two problems with this approach have been filtered through into the conceptualization and analysis of social capital as networks and associations. First, the economic *is* social - that is economic behaviour is social behaviour in that it exists in function of its interaction with social others. By the same token, economic institutions are social institutions (for example, markets, banks). Second, social life is not only differentiated but it is also conflictive. Thus networks, associations and organizations will reflect, as well as influence, wider social relations of wealth, power and interests (see, for example, Wood 2003). Conceptualising social capital as trust also raises some of the same problems: for example, particular manifestations of trust may be based as much on the predictability of accepted social relations (e.g. landowner -tenant, in which the relation offers shared benefits, even if they are unequal ones) as on effective and well-run micro-finance schemes targeting women.

An issue for mainstream economics, then, is how to factor into 'economic' behaviour social processes that do not necessarily enter the market and are not readily quantifiable. With respect to poverty, the assumption is that there is a range of social processes (including social institutions) that, if the poor were to be included, would help bring them out of poverty, or that, if such social processes and institutions were to be enhanced or enabled to work better, would have the same effect. It is further suggested that if such social processes and institutions were to be strengthened or made more effective, they would reinforce trust between participants, which in turn would enhance the outcomes for poor people by reducing risk and encouraging the acceptance of new norms, practices and other innovations. In addition, norms and practices that are detrimental to action on poverty might be reduced. Thus building trust involves not only well-functioning institutions that meet the needs of the poor, but also involves poor individuals in a behaviour change in decision-making that affects others as well as themselves. (We come back to this aspect in the discussion of the prisoner's dilemma below.)

The caveat to this set of assumptions is that, to the extent that wealth for some depends on the poverty of others, and that unequal and/or exploitative social relations are causing poverty, social processes and social institutions are likely to reflect this wider context. So there are two important prior questions in analysing any contextual and livelihoods: (a) which social processes and institutions reinforce risk/poverty, and how? (b) which social processes and institutions reduce risk/poverty, and how? Answering these questions will inform the answer to 'how is social capital (networks, associations, trust) allocated?' and 'how can social capital be re-allocated or constructed to help provide exit strategies from poverty?'.

In attempting to answer these questions, we use the concept of social capital with some caution, not only because it is a contested concept, but because we are aware not all social processes and institutions are assets for all people - they may be assets for some and divestments or sources of social inequality , subordination and indeed mistrust for others. In this chapter we

examine the interrelationships between networks, associations and trust and analyse the mechanisms that reinforce or undermine them, and the extent to which they might mitigate risk. In the next section, we elucidate further the theoretical underpinnings of our approach in terms of economic analysis.

2 Risk, trust and asset accumulation

We gave two main definitions of social capital above: one based on networks and associations and the other based on trust. In addressing specific mechanisms which mitigate or reinforce risk, we work with both definitions and build our own analytical construct based on the conceptual and empirical differences between them.

(i) Motivations for association to increase trust

To try and illustrate the issues at stake, let us turn once again to a gaming approach, and in particular to one of the simplest of interpersonal trust games – the prisoner's dilemma - which we will take further to consider the relations between individuals and institutions. We have already used this construct to explain the breakdown of trust – in both cases presumed to be damaging for poverty reduction - in two contexts, and we reproduce them here as Figure 6. 1. In the first case, members of a microfinance group (from Chapter 5, Uganda and India) fail to make their individual contributions to a loan taken out by a solidarity group , because they each think that they can persuade other members of the group to pay their share: the group collapses, and opportunities for productive investment are lost[110]. In the second case smallholder agriculturists (from Chapter 1, Zimbabwe) fail to adopt new seeds and other innovative techniques recommended to them by extension officers because they fear a counter-move by government, such as land confiscation[111]. The crucial question, in both cases, is what causes breakdowns of trust, and what measures might remedy this.

---

[110] Other pathological cases from developing countries are provided by Woolcock (1999).

[111] As will be illustrated later, these refer to two different cases of social capital formation:

Figure 6.1. Trust and the prisoner's dilemma

(i): group microfinance (as in Ch 5, Table   )

Client 1 Client 2	Pay full instalment	Do not pay full instalment
Pay full instalment	1,1	-1,**2**
Do not pay full instalment	**2**,-1	0,0

(ii) agricultural extension (as in Ch1, Table   )
Payoff to government precedes payoff to 'Client 1'

Client 1 Government	Innovate (follow suggestions of extension officer)	Not innovate
Not confiscate land	1,1	-1,**2**
Confiscate land	**2**,-1	0,0

 The best outcome for either player in both games, under the structure of payoffs given, is to abuse the other's trust (which yields 2); the worst outcome is to have one's own trust abused (which yields –1) and mutual trust ranks above mutual defection. The dominant strategy equilibrium is thus, of course, in the bottom right-hand corner ('mutual defection'), and in the process, *because of the fear of each that trust will be abused*, trust is dissipated.

However, this paradox does not, of course, always materialise. It may be seen as a 'breakdown position' for both players within a bargaining process, as in Figure 6.2 below.   Whether the equilibrium eventually reached takes the form of the retreat to individuals' breakdown positions depicted by Figure 6.2, or a conventional Nash-type equilibrium in which agreement is reached, depends essentially on how the payoff from exploitation of the other player (the rest of the community) is *perceived*: the figure in bold in figure 6.1. If this figure is more than 1 for both players, then, we have a conventional (bottom right-hand corner) prisoner's dilemma solution, and trust (social capital) is dissipated. If it is *less* than 1 (in other words, the players perceive a greater payoff to collaboration than to exploitation) we have a collaborative (top left-hand corner) equilibrium, and it can be hoped that such agreement will lay the basis for predictable behaviour patterns by both parties, which in turn will build trust. The fundamental question to be resolved is what processes (in the absence of a 'market' for trust) are likely to shift the payoff from 'more than 1' to 'less than 1', and increase the likelihood of mutually supportive behaviour.

Figure 6.2: success, failure and perceived gains from negotiation within 'communities'
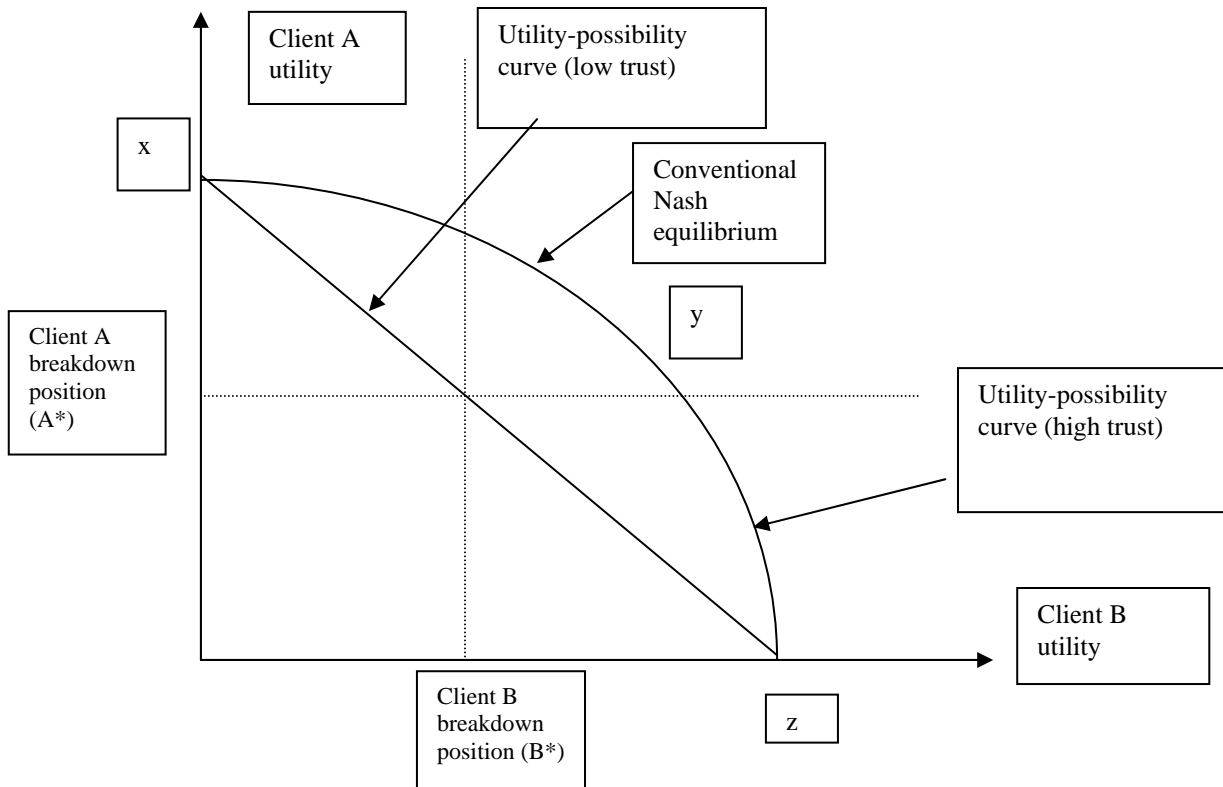
We wish to suggest, and illustrate from our empirical materials, three processes by which this can happen.

*(i) '**Experiential** trust':* people within a group come to trust one another because their *previous experience* of working with one another is positive. In such an environment expectations of exploitation are diminished, and thereby the bold figure in the off-diagonal cells of the prisoner's dilemma diminishes to 1 or less, the dominant strategy equilibrium moves from the bottom right-hand to the top left-hand corner.

Our case-study work revealed a number of favourable environments for the emergence of positive group experiences. One of these was *perceived equality:* in a situation where the gains from joint working are seen as relatively equal, exploitation of the weaker by the more powerful may be feared less[112]. Another was *joint experience of working against a common adversity* - which might be a circumstance, a person, an institution, or even,

---

[112] Alesina and La Ferrara (2000:847) find that in the United States 'after controlling for many individual characteristics, participation in social activities is significantly lower in unequal and in more racially or ethnically fragmented localities' We know of no tests of the same proposition for developing countries. The idea of a link between inequality and perceived risk is taken up again in the context of political risk in Chapter 9.

as in the case of the many 'resistance movements' which form an important base for social interaction in African countries and in particular in Ethiopia and Zimbabwe, a government.

   (ii)Incentivised trust': people within a group may come to trust one another more as a consequence of the downside risks associated with not trusting one another being reduced. Whereas institutions cannot create experiential trust, they can create incentivised trust by providing rewards to collaboration, or by providing protection for those who trust and are let down[113]. An important example of the latter is insurance, so often a market failure in developing countries. This reduces the costs associated with income shortfalls which are due to interpersonal risks (in terms of the prisoner's dilemma model, the -1 suffered by the exploited party in the off-diagonal cells is compensated to $+1$); once again the dilemma collapses and the equilibrium moves to the top left-hand corner.

   Again, it is possible to specify circumstances which are favourable to the growth of incentivised trust. One of the most important *is awareness of the future consequences of one's actions* – if you know that you will have to live with the consequences of behaving in an exploitative way, that reduces your incentive to do so. The simple prisoner's dilemma, of course, is a one-shot game,and cannot accommodate this kind of forward-looking behaviour; but it can be demonstrated under some rather specialised assumptions that when the prisoner's dilemma is repeated, the likelihood of altruistic and more trusting behaviour increases[114]. In the Appendix we treat both experiential and incentivised trust as shift parameters which increase the likelihood of forward-looking behaviour and thence of the formation of social capital.

(iii)*'Charismatic trust':* without experience or incentives, people within a group instinctively come to trust individual 'leaders' with particular personality characteristics. This characteristic is less easy to rationalise in terms of measurable individual gains and losses than incentives and experience, but there is abundant case-study evidence in favour of its role as an independent factor in building trust.

The general story is therefore as in Figure 6.3:

---

[113] They can also, by the provision of guarantees, influence expectations of whether people are able to meet their commitments, which will influence trust: for example, the willingness of an individual within a microfinance group to trust a debtor to repay his debt will depend partly on whether that debtor is insured.

[114] This can happen either if the game is infinitely repeated, or in the case of games with a finite number of moves if information is incomplete. For the adaptation of prisoners' dilemmas to incorporate altruistic behaviour, see also Collard (1976).

Figure 6.3. Mechanisms towards the accumulation of social capital
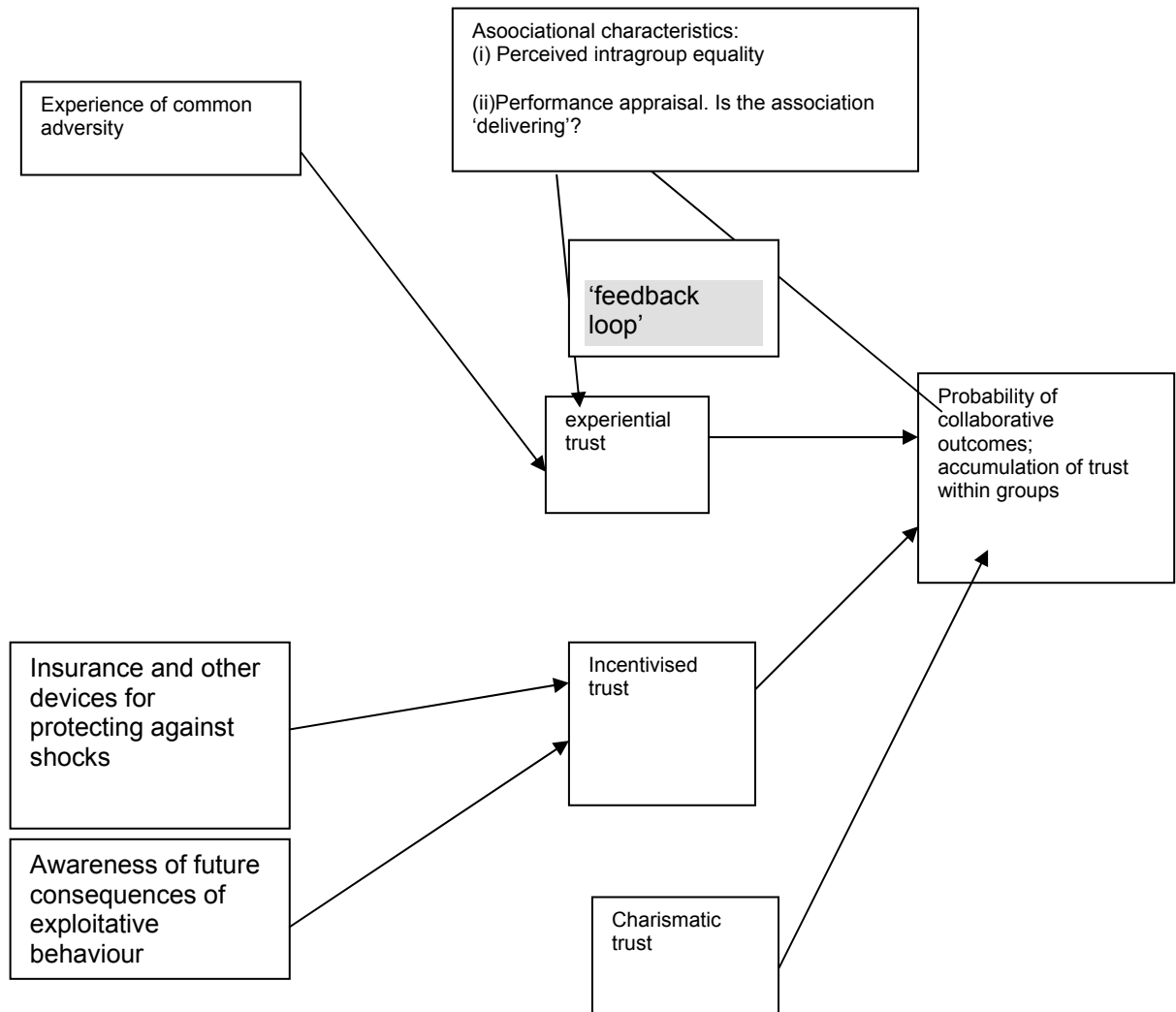
The general approach, then, will be that these factors can be used to give us, in place of a 'market'[115], and with certain assumptions, a predictive relationship for explaining the development of networks, associations and trust that can work to the benefit of poor people[116]. The weaker these factors are, the greater the probability of the outcome collapsing to the 'bottom right-hand corner' (mutual-exploitation) outcome of the prisoner's dilemma, and the stronger they are, the greater the likelihood of a collaborative outcome at the

---

[115] Incentivised trust looks like a market mechanism, but it is not a market in the conventional sense. What builds up trust of this kind is not usually an offer of money, but the removal, typically by some kind of assurance mechanism, of fear of deception.

[116] This framework applies to the development of trust within small groups – indeed all our game-theory examples relate to two-person situations, and we take a risk in extending them to the case of multi-person groups. In addition, once social capital comes to be formally embodied in *institutions*, there are other factors to examine, such as the transparency and auditing mechanisms of the institution. We consider these further on pages   below.

top left-hand corner. In Figure 6.2 we represented these two alternative outcomes as options in a bargaining diagram between two individuals. If the mutual-exploitation outcome materialises, both individuals revert to their fallback positions (A*, B*), whereas if the collaborative outcome materialises there is association and there exists the option of bargaining, by Nash or other methods, concerning the allocation of material resources around the locus XYZ which represents the possible distribution of gains between the two individuals. But what is also important is style as well as substance; within a given grouping the growth of trust, as we shall see, is determined not only by the factors listed above but also by whether association is seen as being spontaneous or imposed.

We now show how the Nash approach can be used to generate, in the absence of a market, a predictive relationship for the supply of social capital. Imagine two individuals, A and B, and assume that in the solution to the Nash bargain both parties maximise their perceived incremental utility, U_a and U_b, in relation to their breakdown position U_o (where there is no relationship between them)

$$\pi^* = (U_{ap} - U_{a(o)}).\ (U_{bp} - U_{b(0)}) \qquad\qquad (1)$$

The subscript p stands for 'perceived': it is what the individual perceives as being advantageous rather than the objective situation which is important to the outcome.

To operationalise this approach into a 'supply function for social capital' we optimise the function (1) by setting its derivative with respect to social capital equal to zero:

$$\frac{\partial\pi}{\partial S} = (U_{ap} - U_{a(o)}).\ (U_{bp} - U_{b(0)})\ = 0 \qquad\qquad (2)$$

Taking note of the idea that for each individual A and B the perceived benefit to be derived from collaboration will depend on the five factors mentioned above, the process of optimisation indicated by (2) will yield, with some manipulation, a reduced form

$$S = \text{constant}\ (g,L) + \alpha_1\ (I) + \alpha_2(D) + \alpha_3(E) + \alpha(X) \qquad\qquad (3)$$

where I = *incentives* to collaboration
      D = *defences* against shocks
      E = within-group *equality*
      X = *prior experience* of collaboration, often associated with adversity

and the shift parameters are:
      g = gender
      L = within-group leadership

This, then, is our first estimate of the 'social capital formation function', and we estimate it in Table 6.1 below. We must, however, not forget the process working in the opposite direction
(at the top of Figure 6.3) in which the *effects* of collaboration (on poverty and other variables) feed back into experience and thence, by our previous argument, into trust.

(ii) Types of social capital
　　　　Up to this point we have treated social capital as a homogeneous asset called 'trust' or 'association', generated by means of the three processes described within specific associations or affinity groups. What has not been considered is the possibility that the nature of trust links might vary according to, for example, economic status or gender. For example, within the (associational) approach to social capital advocated by the World Bank, Narayan and Woolcock (1999) have made a distinction between three types of social capital which reappears in the World Development Report (2000).:

- 'bonding' – networks operating within localised neighbourhoods, which enable the poor to 'get by';
- 'bridging' – networks operating between neighbourhoods, regions and organisations, which are deployed mainly by the less poor for promotional purposes;

and 'linking' – networks operating between households and members of organisations (government, NGOs and private companies) whom they perceive as being above them in the hierarchy, and to whom they attach themselves in order to get ahead. In other words, as income and wealth increase, not only does the quantity of social capital increase but also its type and purpose – from protectional to promotional.

We reproduce below (Figure 6.4) the diagram in which Woolcock and Narayan represent the relationship between these types of social capital and 'welfare':

Figure 6.4. Social capital and poverty transitions

Welfare

Bonding

Bridging

Defensive mode:getting by

Offensive mode:
getting ahead

Diversity of social networks
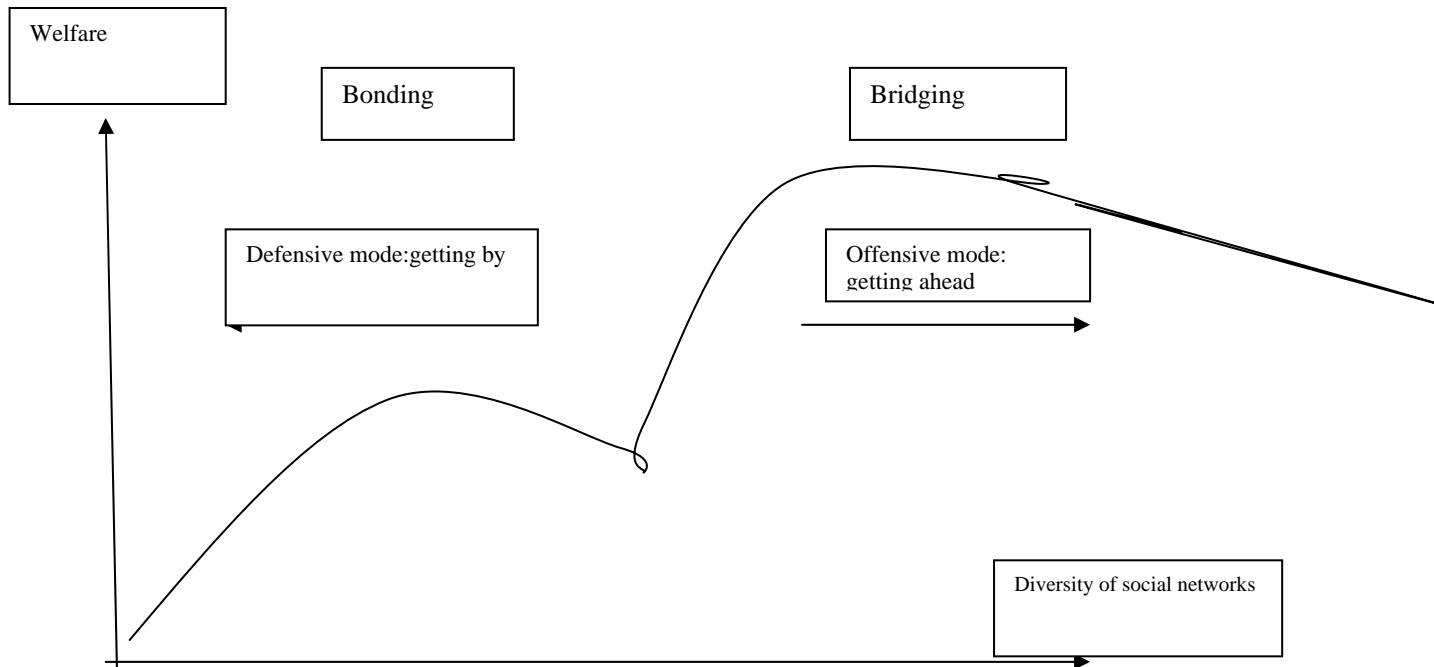
This is very similar to the general approach taken in our Figures . and 5 (page xx), which also visualise progressively greater emphasis being placed on risk aversion and security of exchange-value as perceived vulnerability increases, and progressively greater emphasis on 'promotional' strategies which increase risk and return as income increases; our 'protectional' strategies are very similar to the Woolcock/Narayan idea of 'defense/getting by' and our 'promotional strategies' closely resemble the idea of 'offense/getting ahead'. What our story adds is a risk dimension: as a household becomes poorer, so does its need increase not only for defence as such, but for *liquidity* in all forms of capital as an instrument of self-defence [117].

Do men and women have generically different needs for different types of social capital? As we saw in chapter 3, Diane Elson has suggested that this may be the case, because women lack in particular those institutional defences which are set up by men for the protection of men:

---

[117] The analogy is with James Tobin's paper 'Liquidity Preference as Behaviour towards Risk'(1958), which seeks to explain flight from financial assets, and hence high interest rates, and hence stickiness in getting out of recession, as a response to risk.

'Risk is particularly important in evaluating the implications of a reduction in the gap between the proportions of men and women whose labour force status is that of employers and self-employed. It is tempting to conclude that these two categories of engagement in the labour force are particularly likely to be empowering because they seem to be associated with greater control over production than the status of an employee. Even if this is the case, however, they do not confer control over market forces: hence risk-reducing institutions, such as chambers of commerce, business clubs, trade associations are extremely important. Such institutions are often 'bearers of gender' in the sense that they are constructed around male norms (and may even formally exclude women as members)'.

Certainly, it seems likely that for many women: (i) perceived vulnerability and interpersonal risk may be greater, exactly because they are excluded from access to many conventional assets such as land and conventional credit, and also to the mechanisms which Elson mentions; (ii) orientation towards the future may be greater because of a greater involvement in caring for children's needs, which diminishes willingness to embark on an exploitative strategy. Because of (i) we hypothesise that women, at a given level of income, will have a greater incentive to invest in 'liquid' or 'protectional' forms of social capital, and because of (ii) we speculate that intrinsic levels of incentivised trust may be higher amongst women.

However we also need to look beyond short-term liquidity/protection against risk to longer-term strategies that will not only protect poor people from crisis but will support an exit from poverty. Thus there is a question about whether the more distant and apparently less trustworthy relationships used by the less poor or relatively wealthy embody trust of a different form - less personalised and more institutional. To what extent do given institutions reflect norms and values that engender trust? Or to what extent, as we ask below, is there a calculation based both on self-interest and the interests of the collectivity, in which is it assumed that there is common ground and an outcome that will meet the needs of both and therefore enhances collaboration as well as individual decision-making? There also remains a larger question of how trust relations develop over time. This is a challenging assignment – as O'Neill has eloquently argued mainly within the context of developed countries, any amount of audit and scrutiny of the performance of people within institutions does not necessarily increase people's degree of trust in those institutions.

Thus in what follows we shall focus on possible measures towards the construction of varieties of social capital, and how these may vary according to the gender and income level of the 'target group'.

3. Aggregative (regression-type) explanations of social capital formation

We begin by testing out the reduced-form relationship emerging from our discussion of social capital accumulation within a gaming framework. This, we recall, was:

$$S = \text{constant } (g,L) + \alpha_1 (I) + \alpha_2(D) + \alpha_3(E) + \alpha(X) \qquad (3)$$

where I = *incentives* to collaboration and trust

D = *defences* against shocks
E = within-group *equality*
X = *prior experience* of collaboration, often associated with adversity
(all of these proxies for experiential trust and factors facilitating it)

L = within-group *leadership* (a proxy for charismatic trust)

In Table 6. 1 we present ordinary least-squares estimates of equation (3), calculated for the regions of India, Ethiopia and Uganda for which we have sample data. Investment in group assets is generally:

(i)   positively correlated in all countries with defences against shocks (in the form of assets);
(ii)   in Uganda, positively correlated with trust, here treated as a proxy for prior experience;
(iii)   in Uganda, related to gender in a rather strange manner: women are *much more* likely to invest in health and *much less* likely to invest in burial societies.

Thus we have tentative evidence from (i) in support of the 'incentivised trust' hypothesis (in the sense of the positive coefficient on assets), and from (ii) in support of the experiential trust hypothesis (in the sense of the positive coefficient on the trust measure). Women invest in particular in *forms* of social capital most likely to protect their livelihoods, that is health societies. We have not tested as yet for the effects of intragroup inequality and leadership.

Table 6.1.India, Ethiopia and Uganda samples: Socio-economic determinants of trust and investment in networks

	India (Andhra Pradesh, Vepur and Guddimalkapura)		Ethiopia (Jimma, Afeta Peasant Association)			Uganda (Mbale, Sironko and Bufumbo)		
Social capital measure (dependent variable)	Investment in group assets		Community trust			Investment in group assets		
Subsample Regression coefficients on independent variables:	Male	Female	Male	Female	All	Microfinance groups	Burial societies	Health groups
Constant	3.25*	3.73*	35.9*	97.6*	3.93	1.26	-1.66	1.99
Poverty group	0.078 (0.868)	-0.064 (0.557)				0.20 (0.87)	0.23 (1.06)	0.23 (1.06)
Household income	0.006 (0.082)	-0.148 (1.233)			-0.14 (0.39)	0.25 (0.94)	-0.29 (1.11)	0.14 (0.55)
Assets (proxy for defences against shocks)	0.211* (2.06)	0.141 (1.434)	0.008 (0.88)	1.01 (0.04)	0.006* (1.98)	0.29* (1.84)	-0.26 (0.98)	0.34** (2.29)
Land			6.59 (1.19)	-3.54 (0.75)				
Gender						0.03 (0.17)	0.51* (2.73)	-0.45* (2.40)
Trust (proxy for experience)						0.24** (2.55)	-0.067 (0.37)	0.13 (1.82)
Education			2.37 (0.60)	-15.8 (0.59)	0.94 (0.04)			
Maize yield			0.006* (2.09)		0.19 (0.76)			
Coffee yield			-0.77 (2.04)		0.024 (0.089)			
Paddy yield	-0.031 (0.364)	0.075 (0.815)						
R^2	0.055	0.032	0.29	0.34	0.084	0.16	0.26	0.25
Number of observations	151	151	23	11	34	34	34	34

Notes: (1) * significance at 5% level or better (t-statistics in parentheses)

(2) We do not attempt to model membership of associations in Ethiopia, since peasant associations are compulsory, and membership of burial societies is universal.

However, to get a true estimate of the factors which influence social capital we need to reconsider more carefully both the definition of social capital and the estimation procedure. In the first place, there is the possibility of two-way causation between social capital and some of the factors which cause it, and in the event of such endogeneity single-equation estimates such as those in the table will be misleading. In the second place there is of course ambiguity about the right measure of social capital to use and the method to

use for the estimation of trust, and so we need to see how robust the estimates portrayed in Table 6.1 are to the concepts and methods used.

Figure 6.5 illustrates a simple picture of the link between the trust and associational measures of social capital, as depicted in the upper triangle of Figure 6.3 – indeed it is simply a blow-up of that triangle. We postulate a two-way interaction between the associational and trust measures of social capital. How far association within organisations breeds trust depends on the evaluation which association members make of that organisation, and in particular of its leadership. But it also, on the evidence of the table above, appears to depend on income and assets. Meanwhile there is a feedback in the opposite direction from trust to association: people who trust one another more have a predisposition to form associations, as already illustrated by the microfinance groups of Chapter 5. The a priori influence of income is ambiguous: richer people are freer to invest their cash resources in associations with trusted people, but against this, partnerships formed in adversity generate strong bonding social capital as again we have found from the case studies of the last chapter.

Figure 6.5 A simple two-way relationship between association and trust
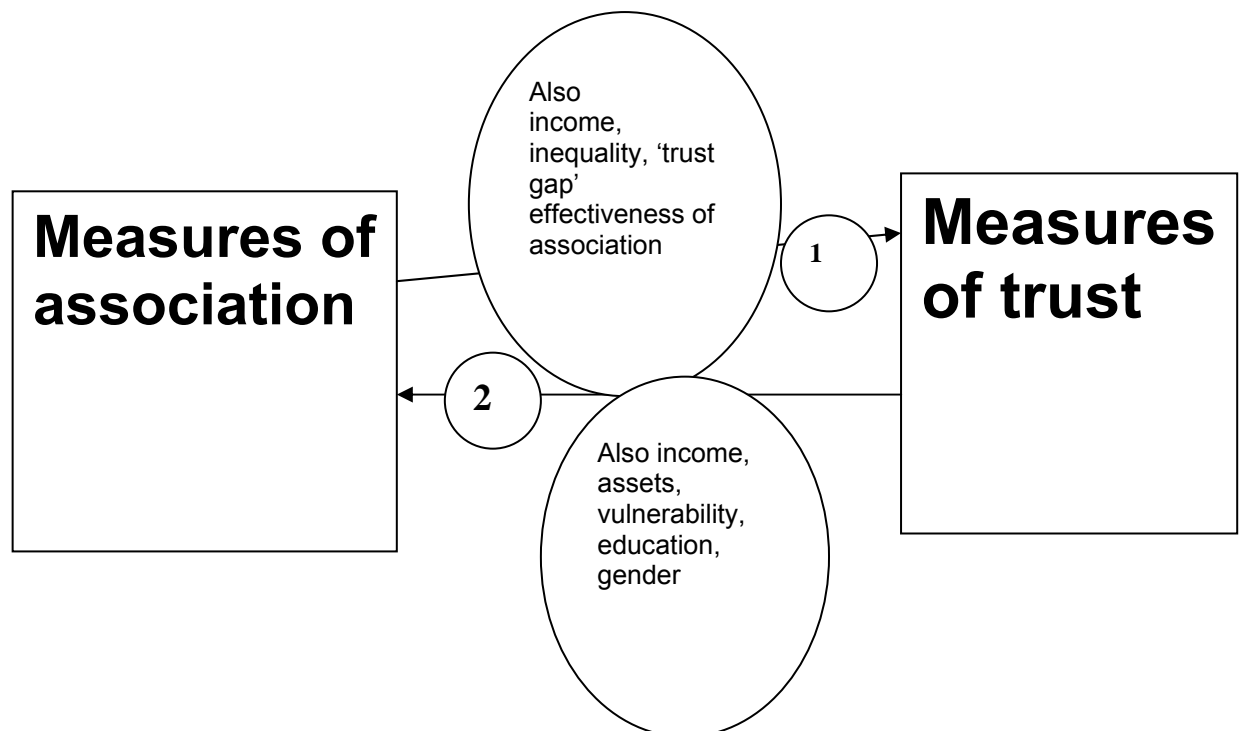
We now (Table 6.2) estimate this two-way relationship, for Uganda only, by OLS and instrumental-variables methods. 'Association' is measured as an average of 'bonding social capital' (membership of affinity groups whose membership is concentrated within the village), 'bridging social capital' (membership of associations extending beyond the village) and 'linking social capital' (social or professional linkages with government officials, NGOs and private companies). ' For 'trust' there are two kinds of estimate – a straightforward *World Values Survey-* type question about the extent to which the respondent trusts individuals within the community, and also the measures derived from the 'trust games' of Chapter 2. We shall call these, respectively, the *experimental* and the *questionnaire-based* indicators.

Within the 'trust to association' relationship, we observe a fairly orthodox positive influence of risk efficacy (assets) on associational membership for a given level of trust - in defiance of the Narayan and Pritchett view, quoted above, that social capital uni-directionally determines income and expenditure; no other variables are significant. In the relationship running in the opposite direction, the story becomes more complex. Risk efficacy is always a positive influence, robust to variations in the trust measure and the estimation procedure used. So is the evaluation of the effectiveness of group organisation and leadership: if these are ranked highly, trust increases, and if they slacken, trust falls away. Other influences vary according to the type of trust indicator selected. Female education (not male) is an important positive influence on the experimental indicator, but loses significance completely in relation to the questionnaire-based indicator. Intragroup equality, by contrast, is a significant positive influence in relation to the questionnaire-based indicator, but insignificant in relation to the experimental indicator. Perhaps most intriguing of all, the questionnaire indicator of trust is strongly responsive to what we call the 'trust gap' – the difference between the degree of trust evinced between 'members of one's immediate community' – typically the village – and 'Ugandans as a whole'. The higher this gap, the greater the rate at which associational membership converts into trust. In other words, trust within the communities of Sironko and Bufumbo is fed by *distrust* of Ugandans as a whole; trust, on this view, is not a homogeneous asset which can be infinitely extended, but rather a positional good which thrives through distrust of others – and potentially by creating distrust of others. This is not a new insight – it has been developed in relation to the Sicilian Mafia, for example, by Diego Gambetta[118] – but it has important implications for those wishing to understand trust-building mechanisms, which we develop in the concluding section.

---

[118] 'It is by offering trust *in conjunction with* discouraging competition that the mafioso ends up selling trust as… a good that one seller can consume only of other sellers do not. And this is why competition develops in harmful ways.. by throttling the market rather than letting it work freely'. Gambetta 1988, p. 172.

Table 6.2. Uganda sample: estimates of the two-way relationship, using alternative concepts of trust

Relation (1) (trust to association)

Dependent variable: composite social capital (a mixture of bonding, bridging and linking associational memberships)

Regression coefficients on independent variables:

Independent variables	OLS	2SLS
Constant	1.10 (1.03)	4.36 (0.41)
'risk efficacy' (composite asset measure)	1.94** (4.95)	1.22* (2.20)
Income	0.0005 (0.06)	4.80 (0.69)
female education	0.032 (0.004)	
trust in affinity group	0.003 (1.95)	
'trust gap' between affinity group and Ugandans as a whole	-0.004 (0.31)	
R^2	0.207	0.105

Relation (2) (association to trust)

	Measure of trust (dependent variable)		
	Trust in affinity group		First player offer in trust game
Independent variables	OLS	2SLS	OLS
Constant	**1.85**</br>(3.90)	**-0.77*** (0.87)	1692 (1.68)
'risk efficacy' (composite asset measure)	**2.57** (0.18)	**0.88*** (2.03)	307.6* (1.99)
Female education	**0.38*** (1.95)		1008.3** (2.90)
'trust gap' between affinity group and Ugandans as a whole	**0.27**** (5.17)		84.3 (0.95)
Member's evaluation of group *effectiveness*	**0.19*** (2.01)	1.39 (1.10)	58.9* (2.28)
Member's evaluation of intragroup *Equality*	**0.30**** (3.66)		-113 (0.74)
R^2	**0.36**	0.043	0.29

Some tentative policy implications thus begin to appear from the quantitative evidence so far. Levels of trust are responsive to higher levels of female education, better-functioning institutions and higher levels of intragroup equality, as well as (controversially and not yet robustly demonstrated) through creating suspicion of others. It may not be possible to create experiential trust through a market process, but it appears to be possible to create it by creating institutions in which members have confidence, as well as by institutional developments which have a bearing on education and on perceptions of equality.

However, other mechanisms are important. External agents can influence experiential trust only indirectly, but they can create incentivised trust if they are able to design incentives which reduce the costs of being exploited. As we already discovered in Chapter 2, this is not a simple mechanical process. In the experimental 'insurance game' described there, we showed that there exists a substantial demand for insurance in Sironko and Bufumbo, but that insurance elicits higher levels of trust only within the higher-income village, and that the 'effectiveness' of insurance in general is positively associated with income and negatively with social capital. We have seen in Chapter 4 that all kinds of benefits for lower income groups can be extracted from microinsurance, many of them in the form of externalities; but getting these benefits to materialise does not appear to be easy. What can be done?

In Table 6.3 we examine the influence of particular potential policy handles on our measure of the effectiveness of insurance. The dependent variable, as in Table 2.12, is the offer (the degree of revealed trust) of player 1 in the insurance game, less the mean of player 1 offers under the situation of no insurance. The effectiveness of insurance, in this sense, is responsive to female (but not male) education, microfinance membership and (without statistical significance) to extension contact. The apparent lesson from this is once again that *complementarities matter* in determining the effectiveness of assets within the anti-risk portfolio, and specifically in enabling insurance to create trust.

(elaborate DSA points, possibly with scatter)

Table 6.3. Policy determinants of experimental effectiveness of insurance

Regression coefficients on independent variables:	*Dependent variable: 'insurance effectiveness' (player 1 offer under insurance, less mean of player 1 offers under no insurance). OLS analysis; Student's t-statistics in brackets. * denotes significance at 5% level. Number of observations = 34 (i.e. those taking out insurance within insurance game)*		
Constant	-174.6 (0.87)	-116.7 (0.53)	187.5 (0.91)
Monthly household income per equivalent adult			0.001* (2.02)
Risk efficacy measure (composite asset index)	127.8* (2.20)	151.9 (1.33)	
Composite social capital (associational membership) index		-88.1* (1.95)	-75.9 (1.47)
Microfinance membership	248.4** (2.86)		
Extension access	895.4 (1.52)		
Male education	-364 (1.28)		
Female education	571.5** (2.78)		
R^2	0.282	0.126	0.141
Number of observations	26	26	26

Source: 'insurance games' 27/8/03 and 28/8/03 (for rubric see Appendix to Chapter 2)

Thus it does appear to be possible to identify some instruments which increase the possibility of being able to intervene effectively, through insurance, in the vicious circle of poverty by incentivising trust. However, this quantitative evidence is only a part of the story. What is also important is how far it is confirmed or disputed by more qualitative and anecdotal findings from our survey countries. We consider these in the following section.

4. Networks, associations and trust in practice: experiences from the case studies

Types of association

Here we explore the experiences of social capital formation in three of our four country case studies: Ethiopia, Uganda, and Zimbabwe.   The findings are based on a combination of quantitative and qualitative survey techniques. The qualitative, second, round of the survey aimed to capture in more detail the nature and relative strengths of different *forms* of social capital – 'bonding' & 'bridging/linking' (Narayan & Woolcock, 1999) – in the survey areas; and to provide insights into the incentives/disincentives for social capital formation as perceived by respondents.

In two of the case study areas, Ethiopia and Uganda, the survey also included, in addition to questions on membership of organizations and the derived benefits from membership, questions on perceived trust (Whiteley, 2000) and on expectations in times of need for a range of different groups of people both within (e.g., family, community in general) and beyond the community (e.g., local officials, public service workers, and politicians, among others). On the basis of responses to these sets of questions we have constructed a trust index for each country.   The index uses scores that reflect respondents' degree of agreement with a number of statements about each group of people that fall into three categories: perceived trust; expected assistance in times of need; and perceived honesty. The higher the index the higher the person's perceived trust (range for each group: 0 – 90).   We shall want to compare these quantitative measurements of trust with those revealed in the qualitative data.

Both the number and types of community groups/organizations found in the study areas varied enormously (see Tables 6.4 and 6.5, below) with Uganda, in our sample area, having by far the largest number (42 different affinity groups). In sharp contrast, our sample area of Zimbabwe has only seven community organizations and Ethiopia has only three. In Uganda, individuals reported memberships of up to five groups and in Ethiopia up to three. Burial societies are found in all three regions sampled, and in addition to these we encountered: community labour and farmer/business groups, in Uganda and Zimbabwe; microfinance, health and education groups in Uganda; peasant and women's associations in Ethiopia; and, perhaps not surprisingly, given Zimbabwe's serious economic decline and food crises in recent years, food aid NGOs in Zimbabwe.

Table 6.4. Number of community groups/organizations & group memberships *(Feb. 2003)*

	Number of community groups/ Organizations*	Number of group memberships:				Types of groups encountered
		None	One	Two	Three to five	
Uganda	42	11 (32%)	11 (32%)	5 (15%)	7(21%)	Burial societies(61% of members) Microfinance groups(39%) Community labour(9%) Business farmers/group associations(26%) Health societies(9%) Educational associations(22%)
Ethiopia	3			33 (97%)	2 (3%)	Burial societies Peasant associations Women's associations
Zimbabwe	7					Community labour Business and farmers' groups Food aid NGOs

* Respondents were asked how many community organizations in their own community they could name. Figures refer to total number of organizations named.
Sample size: 34 and 35 respondents in Uganda and Ethiopia, respectively

Experiences from the case studies : Ethiopia

In Ethiopia the resurvey (February, 2003) covered 35 of the 295 respondents included in the initial, quantitative (April 2002) household survey carried out in Jimma, an administrative zone in the southwest of Oromiya State.   The survey was carried out in Afeta Peasant Association, Manna *wereda* (district), using a semi-structured questionnaire, and included twenty-four of the original male respondents and eleven of the original female respondents. In addition to capturing the experiences of the different income groups and the experiences of both men and women, the aim of the resurvey was to understand the process of group formation, as discussed above, and the impact of group memberships on the ability of poor people to manage risk and/or to adopt longer-term, higher risk strategies that would support an exit from poverty. Thus, respondents were selected using a range of criteria: poverty profile, gender, engagement in agriculture, and participation in the risk exercise that formed part of the initial quantitative survey (see chapter 2)[119].

Of all of our case studies, Ethiopia has by far the fewest number of associations. Except for burial societies, which are traditional community based groups, two of the three named associations (see Table 6.5 below), the Peasant and Women's associations, moreover, are not typical of the types of groups/organizations commonly found in the literature on social capital, namely, bottom-up civil society organizations, but rather government- imposed mass organizations created under the Mengistu regime (1974-1991) in the latter part of the 1970s. The relative absence of civil society groups in the study area may, in part, be explained by the regime's simultaneous, and at times brutal, suppression of indigenous NGOs, a characteristic common to the now defunct communist regimes of that time.

Spontaneous social capital formation from below: the burial society

As Table 6.5 shows, the type of organization perceived by all respondents as the most useful to the community, and the one that all respondents reported being a member of, is an '*Edir*' (burial society). According to informants there are three burial societies in the survey area, although none of the respondents reported being a member of more than one society.   Burial rituals in the study area, as elsewhere in Ethiopia and in Africa generally, are fairly lengthy and very costly affairs. In addition to the cost of the burial, which also includes a contribution to the church, immediate family members of the deceased are expected to provide food and drink to guests throughout the mourning period, which begins on the day of the death of the deceased and continues for fifteen days thereafter, during which time the number of mourners - including relatives and friends of the deceased, many of whom travel long distances to come and pay their respects, as well as community members - can run into the hundreds. Long-staying guests are typically housed in a tent set up specifically for this purpose. Burial societies

---

119 The composition of the sample was as follows:

	Male Respondents	Female Respondents	Total
Ethiopia:			
Sample:	24	11	35
Poverty profile Grp 2	8 (33%)	3 (27%)	11 (31%)
Poverty profile Grp 4	16 (67%)	8 (73%)	24 (69%)
Engage in agriculture	24 (100%)	11 (100%)	35 (100%)
Participated in Risk Exercise	17 (71%)	2 (18%)	19 (54%)

Notes: The poverty profiles refer to a poverty profile index based on the household's imputed income and imputed asset values. Poverty profile Grp 1= income and asset poor; Poverty profile Grp 2 = income poor, asset rich; Poverty profile Grp 3 = income rich, asset poor; Poverty profile Grp 4 = income & asset rich

Table 6.5. Ethiopia sample: membership of community organizations

	Male Respndts (%)	Female Respndts (%)	Total Sample (%)
Sample size:	24	11	35
How many community organisations can you name?			
One	46	55	49
Two	42	18	34
Three	13	27	17
Name of Organisation(s)?			
'Edir' (burial society)	100	100	100
Peasant Assoc.	54	45	51
Women's Assoc.	13	27	17
Which organisation is the most useful to the community?			
'Edir' (burial society)	100	100	100
Do you belong to any community organization?			
'Edir' (burial society)	100	100	100
Peasant Assoc.	54	45	51
Women's Assoc.	-	18	-

are a traditional, informal, form of insurance which members are able to draw on in the event of the death of a family member. If this insurance works, it creates what we have called 'incentivised trust': the costs of a death become controllable, one important potential cause of mistrust is thereby removed, and membership of the association creates the possibility of better knowledge of members of the immediate community.

Within *edirs,* member contributions, as illustrated by Table 6.6, are a combination of cash, labour and food. Cash contributions are in the form of an annual fee, while labour contributions, outside of the time spent on attending meetings, are specific to the burial ritual and are gender specific: with men responsible for the digging and preparation of the grave and for the preparation of the 'house' (i.e., putting up the tent) for the mourners; while women, in addition to contributing to the preparation of the house, are mainly responsible for the preparation and provision of food. In addition, members may draw on the group for cash contributions to help cover additional burial expenses.

Table 6.6. Ethiopia sample. 'Edir' (burial societies): perceived benefits and types of investment

	Male Respndts	Female Respndts	Total Sample
Total Sample:	24	11	35

Why joined/What are the benefits to you?

Members help each other when someone in the family dies: they dig the grave & provide food & money to cover the family's expenses (%):	100	100	100

How often do they meet?

Once a year (%)	13	18	14
Twice a year (%)	33	27	31
Three times a year (%)	17	-	11
When necessary (%)	38	55	43

How often do you attend meetings?

Once a year (%)	8	18	11
Twice a year (%)	33	27	31
Three times a year (%)	17	-	11
When necessary (%)	38	55	43
When I can (%)	4	-	3

Do you have a particular role in the organisation?

No particular role (%)	96	100	97
I am a 'messenger' (%)	4	-	3

Do you participate in any decisions made by the organisation?

Participates in decision on membership fees (%)	100	100	100

What do you contribute to the organisation (fees, labour, other)?

Fees & labour (%)	100	100	100

Cash contributions to the organisation

12 birr per annum (%)	92	-	63
'We/my husband' pays 12 birr per annum (%)	-	73	23
10 birr per annum (%)	8	-	6
'We/my husband' pays 10 birr per annum (%)	-	27	9

Labour contributions to the organisation

Dig & prepare grave for burial & prepare the house for mourners (%)	100	-	69
Provide (cooked) food & drink & prepare the house for mourners (%)	-	100	71

A notable feature of the study area is the absence of capital markets, a legacy of Ethiopia's fifteen-year-long command economy (1975-1991). Although the

post-1991 government's liberalisation policies have made significant progress over the past decade, capital markets remain in their infancy. Given the absence of formal insurance mechanisms in the study area, traditional burial societies provide members with short-term protection during times of need. But, in addition to the risk management benefits of group membership, these groups also reinforce community solidarity and are, thus, important forms of what Narayan and Woolcock (1999) term as 'bonding' social capital:

> " No one wants to be alone at such times, members not only share times of joy, they also share the times of sorrow"
> (Female respondent, Ethiopia interview no. 199).

Members of *edirs* jointly determine the annual subscription, which reduces one obvious source of potential conflict and enables participation by all in the key pricing decision.

Social capital formation imposed from above: women's and peasant associations

In sharp contrast to the community based burial societies, Peasant Associations and Women's Associations are government -imposed mass organizations whose origins date back to the mid- and late 1970s, respectively. Peasant associations, Ethiopia's lowest unit of rural administration, are the creation of the Mengistu regime and were initially perceived as mechanisms for implementing that regime's pro-poor land reform of 1975 and for mobilising support for community based development initiatives. In the form in which they were initially conceived, the peasant associations had great potential for supporting the formation of various forms of social capital; however, this potential was soon eroded. By the early 1980s the (in theory, locally elected) peasant association committee members had become little more than executives of the state responsible for implementing state levies and state imposed crop quotas, and for what can arguably be seen as functions designed to totally undermine social capital formation, namely, the implementation of state designated conscription and resettlement quotas. At the same time, the extensive powers given to the peasant association leaders led, in many instances, to their corruption and the abuse of power.

When the Mengistu regime fell in mid-1991, it was determined not to dissolve the peasant associations, but rather to give them greater autonomy, and the role for which they were initially created has been more or less been restored. Committee members are now paid a salary in an attempt to eliminate a repeat of the corruption of the 1980s. In addition to the task of land redistribution (in theory, land redistributions are carried out every three years, but as we shall see below, this practice has been eroded in some areas) the associations are responsible for maintaining peace and stability and, in particular, for implementing community development projects.

Given the recent, chequered history of Ethiopia's peasant associations, membership *per se,* and compulsory membership in particular, is not a very helpful measurement of social capital. If anything, the lessons for social

capital formation of the 1980s highlight the importance of good, effective leadership (what we have called 'charismatic trust') together with the leadership's willingness and/or ability to carry out its designated tasks.

We now examine the level of trust among community members, and relate it to earlier analysis. In Table 6.7 we present the community trust scores for different income groups. What the data show, first, is that, *irrespective of income status*, there is a significant level of trust within the community: as already observed in Table 6.1, there is only a loose correlation between income levels and trust scores, and what changes as income increases is the type of association rather than its intensity. While the data suggest, in Ethiopia as in Uganda, that wealthier members are less likely to have low levels of trust in the community than poorer members, they are just as likely to have high levels of trust. The social capital-depleting effects of the corruptive practices of the associations' leaders in the 1980s, during which poorer community members bore the brunt of the leaderships' abuse of power, while wealthier community members were able, through bribery, to accumulate larger landholdings and to avoid conscription and/or resettlement, would appear to have been largely redeemed.

Table 6.7. Ethiopia sample: level of trust in members of own community by poverty level

Poverty Profile	Level of Trust (% of sample within income group)		
	Low	Medium	High
Low income (high assets)	45.5%	9.1%	45.5%
High income (high assets)	25.0%	25.0%	50.0%

<u>*Notes*</u>*:* **The low, medium & high percentiles on the scores for community trust are: 0-25, 26-50, 51-90, respectively; the possible range of community trust scores** was 0-90

However, a further determinant of social capital formation – the 'feedback loop' in Figure 6.3 - is the ability of the association to deliver the expected benefits of membership. As we saw, a major function of the association, and one that benefits the whole community, is land redistribution. In theory, land is to be redistributed on a three-yearly basis to accommodate newly formed households. Among the several findings of the initial, quantitative survey is that land reallocations in the study area have long since fallen into abeyance, forcing households to revert to some or other diluted/distorted version of 'traditional' tenures based on partible inheritance and subdivision of holdings, often resulting in the pitfalls commonly associated with such systems: shrinking landholdings to a level too small for adequate livelihoods and increasing landlessness, especially among young, newly married men. According to the peasant association committee informants an estimated 35% of households have no land. The problem is one of land shortage; the association has long since exhausted its land fund:

> The main problems of land in this peasant association come through the extreme increase in population. When these young men get married they will share the land of their family, to build a house and have some small farming land. They all earn their land by sharing from their parents. For this reason some people must migrate to the nearest town. This way of sharing land started long ago and is still going on. You can imagine the future for these young men after a couple of years."
> (Interview, Feb. 2003: Mohammed Sanu Aba Giad, Afeta PA committee member)

That the association is no longer able to provide members with the main perceived benefit of membership, access to land, would explain why none of the respondents perceived it as being the most useful community organization, and why a significant number of them didn't even mention it when asked about the community organizations they could name (see Table 6.5, above).   It may also explain the reported lack of investment (see Table 6.8, below) in the association on the part of several respondents. As argued in the previous section, members' evaluation of the added value they were getting from their associations plays an important part in determining the trust they generate. While some members reported making cash and/or labour contributions, other members did not make any investments. While lack of investment in the association may reflect the ability of members to contribute, a more likely explanation would appear to be that the perceived benefits of investment are few and are likely to benefit certain households more than others.

 As Table 6.8 shows, for male respondents the main perceived benefit of membership is access to agricultural extension services. However, we need to compare this finding with those of the initial (April 2002) survey, which showed that none of the 295 households included in the survey used the extension services; in all cases the cost of the extension package was reported to be prohibitive. This suggests that access to extension services is likely to benefit wealthier community members.   At the same time, allowing for the possibility that the uptake of the extension package on the part of some community members may result in increased labour demand, provision of extension services will have no direct value to the increasing number of landless community members. It is also revealing that most of the female respondents saw no benefits to be had from membership. In other words, this is a form of social capital whose direct effects on *individuals* , as widely expressed to us in interviews, are unlikely to be pro-poor.   However, we need also to set against these differentiated benefits of membership, the community -wide benefits to be had from the association's community development initiatives. These activities, as also illustrated by the table, focus on the development of community infrastructure, cleaning wells, repairing roads, which clearly have welfare benefits for all community members.

There is clearly a significant level of trust within the community, which suggests that the peasant association clearly has the potential for supporting social capital formation. However, a major constraint, and one potential source of intra-

Table 6.8. Ethiopia sample. Peasant associations: perceived benefits and types of investment

	Male Respndts	Female Respndts	Total Sample
Sample:	13	5	18
What are the benefits to you? Gives advice on crop diseases & Provide agricultural inputs (fertilizer, seeds) to farmers (%):	58	27	49
Mediates between the people & the Government/collects land taxes (%):	17	36	23
They 'do nothing, just talking politics' (%):	25	36	29
How often do they meet? When necessary (%)	100	100	100
How often do you attend meetings? When necessary (%)	100	100	100
Do you have a particular role in the organisation? No particular role (%)	100	100	100
Do you participate in any decisions made by the organisation? Electing committee members (%)	100	100	100
What do you contribute to the organisation (fees, labour, other)? Fees & Labour (%)	17	-	11
Labour (%)	21	-	14
Don't contribute anything, just attend meetings (%)	17	45	26
Cash contributions to the organisation 12 birr per annum (%)	17	-	11
Labour contributions to the organisation Clean wells/repair roads (%)	38	-	26

community conflict is the land issue. Evidence from the initial survey shows that this may already be becoming a problem, with neighbours encroaching on each other's land. As one respondent reported in response to the question: 'If you had a crisis who would you turn to for help? Can you give us an example?':

> I had a big problem with my neighbour, he had taken some of my land. In the end I had to call the peasant association committee and they resolved the dispute." (Male respondent, interview no. 289)

The Zenawi government, although unwilling to concede to donor pressure to privatise rural lands, does recognize the need to deal with the land issue, but has yet to take any clear line of policy, preferring to leave any decision on this (highly sensitive) issue to the individual State governments.   However, as our findings show, rural community members do need security of tenure, and the issue of landlessness clearly needs to be addressed. These issues cannot, of course, be resolved in the abstract. What is needed are detailed investigations of the actual workings of the country's, clearly complex, land tenure systems. The current fudging of the land issue is likely to undermine the potential of peasant associations to support the formation of social capital.

Case study 2: The quest for social credibility among the Gisu in East Uganda

In October 2001, we interviewed 297 farmers in Mbale, Uganda (146 in Sironko district, 151 in Bufumbo district) on a variety of issues relating to labour supply and demand, agricultural innovation, and intra-household decision-making processes. Of these, 205 (109 in Sironko and 96 in Bufumbo) subsequently participated in experiments that assessed their attitudes towards risk-taking, including the taking of risks with investment in other people (see Chapter 2 for a description of these experiments). When analysing the data, we were struck by the observation that a substantial group of relatively *poor* farmers achieved relatively *high* yields on their land. Furthermore, an analysis of their attitudes towards risk confirmed that these farmers are remarkably risk-*seeking*, at least when compared with their peers; the link between income and risk-taking is weak, as previously observed in Chapter 2.

We therefore conducted a re-survey in February 2003 (in Sironko only) among a sample of this particular group of farmers, as well as a control group, with the aim of establishing the role of social capital in their risk management strategies: firstly, whether the tendency to form networks can be explained as an attempt to provide an insurance against risk , and secondly, whether networks (both formal and informal) actually do provide some type of insurance and induce more trusting attitudes, as a result of which members would be more willing to undertake the risks involved in entrepreneurial behaviour, or in this case to invest in high-yielding – but costly – agricultural innovations.

We stratified the sample as follows: half of the respondents should be poor in at least one dimension (income or assets), and half of them should belong to the group that achieved remarkably high yields (defined as one standard deviation higher than the mean yield)[120]. The high proportion of female

---

[120] The resurvey sample in Uganda was composed as follows:

	Male	Female	Total
Sample	13	21	34
Engaged in agriculture	13 (100%)	21 (100%)	34 (100%)
Poverty profile: Income and asset poor	1 (8%)	7 (33%)	8 (24%)

respondents (21 out of 35) is *not* a result of stratification, but of the fact that well-performing farmers are often women – as further examined in Chapter 7. These 34 respondents were interviewed at some length about involvement in community organisations and benefits derived from these. We also traced as many participants in the Sironko risk experiment (Chapter 2) as we could (83 out of the original 109), for a short interview on trust.

The story that emerges from our data is that of a society characterised by deep-rooted patterns of distrust, and in which a proliferation of voluntary associations attempt to regulate individuals' behaviour, which people join in their large numbers in the hope of overcoming the distrust that plagues their interactions with their neighbours: that is, people join such organisations to represent themselves as trustworthy and to find others willing to commit themselves to trustworthy behaviour. Sadly, such associations become the location for fear of exploitative behaviour, and (because people pre-empt expected abuse of trust by themselves abusing trust – a classical manifestation of the Prisoner's Dilemma) of actual exploitative behaviour. Paradoxically – and here a sign of hope emerges – associations that fulfil a traditional, ritual function yield more economic benefits to their members than associations *designed* to yield economic benefits. The reason seems to be that in the former type of association people are not afraid of their fellow-members, as a result of which fruitful economic co-operations arise as it were *spontaneously*.

The story can only be told well when we take a historical perspective that is cast back over a sufficiently long period of time. Whereas the appalling lack of trust among the Gisu in Mbale has been attributed to the dark years of the Amin and Obote regimes of the 1970s and 80s (Evans 1996), we are more inclined to take Heald's (1998) lead and see its roots in the collapse of long-established forms of authority and administrative structure in the rural areas of Uganda in the immediate aftermath of the colonial era in the early and mid 1960s. The vacuum of power left by the colonialists was filled with lawlessness and violent crime: Bugisu's homicide rate between 1964 and 1968 was among the highest in the world (only topped by Colombia). So when Amin in the 1970s made robbery a capital offence, and instituted public execution of thieves, the Gisu applauded the measure, seeing Amin's programme of discipline and control not as something wholly unsavoury, but rather as a necessary evil, because radical times call for radical measures (Heald, 1998, p. 229).

The Gisu themselves also took drastic measures: they responded to the problem of endemic crime with vigilance committees and drinking companies (actually companies that regulate, not promote, their members' drinking,

Income poor, asset rich	1`(8%)	1 (5%)	2 (6%)
Income rich, asset poor	3 (23%)	2(10%)	5(15%)
Income and asset rich	8 (62%)	11(52%)	19(56%)

Note: Poverty profile Grp 1= income & asset poor; Grp 2 = income poor, asset rich; Grp 3 = income rich, asset poor; Grp 4 = income & asset rich

because of a perceived connection between alcoholism and violence), which adopted a stringent code of discipline to repress perceived causes of crime. The key to understanding why members of a tribe marked by a (by African standards) strong sense of individual autonomy voluntarily joined organisations that severely restricted their personal freedom lies in their huge need to overcome a destructive pattern of suspicion, outrageously unfounded vilifications, and consequent violence. A longish quote may help appreciate how draconian the rules were that members of drinking companies submitted themselves to in order to show themselves trustworthy, in return for which they could expect others to be trustworthy:

> The 'discipline' was the most important and indeed the prime reason for forming the groups. The main rule was a ban on all talking without the express permission of the *asikari* (policeman), and even all conversation had to be directed to the whole company. In other words no one was to make a noise, talk out of turn, or even worse, whisper secretly to his neighbour. Nor was more than one person at a time allowed to leave the room in case they took that opportunity for conspiring together. The *asikari* reigned supreme in another sense also, for only he was allowed to reprimand another. Any offence against the 'discipline' was punishable by the *asikari* who could confiscate the man's beer-tube[121] and place it in his 'prison', or for repeated infractions send the man home. With regard to the *asikari*'s prison most groups adopted the same procedure. A string was tied across the room with a number of loops attached. At one end a man could tie up his tube if he wished to leave the room, safe in the knowledge that no one could secretly place poison in it while he was gone. The other end was marked by a red flower or sometimes by a red Sportsman cigarette packet and this was the *asikari*'s prison.' (Heald, 1998, pp. 232-33)

Suzette Heald, who conducted extensive fieldwork in the area over a large number of years, regards the vigilantes as African mafias: she sketches a convincing parallel with the mafia in nineteenth-century Sicily. Together with the drinking companies (there are strong links between the two) they succeeded in creating a totalitarian order with an inordinate respect for rules. Homicide rates did *not* drop, but killings were now regulated: the vigilantes set out to purge their society of those held responsible for chaos, crime, confusion and insecurity: alleged witches and thieves. The solution became part of the problem, or in Heald's words: '[t]he problem in Bugisu combined the need to create a community in the sense of re-establishing the personal boundaries of co-operation and trust with the need to cleanse it' (1998, p. 251).Problems generated by deep levels of distrust, especially when so violent in nature, are persistent: the trauma painful enough to be felt throughout the decades to come, even after the authoritarianism and fear of the Amin/Obote years had receded. For example, in January 1995, a Ugandan newspaper reported the killing of 36 alleged sorcerers in the Bulucheke sub-county of southern Bugisu: 'the victims, who were aged between 50 and 80 years, were hacked to death between January 16 and 22 by an angry mob of youths who accused them of witchcraft. They were also accused of practicing sorcery which prevents the elite from getting employment and making youthful girls barren' (quoted in Heald, 1998, p. x).

However, as in Ethiopia, from the late eighties onward, the authoritarian and male-dominated pattern of association that had characterised the Amin/Obote years began to be overlaid by a more

---

[121] Arjan: footnote please, to describe Gisu drinking rituals..

diversified pattern of voluntary association, in which women took a larger role, both in single-sex and in mixed groups. The groups in which people became involved are listed in Table 6.4: burial societies and women's and men's agricultural workgroups expanded in scope and were joined, from the late 1980s on, by microfinance groups and health and educational associations. Our respondents' motivations to join the many associations that litter Sironko (as shown in Table 6.4, we counted 42 different associations among our respondents alone) still have to do in part with a display of self-restraint designed to gain the trust of others [122], which in the long run may gain economic benefits but is the short run is also designed to obviate the risk of being killed. One respondent (41) offers that now that he has joined a co-operative society, 'there is no reason why I should get violent, but rather, my mind is filled with development plans'. Another respondent (42) also suggests that his previous problematic drinking and violent behaviour has now been replaced by the 'income generating activities' of the group he has joined. Respondent 56 expresses relief at the presence of associations (which she links with government initiative and propaganda) concerned with its members' development: 'Most of the people were not informed about what was taking place in their own areas, but since the media, especially radio, came into existence, people are more concerned about developmental issues and not causing chaos in their areas. As a result the government is bringing projects close to people and this has reduced the violence as people are preoccupied with some work'. In other words, people use the act of joining a voluntary association to signal that they can be trusted as working colleagues; and, as we have seen, the outcome of the 'trust game' within the voluntary association, and the ability of individuals to mitigate the risks they intend to mitigate, depends on the response of others to their gamble. To illustrate the range of possible responses we may now consider three cases which will be developed in the next section:

(i)   *Growth of experiential trust: initial trust rewarded without material incentives.*

Interviewee 10065 in 2000, the year after taking out his Centenary Bank loan, had an income of $65/month. Most of his loan was invested in land purchase and cattle trading, and he expressed the main benefits of it in terms of his children's improved standard of living: 'Since I began getting loans, I can't remember a time when I was not in a position to attend to a sick child. (But) the main change in my standard of living is that I can afford to buy my children a new school uniform every year.' However, a part of the loan was used to pay the subscription fro the Bulako Farmers' Group, which was then used as an emergency-loan facility. 'The group assists me if my crop is not ready and I have to service a loan. I then pay back later (without interest)'. Having

---

[122] Some drinking companies developed over time into rotating credit organisations (but they do still exist in their original form, and some of our respondents belong to these). Many of the earlier groups had started on a non-monetary basis, but already 'by 1968 most had adapted the rotating system of beer-brewing as a way of making a lump sum of money for each member in turn. […] Many companies started a loan system from their communal funds at the same time.' (Heald, pp. 232-33).

committed himself to the farmers' association, he felt that it was able to give him support through both official and unofficial channels.

> (ii)   *Growth of incentivised trust: initial trust rewarded with material incentives, often provided by 'exogenous' intervention*

(FINCA) interviewees , whom we have already encountered in chapter 4, claimed that since they had joined the Nsambya Hospital insurance club their expenditures were more predictable, so that they were less vulnerable to sudden shocks. Respondent 20 stated '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'. 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 (having to)
borrow 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'. Common to all these cases was a reduced fear of having to place oneself in a position of being exploited by others, which made possible increased trust in them.

> (iii)   *The downward spiral*

But when the problem is one of overcoming persistent distrust, attempts at solutions to it may either alleviate or aggravate the original problem. Patterns of suspicion and un-cooperative or outright dishonest behaviour may be repeated and thereby made more intractable within the very associations that exist to break them. Sadly, if there is a common theme among respondents' evaluation of the group they have joined, it is that it has taught them that people cannot be trusted. Here is but a handful of the many sadder-but-wiser respondents:
>> - 'Sometimes people come together to form groups that can help each other in weeding; but often weeding another member's garden she will feign sickness when it is another's turn. More so, we have our small group where we pool our small funds so that after one week we give each member a certain fee. But the group seems to be crumbling because of lack of trust whereby when one receives his money, when it is another one's turn she claims that she's broke. So quarrels become the order of the day. […] Most members have pulled out of the club, with ill feelings towards those who received the money and failed to pay the others. So the enmity becomes permanent'. (118)
>>> - 'In 2001, a group called Salikwa Poverty Scheme was created, but our leader by then disappeared with the little money that we had collected as membership. Therefore such tendencies among people are the leading cause for lack of trust'. (47)
>>> - 'People are cheats! They run away with other people's money'. (8)

The formation of social capital in a traumatised society is a highly complex exercise, and it must be said that the (donor-inspired) Ugandan government's stab at it is not necessarily helpful. It is perhaps not fanciful to term the Gisu's

tendency to join the groups that government propaganda urges them to join, 'pathological'. The analogy that comes to mind is that of the film Fight Club in which the main character attends meetings of groups such as Alcoholics Anonymous, Narcotics Anonymous, Sex Addicts Anonymous, and countless other organisations, with members of which he develops countless relationships: but his obsessively doing the rounds of emotionally draining meetings is a relentless search for meaning and belonging, which – so his delusion tells him – he may find in these groups, but which leave him exhausted. The Gisu, who feel unsafe where they live[123] , hope to find trust in the associations that they join, but the nature of these associations is such that for their effective functioning they *require* a sufficiently high *pre-existing* (or institutionally incentivised) level of trust, in the absence of which the belief that others cannot be trusted does not get replaced with a more positive belief, but gets reinforced.

Constructing a measure of social capital based on the incidence of membership of community organisations may therefore be misleading. It must be telling that the farmers who inspired our re-survey, those who despite their poverty do remarkably well on their (often small plots of) land, and of whom we hypothesised that they would more than others benefit from such organisations, steer more than others clear of them [124]. Our data are not conclusive, but in the light of what we know, it is tempting to speculate as follows. Ugandan farmers have retreated into subsistence as a result of the destruction of the physical, social and legal infrastructure of the recent past (Larson and Deininger 2001). Whereas some farmers have started to look for a way out of subsistence-farming through joining associations that promote market participation, others retain their exclusive focus on subsistence. It may be surmised that, because of a large-scale failure of co-operative behaviour within associations, the net effect of joining some of them (benefits from membership minus opportunity costs of time foregone in farming) is negative. It is not a kind thing to say about enterprises fuelled by good intentions, but for the time being their main achievement seems to have been to distract their members' time and attention from their core business.

---

[123] Note from the following table, derived from our 2003 survey, how little people are trusted who live nearby, compared to the reference category of 'own family':

Would you say of the following groups: most of them can be trusted, or you can't be too careful in dealing with them? (% of respondents, N = 83)

	Most can be trusted	Can't be too careful
Own family	95.2	4.8
Own village	48.2	51.8
Village 10 km away	6.0	94.0

[124]. **Mean crop yield (kilos of maize/hectare), various groups (source: 2003 survey, N=36) For reference, the average all-Africa maize yield is about 1000 kg/ha.**

	Members of groups with a ritual function	Members of groups with an economic function	Non-members	N
Income or asset poor	1440	1200	1464	17
Income and asset rich	2120	1588	1795	19

To end on a more positive note, it should be pointed out that groups that fulfil a traditional, ritual function (burial societies) *do* bring economic benefits, that is benefits for which they were not created. This leaves us with the paradox that among the Gisu social capital is only truly *capital* (i.e. an investment in it yields a positive return) when it is truly *social* (i.e. has not been created with the express intention of reaping economic rewards). What follows is again speculation, but it just may be that levels of distrust among the Gisu are such that profitable co-operative behaviour has little chance of succeeding in situations where there is a perceived opportunity for *more profitable* un-cooperative behaviour, because the Gisu will reason that their fellow Gisu are bound to abuse them, for which reason it is wiser to abuse them first; but once the motive is removed, once that is, a situation is created in which people do not come together in order to make a joint profit but for something else, profitable co-operative behaviour may arise spontaneously.

Case study 3: networks, associations and trust in Zimbabwe

In Zimbabwe, we interviewed 20 individuals, 18 of whom were in the original survey and the other two were members of survey households. These interviewees came from the communities of Chitekwe and Gurure (in Mutoko district) and Zvamapere and Madzivire (in Chivi district). In Mutoko and Chivi as a whole, the interviewees were located in the following poverty-profile groups:
1 (income and asset poor): 4
2 (income rich and asset poor); 2
3: income poor and asset rich: 2
4: income and asset rich: 2
In Mutoko five interviewees, and in Chivi four, were from female-headed households.

The qualitative evidence which we have is consistent with the general hypothesis that social capital tends to decline under economic stress, and that the causation is explicitly from economic conditions to social capital rather than the other way about (as, for example, in the interpretation of Narayan and Pritchett). Our principal example is the case of communal labour (known as *nhimbe* in Shona) under which arrangement

a group of 4-6 people weeds a member's field for an agreed-upon period, say approximately three hours in the morning. They will go to a different member's field in the afternoon to work for the same number of hours. No food is given to the members as they carry out the task. This has had the effect of speeding up weeding, resulting in a good crop (usually maize) in the fields' (interviews, Chitekwe, April 2003).

 It also, in principle, enables households to plough a larger area and to cope with labour demands. Nonetheless, both in Chitekwe and in some cases in the Chivi area as well, most informants said that community labour was on the decline under the stress of individual needs for cash (and in some cases lower yields due to drought). While a decline in reciprocity was only mentioned by one informant in the individual interviews, the cluster interview report suggested that 'some people have failed to reciprocate the favour extended to

them when it is time for them to do so. The system works on good faith and is prone to the risk of a free rider problem. Many people fail to honour their obligations due to jealousy. In the remaining villages, there were pockets of some households who still practise it. However, the majority say people now want money and cannot continue to work for what they regard as 'charity' (interviews, April 2003). Many informants ascribed recent declines in yields and in sown area to the this decline in communal labour.

The other dimension of social capital examined was the level of demand for participation in organisations and associations in the communities, which was of particular interest given the proliferation of NGOs on the supply side in Zimbabwe's current drought and economic crisis. There was strikingly more participation in such organisations in Mutoko (16) than in Chivi (6)[125]. The contrast was thus put to us by one of the cluster interviews:

'In Mutoko district, the Zimbabwe Farmers' Union has a bigger membership and most farmers are getting agricultural information and extension advice. The organisation charges a membership fee of $Z200 per year for each household [hard for poorer members to afford – P.M.] ZFU is hardly in Chivi. Its activities are not as visible as they are in Mutoko, most probably because Chivi is further away from the Union's head offices in Harare or because Chivi is less productive agriculturally than Mutoko. Most of the farmers in Mutoko are active members, who attend provincial shows, receive equipment, and tax concessions. In Chivi [by contrast] Madzivire had hardly any associations. Only Care International Zimbabwe was active in the area distributing food relief. People do not have time to participate in group activity or associations because this is a commercial area where people spend most of their time selling their wares at Ngundu junction, a focal point for long distance buses and heavy trucking vehicles on their way to South Africa or Bulawayo. Buying and selling is a vibrant business which chews up most people's time.' (JIMAT testimony based on interviews, Chivi and Mutoko, April 2003).

The final trend observable in Zimbabwe is a shrinking back from promotional 'bridging' and 'linking' to 'bonding' forms of social capital (Figure 6.3 above) - and to the ultimate form of bonding social capital, namely the family - as the crisis deteriorated. Although the NGOs World Vision and Care International, as we observed above, have been playing a key role, individual informants identified their families and relatives as their main source of help and the people on whom they most rely. Neighbours also featured, as did the kraal-head in three cases.

Thus, over time, the trajectory which we observe in Ethiopia and Uganda is of a partial recovery of extra-family trust, especially at the bottom end of the income scale, from very low levels caused by oppressive government and a partial breakdown of civil order at the local level; in Zimbabwe the reverse, with a weakening of communal labour and involution from promotional forms of social capital into protective ones as the crisis deepened.

Table 6.9 pulls together the threads of the story so far. Although perceiving the dangers of exploitation, individuals gravitate towards membership of

---

[125] According to our interviews, most participation in voluntary associations in Mutoko came from the poorest group; but this apparent involvement of the poorest group in leadership positions is highly deceptive, since some individuals had prominent roles in more than one association.

associations as a risk-management device especially if any of the processes described earlier as favouring experiential trust (democratisation of organisation; equalisation of perceived well-being..) is working over time in favour of increased trust, as it was in Ethiopia and Uganda; indeed, in Mbale, Uganda, there seems to be an adverse selection problem, with the weaker individuals gravitating towards the groups which they think will protect them, and the stronger ones fighting shy of involvement. In Uganda, as we saw, individuals joined associations as an opening bid intended to signal their intention to resolve differences by non-conflictual means, rather than court the dangers of a conflictual solution. From then on, the development of trust appeared to be favoured by: charismatic *leadership; institutions* capable of providing insurance against financial or interpersonal shocks; and most of all, satisfactory *performance* (rate of return on social capital) in relation to what was expected. 'Positive feedbacks' such as demonstrated loyalty, better-than-expected performance and the ability to extend public action into new fields (see next section) entrench the development of trust; evidence of exploitation and underperformance (see Zimbabwe case study) depletes it.

Table 6.9. Summary of interim findings on social capital formation

	Factors favouring group formation and investment within group	Factors favouring *development of trust* within association	Factors favouring *effectiveness* of association (multipliers and feedbacks, especially into poverty reduction) Nb. Ch 5 for MF groups
Qualitative findings (from section 4 above)			
Ethiopia: Edir (burial society)		Ability of *edir* to provide solidarity and consolation(see respondent 199 above)	Ability of *edir* to provide insurance against income shock, providing incentivised trust
Peasant association	Self-management (see page xx above)	Leadership, favouring development of charismatic trust (see page above)	Ability of association to resolve land disputes (see respondent 289 above)
Uganda			
Burial societies			
Microfinance groups			Ability of borrower to use loans flexibly in particular for children's welfare (see page xx above)
Microinsurance groups		Improvement of relations with supplier (see Chapter 4 above)	Ability of group to stabilise income and release scheme member from exploitative relationships.
Farmers' associations		Leadership, favouring development of charismatic trust (see page above)	Ability of borrowers to take emergency loans as well as advice (page xx above)
Quantative findings (from table 1 above)			
All groups (regression findings)	Assets (India, Uganda)	Male gender (Ethiopia) Effective group leadership, within-group equality(Uganda)	See Table below

		Insurance facilities (Uganda, Bangladesh)	

For the present there are two further possible impacts of social capital that we wish to demonstrate. In the first place, it switches between groups, as resources earned in one activity are reinvested in another one: for example respondent 10071 used resources from a microfinance loan to join a women's brewing group, 10084 to join the Bulako Farmers' Club, and 10065, who as we have seen also joined this group and used it as a source of emergency finance, joined a burial society. In the second place, it switches between activities, as groups established for financial purpose broaden their activities into fighting for better educational standards in schools (testimony of 10045), or better conditions in local hospitals (10046) or reduction of corruption in local government (10084). Several of the factors which we have earlier cited as likely causes of social capital formation, such as leadership and group cohesion, also seem to determine the rate at which groups 'multiply' in this way.

Thus individuals monitor groupings for the 'quality of service' they are getting from them, and withdraw from, or develop, their participation in those groupings in the light of that information. On Figure 6. 4, the better to understand how this process fits into the broader activity of risk management, we have depicted the trajectories of three of the Ugandan respondents quoted above. These are:

(i)   10065 –investment in social capital from microfinance initially visualised as risk avoidance, positive feedback from group, respondent now working to extend the activities of the group into new areas, which involves some increase in risk.

(ii)   10071 – female brewer, joined farmers' group to help her out of a personal crisis (abandonment by her husband and low harvest at the same time), positive feedback from group membership, but (being at a lower level of income) steers the group in a risk-avoiding direction.

(iii)   The individual depicted on page 33 above – who committed himself to the ill-fated Salikwa Poverty Association, extracted himself on discovering he had been exploited by the leader of the association, and reverted to his original with reduced levels of trust.

Figure 6.6.. Investment in social capital,:the 'feedback loop'

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 4). 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..

6. Analytical and policy implications

Definitions and causal processes

We have indeed discovered plenty of evidence to support the general proposition that social capital, or 'community governance', is an important factor in development , redressing the risk of market failure and the relief of poverty. However it is not, for the most part evidence with an unambiguous message either for analysis or for policy. We would attempt to summarise in the following way:

- Social capital can be conceptualised both as association and as trust, and these interact both with one another and with the level of well-being; in general, when the general level of assets is growing (as in Ethiopia and Uganda) levels of association and trust increase and the favoured type of social capital changes (becoming more 'promotional' and less 'protectional'). When the general level of assets is shrinking, as in Zimbabwe, these processes are thrown into reverse and individuals fall back on those intra-village bonding links that they can draw on.
- Social capital can indeed be seen be seen as a stock of relationships on which people can draw, but these relationships are not necessarily additive nor even 'productive', as has been pointed out by the conceptual literature. From the quantitative evidence for Uganda we can see that trust in one's affinity group is directly related to *distrust* in fellow citizens, and from the qualitative evidence for the same country we can see a potential adverse selection problem, that joining groups may be a refuge for weak free-riders (and thereby lead to group 'involution') rather than a means of advancing a collective interest.
- Whether these components of the 'dark side' of social capital dominate or are dominated by the bright side is an empirical matter, and the general trend of our quantitative results supports an optimistic view that social capital is more often an asset than a liability. However, estimation procedures matter (neglecting the simultaneous nature of relationships between trust, association and assets yields biased results) and so do definitions. Here, we innovate by examining an *experimental* definition of trust, derived from a 'trust game' already utilised by Abigail Barr in Zimbabwe, as well as a more conventional *questionnaire-based* definition.

Possible policy implications
- Our interest is in developing social capital in a poverty-reducing way. In this context, we make a distinction between *experiential* trust, which derives from interaction between individuals, and *incentivised* trust, which derives from institutional or policy interventions to reduce the risk associated with investment in social capital (with being deceived by trusting others) .

- In this context, the distinction between experimental and questionnaire-based concepts of trust turns out to be potentially quite significant. Both concepts are positively responsive to levels of income and wealth and 'group performance'. In addition, the experimental definition is responsive to levels of female education; the questionnaire-based definition is responsive to levels of within-group equality, and to the 'trust gap' between the immediate community and fellow-citizens as a whole.

- There is also some evidence, both from our 'insurance game' and from the evidence in particular of Ethiopian burial societies, of a substantial demand for either formal or informal insurance. We have observed some evidence of the client-specific and external effects of insurance in Chapter 5. However, evidence from our experimental 'insurance game' provides a warning against insurance being able to break into the vicious circle of poverty by increasing levels of trust. On the evidence from eastern Uganda, insurance only increases trust on average in the higher-income village. But the impact on trust is increased in the case of individuals who have multiple linkages with external services (microfinance and extension); as also in the case of educated females. These complementarities are important in determining whether insurance will be effective.

- These data provide rather weak evidence in favour of female education and increased intra-group equality as instruments which may be able to build trust indirectly, and insurance as an instrument for building it directly. But insurance, although more *demanded* by lower-income individuals, is more effective amongst higher-income individuals; this may have implications fro the ability of an 'insurance fix' to reduce poverty.

- Finally, there is one other resource which has been able to mobilise social capital on a large scale. This (see chapter 8 of this book) is charismatic leadership – as exemplified by Ela Bhatt of SEWA or F.H. Abed of BRAC). But this –pending further examination in chapter 8 below – is even harder to incentivise than trust.

Appendix: social capital formation as a game

(i)   Single and repeated prisoner's dilemmas

In the simple prisoner's dilemma, the game takes place in only one period, and as a consequence the only dominant strategy equilibrium is in the bottom right-hand corner:

Figure 1(recapitulation) . The orthodox prisoner's dilemma

Client 1 Client 2	Pay full instalment ('cooperate')	Do not pay full instalment ('cheat')
Pay full instalment ('cooperate')	1,1	-1,**2**
Do not pay full instalment ('cheat')	**2**,-1	0,0

The same problem applies if the prisoner's dilemma is repeated a *finite* number of times. Both prisoners know that in the last repetition they will *confess* (in the game portrayed above, both borrowers know that they will *cheat*) hence they may as well *cheat* in every period. 'Building a reputation is pointless, because in the (final) period it is not going to matter' (Rasmusen 1994: 122). Proceeding inductively, both players *cheat* in every round, the unique perfect equilibrium outcome.

To achieve a collaborative income, therefore, it is not enough simply to repeat the game. One option is to repeat the prisoner's dilemma an infinite number of times instead of a finite number. Suppose that both players adopt the following *strategy 2:*
  (1) Start by choosing *Co-operate.*
  (2) Continue to choose *Cooperate* unless the other player has chosen *Cheat,* in which case always choose *cheat.*
If Client 1 uses this strategy, the same strategy is weakly Client 2's best response. If he cooperates, he will continue to receive the high (cooperate, cooperate) payoff forever. If he cheats, he will receive the higher (cheat, cooperate) payoff once, but the best he can hope for thereafter is the (cheat, cheat) payoff.

A second, much more complex, approach is to let the number of periods remain finite, but to allow incomplete information. In this situation it is possible to show that there is an upper limit on the number of stages within the game in which each player chooses *Cheat.*

To illustrate this result consider what would happen in a 10001-period game with a probability of 0.01 that Client 1 is playing Strategy 2: *Cooperate* until the first evidence that people are *Cheat*ing, and *Cheat* in every period thereafter. If the payoffs are as in Figure 1, a best response to a player known to be operating strategy 2 is (*cheat* in the last period, unless your opponent chooses *cheat* first, in which case respond with *cheat*). Both players will choose *Cooperate* until the last period, and client 2's payoff will be 10002 (10000)(1)+ (2). Suppose for the moment that if client 1 does not operate strategy 2, he is highly aggressive, and will choose *Cheat* every period. If client 2 follows the strategy just described, the outcome will be (*Cheat, cooperate*) in the first period and (*Cheat, Cheat*) thereafter, for a payoff to client 2 of – 1 (= -1 + (10000)(0). If the probabilities of the two outcomes are 0.01 and 0.99, Client 2's expected payoff from the strategy described is 99.01. If instead he follows a strategy of (*Cheat* every period) , his expected payoff is just 0.02 (0.01(2) + 0.99(0)). It is clearly in Client 2's advantage to take a chance by cooperating with Client 1, even if Client 1 has a 0.99 probability of following a very aggressive strategy.
       An aggressive strategy of this sort, however, is not client 1's best response to client 2's strategy. A better response is for Client 1 to choose *Cooperate* until the second-to-last period, and then to choose *Cheat.* Given that Client 2 is cooperating in the early periods, Client 2 will cooperate also: the payoff is so great if Client 1 is following strategy 2 that it is worthwhile for Client 2 to risk a low payoff for one period.
       So even if aggressive behaviour by Client 1 is not the best response, and even if in spite of this the probability of it is 99%, cheating every period (the bottom right-hand corner solution) is no longer the dominant strategy equilibrium, and there is a finite upper limit on the

number of stages in the game in which cheating takes place. What we wish to add is that the perceived probability of aggressive behaviour (and therefore the probability of a collaborative solution) varies negatively with the three trust factors portrayed in Figure 3.

(ii)   The derivation of the reduced form (equation (3))

Under the standard Nash-bargaining approach, we seek to maximise the joint product of the gains of the two individuals involved in bargaining:

$$\frac{\partial \pi}{\partial S} = (U_{ap} - U_{a(o)}).\ (U_{bp} - U_{b(0)})\ = 0 \hspace{3cm} (2)$$

Using the product rule,

$$(U_{ap} - U_{a(o)}).\partial/\partial S(U_{bp} - U_{b(0)})\ + U_{bp} - U_{b(0)})\ \ \partial/\partial S\ (U_{ap} - U_{a(o)}) = 0 \hspace{0.5cm} (2a)$$

But by assumption

$$U_{bp} - U_{b(0)})\ = f(I, D, E, X)$$

where I = *incentives* to collaboration
       D = *defences* against shocks
       E = within-group *equality*
       X = *prior experience* of collaboration, often associated with adversity

Hence (2a) can be written as

$$(U_{ap} - U_{a(o)}).\partial/\partial S(f\ (I, D,E,X_{)})\ + U_{bp} - U_{b(0)})\ \ \partial/\partial S\ (U_{ap} - U_{a(o)}) = 0 \hspace{0.5cm} (2b)$$

Hence

$$\frac{\partial/\partial S(f\ (I, D,E,X)}{\partial/\partial S\ (U_{ap} - U_{a(o)})}\ = \frac{-(\ U_{bp} - U_{b(0)}))}{(U_{ap} - U_{a(o}} \hspace{3cm} (2c)$$

Simplifying and solving for S

$$S = g(I, D,E,X) \hspace{4cm} (2d)$$

Where g( ) is the integral of the expression on the left-hand side
of   (2c)

Our estimating equation (3) is a linearised version of (2d)

Chapter 7. Gender, agricultural technical change and poverty reduction: African case studies

1. Introduction

The chapters so far have examined a variety of responses to risk: through the labour market, through insurance, through microfinance and through social capital. We now want to bring these approaches together, and seek to do so over the next three chapters. In this chapter, we examine and test a model of the rural household's response to risk; in chapter 8 we examine the process of coordinating and supporting these responses to risk as used by two 'giant' developing-world NGOs; and in the final chapter we venture into new territory and examine the management of political risks.

In this chapter, the basic proposition which we wish to examine is that the adoption of modern varieties of crops (especially foodcrops) offers an important potential route out of poverty, because it provides a defence against risk *at the same time* as an increase in material well-being. This is by no means an uncontroversial claim: for many years the Asian green revolution was accused of channelling benefits only to high-income farmers, and of impoverishing the poor by depriving them of their land. The literature of the last fifteen years (e.g. Lipton and Longhurst 1990; Singh 1990; Kerr and Kolavalli 2000) makes it clear that, especially once indirect effects operating through labour markets and off-farm linkages are taken into account, the green revolution has on balance not only been poverty-reducing but indeed accounts for a large part of the 'growth with equity' experienced in East and many parts of South Asia[126]. But this message has been slow to feed through into policy, possibly because the extent of the impact remains disputed: the international institutions' current poverty strategies have given only a minor place to spreading the green revolution to those places where it has not yet penetrated, including most of Africa (Mosley 2002), aid volumes to agriculture as a whole have declined, and the question is now being asked 'whether the African small farmer can survive' (symposium, *Development Policy Review,* December 2001). The question of what technical change in agriculture can and cannot do for the well-being of the African, and for that matter the South Asian rural household, as studied from several different angles in this book, is therefore of considerable policy significance. At the same time as examining technical change, we shall also wish to examine the process of diversification into cash-crops, which on conventional assumptions will involve an increase in risk at the same time as it increases expected income.

In examining these questions, we wish explicitly to take note of the fact that most farm work in Africa, at least, is done by women, and to assess the

---

[126] Statistically, the number of studies claiming that the Asian green revolution increased poverty or at least inequality was (at least ten years ago) well in excess of those claiming the opposite, as shown by Freebairn's review of over 300 studies (1995). However, many of those studies are non-rigorous, and many contain no discussion of indirect effects (i.e. those which go beyond the individual farm household).

extent to which agricultural underperformance is due to women having lower productivity in their agricultural operations. Boserup, in her pioneering study of women in development, argued that 'in the course of agricultural development, men's labour productivity tends to increase whereas women's remains more or less static' (1970:53), and if this is right, then on its own it provides an important explanation of agricultural underperformance, given the large share of agricultural work done by women[127]. At a micro level, Udry's rigorous study of Burkina Fasoclaims that 'plots controlled by women are farmed much less intensively than plots controlled by men', with the consequence that 'about 6 per cent of output is lost because of inefficient factor allocation within the household' (Udry 1996:1010)[128]. Usually this gender bias is explained in terms of women having deficient access to inputs which are required to sustain yield; in particular extension services (Saito, 1994), but also land, and hence credit, on the grounds that a title to land is required to be able to offer collateral to a lender. These factors, where they apply, obviously constrain the ability of producers to achieve high yields; but the possibility also exists that there exist differences between the objectives of men and women, in particular in relation to the risks which green revolution technologies attempt to reduce. Plant-breeding efforts generally aim to produce varieties which raise yields and reduce risks at the same time, which constitutes the main attraction of the green revolution, but is this attraction perceived as such, do the risk perceptions of male and female producers vary (as discussed in Chapter 2 above), and does this have a bearing on the yields which they achieve? Any serious attempt to understand yields, and diversification, obviously has to address this issue.

Finally, any arguments that higher foodcrop yields will reduce poverty need to establish rather than simply assume that a link exists between productivity and the crop-mix. Other things being equal, higher yields, and also a larger share of income from high-value crops, increase output, and therefore income and assets, and therefore poverty and vulnerability to it are reduced; but are other things equal, or do there exist indirect price-based or other mechanisms by which higher yields or a broader spectrum of incomes might reduce income and other entitlements? The issue is complicated, as the range of indirect effects which influence those entitlements is considerable – price effects, the labour-market effects examined in Chapter 3, farm-nonfarm linkages, to mention only three. It would be nice to set these issues on one side and assume that only the direct impact of yields on incomes matters; but we cannot, indeed the magnitude of these indirect impacts is one of the main points at issue between the defenders and the opponents of the green revolution. In this chapter we use a short-cut, which falls well short of a full general equilibrium analysis of the indirect impacts, and which we hope can be seen as an underestimate of the magnitudes involved.

---

[127] The share of female-headed households in India increased from 20 to 35% between 1970-96 (IFAD 2001: 86) and may have increased in Africa by a similar proportion.

[128] Udry does note that on some plots, women have a higher value of production than men, but typically because of a different crop mix; on a given plot and with a given crop, he insists, men's productivity is higher. 'Plots controlled by women have significantly lower yields than other plots within the household planted to the same crop in the same year, but controlled by men.' (Udry 1996:1018)

2. The model

Taking as point of departure the model developed by Udry (1996), ---perhaps the most rigorous to address the issues of gender-differentiation and productivity in the same paper - our own approach diverges from his in four important respects: (i) we differentiate between risks as perceived by males and females, (ii) the focal point of our model is a 'disaster' level of income, which the farm household uses every possible expedient to avoid, (iii) in pursuit of this objective the farm household is assumed to adopt a 'perceived portfolio optimisation' approach, as described in earlier chapters, and (iv) we include a labour market – since in the countries of Africa where we worked, Uganda, Zimbabwe and Ethiopia, it is certainly not the case as in Udry's Burkina Faso villages that 'there is virtually no hiring of labour or rental of land' (1996:1017)[129]. Certainly African rural labour markets are in general thinner than Asian ones, but to remove them altogether from the analysis by assumption would have drastic consequences for estimated poverty impact, which in Asia has operated even more through the labour market rather than through direct impacts on producers (Singh 1990: chapters 3-5)

The model is presented here in graphical form, with the mathematical presentation confined to the Appendix. The crux of the model, as earlier mentioned, is point D, the 'disaster' level of well-being (in the diagram, assets) which the farm household wishes at all costs to avoid being pushed below.

To visualise how the household seeks to protect itself against such disasters, consider Figure 7.1, in which the decision-taker (a member of the household, not the household as a whole) visualises both an 'ideal' and a 'real' choice. There are five parts to the story:

(i) *The 'ideal' choice.* The ideal choice (that which would be made in a risk-free world) is in the right-hand quadrant , a simple isoquant diagram of technical choice. This defines an 'optimum technology under certainty', in the sense of optimum levels of assets and land.

(ii) *Choice under risk.* The left-hand quadrant is a representation of choice under risk, in which a welfare function, which summarises the attainable combinations of risk and material well-being, is optimised subject to the constraint that the probability of 'disaster' not fall below a specified level (In the diagram, this maximum allowable risk is set at 5%: i.e. each point on the boundary line DD' , to the right of which the decision maker must not overstep, is at least two standard deviations away from the disaster level of assets). Subject to this constraint on the maximum risk of disaster which can be allowed, the decision taker maximises the rate of accumulation of assets, and consequently productivity (measured on the vertical axis). The more the decision-taker's preference function is weighted against risk, the less is optimum asset accumulation, and the less(on conventional assumptions) the hope of escape from the vicious circle of poverty. Figure 7.1 illustrates,

[129] Boserup(1970:26) also argues that 'very few of the cultivator families in the African samples used significant amounts of hired labour'. For contrary evidence see Chapter 3, on which we draw below.

with reference to small-farm agricultural production, the stereotypical case in which women – for the reasons set out above – are more risk-averse than men, and as a consequence accumulate less assets for a given level of technical options, and hence have lower productivity. This is the intrahousehold version of the 'vicious circle of poverty' depicted by Boserup, in a passage from which we have already quoted:

<< Often, men apply modern scientific methods in the cultivation of cash crops, while their wives continue to cultivate food crops by traditional methods. Thus, in the course of agricultural development, men's labour productivity tends to increase whereas women's remains more or less static. The corollary of the relative decline in women's labour productivity is a decline in their relative status within agriculture, and, as a further result, women will want either to abandon cultivation and retire to domestic life, or to leave for the town.>> (Boserup 1970, p. 53)

Analysis already carried out by us under another project (Horrell et al.,2003) shows how far the reality depicted in our case-studies differs from Boserup's portrait; nonetheless, the stereotype illustrated in Figure 7.1 remains useful as a point of reference which describes only too vividly how much of the profession continues to visualise gender relations within low-income farm families.

The rate at which assets (measured on the vertical axis) are accumulated is governed by whichever is the *less* of optimum asset accumulation under certainty (in the right-hand part of the diagram) or under uncertainty (on the left). In the typical case, individuals are risk-averse (we have discussed the extent to which they are in Chapter 2), the risk-affected choice is less than the 'ideal' risk- free choice, and risk serves, as we put it, as a brake on the adoption of the desired technology. We take up again the question of the means by which 'the brakes can be taken off' by institutional and policy changes in Section 5 below.

Consumption/Assets/
Productivity(Y)

Actual risk-
income
relationship
for hybrid
seeds

Boundary of
safe region:
$Y = d + 2sd(Y)$

D'

E

F

'technical
optimum' (for
both sexes) A

Perceived
Risk/
income
tradeoff
(men)

'male
optim
um' B

'female
optimum'C

Perceived
risk/income
tradeoff
(women)

**Asset
'Disaster
point'
D**

*Riskiness
(e.g. standard
deviation)
of income*
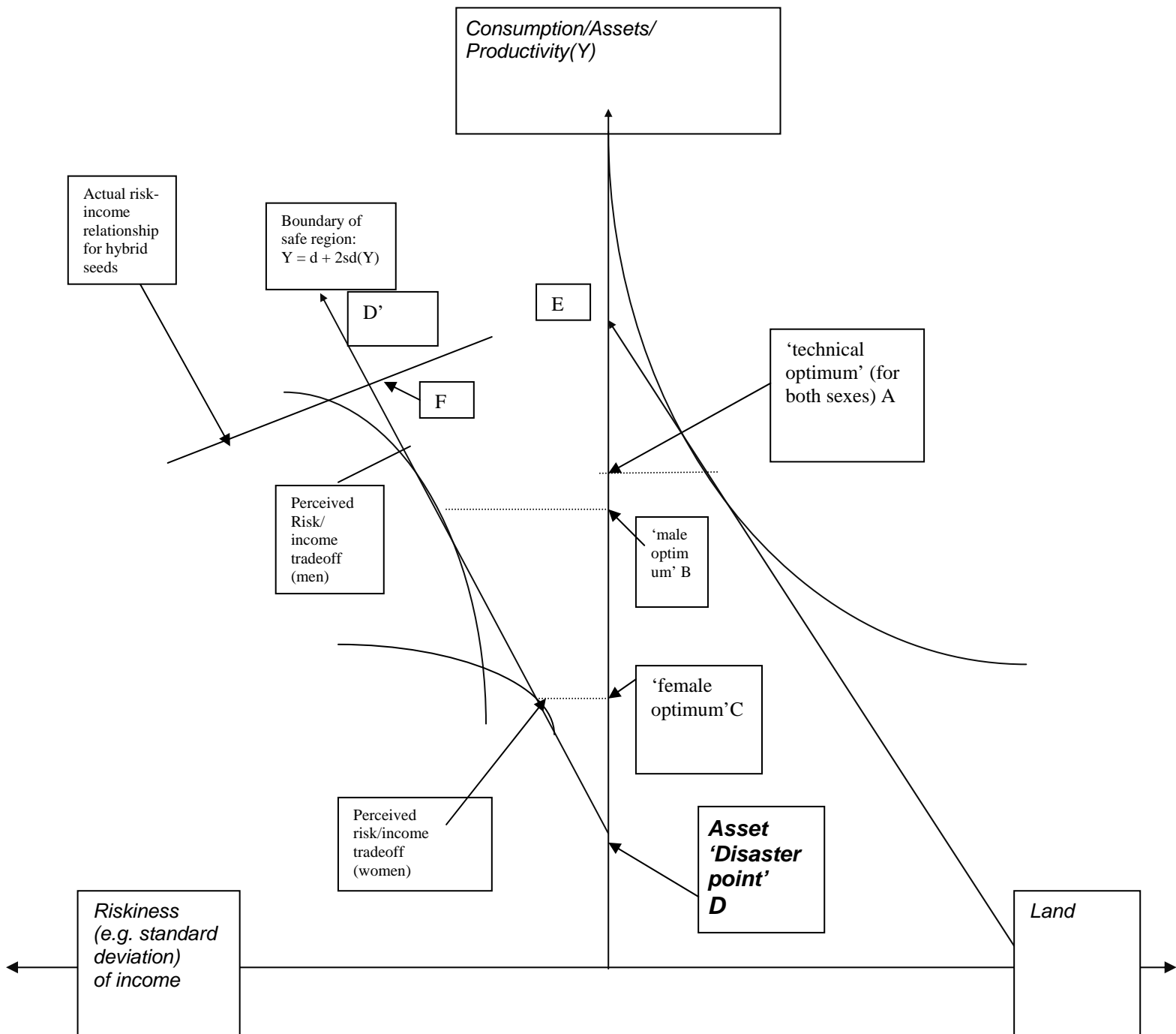
Land

**Figure 7.1. Risk and yield in small-farm agriculture: a stereotypical
picture**

Notes. 1. In the right-hand part of the diagram, a female and male producer face the same budget constraint and
have the same endowments of land and 'assets' available to them; for both, the optimum allocation under certainty,
for both sexes, is point A.

2. In the left-hand part of the diagram, assets (physical, human and social) are measured northwards on the
vertical axis. The household visualises point D as a 'disaster' level of assets or well-being, and the line DD',
drawn at an angle of 67.5 degrees to the horizontal, defines a 'safe region' in which the actual level of assets is

always at least two standard deviations away from the 'disaster level', i.e. the probability of disaster is never more than 1% (check). Any change in the 'optimum technology' (e.g. from A to C in the right-hand part of the diagram) which involves a movement into the no-go, or excessive risk, area in the left-hand part, will not take place. Thus with the land/purchased inputs ratio at pp', A is the best technology from a productivity point of view, but the corresponding level of risk F is excessive, and for this reason the level of inputs adopted is the lower-yield level B (for men) and C(for women).

3. The optimum asset portfolio is the *lower* of the technical and 'risk' optima. Thus, in the diagram, the 'technical optimum' for both sexes is at A, the 'male optimum' is at B, and the 'female optimum' is at C.

(iii)Intrahousehold portfolio choice and negotiation: the reconciliation of (i) and (ii) .Each of the equilibria A and B is a combination of risk and investment levels; it corresponds to an individual portfolio of assets. These assets may consist of physical equipment, labour-power (as analysed in Chapter 3), skill or human capital, or social capital (as analysed in Chapter 6) The composition of the portfolio –like the portfolio as a whole - is selected so as to balance yield and *risk efficacy,* the ability to protect against an adverse shock[130]. As we discovered in Chapter 6, social capital cannot be bought, and this has implications for the place of social capital within the portfolio, which are explored below. The balance of evidence from Chapter 2 suggests that the importance of the risk-protection function increases, not with income poverty, but rather with *perceived vulnerability,* and this assumption is embodied into the modelling of the Appendix.

Within the household there then follows a process of decision-taking, which is cooperative or conflictive according to the nature of the household and the environment within which it operates. In particular, we identify two kinds of decision-taking processes:

Case A. Allocation determined by a bargaining process between male(s) and female(s). As documented in the literature (e.g. Dercon and Krishnan 2000, and the country case studies of Chapter 6), there are many cases where risk-sharing within the household remains incomplete; often, however, there is an attempt to 'bargain' the allocation of these risks (as illustrated in Chapter 3) between adult members of the household, with the consequence that the actual allocation of labour and other resources to productive tasks between male and female moves to some point intermediate between the male and female optima – B and C on the illustration of figure 7.1.

We may illustrate from Figure 7.2 which is simply an inset from Figure 7.1 (the segment of the feasibility boundary, or risk-income tradeoff, between points D and F). At the outset - when the household is formed - males and females have different preference functions, M and F, and this leads to different initial yields. But, within partnerships, a process of separate-spheres bargaining lead to a redefinition within the household of optimal:

    (i)   labour allocations;

---

[130] The approach has analogies to the 'household economic portfolio model' developed by Chen and Dunn (1996) which, however, is not specified in a testable form.

    (ii)   allocation of crop land between food and cash crops (in particular coffee and maize);

    (iii)   investment rates, and hence yields.

What determines the dynamics of these processes? Essentially, changes in bargaining strength and/or in fallback positions (which we define as reversion to the traditional division of labour, not divorce, which is a relatively rare occurrence). Three conditioning factors are particularly important:

    (i)   *Changes in available defences against risk* –in particular stocks of human, physical and social capital - which confer, or take away, people's ability to protect themselves against potential shocks. The partnership, as long as it can be drawn on, can itself be seen as an insurance against risk[131]. More broadly, our empirical observations suggest that the stronger the shock, the greater the fusion of 'traditional' gender functions which this implies[132]).

    (ii)   *Changes in voice options -* which may enable women, for example, to exercise more bargaining leverage within the household by protesting against allocations which they see as exploitative. The intervention of educational and civil-rights NGOs, as we shall see in Chapter 8, may act in this guise.

    (iii)   *Changes in exit options* (e.g. labour or microfinance) which achieve the same effect via a different route.

---

[131] As respondent Uganda 282 put it, 'Women [in partnerships] face less risks because all the duties in a home rely on a man when he is there and in case of any loss, it's the man still responsible' (interview 26.8.03)

[132] See Horrell et al(2003), materials on household time use. A further illustration of this effect is provided by Satyajit Ray's film *Distant Thunder*(1973), based on the Bengal famine of 1943, in which under the stress of the famine men taken on many tasks conventionally assigned to women (in particular cooking and food preparation) and women many tasks conventionally assigned to men (in particular foraging for wild foods, fishing and heavy labour in the brick-fields).

Figure 7.2 diagram labels:
- Investment/yield
- M
- F
- Under stress of
(i) increased voice opportunities
(ii) increased exit opportunities
(iii) shocks, or improved defences against them (including the household internal account)
- 'Disaster' income level D
- Risk/vulne rability
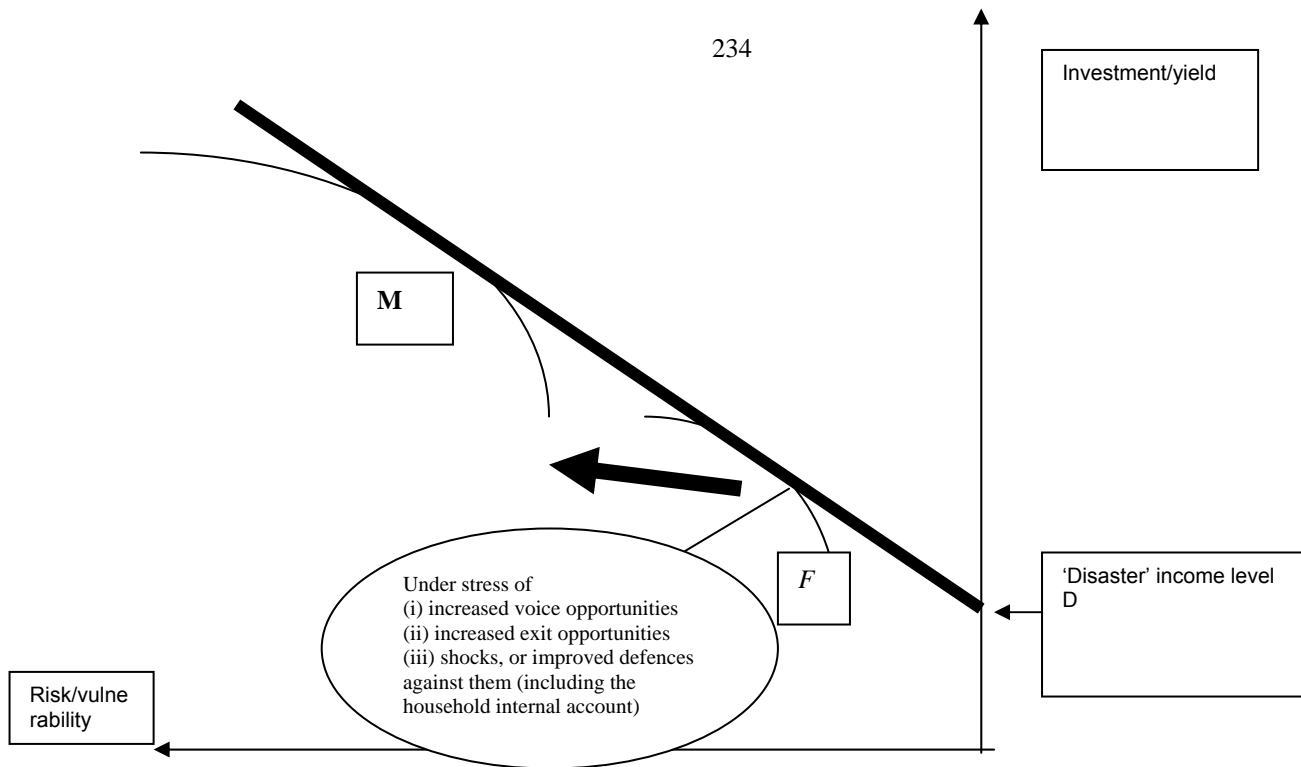
Figure 7.2. 'Risk bargaining' between male and female optima
Possible strategies (see pages 234-235)
'Risk-reducing, gender neutral': moves the M and the F functions up the 'frontier' by the same amount.
'Risk-reducing, pro-female': moves the F function up the 'frontier' more than the M function.

Each of the last two options reduces the scope for patriarchy within the household[133]. All of them alter perceived vulnerability, and thereby risk aversion, leading to a changed allocation of resources in partnership households – the two risk functions M and F, as illustrated on Figure 7.2, move toward one another, and in the limit become one.

In such cases, sometimes under the negative stimulus provided by structural adjustment and other negative income shocks, sometimes under the positive stimulus of intrahousehold income transfers, men and women frequently find themselves undertaking tasks which cross the boundaries of the 'separate spheres' from which they initially negotiate, and in the process increasing the productivity of their joint operations. The case of women in Uganda increasingly undertaking ploughing operations (page 250 below) is an interesting case in point.

Case B. Allocation determined by 'necessity: decision-taking by one household member only, typically a female head of household. In an increasing number of cases only one person – more often female than male[134] – is available to direct the household's agricultural operations, and that person is forced both to act both as manager and as labour force, to the

---

[133] The positive influence of the Grameen Bank of Bangladesh on domestic violence (Schuler and Hashemi, 1994) is one of the earliest measured influences of the impact of external financial intervention on domestic social relations.

[134] The number of female-headed households is increasing globally; footnote 127 above.

extent that that labour cannot be devolved inside or outside the household. A bargaining model is inappropriate in such cases, as there is nobody for the key decision-maker to negotiate with.

 The allocation of resources under risk is thus determined by a mixture of bargaining and individual-allocation processes.

(iv)Labour supply and demand, and the transition from yields to poverty

Labour supply and demand both respond to the level of risk in the labour market, which is gender-specific; thus, as we discovered in chapter 3, the demand for female labour responds much more strongly to surges in demand, and falls back much more rapidly in time of recession, than the demand for male labour. These labour market responses then constitute an important channel, additional to changes in the yields and incomes of smallholders, causing levels of poverty to increase and decrease. Possible functional forms for the labour supply and demand and 'poverty transition' functions are set out in the Appendix. In particular we identify four possible strategies for poverty reduction:

 Comparative-static predictions

(i)The prediction that the adoption of modern varieties will be only a limited proportion of the budget share spent on seeds only holds good if the risk-yield function is convex with respect to the risk constraint; in other words, if risk *decreases* as yield increases. If modern varieties are perceived to have the consequence of *reducing* risks, then a corner solution such as point E (on figure 7.1) will hold, and the entire budget share allocated to seeds will be spent on modern varieties. Investment and poverty reduction will increase.

   (ii)   Measures which reduce the standard deviation of assets (such as insurance, savings, some forms of credit such as the 'internal account' of village banks,… reduce the standard deviation of returns from assets, and thus steepen the constraint DD' : they increase the amount of investment that can be carried out
for a given probability of disaster, and so, holding people's risk-preferences constant, investment and poverty reduction will increase.

   In general, any shock to the economy can either increase or reduce risk (shift the risk-yield tradeoffs up or down) for either male or female cultivators. We describe approaches (i) and (ii) as *risk-reducing, gender-neutral* (RRGN) strategies.

   (iii)   If risk-avoiding measures such as those indicated in (ii) are supplied principally or wholly to women, there will be an upward shift in the 'female equilibrium point' C as a consequence of an upward shift in the 'permissible risk' constraint facing female clients. Investment

(iv) By the same token, measures which are *asset -increasing* or increase the risk coping capacity available to farm households as a whole or specifically to female farmers (AIGN or AIPF strategies) will raise investment and reduce poverty.

Illustrations of each of these strategies are provided on Figure 7.2 above.

Finally, measures which raise the demand for labour or for farm-nonfarm linkage activities, holding constant the transition coefficient, will move upward the risk/ yield constraint and increase the poverty leverage of modern varieties adoption for a given quantity of investment.

To summarise so far: perceptions of risk in the typical case act as a brake on the realisation of the 'ideal' allocation of resources; these *perceptions* may differ even from the on-farm (never mind the research station) reality, and be influenced by quite complicated experiential and historical processes; and they may vary between men and women, with implications for the intra-household as well as the community- and country-level distribution of income.

To test these propositions, we derive in the appendix a reduced form for male and female yields and for poverty which has three principal components:

(19)Total yield: $(Y/A) = \alpha_0 + \alpha_1 I + \alpha_2 E + \alpha_3 L$ + social capital variable….+ policy shift parameters

(20)Female yield = $(Y_f /Y) = \alpha_4 + \alpha_5$ (bargaining parameters) + α_6(extension…) + α_7(land, labour) + social capital variable…+ female-headed household dummy variable.

(21) Total poverty = $\beta_o + \beta_1 (Y/A) + \beta_2$ (labour income) + β_3 (linkage coefficients) + β_4(credit, insurance and other policy variables)

In first difference form, the β's in equation (21) are in effect 'transition coefficients' which define how many people move over the poverty line for each unit increase in each of the 'stimuli'

We now proceed to estimate these reduced-form equations, and to consider, in the light of these estimations, possibilities for exit from poverty.

3.Empirical strategy

In this analysis we examine data from villages in Uganda and Ethiopia – two countries in which both agricultural performance and poverty reduction performance have been much better than the African average, and often have been seen as providing a model, and also from Zimbabwe, a country which experienced an early 'mini-green revolution'(Eicher 1995) but which has since fallen into decline. The principal characteristics of the survey areas are as listed in Table 7.1:

Table 7.1. Survey locations

	Uganda	*Ethiopia*	*Zimbabwe*
Survey areas	Sironko and Bufumbo(Mbale district)	Afeta and Omo Beka PAs, Jimma province	Makoni and Mutoko communal areas
Characteristics	High and generally reliable rainfall (c1100mm pa). Fragmented landholdings (but few completely landless), diversified crops (maize, beans, coffee, bananas, vegetables). For more detail see Table 2.7.	Reasonably high (average ?800mm pa) but erratic rainfall. Substantial landlessness.Good infrastructure (nearest town 5km). Crops: maize, coffee, teff.	In NRII(check): reasonably high average (c800mm pa) but erratic rainfall. Maize main crop in both areas, but also horticulture. Opportunities for labour mobility from quarrying/gold panning(Mutoko) and urban service/construction sector(Makoni)
Number of households surveyed	297	296	300
Partnership	266	235	225
Female-headed	31	61	75
Survey dates	Oct-Dec 2001, resurveys Feb and August 2003	April 2002, resurvey April 2003	Dec 2001-Feb 2002, resurvey Feb 2003

The main inter-country differences which we expect to see reflected in yield performance (for both males and females) are:
  (i)   greater availability of credit and extension services, and more active labour markets, in Uganda;
  (ii)   greater labour shortage (persons and oxen) in Ethiopia;
  (iii)   shrinking levels of social capital in Zimbabwe, as a consequence of recent political initiatives to hand over land by force to former freedom fighters, and a trend towards an increase in these levels in Uganda and Ethiopia;

The main inter-country differences which we expect to see reflected in *gender-specific* yield performance are:
  (iv)   the greater number of female-headed households in Zimbabwe;

(v)   better extension services for women in Uganda; and the better fall-back position for women in the event of divorce[135].

Descriptive statistics for various indicators of our 'investment' variable (in particular maize yields, use of hybrid and acreage under coffee) are set out in Table 7.2. Our Ethiopian sample is just about on, and our Ugandan and Zimbabwe samples substantially above, the African average maize yield of about 1.1 metric tons/hectare[136]. We immediately observe that the data do not , in general, fit Boserup's and Udry's picture of lower productivity on female than on male plots. Productivity is indeed lower on plots operated by female-headed *households*[137]*,* but in Ethiopia and Uganda, on plots operated by females within partnership households, productivity is higher than on plots controlled by men. In Zimbabwe data are given for partnership and female-headed households only[138].

---

[135] Most courts in Mbale, the region of eastern Uganda where we worked, awarded some land to female members of a partnership household in the event of divorce. New legislation is currently being prepared to formalise women's land rights and grant equal shares in both land and movable property to the male and female partner in the event of a divorce.

[136] FAO, *Production Yearbook 2002,* Rome.

[137] This applies in all countries for maize. It does not apply for minor crops, e.g. roundnuts in Zimbabwe, for which the average productivity in respect of female-headed households was higher than men's.

[138] Dercon and Krishnan (2000: 704) note that in Ethiopia ' tasks related to the agricultural cycle are carried out together, on a joint family farm', and that as a consequence there is greater covariance of risks than in the situation where male and female take separately and potentially mutually offsetting decisions in relartion to 'their own' crops and plots.

Table 7.2. Uganda and Ethiopia samples: average yields and crop choice by gender

	Uganda(Mbale; Sironko and Bufumbo)			Ethiopia(Jimma; Afeta PA)			Zimbabwe(Makoni and Mutoko)	
	Partnership households(1)		Female-headed households (n=19)	Partnership households(1) (n=218)		Female-headed households (n=37)	Partnership households (n=226)	Female-headed households (n=69)
	Production decisions taken by men (n=110)	Production decisions taken by women (n=110)		Male process (n=126)	Female process or female control of production or marketing (n=92)			
Maize yields (kg/ha; standard deviation in brackets)	**1422.0 (734.6)**	**1538.1 (796.3)**	**980.6 (751.6)**	**1176.5 (521.3)**	**1282.0 (43.3)**	**1004.5 (462.5)**	**1771.2**	**1504.8**
Asset profile: Average acreage owned or controlled				3.42	2.25	1.74	5.48	3.77
Acreage under maize	2.36 (2.08)	2.56 (2.90)	2.25 (2.14)	1.34 (0.61)	0.95 (0.52)	0.62 (0.64)	2.02	1.71
Acreage under cash crops: Coffee	0.39 (1.75)	0.31 (0.78)	0.04 (0.2)	1.86 (0.85)	1.27 (1.17)	1.10 (1.04)		
Average no.cattle kept				0.39 (0.36)	0.65 (0.66)	0.37 (0.44)	5.9	4.2
Average level of education				1.66 (0.80)	1.00 (0)	1.07 (0.31)		
Social capital: (i)bonding soc. cap. (ii)'player 1 offer' (trust measure) (iii) Extension officer estimate	0.96 (0.71) Sh 1756 Medium	1.13 (0.75) Sh 1875 High	1.00 (0.57) Sh2000 Low					
ToTal value of assets($)				76.6	61.8	55.4		
Resource use: Average number of outside labourers used % use outside labour	3.14 (4.49)	2.56 (2.90)	2.25 (2.14)	0.96 (1.72)	1.12 (1.65)	0.92 (1.42)	0.5 31	0.2 25

								97	86
Fertiliser usage (kg/ha)								97	86
Utilisation of improved seed(%)	76.8 (27.9)	73.0 (27.9)	66.1 (27.8)	0	0	0			
Attitudes to risk (*whole sample*[139]): Chose $100 Chose gamble	94 6			91 9				33 67	

Source: surveys as specified in Table 7.1.
Notes: (1) Partnership households. In both Uganda and Ethiopia these are distinguished between male and female-controlled lands on the basis of answers to the question 'Who controls the land used for maize production?'

We now seek, in the light of our model, to understand the determinants of male and female yields. As illustrated in the model (Figures 7.1 and 7.2) there are two basic causes of differences in yields – availabilities of factors of production, and the way these factors of production are allocated in face of risk, and in both respects we have found it convenient to draw a contrast between men and women. From the table we can see a major reason why *female-headed* households, in all three countries, have lower yields – they have less assets (cattle, land and on some accounts, social capital), thus are more vulnerable to external shocks, thus are more exposed to risk and have less motivation to invest in modern inputs. By contrast, women operating within partnership households have better access to three assets which enable them to achieve higher yields. The first is simply the common-pool resources of the household – the income flows to which they have access by virtue of having a partner. The second is the *social capital* resources to which they have access by virtue of having a partner – these, as noted in Chapter 6 and further illustrated below, are quite important in the case of both microfinance and extension. The third is education – by contrast with the first two resources, it is much less easy to invoke a structural reason why women in partnerships should be better-educated, but they appear to be.

 Table 7.3 formalises this argument by means of regression analysis, and exposes some structural differences between the yield functions of men and women. The coefficients on fertiliser, hybrid seed and hired labour are conventional; land acreage is variable, with a negative coefficient in Ethiopia and Zimbabwe (the 'inverse farm size rule', suggesting more intensive utilisation on smaller farms) ,but a positive coefficient in Uganda. Microfinance has a positive coefficient generally, but has a negative coefficient for female-headed households in Uganda. Women within partnerships not only appear to have higher levels of social capital (and other assets), *but also to use both that social capital and also extension advice better than both men and female-headed households;* we investigate this further by qualitative methods below. In Uganda, where we are able to decompose the hybrid seed variable, partnership women in particular get higher returns from the 'highest-risk,

---

[139] Individuals with both low income and asset levels.

highest yield' seeds (K614 and K622)[140], but as we shall discover further on, this result does not hold good at lower levels of income, and below the poverty line growers prefer the lower-yield, more-resistant-to-drought-risk Longe 1 and Longe 5. At high levels of vulnerability, high exposure to risk is not rational, and that lesson has been internalised by our sample.

---

[140] The main composite and hybrid seeds available in Eastern Uganda at the time of survey were:

Variety	Yield (NARO verification centre)	Yield (our sample, Bufumbo and Sironko)	Risks	Other characteristics
Composites				
Longe 1	2144	Low	Drought and pest resistant	Possible to double-crop
Longe 5	2780	Moderate	Most disease-resistant variety in Sironko, some problems with maize streak virus	Good nutritional qualities; can take two crops a year
True hybrids				
K614		Moderate	Some problems with smut	
K622	3508	High	Vulnerable to maize stalk borer	
Z625	2280	Moderate	Highly resistant to maize streak virus and stalk borer	Does not make good beer

Yield data (col 2) relate to field trials at Lower Mbale verification centre kindly supplied by Dr George Bigirwa, Namulonge Agricultural Research Station (20/08/03. Other data from Natanga interviews.

Table 7.3. Regression analysis: male and female maize yields
(OLS analysis. t-statistics underneath coefficients in brackets)

Regression Coefficients on independent variables	Uganda(Mbale; Sironko and Bufumbo)				Ethiopia(Jimma: Afeta PA)			Zim-babwe[141]
	All households	Partnership households		Female-headed households	All households	Partner-ship households	Female-headed households	
		Land controlled by men	Land controlled by women					
Constant	598.0** (3.89)	562.6* (2.11)	661.5 (1.40)	368.7** (3.29)	565.3	1150.4 (2.78)	1330.9** (7.48)	-376.6 (0.8)
Maize acreage	44.12** (2.74)	32.0 (0.91)	27.6 (1.46)	-73.3 (1.14)	-6.2 (0.26)	-45.1 (0.91)	-5.6 (0.22)	-36.7 -0.4)
Costs per acre								0.1* (2.0)
Utilisation of hybrid seed(%)	0.27* (2.23)	0.33 (0.16)	4.52* (1.91)	6.48** (2.52)	709.4** (3.66)			15.1* (1.8)
Fertiliser/acre								1.4* (1.8)
Extension contact	208.4** (2.74)	283.1 (0.91)	301.5* (1.65)		-69.5 (0.91)	675 (0.29)	-80.16 (0.95)	304.5 (1.3)
Household labour	-15.55 (0.44)	16.4 (0.29)	-75.4 (1.10)	-22.2 (0.43)	2.57 (0.11)			
Hired labour		9.04 (1.97)*	41.3 (1.26)	11.66 (0.46)		-63 (1.25)	1.56 (0.06)	51.4 (0.9)
Access to finance	52.6** (2.67)	67.2 (0.51)	117.2* (2.10)	-553.8** (3.76)				
Social capital		52.38 (0.97)		0.062** (2.54)				
Trust coefficient (Player 1)			0.026* (2.17)					
Male education(voice proxy)	88.3 (1.27)	-41.5 (0.31)						
Female education(voice proxy)	67.8 (0.73)		105.8 (0.6)			-81.9 (0.48)		
Male exit possibilities	72.49 (1.01)	-287.8* (2.41)						
Female-headed household								-45.4 (0.2)
Risk-aversion coefficient (AP9)	-17.55 (1.06)	-23.4* (1.91)	-220,4 (1.73)	-113 (0.95)				
R²	0.236	0.17	0.662	0.521	0.06	0.07	0.01	0.17

Sources: Surveys, 2001-3 (see Table 7.1 above)

Thus women on the average, if suitably protected against risk and able to access sources of information about higher-yielding varieties, achieve *higher yields than men in respect of crops which they also grow and on the same*

---

[141] Mutoko and Chivi districts. Both men and women; but note coefficient for female-headed households.

land –much assisted by the fact that most modern varieties of maize are risk-reducing as well as yield-increasing, as this reduces the risk which means most to them[142]. So the green revolution as such is risk-reducing and gender-neutral, but particular instruments by which it can be accessed, such as microfinance and in some districts extension also, are risk-reducing and pro-female, because women access these resources more than men; this is the good news. The bad news is the possibility for a vicious circle of poverty to bar the gateway to higher yields for particular women, and especially female-headed households, in several senses visible from Table 7.3:

(i)   The highest-yielding inputs are the most expensive, and this factor may conspire with capital-market obstacles to bar access to hybrid seeds[143] and other 'modern' inputs for the poorest and least socially connected farmers.

(ii)   The poorest people have the worst access to markets, particularly if additionally afflicted by physical or other handicap. In Zimbabwe, one woman –a female-headed, income-poor household – was constrained to sell her produce to her neighbours rather than on the open market because 'I have no option so I sell within the community because of health problems and I cannot carry any baskets since I am asthmatic'.[144]

(iii)   Female-headed households, across all three countries, have the lowest levels of assets (land, animals and education), the lowest effective demand for labour and also the lowest levels of social capital, all of which have substantial leverage within the yield function. They also pay more for the inputs they do use

We now examine, in table 7.4, a potentially riskier choice: the share of land allocated to coffee, an increase in which is likely to expose the farmer to pricing, technical and financial risks not associated with maize. Its adoption does not reduce food security risks, and we therefore expect to be less attractive to women than maize. The independent variables are the same as in Table 7.3 with the omission of use of hybrid maize seed and the inclusion, following the approach of Dercon(1996) liquid assets (land, cattle, goats, and in Ethiopia oxen) to the standard yield function (3)[145]. Land turns out to be highly significant, and agricultural extension also; but we can find no evidence of *liquid*-asset effects, whether from oxen, cows or goats. Even though, in Dercon's analysis (1996:497) ' a household with positive assets will always reduce its allocation to the safe crop' there is no evidence of this behaviour among the Ugandan and Ethiopian households whom we survey here.

---

[142] The composite varieties Longe 1 and Longe 5 are more drought-resistant and more pest-resistant, and thus have higher stability than as well as higher yields than, traditional varieties (Nantanga interview). Longe 5 in addition has better nutritional qualities. For the hybrids (Kenya 614,622 and 625, Zimbabwe 625 and Uganda the evidence is more mixed – the lowland hybrids, especially Kenya 622, are more vulnerable to maize smut and stalk borer. Add evidence from Ch 2 of Gatsby book…

[143] In eastern Uganda seed for the low-yielding (but sometimes more disease-resistant) composite Longe 1 costs Sh1200 ($.60) per kilo whereas for the higher-yielding hybrid K614 it costs Sh 2500 ($1.25) per kilo. Natanga interview, 21/8/03.

[144] Sara Horrell: *Poverty, Risk and Diversification* (draft chapter for Horrell et al 2003), page 17.

[145] Dercon (1996: 485) argues on the basis of Tanzanian evidence that 'if liquid asset holdings are large, providing a buffer for consumption shortfalls, then households will be more willing to take up high-risk activities'.

Table 7.4. Regression analysis: dependent variable - male and female coffee acreage

Regression coefficients on independent variables

(OLS analysis. t-statistics underneath coefficients in brackets)

	Uganda			Ethiopia	
	Partnership households, male-controlled plots	Partnership households, female-controlled plots	Female-headed households	All households	Female-headed households
Constant	72.6** (5.35)	0.93 (1.85)		-9.41E-02(0.70)	-0.392(1.16)
Size of landholding				0.51**(32.53)	0.62**(18.69)
No of labourers				-0.21(0.45)	-3.37(0.80)
Social capital	-3.23 (1.01)	-0.12 (0.80)			
Microfinance Access	7.69 (0.59)	0.37 (0.53)			
Access to agricultural extension services		-0.23 (0.19)		0.13*(2.04)	NA
Asset index	-10.56 (1.21)	0.98 (1.41)			
Number of oxen owned by household				1.75E-02(0.37)	-9.61E-02(1.39)
Number of cows owned by HH				-1.48E-02(0.23)	-5.35E-02(0.41)
Number of goats owned by HH				-5.43E-02(0.38)	-7.75E-02(0.65)
R^2	0.17	0.28		0.799	0.869
Number of observations	23	26		294	60

Source: Surveys, 2001-3 (see table 7.1 above)

Thus entrepreneurial decisions which hold out the hope of transitions out of poverty – increases in maize yield and investment in coffee trees – result, in a quite conventional way, from increased applications of inputs which raise productivity, from stocks of some liquid assets (but including, for this purpose, social capital) and from low levels of risk aversion; however, they also result, in a quite unconventional way, from a *high* and not a low ratio of plots controlled by females within partnership households. Why is this? One clue comes from Table 7.5, from Eastern Uganda, which suggests that in households where there is, in the terms of Horrell et al (2003) a 'female process' – in other words, female control of the decision from beginning to end – very different allocations of resources result, much more

favourable to investment and to productivity increase[146]. In particular, within such households the share of total household income spent on investment, and especially crop-related investment, is much higher than in households where all or part of the household decision-making is male-controlled – *and much higher than in female-headed households.* This finding bears clear relationship to others in the intrahousehold area which demonstrate differential rates of investment in *human* capital – with corresponding health outcomes – as between male and female decision-takers[147]; but here the emphasis is on *physical ,* and specifically crop-related, investment. More broadly, this evidence confirms much modern intrahousehold research which suggests that 'the budget shares of particular goods are significantly related to the shares of… income accruing to women in the household' (Udry 1996: 1011) , with implications for the level of investment in particular activities and the distribution of benefits from it.

---

[146] By contrast, in Bufumbo, Uganda, the extension officer took the view that the acquisition of a fallback position within the household drove the allocation of resources: 'as women buy (modern) inputs they become more market-oriented. That gives them bargaining power within the family, which enables them to take control of marketing and advise their husbands' (Natanga interview, 28/8/03). This is the opposite sequence to the one presented here.

[147] Much of the enthusiasm for microfinance (recall Chapter 5) is of course based on the proposition that women will use loans better: partly because they have less alternative sources of finance and therefore are more likely to repay loans, but also because they are more forward-looking and more oriented towards their children, therefore more orientated to spending income on investment rather than consumption goods.

Table 7.5. Uganda sample: crop-selling and consumption and investment patterns(whole sample)

Money used to buy: (% of usages)	Partnership households:				Female-headed
	Male process	Female money	Female process	Male money	
Food and basic household goods	38.9	36.4	31.3	41.3	37.9
Clothes	14.5	12.9	10.4	6.7	19.0
Schooling	16.4	25.9	18.8	23.1	13.9
Medical	16.9	15.3	10.4	16.3	17.7
Crop-related investment	7.3	0	16.7	4.8	6.3
Livestock	1.6	3.5	2.1	2.9	2.5
Own business	1.8	3.5	8.3	2.9	2.5
Other	2.4	2.4	2.1	2.9	2.5
Total(%)	100	100	100	100	100
% spent on investment goods	10.7	7.0	27.1	9.6	8.8
Number of households	140	18	15	29	25
Number of crop sales	304	47	31	60	40
Number of usages	491	85	48	104	79

Source: Uganda questionnaire (survey, Oct-Dec 2001), questions xx-xx.

Qualitative analysis of yields (Uganda and Zimbabwe)

In the hope of better understanding the interaction between gender, risk and resource allocation – and also the scope for policy intervention - we now examine some household-level case studies. Our particular objective is to examine outliers from the general pattern of Tables 7.3 and 7.4 – in particular women with particularly high yields – and to see whether these outliers, when interviewed, yield explanations of high performance which supplement or contradict the story which comes out of the tables.

Figure 7.3 shows the scatter of female maize yields for Uganda in relation to farm size and the overall asset index (we recall that Uganda is one of the country samples which does not confirm to the 'inverse farm size rule'. On discussing the yields obtained with the farmers and their extension officer, we discover:

Figure 7.3 Uganda: female yields in relation to acreage, scatter diagram

(i) that in general, in the view of the extension officer, women pick up new technologies more quickly, specifically because they are 'more willing to take a risk'[148] -in particular, as we saw from Table 7.5, risks associated with the acquisition of new agricultural technologies. Four out of the five 'top farmers' in Bufumbo were female, *all but one in partnership households[149]*. The extension officer claimed that this was because they had different attitudes towards risk: 'If you bring a good variety the women will go for it, whereas the men are very conservative in many cases. They say 'this was good enough for my father'[150]. There was also, in the view of the extension officer, a tendency for (especially) women foodcrop farmers to be more focussed on agricultural tasks: as he put it, 'they do not want to have one leg this way and one leg that'[151]. Specialisation by activity, on this view, begets higher productivity, an argument originally put by Adam Smith 250 years ago.

[148] Interviews, Patrick Natanga, (former extension officer, Bufumbo and Secretary-General, Mbale farmers' Association), Makerere University,21 Augusr 2003 and Mbale, 23 and 27 August 2003. Hereafter 'Natanga interviews'.
[149]. Within polygamous families, indeed, wives sometimes 'compete in terms of yields to get the favour of their husbands'; Natanga interview, 28/8/03.
[150] Natanga interview, 23/08/03. In general, gender is not a significant influence, one way or another, on the Arrow-Pratt measures of risk aversion (recall table 2. above)
[151] Natanga interview, 23/08/03.

(ii) that several of the outliers and differences in behavioural patterns between men and women arise because men and women are driven by *different* risks – specifically, by financial and food insecurity respectively. As the extension officer put it, 'while the woman is talking of lack of food the man is talking of lack of money'[152]. Often women saw themselves as exposed to higher levels of risk because they took more responsibility for, and did more work on, the family's basic subsistence[153]. As a consequence of this men and women have different expenditure patterns with different productivity potentials, as already observed in table 7.5.[154] These differences in perceived risk and in expenditure pattern are embodied into the modelling of the Appendix.

(iii) that the outliers (the women who have very high yields in relation to acreage, as illustrated on Figure 7.3) sometimes have these because they have access to forms of *social* capital which are denied to others – and in particular to women in female-headed households. (Social capital, of course, is the negative of interpersonal risk, and thus those who were able to join networks were acquiring a form of interpersonal risk insurance.) Women were more willing to take extension advice and microfinance in groups than men; often proceeds from microfinance loans were invested in the building up of social networks[155] . By contrast, female-headed households tended to have restricted access to social capital, as well as to land, cattle, and many forms of physical capital[156]. One of the highest yielders of all, number 244 from Bufumbo , who had yields of over 4.5 tons per hectare, was married to the chairman of the Mbale Farmers' Association: she was active in politics and acted as an extension agent in her own right. (Female) respondents

---

[152] Natanga interview, 27/8/03.Several of our resurvey interviews also bore witness to this difference in risk perceptions in different ways when asked if they saw any difference between the risks faced by men and women: 'Men face risks like having to pay back a loan even when there is a shock to our income while women face risks like having misunderstandings with their husbands over mismanagement of funds got from sale of the crop' (respondent 89);

Some suggested that this difference in risk-perceptions found its way into the crop-mix, e.g. respondent 238 said that 'women tend to get involved in the cultivation of beans thereby taking lesser risks' (interview 25.8.03)

[153] 'The women face more risks because they are people who are on the ground as compared to men' Interview with respondent 44, Sironko, Uganda, 26.8.03.' I think women face more risks because it is women who do most of the cultivation in addition to the household chores. So if there is any eventuality it is she who stands to lose more'(respondent 171)

[154] Those with high yields who had access to microfinance loans notably tended to divert a higher proportion of those loans into the payment of school fees – ; women tend to spend a higher proportion of the income which they control not only on physical, but on human capital in relation to consumption.

[155] Respondents 10084 and 1065 joined the Bulako farmers' club, whereas respondent 10057, the record-holder, joined two roscas and two burial societies. 1065 commented of the farmers' club, 'The group assists me if my crop is not ready and if I have to service a loan. I then pay back later (without interest). Subscriptions paid to each of these societies thus can be seen as an investment in an asset which can offset a large part of the risk to which the taking out of large loans exposes them. Mosley and Rock(2002), p.52.

[156] Natanga interview, 27/8/03.

numbers 213 and 235, also positive outliers on Figure 7.3, claim they learned much of what they know about maize husbandry, and in particular the idea of using Kenya Hybrid 614, from respondent 244 within a group which was initially formed by the extension officer purely for demonstration purposes, but who eventually became close friends [157]. This divide between those within and without access to social networks appears to be particularly important at the bottom end of the income scale[158].

(iv) that women who had high yields frequently achieved this by being willing to take on tasks not conventionally taken on by women ; in particular, soil preparation with oxen. Respondent 79 in Sironko, for example, on purchasing her own pair of oxen in 2002, ploughed the land herself, and reaped as a consequence a yield well above the regression line.There is evidence that much of this increased substitutability within the agricultural labour force is of recent date. As Saito remarked ten years ago (1994: ix) 'The gender-specific nature of African farming is disappearing as women are growing crops (such as coffee and other cash crops), taking on tasks (such as land clearing) traditionally performed by men, and making decisions on the daily management of the farm and household'.

4. Implications for poverty strategies

What is the impact of these technical changes on poverty? As illustrated in Figure 7.4, there are two links in the chain: from yields to income, and from income to poverty. As we have discussed, there are various possible policy influences and yields, and feedbacks can be expected from well-being to behaviour, as in the 'vicious circles' of Chapter 2.

Expressed as summary correlations, the linkages are as follows:

---

[157] Social capital, however, we recall from Chapter 6, is by no means a necessary or a sufficient condition of high yields –many of the women with the highest yields (e.g. nos. 22 and 35 on Figure 7.3) were 'loners' who avoided group memberships, and many of the people of both sexes with the lowest yields were behaving as free-riders on whatever groupings they could find to take them in.)

[158] From Table 7.6 below we argue that the relationship between income and social capital is particularly strong and significant in the case of people with incomes below the poverty line.

Figure 7.4. Linkages from yields to poverty(correlation coefficients)
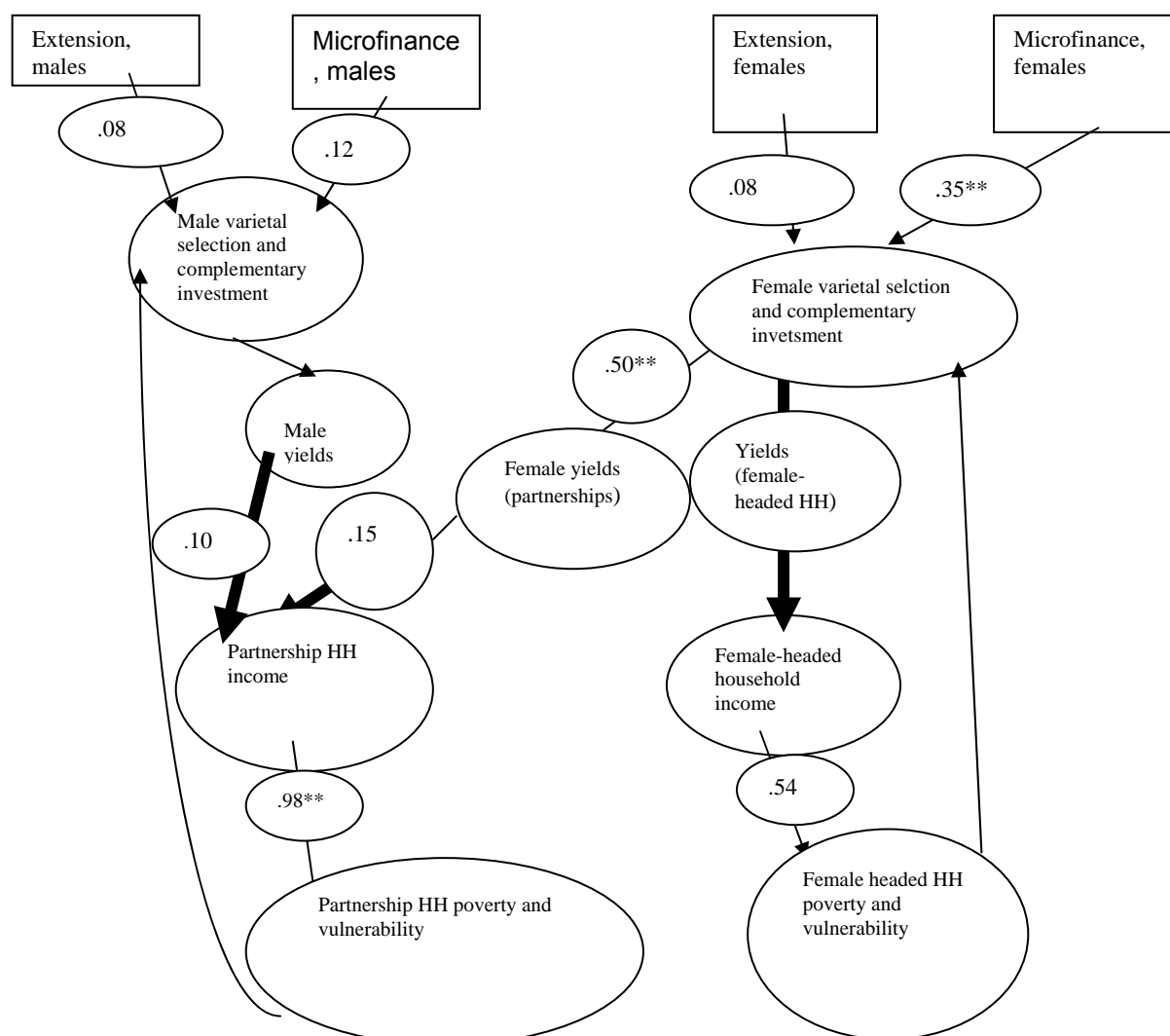
Source: Uganda surveys, 2001 and 2003.
Notes on variable definitions:
'Extension contact': 1-0 dummy variable (whether any contact with an extension officer during the previous year)
'Microfinance': value of loans taken in previous year.
'Varietal selection and complementary investment': sum of expenditure on hybrid seeds, fertilisers, pesticides and agricultural labour hiring (average of data from 2001 and 2003 surveys)
'Poverty and vulnerability': value of vulnerability index (see Table 2. 5)

In our final table, Table 7.6, we lay a magnifying-glass across the 'poverty transitions': the households who were below the poverty line in 2001 but who rose above it by 2003, details of whom are displayed at the beginning of the Appendix. Of particular concern is that the links marked in heavy type in Figure 7.6, from crop yields to income, weaken as we move towards the bottom of the income scale. Across the sample as a whole, a 1% increase in yield 'converts' into a 14% increase in income, highly significant, with a bias towards male farmers; but among households below the poverty line of 25,500 Uganda shillings/month per equivalent adult, the same increase in

yield converts into an average increase of 0.22 per cent., insignificant, with a bias towards female farmers[159]. On the surface, it looks as if the benefits from productivity increase in foodcrops are being channelled towards the better-off farmers.

On the positive side, however, there are three factors which appeared to encourage the transition:

(i) In three cases out of nine in Sironko and Bufumbo (94, 143 and 233)(household) movement out of poverty was associated with a green revolution: a dramatic increase (more than doubling) in foodcrop yields. In a fourth case, 229, high yields were maintained. All of these cases were female, and 94 is female-headed. In most cases – much more than at higher levels of income[160], -preference was for the relatively low-yield, low risk Longe 1[161], as is entirely rational for people operating at high levels of vulnerability, although the woman who achieved the most dramatic 'green revolution transition' – 233 from Bufumbo – used Kenya Hybrid 614.

(ii) In a number of cases, movement out of poverty was associated with a large increase in labour income. Most of these cases were male. In cases 10045a and 10045b, the exit from poverty can be seen as a 'wider impact' of expansion of foodcrop farming, since the employment provided was on maize farms.

(iii) In addition, there exist various institutional devices which appear to have had the impact of raising incomes both through the direct and through the indirect channels. These devices are microfinance, extension and the purposive acquisition of social capital. Microfinance (mostly individual credits through Centenary Bank) is significant in Bulako, but not in Sironko and Bufumbo. Social capital is highly significant in Sironko and Bufumbo[162], particularly in the form of 'bonding' social capital within the village – one particular form of this which we have already observed is the (mostly women's) agricultural extension groups which would get together to try out modern varieties of maize –and sometimes exotic cash crops such as vanilla (Plate 1).

. Poverty reduction here, as in so many other cases, appears not to trickle down by any automatic mechanism but rather needs to be incentivised by whatever devices are locally relevant.

---

[159] We have observed 'kinked' relationships of this kind in relation to microfinance also: see Mosley and Hulme(1998)

[160] See Table 7.3 above.

[161] Demand functions for different seed types…

[162] This social capital itself appears, across the sample as a whole, to be principally female in nature. As shown in Table 7.6 below the regression coefficient of social capital on the income of those below the poverty line is 1405 , significant, for the sample as a whole; 2805 , significant, for female respondents; but 990 , insignificant, for male respondents.

Table 7.6. Uganda: poverty transitions, 2001

	Male	Female	Total
Dependent variable			
1.Persons crossing poverty line(1) between 2001 and 2003(2) Associated with: significant change in crop yields	3 0	6 4	9 4
Significant increases in labour income	4	1	5
Above-average levels of bonding social capital	3	3	6
2.Consequences of change in crop yields (regression coefficients): Change in income(total)	16.44** (2.83)	0.22 (0.74)	+14.7** (5.12)
Change in income among those below poverty line	-0.004 (0.024)	0.25 (0.87)	0.22 (0.74)
3.Poverty consequences of change in policy variables(partial regression coefficients of policy variable on income of those below the poverty line)			
Extension (cases = 109)	-45814 (0.40)	22305 (0.33)	13513 (0.25)
Risk-reducing, pro-female	990	2805*	1405**

Social capital	(0.89)	(3.64)	(2.40)
Possibly risk-increasing, pro-female			
Microfinance	2633	3088*	3045*
	(0.93)	(2.15)	(1.86)

Source: Part 1 of table, Appendix to this chapter; parts 2 and 3, Uganda surveys 2001 and 2003.

Notes: (1) Poverty line is taken as 25563 Uganda Shillings per adult equivalent household member per month. Adult equivalents were calculated at scales appropriate for East Uganda (as reported in S. Appleton 'Changes in poverty and inequality' in R. Reinikka and P.Collier(eds) *Uganda's Recovery,* 2001. A conventional adjustment (α=0.22) is made for economies of scale in group consumption. 43% of the sampled households are therefore classified as income-poor. Data for those who crossed the poverty line between 2001 and 2003 (nos 87,90, 91, 94,120, 143, 229,233, 282) are given in the Appendix.

 (2) Data for Sironko and Bufumbo only.

We are now in a position to summarise. In their analyses of gender and agricultural productivity in Africa, Boserup and Udry discovered a systematic bias in factor allocations which caused the productivity of land cultivated by females to be less than the productivity of land cultivated by males – leading to the policy implication that, in Udry's words:

> the household could achieve higher input by reallocating variable factors from plots controlled by men to plots controlled by women or, equivalently, by reallocating land from women to men.

(1996:1018)

We have been able to discover no such systematic bias, but rather in Uganda and Ethiopia, have found women farmers who do not already suffer from a negative bias in input allocations – mostly but not entirely women in partnership households – to have higher yields. We explain this in terms of a model in which, within a general framework of avoiding disaster and trading off risk against return, women perceive risks differently – focussing on food security rather than financial risks – and, as a consequence, invest a portion of the gains in new agricultural technologies and in the acquisition of social capital; although there is of course huge differentation within the categories of both men and women farmers owing to differences in fallback positions. As a consequence, by contrast with the Udry approach, we can see merit in reallocating land *from men to women,* as well as stepping up support services for women, on a basis of 'backing winners', even within the context of systems in which –as in the three countries examined here – factor allocations are still severely biased against women.

It is necessary however to repeat the warning that even though gains in agricultural productivity translate, overall, quite tightly into gains in income, the link is much weaker at the bottom end of the income scale. This has implications for the possibility of converting an 'African Green Revolution' into

direct reductions in poverty. A range of institutional expedients, as examined in earlier chapters of this book – microfinance, extension, expansion of labour markets and growth in social capital – all show potential (figure 7.4) in enhancing this linkage, but all need tailoring to local environments to be effective. The thrust of our argument thus supports those (e.g. Thirtle et al. 2001)[163] who advocate expansion of foodcrop agriculture as an anti-poverty strategy, but emphasises that neither this nor even a focus on women farmers will achieve poverty reduction on its own.

---

[163] Thirtle et al., using cross-sectional econometric methods, demonstrate a significant link between growth of the agricultural sector and rate of poverty reduction across a large sample of developing countries.

Appendix. (i) Uganda: data on 'poverty transitions'

Client reference and gender (FH= female-headed)	Income 2001 ($/month)	Income 2003 ($month)	Assignable changes in income:				Interview notes
			Maize Yield 2001/ 2003(1)	Loan-supported activity(2)	Labour(3)	Social capital and other causes (interview indications)	
Bulako interviewees: M10084	38	65		30			'I feel good because I can now take care of my family and can buy new school uniforms for my children every year. Since I began getting loans, I cannot remember a time when I was not in a position to attend to a sick child'
M10011a M10011b	22 27	60 65			34 41		Both gained steady employment as a consequence of being hired by 10011.
F10077	34	101	1700	35		Some financial assistance from son in Kampala, 'but this is not regular'. During holidays children help with rice cultivation, especially bird-scaring.	Centenary Bank individual loan, making possible expanded acreage and flour milling business. 'The family now has food always. I can now afford to hire labour,and send all my children to

							school even without the help of my husband ('who is almost never around'
F 10045a F 10045b	31 36	64 61			27 32	Weeding labour on maize farm, 4-month contract	
Sironko interviewees:							
87M	9	15	800/600 (Longe 1)	No loan		Social capital index 3(bonding social capital index :2) (4)	
90FH	10	19	800/200 (Kenya hybrid 511)	Loan from FOCCAS (group-lending NGO)		Social capital index 4(bonding social capital index 3)	
91M	4	61	1000/150 (Longe 1)	Loan from FOCCAS	10	Social capital index 4(bonding social capital index :5)	
94FH	6	26	**1400/2000 (Longe 1)**	No loan		Social capital index 0(bonding social capital index :1)	
120M	12	119	400/350 (Longe 1)	Member of rosca (Dubanda Club)		Social capital index 5(bonding social capital index :4)	
143F	11	17	400/2000 (Longe 1)	No loan	2	Social capital index 0(bonding social capital index :1)	
Bufumbo interviewees: 229F	7	16	1980/1800 (Hybrid 614)	No loan		Social capital index 1(bonding social capital index :0)	
233F	4	40	1000/2880 (Kitale 614)	No loan		Social capital index 3(bonding social	

						capital index :2)	
282F	7	26	450/50 (Sebei Seeds local variety)	No loan			
Sub-sample mean value	**8**	**37.6**	**803/1114**			**2.77/2.11**	
Sample mean value						**2.71/1.05**	

Notes on assignable causes of exit from poverty:
> (1) *Maize yields:* value of increase in maize production (kg. per hectare per year) between 2001 and 2003. Name in parentheses relates to type of seed used.
> (2) *Loan impact:* change in income 2001-2003, net of change in income in control group.
> (3) *Labour:* value of (monthly) increase in labour income between 2001 and 2003.
> (4) *Bonding social capital* is a measure of trust and association within a solidarity group, typically within a village. For full details of the social capital indices see Chapter 6.

Poverty line for Bufumbo and Sironko: $13 (UgSh 25563) per adult equivalent at end 2001.

(ii)The basic model

This appendix describes the basic model of response to risk tested in this chapter.
> (i) Individual portfolio optimisation
> (ii)   Intrahousehold relationships
> (iii) The labour market
> (iv) Links from investment to poverty

(i)Individual *'portfolio optimisation'* (Figure 7.1)(allocation of assets between physical, human and social)

Any individual decision-taker, male or female, optimises a function which balances two objectives: present consumption and defences against threats to future well-being. We hypothesise that most female preference functions will be oriented towards the minimisation of *food insecurity* and most male preference functions towards the minimisation of *income insecurity.* Defences against threats to well-being are conceptualised in the form of *risk efficacy,* that is, the perceived ability of the decision-taker's entire investment portfolio to defend against risk. Incremental risk efficacy is defined, for any individual i, as:

$$RE = (1- r_1)A_1 + (1-r_2)A_2 + (1-r_3)A_3$$

where r_{ij} = a measure of the *riskiness* (standard deviation or other) of the exchange value of asset j;

  A_j = a measure of the *expected exchange value* (in a defined future period) of asset j.

(A_1 = physical capital: A_2 = human capital; A_3 = social capital)

Thus individual i maximises:

$$C + \alpha RE = C + \phi_i (V_i)(r_1A_1 + r_2A_2 + r_3A_3) \qquad\qquad (1)$$

Where ϕ_i = a measure of the *risk aversion* (positive or negative) of individual I, which varies according to perceived vulnerability (see Chapter 2)

subject to two types of constraints:

(i) current consumption must not fell below the disaster level:

$C - 2\sigma(C) > D$ (2)

i.e. A is always at least two standard deviations from A: there is always at least a 95% probability that A>D.

(ii) production functions for consumption and specific assets:

consumption $C = \alpha_1(A_1 + A_2 + A_3)_{-1}$ (3)

physical capital $A_1 = \alpha_2 CR + \alpha_3 L + \alpha_4 A_{-1}$ (I4)

human capital $A_2 = \alpha_5 + \alpha_6 E$ (+? term for formal education) (5)

social capital $A_3 = \alpha_7 + \alpha_8(INEQ)$
$+ \alpha_9$(policy incentives e.g. insurance) (6)

where:

CR = index of credit availability

L = labour

E = extension availability

INEQ = inequality

Maximising the objective function (1) subject to the constraints ((2) to (6) we obtain the Lagrangean:

$L = C + \phi_i (V_i)(r_1 A_1 + r_2 A_2 + r_3 A_3) - \lambda_1 (C - 2\sigma(C) - D) - \lambda_2 (C - \alpha_1(A_1 + A_2 + A_3)_{-1}) - \lambda_3 (C - \alpha_1(A_1 + A_2 + A_3)_{-1}) - \lambda_4 (A_1 -(\alpha_2 CR + \alpha_3 L + \alpha_4 A_{-1}) - \lambda_5(A_2 - (\alpha_5 + \alpha_6 E)) - \lambda_6 (A_3 -(\alpha_7 + \alpha_8(INEQ)$

$+ \alpha_9 (PI))$

(i) The risk-bargaining process between men and women

We distinguish between two cases A and B:

Case A: there exist two decision-takers of opposite sex within the household. In this case we assume that *separate-spheres risk bargaining* takes place between those two decision-takers concerning the allocation of the productive inputs A_1, A_2 and A_3.

Case B: there is only one decision-maker, typically the head of a female-headed household. In this case we visualise a conventional 'unitary' optimisation process, as in (i) above.

Production is carried out partly in female-headed and partly in male-headed households, the relation between the two being defined by the percentage β:

$$A^* = A^*_1 + (1-\beta) A^*_2 \qquad\qquad (7)$$

Men and women start off with individual risk coefficients ϕ_m, ϕ_f. In *Case A* households these are subjected to a process of 'separate-spheres bargaining', and this process leads if successful to an equilibrium coefficient ϕ^*, which is a risk-coefficient bargained between the two genders; this governs the choice of investment level in figure 1 and equation 5 . In *Case B* (essentially female-headed) households the female risk-coefficient ϕ_f prevails, and the decision-making process proceeds as in Section (i) above.

For case A households the process of intrahousehold bargaining is visualised as follows[164]. Individuals are relatively autonomous in the allocation of their resources, and resource allocations are linked through the mutual need for each other's contributions to the production of a public good (z), produced through a simple household production process. For both males and females, as in section 1, well-being depends on current consumption and defences against future risk (I.1), but current consumption is now disaggregated between the production of a private good (X_f for females, X_m for males) and of the public good Z, which in turn is conditional on the level of the net income transfer that makes up the conjugal contract.

Females therefore maximise

$$U_f = (x_f , z/\theta, \phi_f,) \qquad\qquad (8)$$

and males maximise

$$U_{fm} = (x_f , z/\theta, \phi_m) \qquad\qquad (9)$$

subject to the identical constraints:

---

[164] The exposition here is heavily indebted to Carter and Katz (1996) but differs from their approach through the separate modelling of partnership and female-headed households; and also through the introduction of individual risk coefficients ϕ_m,ϕ_f which are central to the analysis below.

Females	Males
$p_f X_f < w_f l_{f\ (w)} + \theta$	$p_m X_m < w_m l_{m(w)} - \theta$
$Z = a_z (l_{f\ (z)} + l^*_m)$	$Z = a_z (l^*_f + l_m)$
$L_{f(z)} + L_{f(w)} < L_f$	$L_{m(z)} + L_{m(w)} < L_m$
Notation:	
X_f, X_m production by males and females of private good x	
l_f, l_m labour supplied by males and females	
w_f, w_m male and female wages	
Z household goods production	
θ intra-household income transfer, of size determined by conjugal contract	
ϕ_f, ϕ_m risk coefficients of males and females	

For each individual, male or female, the maximisation problem in equations (8,9) can be written out as a Lagrangean after using the time constraint to substitute for $L_{(w)}$. For the woman, the Lagrangean will appear as

$$\mathbf{L_f} = U_f (\phi_f, a_z (l^*_{m(z)} + l_{f(z)}) + \lambda_f (w_f (L_f - L_{f(z)}) + \theta - p_f x_f \qquad (10)$$

Where λ_f is the shadow price of female-controlled income. Assuming interior solutions, the first-order necessary conditions can be written as

$$\lambda_f = (\partial U_f / \partial X_f)/p_f \qquad\qquad\qquad (11)$$

$$(\partial U_f / \partial z) a_z = \lambda_f\ w_f \qquad\qquad\qquad (12)$$

$$w_f (l_f - l_{z(f)}) + \theta - p_f X_f = 0 \qquad\qquad\qquad (13)$$

Condition (12) indicates that the woman will allocate labour to household good production until the marginal returns to that labour $((\partial U_f / \partial z) a_z)$ equal the opportunity cost of labour (w_f) marked up by the shadow price of her own cash income. For a woman with relatively low levels of cash income and low levels of consumption of private goods (X_f) such that the marginal utility of her private production is high, condition (11) suggests that the value of λ_f will be high, implying a tendency to supply relatively little of her labour to the intrahousehold public good Z, even if the female wage rate w_f is low. Note that positive income or asset transfers to the woman will boost her consumption levels, lower the shadow price of own-income, and thereby alter labour allocation in favour of Z-good (domestic) production. Thus intrahousehold income transfers effectively operate as inducements to modify individuals' autonomous time allocation decisions. By contrast unitary and co-operative bargaining models (such as the first one used in Chapter 3) use only a single, household-level shadow price of (pooled) income to value the use of time in home versus market activities, thereby guaranteeing that the trade off between income and leisure is equalised between partners.

Depending on conjectures about the behaviour of other individuals in the household, solution of the equations (11-13) defines 'best-response' or conditional demand and supply functions:

$$X_{k(c)} = X_{k(c)} (l^*_{j(z)} | \theta) \qquad\qquad\qquad (14)$$

$$L_{k(z,c)} = I_{k(z,c)} (I^*_{j(z)} | \theta) \qquad\qquad (15)$$

where $I^*_{j(z)}$ represents individual k's conjecture about the behaviour of partner j. If each individual treats the partner's behaviour as fixed and non-responsive to changes in his or her own behaviour, the special case of a Nash-noncooperative equilibrium is defined as:

$$x^*_k (\theta) = x_{k(c)}(I_{j(z)} (\theta)|\theta) \qquad\qquad (16)$$

$$I^*_{k(z,c)} = I^*_{k(z,c)} (I^*_j (\theta|\theta) \qquad\qquad (17)$$

From this point onwards the modelling becomes completely orthodox: this Nash equilibrium is determined, as illustrated by Figure 7.5, by bargaining strength and by the male and female fallback position. Note, however:

> (i)   that the female fallback position, or risk limit, is determined by perceived female vulnerability ϕ_f, and any increases in voice or exit possibilities, or policy measures, which are able to influence this will also impact on female productivity and labour supply;

> (ii)   perceived vulnerability within a partnership household is determined by the size of the intrahousehold transfer θ, which acts as a kind of insurance payment triggered by the payment of a premium in the form of labour services. Increases in θ, as will be shown below, trigger increases in female labour supply, investment and well-being under fairly general assumptions.

Figure 7.5. The Nash equilibrium and the male and female fallback position

Female utility

Male fallback position
determined by:
(i) assets and other exit options (including social networks)
(ii) voice options
iii risk attitude/perceived vulnerability ϕ ; and thence intrahousehold transfers

Female fallback position
determined by:
(i) assets and other exit options (including social networks)
(ii) voice options
iii risk attitude/perceived vulnerability ϕ ; and thence intrahousehold transfers

Male utility

This process of determining a bargaining equilibrium has already been used to yield a reduced form for female labour supply in Chapter 3:

(at present)

$$L_f^* = \alpha_0 + \alpha_1 C + \alpha_2 CR + \alpha_3 L + \alpha_4 N + \alpha_5 E + \alpha_6 SC + \alpha_7 w \qquad (18)$$

and using the same process we may derive a (reduced form) for total and for female yields:

(19) Total yield: $(Y/A) = \alpha_0 + \alpha_1 I + \alpha_2 E + \alpha_3 L + $ social capital variable….+ policy shift parameters

(20) Female yield $= (Y_f/Y) = \alpha_4 + \alpha_5$ (bargaining parameters) $+ \alpha_6$(extension…) $+ \alpha_7$(land, labour) + social capital variable…+ female-headed household dummy variable.

And , on the premises that yields influence poverty (as illustrated in Figure 7.4 above) a reduced form for poverty follows:

(21) Total poverty $= \beta_o + \beta_1 (Y/A) + \beta_2$ (labour income) $+ \beta_3$ (linkage coefficients) $+ \beta_4$(credit, insurance and other policy variables)

These are the estimating equations used in tables 8.2 and 8.3 above.

iv Labour supply and demand

These equations are derived from, and estimated in, Chapter 3 above.

Supply
$$L_s = a_0 + a_1 Y_l + a_2 \sigma_l + \mathbf{a_3 X} \quad (22)$$
where Y_l = income(entitlements) of labour *supplier*

σ_l = perceived risks to entitlements of labour supplier

$\mathbf{X}$ = other variables affecting labour supply (family and community support, wage rates, assets, landholdings, and crop-specific dummies

Demand
The demand function contains the income of, and the risks facing, the *employer,* together with a range of other determinants:
$$L_d = b_0 + b_1 Y_e + b_2 \sigma_e + \mathbf{b_3 Z_1} + \mathbf{b_4 Z_2} \quad (23)$$
Where Y_e = income(entitlements) of labour *employer*

σ_e = perceived risks facing the employer

$\mathbf{Z_1}$ = controllable (policy) variables affecting labour demand
(composition of demand, microfinance, insurance…)

$\mathbf{Z_2}$ = non-controllable variables affecting labour demand

Note that the term Y_e (employer purchasing power) in (23) constitutes the crucial link between the first three parts of the model and this one. Employers' purchasing power is driven by asset accumulation, which is determined by a conventional accelerator relationship on income, which is driven in part by yields. Note that, by table 7.6, the empirical link between yields and income is weakest at low (specifically below poverty-line) levels of income.

Chapter 8. The management of multiple risks: BRAC and SEWA

1. Introduction

The argument so far has examined *individual* expedients by which *individual households* can protect themselves against livelihood risks and thereby reduce their poverty – in particular, labour, insurance, microfinance and social capital-building strategies. In this chapter we consider the consequences for organisations and for individuals of providing protection against *several of those risks at once.* To this end we provide a portrait of two very large non-governmental organisations which have sought to do this, BRAC ,the Bangladesh Rural Advancement Committee, and SEWA, the Self-employed Women's Association of Gujerat, north-western India . Questions on which we shall wish to focus include: How does this approach of tackling risks in an integrated manner help to deal with the problem of market failure? What attractions does this 'integrated' model of risk management have for the organisation which sponsors it, and for the client? If attractive, why has it been so little imitated? Does it offer a promising approach to poverty reduction, and how can it be incentivised to offer more in this direction?

Both of the organisations were born in 1972, BRAC as a relief organisation in the aftermath of the civil war caused by the secession of Bangladesh from Pakistan and SEWA as a registered trade union, - initially the women's wing of the Textile Labour Association founded by Mahatma Gandhi in 1972[165] – but ever since that time representing low-paid women traders and workers, many self-employed and many working at home, who were without representation in the workplace. The organisation was formed during a drastic shake-out of the labour force in the Ahmedabad textile mills[166], which forced many formal-sector employees into insecure livelihoods in the informal sector – and can thus be seen as one of the most innovative early attempts to deal with the social costs of adjustment.

Both organisations place the empowerment, and not just the material well-being, of the client at the centre of their objectives[167]. In SEWA's case the principal instrument by which this was done was the (women's) *cooperative* and in BRAC it was the *village organisation.* Cooperatives and village organisations were formed among all members from the 1970s onward, and in SEWA's case also to organise in support of better working conditions, relief

---

[165] In February 1981 the women's wing was expelled from the Textile Labour Association and forced to become an independent organisation. Sebstad (1982),p.9.

[166] Between 1950 and 1980 the labour force in the Ahmedabad textile mills fell from 25% to less than 5% of the city's industrial labour force. Sebstad(1982),p.2.

[167] In 1983 BRAC's founder, F.H. Abed, stated that 'without the resolution of the problem of power, genuine development in rural Bangladesh will continue to elude us' (Montgomery, in Hulme and Mosley 1996: 156)

from police harassment, minimum wages, and less monopolistic relations with moneylenders and other suppliers of services.

In both organisations the development of health, and especially maternal and child health, services has been primordial. In SEWA these services, however, are bought by clients from suppliers in the private or government sector and then brought within reach of clients by devices such as its insurance scheme. BRAC, by contrast, supplies most of its own health services; indeed it achieved recognition in the 1980s primarily through its activities in the health sector, and in particular its OTEP (oral rehydration therapy programme) which had reached the astonishing figure of thirteen million households by 1990 (Montgomery et al., in Hulme and Mosley 1996). The credibility acquired through the OTEP's coverage and success opened up new prospects for donor funding.

Neither organisation, therefore, was founded as a financial institution, and neither, of course subscribes to the minimalist, achieve-sustainability-at-all-costs ethic fashionable within the dominant faction of the microfinance community (Chapter 5 above). Both organisations, rather, took on microfinance, from the late 1970s onward, as a means towards the achievement of their social objectives, including poverty reduction; a stance for which they were initially cold-shouldered but eventually embraced by donors as poverty reduction finally came to encompass their other objectives in the early 1990s. Within SEWA this took the form of a SEWA Bank (founded only two years after the parent organisation in 1974); within BRAC, of a Rural Credit Programme which cross-subsidises the Rural Development Programme of health, educational, training and marketing activities[168]. Initially, SEWA lent only through cooperatives (to individuals with a guarantor)[169] but it has now, especially in rural areas, moved over to the fashionable (especially with the Government of India) self-help group model of credit provision (see chapter 5 above).

This dualism between 'banking' and 'social development' activities then formed the springboard, within each organisation, for a process of diversification which has three separate dimensions. In the first place there is *product diversification.* SEWA has developed insurance, training and legal advice alongside its 'core business' of labour market activities and banking. BRAC has been more diversificatory still, and has in addition to the above moved into research, property development, and agricultural marketing, so that it is now possible to be delivered at birth by BRAC, fed by BRAC, housed by BRAC, financed by BRAC, educated by BRAC (at primary, tertiary and post-formal levels), rehabilitated by BRAC after illness or accident, cared for by BRAC in old age, and of course financed by BRAC through the entire lifecycle. In the second place there is *product development* (for example, the initial SEWA insurance product, developed in 1992, covered only the life and personal health of the (female) client, but this product has been progressively

---

[168] The cross –subsidisation is badly needed. In 1992 each RDP branch, on average cost more than 4.5 times its income (Montgomery et al. in Hulme and Mosley 1996: 116)

[169] Indian cooperatives, in spite of innumerable attempts at reform, have always proved unreliable vehicles for lending, neither poverty-focussed nor financially disciplined, and still report arrears rates, on average, of over 40% (Arun and Mosley, 2003). The SEWA Bank experienced in the late 1970s what, in its own terms, was a 'repayment crisis', with arrears rates rising to around 10% (Sebstad 1982: 84), but this was always minor by the standards of the state rural banks, and was soon reduced. In 2002, the repayment rate was 94% (SEWA Bank *Annual Report).*

extended and developed to cover female health, then personal effects, then the health of the male partner, and finally, in 2003, children's health expenses). In the third place there is *diversification of targeting.* This is achieved in SEWA by indirect means - including the diversification of insurance, which being needed more by poorer people who are risk-averse may push poorer clients over the accessibility threshold -; there are no direct income and wealth means-tests. In BRAC, as in many other institutions in Bangladesh, such tests are imposed (see Table 8.1 below); but much more importantly, innovative financial products have been designed by BRAC to try and enable the ultra-poor to take advantage of financial services, which has often (Chapter 5) not been easy for them to do. The first of these was IGVGD, the Income Generation for Vulnerable Groups Development Programme, which provides to ultra -low-income single women a sequence of food aid, then contractual savings coupled with training, then a small loan for income generation in a low-capital-requirement activity – common ones are poultry farming and sericulture -, and then loans of progressively increased size within the standard rural credit programme (RCP). Over a quarter of a million loans have now been made within this modality (Hulme and Matin 2003, Mosley and Halder 2003) . Then in 2001 an evaluation (Webb et al. 2001) found that even IGVGD was not reaching far enough down – or more precisely that the very poor were taking advantage of the food consumption and not the investment elements of the sequence. In consequence, a new programme aimed still further down the scale, *Challenging the Frontiers of Poverty* (CFP) was piloted in Rajshahi and other poor districts in 2002. . In spite of a widespread desire among microfinance sponsors and providers to 'reach the poorest' there have been few extensions or even imitations of IGVGD and CFP except, to the author's knowledge, one unsuccessful case in Zambia (Mosley and Rock 2002). What has to be understood if possible is, not only how to replicate the kinds of anti-risk instruments which BRAC and SEWA have pioneered, but much more, how to incentivise the creativity which they have shown in developing such instruments.

Some of the main similarities, and differences, between the organisations as they have evolved up to the present are contained in Table 8.1.

Table 8.1. BRAC and SEWA: design features

	BRAC	SEWA
Founded	1972	1972
Functions	Microlending, health insurance, primary health and education, rural marketing, more recently tertiary education, numerous directly productive activities*	Registered trade union, microlending, social insurance, training, housing, NGO coordination
Number of clients	Over 3 million, across the whole of Bangladesh	220,000, almost all in Gujerat state
Gender distribution	Microlending programmes: 75% female	Women only, although some benefits explicitly targeted at male partners
Targeting	Not above 50 decimals of land	
Relationship to government	Nutritional support and IGVGD (see below) are collaborative programmes with donors	Some government subsidy e.g. for health insurance programme
Service characteristics: Health	Provided through own doctors. Emphasis on preventive care through vaccinations etc.	Provided by private doctors through health insurance programme
Insurance	Life insurance compulsory;for health risks only, voluntary scheme available (see ch4 above)	Voluntary (14% uptake) for life, member's, partner's and family's life,health, and personal effects(see ch4 above)
Microcredit	Provided to groups through Rural Credit Programme: additional schemes for poorest (IGVGD and CFP)	Provided through co-operatives, and now self-help groups
Labour markets	None.	Trade union, working through cooperatives for labour standards, minimum wage enforcement, relief from police harassment, improved 'terms of trade'
Empowerment strategy	Through training, creation of Village Organisations and legal advice	Principally through training, intervention in labour markets, women's cooperatives, and legal advice.
Governance	Five executive directors, all male	Rotating board of five directors, all female

Donors	Include DFID, NOVIB(Holland) and World Bank	Include GTZ, Ford Foundation, US Population Council, OXFAM

Notes: including seed production, fish hatcheries, food processing.

These unique organisations, then, are different in ways which go beyond matters of size and gender focus. Distinctive to BRAC is the range of productive activities, from publishing, to fish hatcheries to production of hybrid seed and animal feeds. Distinctive to SEWA is its range of interventions in the labour market, which have needed to be innovative as there was no precedent for a trade union taking actions in support of the self-employed. Strikes for higher piece-rates and demonstrations against the harassment of street vendors have often been attempted but have not always worked, as discussed in more detail below, and SEWA has been forced to switch some of its attention from the supply to the demand side of the labour market, through the negotiation of bulk purchasing contracts[170], marketing outlets[171], improved conditions of work and adherence to minimum-wage agreements. As we have seen in earlier chapters, the poorest people within the informal sector often pay much higher prices for their inputs and receive lower prices for their outputs – thereby augmenting the risks associated with entry into the market economy – and SEWA is one of the institutions which has most comprehensively sought to redress the terms of trade for low-income women.

But these organisations do also have likenesses. In particular, by diversifying the range of risks against which they protect, both organisations have now become miniature (and indeed not so miniature: BRAC is now more than 1.5 per cent of Bangladesh GDP[172]) welfare states, and in particular in Bangladesh, NGOs are gaining economic and intellectual territory still at the expense of the state (Haque 2002). But for all their efficiency as providers of microfinancial and other income-generating services, they are still heavily aid-dependent and do not share the wish of some donors, including the World Bank, that the subsidy element in their operations should be reduced[173]. They are, after all, nonprofit organisations, and whatever it is that they are optimising, private profit is not it. Indeed, they have an incentive to at least sustain aid flows if they wish to minimise interest and other charges to their clients (and therefore to maximise volume growth); and with large aid inflows comes a large need to satisfy the performance audit requirements of the donors. Townsend et al (2002) have argued that those requirements are probably in conflict with those of the rural poor, and there is certainly within both BRAC and SEWA some evidence suggesting that the participation of the poorest is not as readily rewarded in practice as in rhetoric[174]. In short, one

---

[170] As far back as 1981 SEWA's Economic Wing arranged a contract with the National Institute of Design in Ahmedabad to provide cleaning services for their buildings; more recently, in 1995, a cleaning contract was arranged with the Indian Institute of Management.

[171] SEWA has its own network of craft shops, which now achieve substantial export sales. It also organises exhibitions.

[172] The aid subsidy element has, however, beeen reduced from over 50 per cent in the 1980s to around 20 per cent now; BRAC, *Annual Report 2002*.

[173] In 1992, Montgomery calculated that BRAC interest rates would have to be raised from their prevailing 20% to 52% to enable overall break-even on operations (in Hulme and Mosley 1992: 116)

[174] Hashemi (1990) is scathing about the empowerment element of the BRAC agenda, arguing that 'despite a participatory and awareness-raising rhetoric amongst NGOs such as BRAC and Proshika,

view is that the services of, at least, microfinance NGOs are deployed to discipline, rather than to protect the livelihoods of, the poor – and that BRAC and SEWA, as much as the donors who finance them, are part of an emerging system of global governance, protecting against increasingly globalised security risks. This view will be examined at greater length in our next chapter.

2 The approach: possible merits of integration

Within this context we may now ask our main research question, which there has been little attempt to answer in spite of the large literature on both organisations: what is the payoff, to the organisation to the customer and to the poor more generally, of *risk management in multiple,* as practised by both organisations? Is it a precedent which can be replicated, and can it be further 'tweaked' to the advantage of the poor within our study areas?

We can first make three arguments for portfolio diversification, *from the organisation's point of view.* The first is that the different elements in the portfolio may be mutually supportive and make the others more effective, as illustrated by figure 8.2:

Figure 8.1. Risk management through multiple instruments
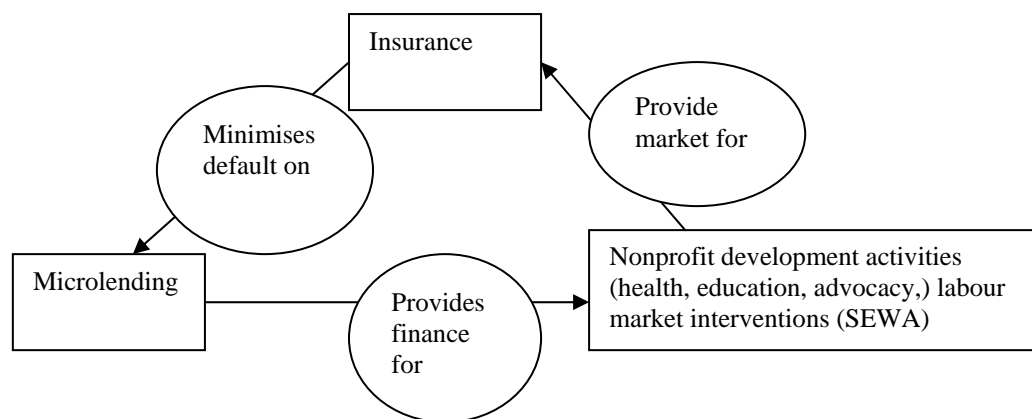
In both SEWA and BRAC, as we have seen, the sequence went from the provision of nonprofit development activities, to microlending which could help finance those activities, to insurance which could help protect the microfinance activities against arrears. Each of the separate activities helps to protect the organisation by putting pressure on the other activities to deliver,

which both draw on the ideology of Freire, the reality is much less impressive. Meetings are organised and led by NGO workers; the agenda is usually set by them and not by the members of the *shomitis* (village councils) and the mode of interaction is teacher-(to)-pupil (ironically what Freire strongly condemns)'. Montgomery , in Hulme and Mosley 1996: 158. Note also comments on (the lack of) targeting in SEWA, under table 8.3 below.

much as the beams of a roof strengthen the roof by putting pressure on one another at one central point. In BRAC, the high-externality (and loss-making) Rural Development Programme (RDP) was cross-subsidised by the high-profit RCP. In SEWA, the SEWA Bank

> has provided an institutional mechanism for Oxfam UK to establish a revolving loan fund for women in the *chindi* (patchwork quilt) project to purchase sewing machines. Moreover it has financed several of the projects during their initial stages, including the vegetable unit and the Baila Marketing Center. The Bank staff also assists in the accounting and financial management of the projects…' (Sebstad 1982: 135)

We shall call this the *mutual-pressure* argument for integration of risk management functions. Often, in addition, intervention to cure failure in one part of the market exposes failure in another market, as eloquently put by SEWA to explain the link between its housing finance programme and its other social objectives: failure in the market for health and housing, for example, is made worse by failure in the market for loans, and therefore both have to be tackled at the same time:

> A majority of the women working in the informal sector live in small, 'kachcha' mud huts in congested slums with large families. Their low-level houses have little or no ventilation, water, drainage and electricity facilities. Often the roofs of their huts leak constantly, and the latter are infested with insects. For women working from home like *beedi* (cigarette) workers and makers of readymade garments, the living conditions are even worse than those of their counterparts in other industries because for the former their home is the workplace where they live, work and store their raw material and finished goods with all the accompanying hazards. Thus *beedi* workers constantly breathe the tobacco they store in their homes, while a ragpicker's hut is full of rags.

> Such living conditions expose the women to numerous risks, often making them susceptible to fire (in the case of small houses), floods (where the houses are situated at low levels), quarrels with counterparts (when they are fetching water), ill-health (through inhalation of tobacco) or unhygienic living conditions (caused by waterlogging and the resultant infestation of mosquitoes)' (Sinha 2002:10)

This is the mutual-pressure argument reinforced by evidence of *interlocking market failure.* The proposition is that some risk management functions are under-supplied, in part because of imperfect information and in part because they generate externalities, and hence providing them in a cluster will enable all of them to function better.

Secondly, a diversified portfolio may enable the institution to grow faster, and thereby not only to supply more services to its target population, but also to develop more influence with government, donors and international organisations – which may indeed set turnover targets for it if it is to achieve

valued types of recognition[175]. Although every part of such of an argument can be (and in the case of our case-study institutions has been) supported as being in clients' interest, it is also the case that NGOs –as emphasised by Townsend et al - develop their own dynamic in which the interests of clients are not the only driver.

Thirdly, a diversified portfolio may enable the institution to build up customer loyalty. The proposition is that each additional offering within the range of risk-management services takes the relationship between supplier and client beyond a purely market relationship into a trusting and protectional relationship, which may be crucial for both parties at a time of crisis or opportunity for the organisation. For example, SEWA was 'fortunate' that its insurance product had been launched by the time of the Gujerat earthquake in February 2001, since that shock impelled those suddenly discovering their lack of insurance cover to accept it from an institution which they already trusted by virtue of already receiving from it labour-market or loan services. During the following year SEWA's insurance clients trebled from 30,000 to 90,000. Similarly, when in an economic slump clients become over-indebted, they first repay the creditor to whom they feel most loyalty – which typically will be the one who provides them with protectional services additional to mere credit, such as mentoring. training, health services, childcare and legal assistance. The integrated model is likely to score over the 'minimalist' one in such a context[176].

This is not remotely to suggest that a 'comprehensive' approach presents no headaches for the sponsoring NGO. In particular, there may be tensions between the 'political' and the 'economic' components Some of these have been beautifully highlighted by Renana Jhabvala[177]:

> We have found several reasons why it is difficult to organise a trade union and a cooperative at the same time. For one thing, the skills required for organising a trade union are very different from those for organising a cooperative. A trade union organiser must be very mobile and on the move, always aware and alert, capable of having her mind in a thousand directions all at once and always ready to struggle. In contrast, organising a cooperative takes business acumen and skills and a compromising nature. And compared to cooperatives, trade unions also have a very different type of relationship with traders and

---

[175] For example, SEWA has made it clear that it aspires to the target of 500,000 members – which would give it voting rights within the ILO.

[176] This may have macro-economic importance. In Bolivia between 1999-2001, many microfinance institutions experienced rising arrears as a consequence of a macro-economic slump aggravated by the entry into the market of consumer credit houses with slack appraisal procedures. Microenterprise investment fell so far as to pull down the entire macro-economy. The only exceptions to this were the two 'village banks' CRECER and ProMujer, like BRAC and SEWA operating integrated health, training and microfinance services with a quasi-insurance component, which grew rapidly through the 1999-2001 recession – the integrated services encouraged their clients to privilege the repayment of debts to them, which protected their operations at a time of financial crisis. The episode os decribed in detail by Mosley and Marconi (2003)

[177] SEWA Board member; (daughter of the novelist and film scriptwriter Ruth Prawer Jhabvala); at the time of interview, head of the SEWA Economic Unit; now director of SEWA's Delhi office. Interview with Jennefer Sebstad, 1981, quoted Sebstad 1982:138-139.

merchants. Trade unionists generally oppose them and struggle against them – in short, they want something out of them. Cooperative organisers must learn to work with them, in a sense be one of them, especially in the initial stages when it is necessary to build up business relationships. The members of trade unions must focus on building unity and courage, and think of themselves as workers struggling against owners. Members of cooperatives, on the other hand, must learn to take on more and more responsibilities and begin to think of themselves as 'owners'. There are some very fundamental differences.

(But) the two can work very well together. A cooperative can be an entry point into the community and serve as the point of contact for a union. It also provides a base from which to build up organisers and local leaders.

These tensions notwithstanding, we believe we have demonstrated that the risk-management strategy of an NGO is an important part of its architecture[178] from the point of view of achieving its corporate objectives, in particular in relation to international organisations and in relation to government . Neither in the case of BRAC nor SEWA has this relationship been seriously adversarial, although a contest for territory has been going on the whole time. One of the criteria by which the contest is arbitrated (by no means the only one) is quality of service delivery In relation to health, a key target for both BRAC and SEWA – which, as we saw in the first chapter, is seen as the number one risk by most poor people . In this context Leonard(2002) has argued that in the environment of developing countries, NGOs have a competitive advantage because they 'have the ability to deliver high quality health care [whereas] neither private practitioners nor regular government organisations charging fees will easily succeed' (*ibid.* : 61). The argument is based in new institutional economics: patients cannot assess the appropriateness and quality of the activities of practitioners, hence free markets and spot contracts do not lead to an efficiently functioning market for health care. In principle public provision might fill the gap, but public provision in the cases examined by Leonard fails to do so effectively by virtue of being over-centralised and unable to devise effective performance incentives. The question is thus how NGOs – by whom patients prefer to be treated, because they fear the profit motive might have adverse consequences – can do this in an environment where the state fails. Leonard's answer is that administrators of mission hospitals and other NGO facilities are able to do this (and in Tanzania, do do this) because of their freedom (by contrast with government) to reward good and penalise bad performance, and because they are not monopolistic, and have a stock of value to lose in the reputations they have built up as quality medical providers. Similar arguments in favour of NGO provision based on asymmetric information apply also in the markets for microfinance and insurance, also of course provided by SEWA and BRAC –

---

[178] This expression for the relational networks which surround an organisation is gratefully lifted from Kay's (1993) study of corporate strategy and requirements for success.

where, however, the hidden information about quality is in the hands of the client, not the service provider.

Thus, on this view, the more asymmetric-information markets where the NGO can make this argument tell, the faster it will be able to grow within a specified country, and the better able it will be to achieve its objective of maximising its influence with government and aid donors. We assume in Figure 8.2 that the organisation seeks to maximise the growth of turnover and political influence, subject to the constraints of break-even and the demonstration of specified standards of service delivery to the client population; for the reasons given above we believe that, *other things being equal,* portfolio diversification will, at least in the perception of the NGO, raise its revenue line in relation to its cost line, thus raise its break-even point and increase its influence, or the externalities which it is able to provide.

Figure 8.2. Strategy from the integrated NGO's point of view
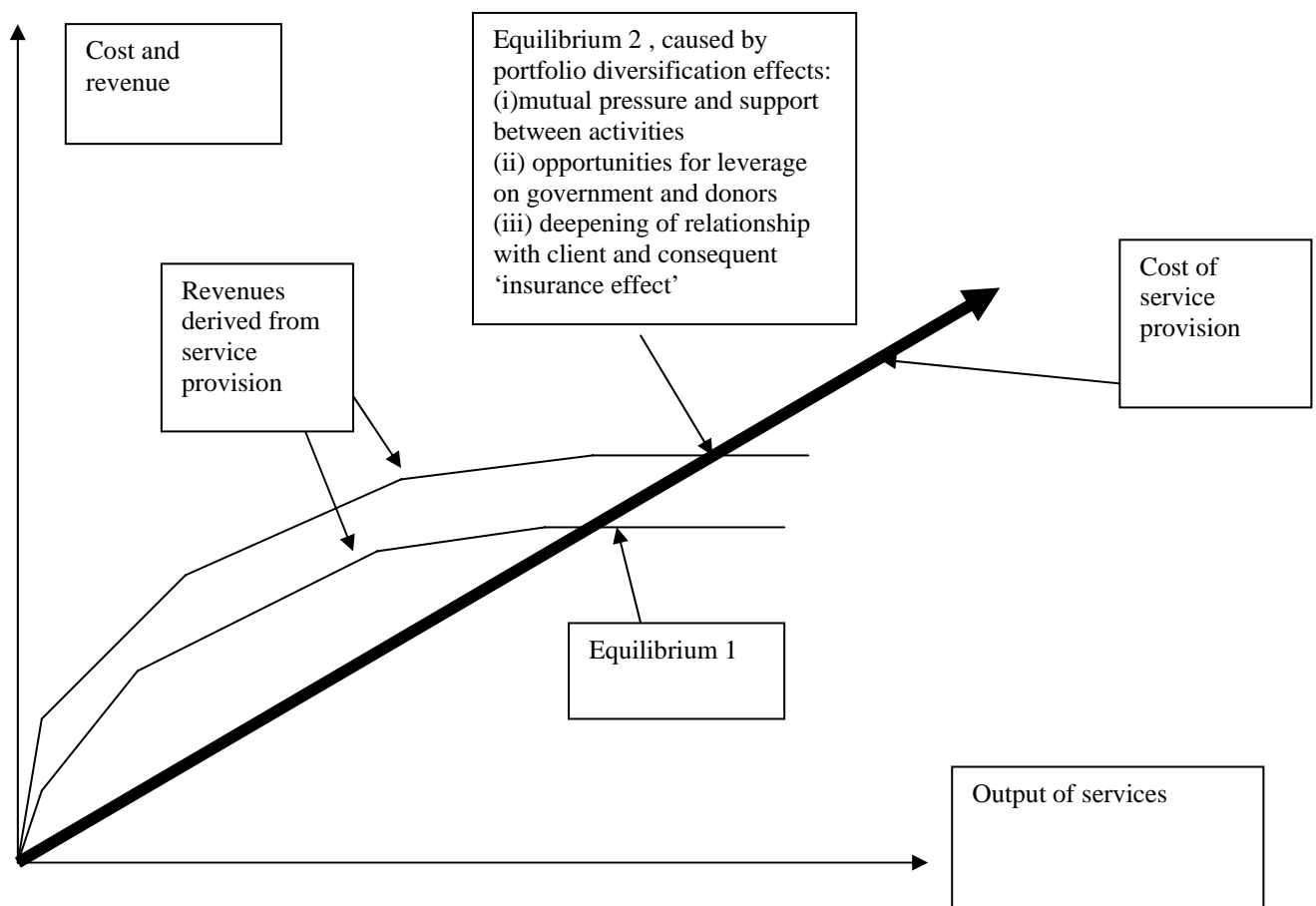
What will the effects of this way of seeing the world be on the client? Figure 8.3 presents the patterns of impact a schematic picture of how the response pattern depicted in the previous diagram is expected to influence the intrahousehold risk management of individual clients, illustrating the pattern of causation from NGO interventions to welfare consequences (with correlation coefficients added, where available). The inspiration for this diagram is the chain of causation visualised by Noponen and Kantor (1999b) but it also

embodies the risk of shocks, and the interlocking vicious circles to which SEWA's quotation, above, refers: - female ill-health, disempowerment, poor bargaining position, exclusion from capital and sometimes cash-labour markets, poor housing. This vicious circle is similar to that used in chapter 7 but with explicit health and healthcare provision variables added. As in chapter 7,we assume that households are motivated at all costs to search for strategies which will avoid 'disaster' levels of income or assets, but now with a focus on the interrelationships between these strategies.

Figure 8.3 NGO strategy as it is intended to impact on the client's intrahousehold resource allocation-a possible chain of cause and effect

(Adapted from a diagram in Noponen and Kantor 1999. Correlations for SEWA 1993-7 are superimposed (** denotes significance at 1% level).
Cross-references to previous chapters are entered (ch x))
Notes: (1) index of confidence in public used is 'bargains with supplier' (see further Table 8.4 below)

Key interventions   **Intrahousehold processes**   **Intermediate outcomes**   **Long-term outcomes**
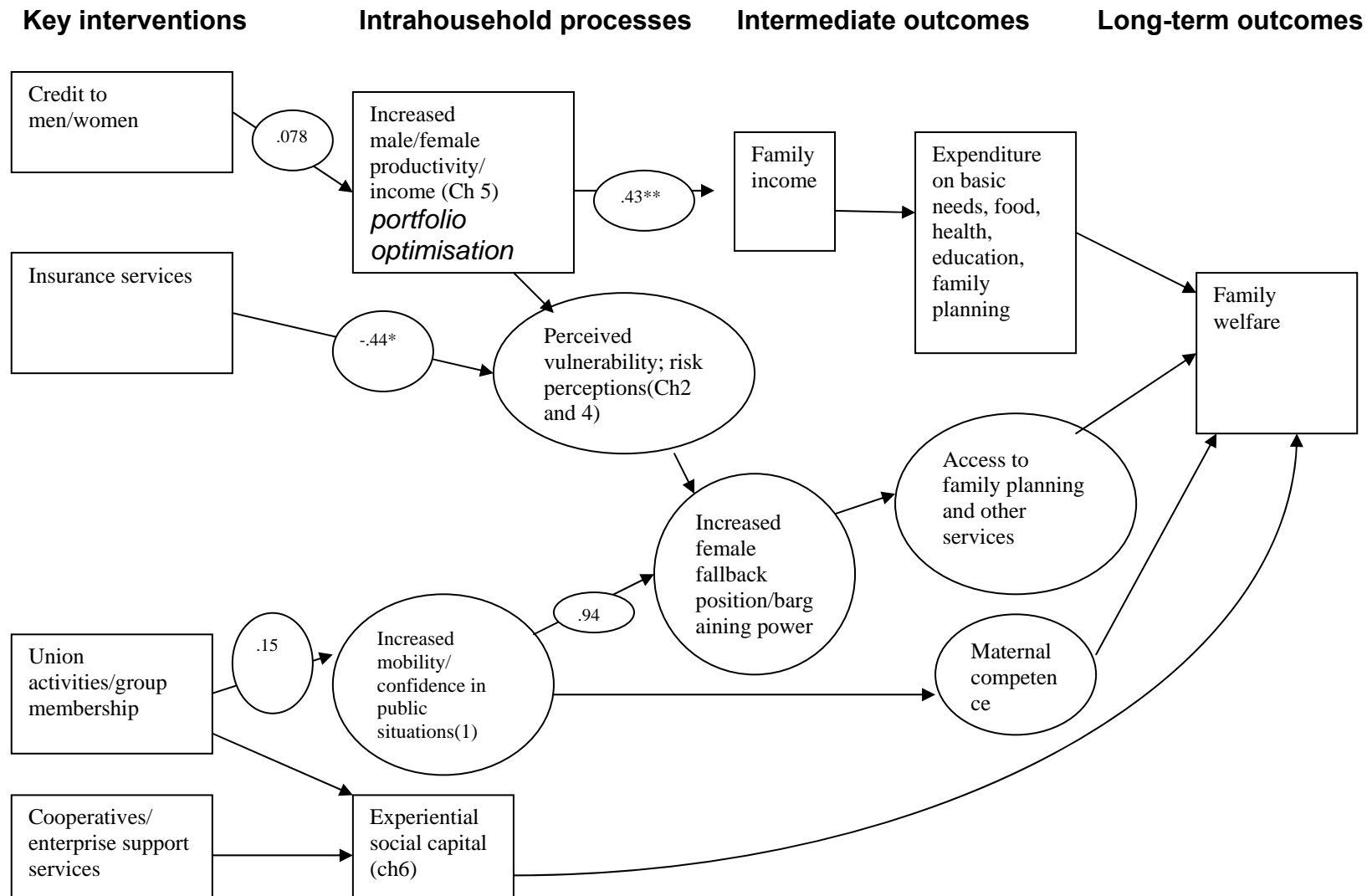
Impact analysis

First we summarise, in Table 8.2, some findings on BRAC and SEWA from the secondary literature and from previous chapters.

Labour market and product market interventions

There is consensus that the results achieved from SEWA's *strike-based* interventions in the labour market have been disappointing in terms of wage increases achieved[179], and that the main benefits achieved have been indirect, in that many SEWA members have been empowered through experience of the industrial struggle to negotiate with pride and self-belief[180]. Indeed these interventions, whatever they achieve in terms of wages and working conditions, can usefully be visualised in terms of seeking to improve the female's breakdown position, or what Bina Agarwal has called her 'internal vulnerability'. At this stage what is observable within SEWA is a clear influence between membership of the loan programmes and willingness to bargain with suppliers (bottom row of the table). A more extended examination of empowerment is attempted below.

Microfinance interventions

Both BRAC and SEWA were doing microfinance before the term microfinance was invented, and evolved their lending models somewhat independently of prevailing fashions within the microfinance movement; their tenacity to the model of integrated provision providing an example. Within SEWA,the early study by Jennefer Sebstad(1982) suggested a positive impact of the loan programme on borrower and total household income, a result confirmed by the data from Helzi Noponen's five-year panel data study presented in Table 8.3. Within BRAC, the 1992 study by Montgomery et al. concluded that 'BRAC's targeting is largely successful '– in the static sense that most membership meet the criteria laid down by RDP rules' (in Hulme and Mosley 1996: 129) but that there was concern about progression: specifically, 'the ideal impact of BRAC borrowers 'graduating out of poverty' is not observable in the survey results [for the late 1980s and early 90s]' (ibid: 138)[181]. This

---

[179] Jennefer Sebstad tells the following anecdote which stands for many such struggles:
'In 1978 SEWA organised over 600 *chindi* workers (who sew rags into quilts) in a strike for higher wages….A compromise agreement was reached between the merchants and the workers: the women would be paid one rupee per quilt. However, within 24 hours the merchants broke their end of the deal by refusing to pay the agreed-upon rate. Moreover, they began harassing many of the women who had been involved in the strike by giving them bad materials to sew, less work, and in some cases no work at all. (Thus) some members found themselves in a worse position than when they had started their protest'.(Sebstad 1982, p.165)

[180] 'At first we thought outsiders were tigers who would devout us. But now I have learned to talk to anyone. We have even learned to confront the police' Suraj (group leader of the vegetable vendors) quoted in Sebstad 1982,p.215.
[181] There was also concern about methods of loan recovery. It is a fairly well established result that collaborative behaviour is hard to induce without the credible threat of sanctions (Fehr and Gachter

judgment is harsh: a range of impact assessments carried out subsequently, and listed in the table, document a clear positive impact of BRAC credit on borrower income.

Indeed BRAC, much more than most microfinance organisations, has sought to innovate in the provision of financial services for the lowest income groups. It has done this particularly though the IGVGD (Income Generation for Vulnerable Groups) programme. It builds on an insight - the recognition of Aminul Alam, now an Executive Director of BRAC, that very poor people see any cash transaction as high-risk[182] – and an opportunity – the offer of food aid wheat by the World Food Programme to BRAC in 1986. Alam's truly creative insight was to use the 'breathing space' provided by transfers of food aid to destitute women as the springboard for a conditional sequence of actions in which recipients would first save some of the purchasing power released by the receipt of food aid, then after a period of regular saving receive training in low capital-requirement activities (poultry-raising, sericulture, fisheries and vegetable gardens being popular choices), then after that period of training receive very small loans enabling those activities to be implemented, which in the time-honoured manner could be scaled up until the recipient was able to 'graduate' into the regular BRAC microfinance programme. Thus at all stages both the financial and the technical risk was kept low, to match the vulnerability of the target recipient (Halder and Mosley 2003; Hulme and Matin 2003). An evaluation of IGVGD by Webb et al. (2001:iii) found that 'while many aspects of the programme were very valuable to ultra-poor women', the observable impacts were mainly on consumption rather than investment , and that most participants do not complete the intended sequence of activities which comprises a transition from the first to the second. Many of the clients who did not stay the distance were characterised by 'limited goals (mainly focussed on short-term food consumption and income flow enhancement) and thus few expectations of proceeding beyond the food aid and savings component ' , 'little confidence in the technical training offered' and 'debt aversion in an environment full of economic risks' – in other words, a determination to use the programme to survive at the bottom end of the snakes-and-ladders board rather than, in keeping with BRAC's wishes, that they should climb the ladders out of poverty. BRAC , in the course of 2002, sought to respond creatively to the conclusion of the Webb et al. report by devising a new programme CFP (Challenging the Frontiers of Poverty) with even more stringent entry criteria[183] and a broader range of services, with asset transfer, basic health services, a higher staff/client ratio and a shock/emergency fund added to the basic programme package.

2000), and such sanctions were indeed in evidence in SEWA cooperatives and BRAC groups. Nonetheless, they have their cost: Khan and Stewart (1992) recall a conversation with BRAC women in which 'they told us with pride that they had pulled down a member's house because she did not pay back her housing loan' (see Hulme and Mosley 1996:154)

[182] Interview, Aminul Alam, BRAC, 8 January 2002.

[183] No household member supported by CFP may be receiving assistance from any NGO, and a CFP client may possess only 10 decimals of land, by comparison with 50 under IGVGD.

Insurance interventions

Relatively little is known about the impact of the SEWA insurance scheme, although as noted it has experienced an enormous surge in demand in recent years, and some tentative impact results are presented below. Within BRAC we have observed in Chapter 4 some positive results of the still incipient insurance scheme on investment and on loan repayment; the social capital impacts will be discussed below.

Table 8.2. BRAC and SEWA: results of some evaluations
(sources in parentheses)

Instrument	**BRAC**	**SEWA**	**Remarks**
Labour market interventions		Disappointing returns from strike action (1) (2)	Qualitative information only. Likelihood of external effects via government
Microfinance: general	1988-92: Positive impacts on income(3), increasing with income level (i.e.disappointingly low benefits to very poor) Khandker 1998: Expenditure per client household 16.5% above control group(9) Halder 1998: expenditure per capita 27% above control group(9) IGVGD 1994-6: Increases in income and durable ownership, decline in begging and landlessness(10) IGVGD 2002: positive impacts on income and investment by very poor, but many 'did not stay the full course' and only accepted consumption benefits(6)	1981:average income of loanee families 116% in excess of control group of nonclients(4) 1993-97: family income of loan recipients increased by 57% (about the same as for non-loan recipients (5) 1993-97: stress events diminish with number of years in programme(8)	Some evidence of the exclusion of the ultra-poor in the SEWA data.
Specialised products			
Insurance	2003: positive impacts on income	1993-7: Insured experience more	Hence, targeting on low income groups

	stability and investment(7)	stress events than uninsured(8)	probably appropriate.
Benefits from multiple risk management	1988-92: cross-subsidisation of RDP and health activities by Rural Credit Programme 2003: repayment rates increased among insured clients(7)	1993-97:income gains of 'integrated service' clients higher than those receiving any individual service (5) 1998: significant relationship between being a loan member and practice of bargaining with suppliers(8)	

Sources(1) 'Strikes organised by SEWA against merchants have been an ineffective tactic in several cases' Sebstad 1982:p9.

(2) The struggle to increase wages has not been satisfactory, although we have succeeded in raising wages of some categories, like headloaders, cart pullers, chindi workers etc.' Ela Bhatt, quoted in Sebstad 1982: 205.

(3) Montgomery et al. in Mosley and Hulme 1996: table

(4) Sebstad 1982: Table 7.20

(5) Table (8.3) below.

(6) Halder and Mosley 2003; Hulme and Matin 2003.

(7)Chapter 4 above.

(8) Noponen and Kantor 1996?,pp7-8. [184]

(9) Rahman 2000, table 2.1, p.12.

(10) Hulme and Matin 2003, table 3, p.655.

What is crucial to our current argument, however, is the *complementarities* between these separate interventions. The earlier discussion suggested that comprehensiveness and integration between services might have all kinds of advantages for service providers but that these benefits might pass the client by – or even disadvantage her, on the

---

[184] Noponen and Kantor note,'The relationship between being a loan member and the practice of bargaining with suppliers is significant at .057, which implies improved aspects of work for loan members. It is not clear whether more assertive businesswomen are attracted to taking loans, or that the process of obtaining credit leads to more assertive bargaining behaviour…Those who are not a member of the loan programme are more likely than those who are a member to have 'never bargained with supplier'. There is a statistical difference between the means of 'number of loans', 'mean loan amount' and 'bargaining with suppliers'. The distribution of means can be seen below (significance of one-way ANOVA F-test presented in parentheses):

Bargaining behaviour Category	Never bargains	Rarely bargains	Often bargains	Total
Mean years in SEWA(.054)	5.8	3.9	8.0	6.02
Mean number of loans	0.58	0.30	1.21	0.69
Mean value of SEWA loans (Rs; 47=$1)	3134	1636	5252	3536

Source. Noponen and Kantor 1999b: 7-8.

grounds that comprehensiveness is an expansion strategy, and expansion might crowd out poverty focus in favour of satisfying the needs of donors (Townsend et al. 2001). However, a number of client-level benefits from comprehensiveness are apparent within the final section of Table 8.2. In the first place, the existence of a profitable element within their portfolio- namely microfinance – has enabled BRAC and SEWA to cross-subsidise within their portfolios, so that profits from microfinance activities can be used to pay for the extension of health and education benefits, which have considerable externalities, to the lowest income groups without pushing up their cost to the point where the poorest cannot afford them. Secondly – as observed for BRAC in chapter 4 – it is possible for insurance services to return the compliment by increasing repayment rates and cutting the costs of bad loans. Third, as we have seen, the effect of being a *loan* member within SEWA appears to increase empowerment in the sense of bargaining with suppliers (Noponen and Kantor 1998, see footnote 184 above) even though this is an impact deriving from outside the parts of the programme which are specifically targeted on empowerment (the co-operative and training components.

The fourth apparent effect of comprehensiveness can be seen in Table 8.3. The data collected by Helzi Noponen for 160 client households enable us to compare the benefits flowing from different programmes within SEWA over the five years from 1993 to 1997, and we compare this change for clients opting into different types of service (savings, loans, cooperative/trade union membership and 'social security', i.e. insurance). For clients of individual services, the 'apparent impact'[185] of individual services on client and household income is lowest for insurance and highest for loans; but it is highest of all for clients accepting the full range of SEWA services, and higher by such a margin as to make it likely that there is some payoff to comprehensiveness as such. This is a claim which now needs to be examined more closely from the experience of individual clients.

---

[185] There is no control group for this survey. We treat the savings scheme (of which most of the respondents were members) as a 'quasi-control' for assessing the additionality contributed by insurance and loan services.

Table 8.3. *Aggregative monthly income data: - SEWA* **(**all data in current rupees; standard deviations in brackets**)**

Note: 1997 poverty line is estimates at 159 rupees/equivalent adult for 1997.

		Year 1(1993)	*Year 5* (1997)
1.Savings account holders(n=78) *(quasi control group)*	*Income*-female member	562.1(679.3)	594.9(615.0)
	Income - family	2242.2(2570.3)	3558.2(3257.0)
2.Loan recipients(n=97)	*Income*-female member	706.1(837.7)	720.0(579.5)
	Income- family	2547.2(2827.3)	4002.4(3376.9)
3.Insurance recipients(n=112)	*Income* – female member	645.0(493.5)	709.5(808.4)
	Income- family	2356.0(2307.5)	3712.5(3246.1)
4.Cooperative members(n=97)	*Income*-Female member	632.5	929.5(1326.4)
	Income - family	2332.2	3707.5(3413.7)
5.'Comprehensive' service recipients (all of above services) (n=32)	***Income*-female member**	**672.8**	**836.8(536.3)**
	***Income* - family**	**1983.8**	**4568.8(2979.5)**
6.Whole sample(n=160)	*Income*-female member	590.5(644.7)	791.9(1203.9)
	Income – entire household	2242.2(2570.3)	3558.2(3257.0)
7.Growth rate of family income 1993-97, whole sample (row 6)			58.6%
8.Growth rate of family income, 1993-97 recipients of 'comprehensive' services (row 5)			130.3%

Source: SEWA/Noponen survey, see Noponen(1999)

Before going further one datum in the table must be highlighted. This is that most SEWA customers are, on headcount criteria, nonpoor. In 1993, the first year of the Noponen survey, 142 of the sample of 160 (an estimated 89 % of female clients) were well above the Gujerat state poverty line of 104 rupees per equivalent adult per month, and 112 of the sample had *household* income below 520 rupees. Simply targeting on self-employed women, as SEWA does, is therefore not to be able to identify cases of persons below the poverty line, although most of their clients are indeed extremely vulnerable to shocks, as the Noponen study demonstrated. There is a contrast here with BRAC, and indeed with most Bangladeshi institutions, which impose a

maximum income *and* landholding condition (typically 50 decimals of land, or half an acre) on all prospective clients, not only those on schemes designed for the ultra-poor.

To understand what is going on at closer quarters we now seek to estimate a predictive equation for client empowerment – a key intermediate variable which both BRAC and SEWA have sought to influence directly, SEWA especially through its interventions to influence the balance of power within product and labour markets. This variable is recorded as 'increased mobility/confidence in public situations' in figure 8.3, which in turn exerts a direct influence on female bargaining power and breakdown positions. We examine, as dependent variable in such a regression, three measures of empowerment, as recorded by the Noponen survey – whether the client is willing to speak out at public meetings, whether the client is willing to speak out in private meetings in the presence of government officials, and whether the client is willing to bargain the price of inputs with suppliers – as already examined. As independent variables expected to influence empowerment we consider not only indices of service provision and well-being – but also shocks, on the grounds that how well the organisation enables clients to deal with shocks may be an important determinant of empowerment and solidarity.

The results are set out in table 8.4. The indications are that not only is loan programme membership a positive influence on the 'bargaining with suppliers' dimension of empowerment (as previously indicated); but so also is income. Stress events on their own are an (insignificant) negative influence on empowerment, but *interacted with perceived SEWA willingness to provide support,* such stress increases empowerment, and the coefficient on the loan member dummy increases in both size and significance. Our interpretation is that crises provide a test of solidarity with the 'mentor' organisation: if the test is failed stresses do damage the effectiveness of the loan (although on the evidence presented they do not wipe it out altogether), but if the test is passed, that strengthens the client's sense of empowerment (in particular in the sense of ability to form networks outside of the village)[186] and identification with the lender. In the process of overcoming the crisis, a sense of the government and other authorities as adversarial and likely to augment stress is replaced by a perception of those authorities as people who could be worked with, to the eventual good of the business. The community participation dimension of empowerment, also, has a strongly significant linkage with SEWA support against police or municipal harassment, *and not with any other of SEWA's support services*. The evidence is that crises also subject intra-neighbourhood links (for example within SEWA cooperatives and within villages) to similar trials, which if passed have the effect of strengthening social bonds and, thereby, loan effectiveness[187]. As 'integrated

---

[186] The sense in which we are using the concept of empowerment here is close to the idea of *linking social capital* (trust relationships formed with traders, government officials and others within hierarchies outside the respondent's neighbourhood) proposed by Michael Woolcock (2000).

[187] In Olejarova et al (2003) we argue that the dislocation and hardship caused by *perestroika* in Russia acted as a factor reinforcing bonding social capital (trust) within those microfinance groups which survived the recession.

service providers', SEWA (and also BRAC) are in a particularly good position to enable their clients to turn stresses to good account in this way.

Table 8.4. Regression analysis of empowerment

	Dependent variable (empowerment index)			
Independent variables	Willingness to bargain with suppliers			Self-rating of community involvement
Constant	1.40** (10.19)	1.48** (6.74)		2.77** (14.45)
Client's monthly earnings	.0008* (2.27)	.0009 (1.34)		.0004 (0.79)
Loan programme member dummy	.28 (1.66)	.02* (1.96)		
Highest educational grade obtained	.003 (0.14)	.0003 (.16)		
Stress events (total monthly average)		-.025 (0.54)		
'Comprehensive' service recipients (all of above services) (n=32)				
Dummy variable: SEWA helped secure inputs				-.24 (0.70)
Dummy variable:SEWA helped find markets, orders				-.259 (0.89)
Dummy variable: SEWA provided training in work techniques or design				-0.84* (2.42)
Dummy variable: SEWA got relief from police or municipal harassment		.42 (1.16)		1.34** (3.13)
Interaction term: Stress events x SEWA relief from harassment	.009* (1.80)			
Number of observations	97	97		86
R²	0.152	0.058		0.179

Source: SEWA/Noponen survey, see Noponen(1999)

For at least some SEWA clients, therefore, the availability of a one-stop shop from the service provider appears to have impacted favourably on client

empowerment, and in particular on the client's ability to withstand stresses – by extending the range of stresses which are 'insured' against. Client 226, for example, took out a loan to buy a sewing machine in 1993. At that time her personal cash income was only 30 rupees per month: untypically for this sample, she was well below the income poverty line. Her dressmaking business did well, but from the beginning her family was assailed by health crises (mostly relating to her children) which caused unbudgeted shocks in 1993, 1994 and 1996. Some of these expenses she covered by joining the SEWA insurance scheme, but more broadly she received training in negotiation skills and in business practice from SEWA in 1994 and 1995, and claims that this assistance at times of severe stress was crucial in enabling her to form support networks which enabled her to control risk and sustain her business against the threat of decapitalisation. By 1997 her family income had risen from 1000 to 6250 rupees per month: she was a star. She had achieved this take-off in part by her investment in protectional strategies (trajectory 3 on the diagram) against *interpersonal* risk, with SEWA's active support – and, she notes, that of her husband.

By contrast client 247, a maker of *beedis* (hand-rolled cigarettes) did not invest in these protectional strategies. She did not join the SEWA insurance scheme or enrol on their training courses. Internally, she was vulnerable: her husband 'wanted that I should complete my studies instead of making beedis' did not support her business, and left her in 1995. Shortly afterwards, she fell into default on her repayments, was forced into asset sales which did not restore solvency, and by 1996 was no longer a SEWA member. This is trajectory 2 on the graph: none of her risk-management strategies had worked.

As shown on Figure 8.4 below, client 226's level of empowerment was enhanced by her ability to use a crisis to form constructive links('linking social capital'), through SEWA support, with government staff and others whose collaboration was needed for the expansion of her business. Stress helped her, just as it harmed her counterpart. What SEWA enabled her to do –in this case as a reaction to crisis - was to *form relationships as an insurance against shock,* supplemental to SEWA's existing 'social security' insurance. Ideally, these relationships will be formed in anticipation of the shock, rather than as a reaction to it.

More broadly, one of the key roles which the service provider can offer to a client highly exposed to risk is to motivate self-protection against risk. This can be done, as we have seen, partly through the provision of savings facilities. However, it can also be brought about within a loan programme by motivating the appropriate choice of investment, as illustrated by this anecdote from the early SEWA:

Maniben was married at the age of twelve and started selling fruit 18 years ago. She learned the trade from her mother who sold fruits by wandering door-to-door, but began herself by selling from a fixed spot

near the hospital. Her whole family is involved in the business. In addition to his job at the hospital, her husband helps by going with her early in the morning to buy fruits from the wholesale market and her children help in selling. She claims that her 10 year old daughter is better at selling than anyone.

In 1977 Maniben took a Rs 700 loan from the SEWA Bank which she used to buy mangoes during their season. Mangoes are very popular and the potential for profits in selling them is high. However, the risks also are high. Unless they are sold within a very short time they rot. Thus there must be some assurance of a ready market before entering into such a venture. She spent her Rs 700 loan all at one time to buy a stock of mangoes and sold Rs 500 worth per day over three days. Her profit was over Rs700. She invested Rs 600 of this profit in materials and labour to build a storage shed for her stock of fruits. This has allowed her to purchase larger volumes of fruit (and greener fruit which doesn't spoil as quickly) and has reduced the number of trips she and her husband must make to the wholesale market. The volume of her business has increased and now she is making at least Rs 30 per month more than before taking the loan.' (from Sebstad 1982: 109.)

(This 'protectional investment' is trajectory 3 on figure 8.4.)

Figure 8. 4. Possible household trajectories

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 4). 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..

Possible 'trajectories'

1: the desired trajectory for an initially low-risk household – stick close to the left bank of the river initially, increase risk level only at 'safe' levels of income.

2: an unarrested shock, causing cumulative decapitalisation and expulsion from the capital market.

3: a shock arrested by luck, informal support (social capital) or SEWA intervention, causing the shock to be arrested: risk(vulnerability) level is reduced, at the cost of a short-term fall in income.

It remains to assess how to channel the benefits from service integration so that the poorest benefit. Our judgment is that BRAC has the products to do this and SEWA the approach (what we have called 'relational insurance'), so that what is ideally needed is to combine the two, and even more to achieve a transfusion of both approaches to areas which have not so far benefited from them. Of key importance is the provision of financial services, and in particular savings, on a sufficiently small scale that the poorest are not intimidated by the prospect of being absorbed into the market economy, which is what BRAC has successfully achieved through IGVGD. But also key , within partnership households, is the SEWA model of providing services to women in a manner which minimises the potential for conflict with their male partners[188], which enables them to finesse their intra-household vulnerability

4. The 'social safety net': the role of State, market and NGOs

We thus have the beginnings of an answer to the questions from which we started: whether *zaibatsu* NGOs such as BRAC and SEWA benefit themselves and their clients from providing an integrated range of risk management services, rather than practising specialisation. Our answer is a tentative yes: the provision of a one-stop shop in social protection, as in other areas of business, may have its advantages, for clients as well as very obviously for service providers. We now assess the broader implications of the development of such institutions.

Through the processes and strategies described, BRAC and SEWA have constructed a 'social safety net' of considerable ambition, extending in BRAC's case across the entire country . In the process, they have attained a role of macro-economic importance – BRAC 's contribution to Bangladesh GDP was, in late 2001, conservatively estimated at 1.5 per cent of the entire economy (BRAC 2002). As the balance of the global workforce shifts from male to female, and in many cases from employment to self-employment as well, the demand for the integrated safety-net functions of the type which BRAC and SEWA provide can only increase. The idea of a social safety net was one leg, and the most criticised, of the World Bank's original blueprint for poverty reduction (World Bank 1990), and so it is interesting here to assess what institutions with an interest in poverty-focussed growth can learn from these brilliantly idiosyncratic attempts to provide one from outside the state apparatus.

In our judgment, there are three things in particular to learn. The first is that,as demonstrated in the previous chapter, not only 'welfare' but productivity depend on strengthening the fallback position of the household members whose bargaining strength is weakest – most often, certainly in South Asia,

---

[188] This trend is increasing. The insurance scheme – originally applicable only to women and their own personal effects – now covers their husbands and children as well.

women. Particularly in SEWA, this has been done by intervening in markets where they are weak, and by promoting an environment in which women can exercise to the full their preferences as regards expenditure patterns (see also Chapter 7 above), rather than simply bargaining up women's fallback position, important though this is.

The second lesson is the importance of doing this not only on an individual but on a collective basis, through the development of social capitals of various kinds, which on the evidence of previous chapters have particular importance to the lowest income groups and to the transition across the poverty line. Sometimes, as we learned from table 8.4, the type of social capital which is needed is quite specialised, with only 'relief from municipal and police harassment' having any serious leverage.

The final lesson is that social risk management is that integrated service provision may have advantages for the client as well as for the provider – and in particular for the link between the two. This may have macro-economic implications. In more than one country during the recent global crisis[189], it is the integrated service providers which have been able, in the downswing, to retain the loyalty of customers and sustain the growth of their lending; and in the several countries where microfinance is now a significant part of the national economy, thereby to boost the entire national economy and reduced the entire social costs of globalisation across an extended period. This has now become an export activity. As we have seen, SEWA was born out of an early manifestation of the social costs of structural adjustment – those experienced by the Indian textile manufacturing industry in the post-Second World War years. Now both organisations have become export brands in their own right, with the 'BRAC' model of social protection underpinned by microfinance now operating in Afghanistan, and technical assistance having been given by SEWA not only to other Indian states, but to a range of overseas countries including Turkey, Yemen and South Africa[190].

(However) BRAC and SEWA are exceptional institutions. Their leaders have shown something close to institution-building genius in their efforts over thirty years, certainly a unique blend of creativity and tenacity; such qualities have generated a great deal of charismatic trust, but this is a quality which cannot be replicated, only learned from. There is nothing exactly like them in the rest of Asia, and nothing at all in Africa, where problems of poverty are more severe in the sense of much growing more rapidly. Attempts to transplant bits of the comprehensive model, and in particular IGVGD, to southern Africa have so far been a dismal failure (Mosley and Rock, 2003). However, other lessons of the two models are probably more replicable, including those mentioned above.

---

[189] For the case of Bolivia see Marconi and Mosley(2003); for Indonesia see Patten et al (2001)

[190] ILO(2001), page 5.

We now, in our concluding chapter, examine the process of adjusting to structural adjustment risks from a different and more macro angle. We examine the possibility that the way in which the adjustment process is carried out may influence poverty not only directly but also indirectly by provoking or minimise social conflict. Once again we pursue a search for instruments capable of promoting risk efficacy; but now we are looking at collective risk efficacy and not individual.

Chapter 9 Keeping out of the whirlpool: controlling the political costs of stabilisation

1 Introduction

Our discussion so far has been mainly of risks which are local in nature – weather, health, interpersonal relations, threats to one's livelihood. Although the discussion of the last chapter did examine two *institutions* whose significance has become global, it continued to examine risks specific to individual clients of those institutions in India and Bangladesh. We now broaden the perspective, and consider the means by which *states* conduct their survival strategies in face of the risks to which they are subject. In particular, we are interested in the political risks associated with the stabilisation of national economies, and in the manner in which those risks are managed by a whole range of organisations: most obviously national governments, but also international financial institutions and even NGOs such as the ones considered in the previous chapter. As in earlier chapters of this book, we have decision-making units juggling a portfolio of assets in order to defend against risk (and once again social capital is a key element in that portfolio): but for the first time, the organisations doing the juggling are principally governments rather than individuals or institutions.

The boundaries of these organisations' control over circumstance are shifting: our examination is conducted in face of increasing uncertainty about the ability of states and international organisations to manage the globalisation process. A recent illustration of this is the long-drawn out experience of the 'East Asian crisis', still rumbling in Turkey, Argentina and other parts of the Southern Cone of Latin America [191], which has taught us that there is no reliable technology to avoid getting sucked into a financial crisis: simply acquiring possession of the macro-economic keys of inflation and public-sector deficit, now achieved almost universally, does not provide secure tenure in the house of economic stability (de Haan, 2002) Nor is it clear why different countries, often adopting the same remedies (essentially deflation of aggregate demand, often supported by the IMF) experience hugely different degrees of difficulty in getting back in: for example South Korea, which achieved almost immediate return to its original growth trajectory, by contrast with Indonesia and Argentina. One important reason for this is that we are at present unable to predict what forms of stabilisation will have political consequences so negative as to wipe out the economic benefits. In some cases, including the two mentioned above, these consequences lock the victim into a whirlpool of conflict and economic collapse, thereby aggravating the poverty and vulnerability of millions of people. There are, therefore, obvious benefits to trying to define a technology of stabilisation which would minimise the consequences of national economies being sucked into the whirlpool, but

---

[191] For an update on the Brazilian and Bolivian dimension of the crisis, see *Financial Times,* 24 June 2002.

would retain awareness of the dominant political undercurrents and of the weakness of the main actors - central banks, national finance ministries and the IMF – in controlling these currents. That is the task attempted in this chapter. The model (section 3) represents the decision-making unit - typically a developing-country government under financial stress – as managing a portfolio of assets (policies and institutions) in the interests of political survival, very much as any low-income household manages a portfolio of material and social assets in the interests of physical survival, and a preliminary test is conducted in section 4. Section 5 illustrates the implications for the conditionality of the international financial agencies, and the concluding section 6 offers some policy recommendations arising from these.

2. The political feasibility of stabilisation: what do we know?

Three literatures are particularly relevant to our discussion:

    (i)   The OECD study of growth and equity in developing countries.
An early attempt to examine the understand the interaction of economic and political factors in determining responses to crisis – undertaken immediately *before* the east Asian crisis - was that by Haggard et al. (1995), which followed in the wake of an OECD study of the social costs of adjustment under alternative stabilisation policies (Bourguignon et al. 1992). General findings of these two studies were the following:

- Different instruments of stabilisation (deflation of aggregate demand) have different social, and hence political, consequences: for example devaluation, as a means of adjusting a macro-deficit of given size, increases poverty much less than indirect tax increases because there will be poor people (employed in export industries) who gain from devaluation, whereas tax increases will not only inflict costs on all consumers but these are likely to be targeted on the poorer ones to satisfy the standard criterion (for maximising tax revenue) of taxing essentials with low price elasticity of demand. In general (Haggard et al.:14) targeted measures pose 'particular political difficulties';
- Growth-oriented structural reforms are less likely to generate violent political reactions than stabilisation measures which generally seek to reduce demand as quickly as possible;
- Once protest gets going, it tends to follow a logistic curve, first escalating and then dwindling because of 'the growing costs that participants must bear' (ibid.:16)
- 'For obvious reasons, strikes and demonstrations were less frequent under the military regimes in the sample, but their lower overall frequency of socio-political action does not mean that military regimes are less vulnerable than democracies' (ibid.:16)
- The government's communications strategy can be used to pre-empt protest, and its response to strikes and demonstrations has an important bearing on the level of social cost and disruption to output (ibid:15) ;

- A focus on social equity 'is not necessarily relevant to the politics of adjustment to understanding the politics of adjustment, because the politically most active groups are not usually the poorest' (ibid.;120)[192]
- New governments must seize the windows of opportunity which arise at the beginning of their regimes (ibid: 121)

This OECD analysis has sometimes been read purely and incorrectly as a new-Machavellian primer for ministries of finance seeking to finesse political opposition; and it certainly contains a tendency to equate social cost with disruption to output, which even a brief empirical examination will refute[193]. And in general the main focus of the OECD analysis is on the *instruments* of adjustment that were used rather than the society it was used on.

(ii)   The Rodrik study of globalisation

This last idea is built on by Rodrik's *The New Global Economy and Developing Countries,* written in the immediate aftermath of the 1997-99 East Asian crisis. Rodrik argues (1999: 77) that 'the deeper determinants of growth performance after the 1970s are rooted in the ability of domestic institutions to manage the distributional conflicts triggered by the external shocks of the period', and cites as particular support the comparative experience of South Korea and Indonesia during that crisis:

> At the onset of the crisis, it seemed that authoritarian
> governments would have a better chance of preventing the
> social explosions which the crisis might create, while 'messy'
> democracies would suffer. The outcome has been quite the opposite.
> Indonesia, an ethnically divided society ruled by an autocracy,
> eventually descended into chaos, with a reduction in GDP predicted at
> 20 per cent or more. South Korea and
> Thailand's democratic institutions… facilitated a smooth
> transfer of power from a discredited set of politicians to a new
> group of government leaders…; imposed mechanisms of
> participation, consultation and bargaining, enabling policymakers to
> undertake the necessary policy adjustments decisively; and…
> because democracy provides for institutionalised mechanisms
> of 'voice', obviated the need for riots, protests and other kinds
> of disruptive actions by affected groups, and furthermore
> undercut support for such behaviour by other groups in society.
>   (Rodrik 1999: 92)

---

[192] However, as an important antidote to this general tendency, the authors note that 'the most intractable determinant of the likelihood that governments will adjust early is the underlying level of inequality in the society… countries where inequality is high are more likely to reach fundamental deadlocks over adjustment.' *(ibid. ,*page 121).

[193] E.g. in the Tiananmen Square demonstrations in China in 1989 the cost to human life and to China's international political reputation was massive, but the effects on output and interestingly on the flow of foreign investment were small.

In this interpretation in relation to the OECD one, then, there is less emphasis on the nature of the shock to which stabilisation is a response (initial conditions, inequalities etc.), much less emphasis on the instruments of economic management, and much more on the instruments of *political* management of crisis. Rodrik, as quoted above, sees the institutions of conflict management as crucial, and seeks to integrate the various possible elements in the story in the formula:

Δ growth = shock x (latent conflict/institutions of conflict management)
(Rodrik 1999:82)

where the 'institutions of conflict management' in the divisor include both the economic institutions emphasised by OECD, and the political institutions emphasised by himself.

(iii)   The 'new economics of conflict'

Since the 1990s, economists have increasingly entered the study of civil conflict, and have shed new light on both the consequences and, more controversially, the causes of conflict and political disturbance. Conflicts which have traditionally been assumed to have an ethnic or political basis and which have caused immense economic damage – for example, in Africa[194], the Middle East and in South-eastern Europe – have been shown also to have economic causes. Any institution wishing to pre-empt the risks[195] associated with such damage, whether national or international, needs to be aware of this literature; however, it has not, so far, been operationalised into the decision-making procedures, in particular the conditionality, of governments and international agencies.

Summarising from a large range of sources, the following variables appear not only to be sensible *a priori* explanations of why conflict might occur, but also to be strongly and significantly associated with the incidence of conflict (e.g. Collier and Gunning 1995, Nafziger and Auvinen 2000):

(i)   growth of GNP – which expands the fund from which public expenditures may be derived to pre-empt conflict.

(ii)   growth of domestic agricultural production – which impinges on domestic food insecurity, an obvious potential source of conflict.

(iii)   Inequality – which not only poses a threat to civil order through a range of channels, but also has been shown to cause damage through the purely economic channel that it depresses demand (Alesina and Rodrik 1994, Alesina and Perotti 1996)

(iv)   Military centrality (the percentage of military expenditures in GNP) – which increases the likelihood of aggressively pre-emptive strategies being used by the civil authorities, and also, as we shall see, reduces the size of the 'fund' mentioned under (i) available to buy off aggrieved parties and build consensus.

---

[195] In the World Bank's *2000 World Development Report* (World Bank 2000) there is strong emphasis on the risks to livelihoods which result from personal physical insecurity– indeed, security, along with empowerment and opportunity, is one of the three thematic foundation-stones of the report.

(v)   More broadly, the style of intervention used by the civil and policy authorities is important (Cramer 2003) – not just the use of communication media, as emphasised by the OECD team, not just the degree of attempts to build consensus (as emphasised by Rodrik), but also the degree of trust of citizens in the message coming from governments and the supra-national authorities who stand behind them – in other words, social capital.

(vi)   Finally, the relationships estimated by the new economics of conflict typically include a hysteresis (past conflict) term to reflect the tendency of present conflict to be rooted in past hatreds.

Other variables, including natural resource dependence and poverty itself (rather than growth) often feature prominently in such regressions (Elbadawi and Sambanis, 2000)

The fact that the link between breakdown of civil order and several of the above variables has been quantified will help us, in particular, to try and define some of the factors which lie behind Rodrik's 'latent conflict' and 'institutions of conflict management' categories.

In the sections which follow, we shall take it as axiomatic that (i) the minimisation of the risk of *internal* conflict is one objective which governments pursue in their quest for political survival, (and the literature mentioned above gives us some guideline as to how this can be done); (ii) the conditionality which international institutions use in determining the stabilisation policies which those governments follow needs to take this into account.

3. Politically optimal stabilisation and conditionality: a 'portfolio approach'

In a macro-economic crisis, the policy instruments that are deployed are typically the outcome of an interaction between two groups of actors – the various interests (including the central bank) within the crisis-hit government and the international financial institutions, often but not always with the IMF in the lead. We take these in order.

The recipient government we see as being driven by a survival motive – the motive to stay in power -, and as deploying a portfolio of instruments in order to achieve this objective. Failure to survive is represented, in the diagrammatic version of the model (Figure 9.1) by the thick black 'catastrophe line', below which the short-term political damage from the reform process is perceived as being so severe that the government expects to fall if the line is crossed. In order to avoid being forced below this line, the government deploys a range of strategies with the intention of reaching an optimum point, or at any rate a survival point (point A on the diagram), on the trade-off between expected long-term economic gains and short-term economic losses from stabilisation. Shocks, positive or negative, move the trade-off up or down. And initial conditions – inequality, social capital, existing conflicts –

determine how close the political economy is to the edge of the precipice. This approach embodies insights from all of the literatures mentioned – in particular the strategies adopted by government enhance Rodrik's 'social capacity to manage conflict' and the conflict literature has given us considerable insight into what initial conditions predispose towards conflict. Our own contribution will be to focus on and seek to assess the extent to which the available portfolio of instruments can be manipulated for this purpose, and in particular to assess the poverty implications; since, as demonstrated in Mosley (2003) and Mosley, Hudson and Verschoor(2003) which out of the range of possible manipulable instruments is chosen has implications for poverty reduction. Our line of argument will be directly contrary to the claim by Haggard et al. that improvements in equity to the very poor 'are not directly relevant to understanding the politics of adjustment'.

Figure 9.1. Reform decisions as seen by government: a stylised view

Recipient's 'political optimum'(A)

Perceived long-term economic gain from

Social capital, anti-corruption measures, pro-poor expenditure (see text)

'Catastrophe line'; below this point the government expects to lose office

bargai nig

Negative shocks

Trade-off between risk and return

IMF optimum (B)

Perceived short-term political loss from reform
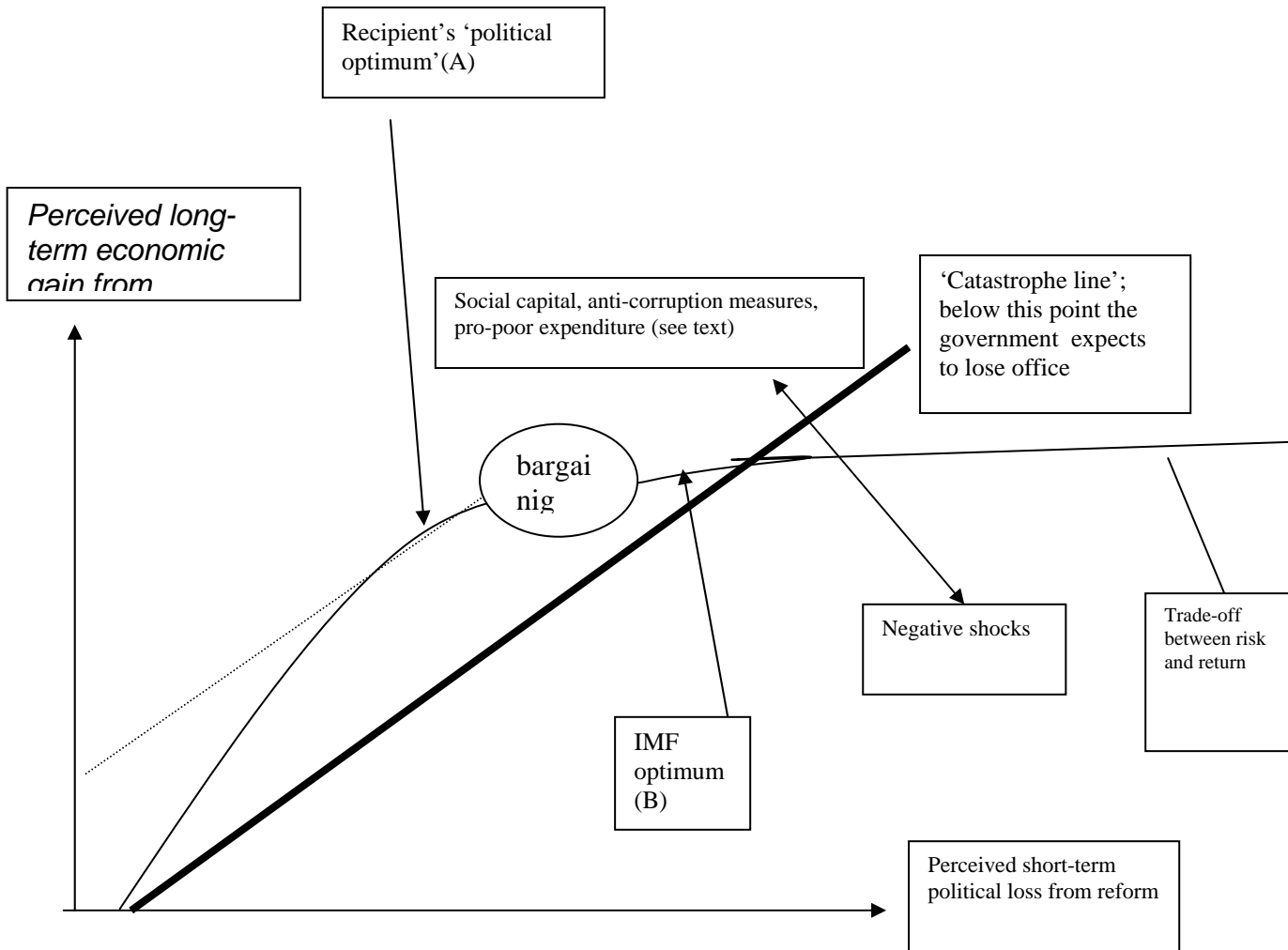
The need to stabilise the macro-economy, then, will come in the form of a shock – fiscal or monetary over-inflation, a speculative run on the currency, contagion from crises elsewhere, or a combination of the above – which forces the government's survival possibility line AA', to the point where it begins to fear that it will be pushed down below the catastrophe line, and perceives a risk to its survival. In choosing how to respond to this shock that government must work out a strategy which has a chance of succeeding within a reasonable time-frame. That strategy may consist simply of letting things drift and letting a war of attrition continue (as persuasively argued by Alesina and Drazen(1991)). But, if it does decide to act in self-protection, any assets which are deployed to that end must be instruments which are *manipulable* – i.e. which can produce the necessary effects on revenue and investor confidence quickly enough to rescue a government under political threat. This creates a bias against slow-acting instruments such as tax reform and public expenditure restructuring, and a bias in favour of instruments such

as, for example the following, for which there is a prima facie case that they lower the social and political cost of adjustment :

(i)Lengthening the time period of adjustment: if the time period over which people are able to make their own personal adjustments to being out of a job and/or to having reduced spending power is compressed too far, the risk that people will feel forced into a corner, with no way out other than violence, increases. Burundi in 1988-9, Yugoslavia in1991, Sierra Leone in 1995-97, and (as pointed out by Rodrik) Indonesia in 1999 provide four illustrations of macro-economic deflation being imposed too drastically to be consistent with political stability. Across a sample of developing countries, the regression rela;tionship between incidence of political violence and the speed of adjustment, as calculated in Table 2 below (equation 3), is :

Political violence indicator = 1.15 - 0.07**(growth of money supply during stabilisation episode)[196]

Taken literally, this equation would appear to indicate that (ceteris paribus) a fourteen percentage-point reduction in the growth rate of the money supply during stabilisation would have the likely consequence of increasing the risk of conflict by one category; that is from low to medium risk, or from medium risk to high risk. There are indeed a number of country-specific factors causing variations around this central tendency, as examined in section 4. Nonetheless, the message would seem clear that, whatever the economic merits of cold-turkey stabilisation, the political risks associated therewith may constitute a considerable liability in fragile states which do not have considerable reserves of social capital to draw on.

(ii) *Pro-poor expenditure* is expenditure which benefits low-income people, either through providing jobs for them or by providing services which they consume. In Mosley, Hudson and Verschoor (2003) we identify the sectors where public expenditure will benefit the poor in this way as primary health and education, agricultural research and extension , rural water and sanitation, and miscellaneous other social expenditures including low-income housing, whereas increases in military expenditures have negative effects on poverty[197].; the share of these expenditures in GNP we refer to as the *pro-poor expenditure,* or PPE, index. A policy of increasing the value of this index can perform three valuable functions: first, it can reduce inequality, increase the potential for social cohesion and community governance, and thereby increase the government's ability to preempt and manage conflict. Second, the PPE index provides a good proxy variable for the 'breadth of outreach' of public expenditure – primary education spending reaches a larger number of persons who can influence the political process than secondary education,

---

[196] 2SLS estimation; political instability used as instrument for the growth of the money supply (see Table 2).

[197] Notice the analogy with the 'military centrality' and the 'agricultural production' arguments from the conflict literature [page 4 above]

primary health reaches a larger number of people than secondary health, and so on. In particular, pro-poor expenditures are typically labour-intensive and benefit labour, which is typically – from Eastern Europe to Latin America to Africa – the main group which loses from adjustment. Finally, the pro-poor label is, since the 1990s, a good way of levering in aid finance, which in turn enables the acquisition of a range of short-term political assets which also protect the government against the risks of crossing the catastrophe line – many of them quite dubious economically but beneficial in a short-term political sense, including the postponement of tax increases and the provision of compensation for public service workers whose jobs have been retrenched. For all these reasons, increases in PPE may provide a valuable counter-asset against the political weakness induced by the costs of stabilisation – and appear to serve this function effectively, on the evidence of table 9.1, which compares the experience of a group of 'effectively' and 'ineffectively' stabilising countries during the 1990s.

Table 9.1 – 20 recent stabilisation experiences compared, summary of results(sample averages)

	Inflation 1990-2000(%)	*Possible explanatory variables:*				
		Vulnerability measures; initial income level ($/capita)	Inequality (Gini coefficient)	Social capacity measure (Observer human rights index)	Policy: pro-poor expenditure index	Governance measure: democracy index
Group 1: Serious economic instability in 90s, stabilisation aborted or interrupted for political reasons	278.8	1806.0	47.8	43.4	0.19	1.80
'Control' group 2: Serious economic instability in 90s, stabilisation successfully achieved	17.0	2556	41.7	27.2	0.43	2.55
t-statistic for differences between sample means	9.92**	0.43	1.36	1.89*	2.52**	3.42**

Note: Group 1 ('unsuccessful stabilisation') countries are: (middle-income) Brazil, Argentina, Ecuador, Turkey, Kazakhstan; (low-income) Indonesia, Zimbabwe, Zambia, Congo-Zaire, Angola, ? Kenya. Group 2 ('achieved stabilisation') countries are: (middle-income) South Korea, Mexico, Thailand, Bolivia, (low-income) Sri Lanka, Nicaragua, Ghana, Uganda, Mozambique, Tanzania, Ethiopia, Indonesia, Kenya.
(2) 'Pro-poor expenditure' (PPE) index is a measure of the exent to which public expenditure is intensive in 'priority' sectors likely to have a poverty-reducing effect. It is calculated as (1.69* log education/GNP) + 0.77* (log housing and amenities) + (0.244 log agriculture/GNP). For data arrays and method of calculation see Mosley et al. (2003).
(3) 'Governance indicator' is a dummy variable defined as follows:
0= dictatorship (civil or military)
1= democratic structures with severe restrictions on freedom of press, civil liberaties and/or freedom of action of opposition
2= democratic structures with minor restrictions on freedom of press, civil liberaties and/or freedom of action of opposition
3= free democracy

In our judgment, not only is PPE useful as a political instrument in its own right, but it becomes increasingly necessary as governance, in a post-1990s political economy, becomes more democratic: once the possibility of violently putting down protest against the social costs of stabilisation is

discounted, measures to buy it off become more important, and PPE is one of the most manipulable of such measures.

(iii) Finally, as pointed out by the OECD study of political feasibility of adjustment, what is also important is the *'policy mix'* – in particular the balance between external and internal instruments of adjustment. As Bourguignon and Morrisson(1992) have identified, devaluation is the instrument of adjustment least likely to provoke social costs and (indirect) tax increases the most likely, with the implication that to the extent that pro-poor politics are good politics, an adjustment strategy with a high ratio of exchange rate adjustment to tax increases will be an effective defence against political risk[198].

Thus we visualise that governments struck by crisis , if the magnitude of the crisis crosses their danger threshold, manage their policy assets (including, if they see them as relevant, the three mentioned) with the aim of reaching an *optimum point:* that which in their perception best balances the economic benefits to be derived from stabilisation against the overriding need not to cross the disaster line. Suppose that this optimum response takes them to point A on the possibility locus. In the typical case where external financing is required from a source such as the IMF, the finance provider is likely to form a more austere view of the optimum package (such as B) and to seek to enforce this by means of conditionality. A process of negotiation will then follow, of which the outcome if successful (point C on the diagram) may be an agreement such as an IMF standby or PRGF (Poverty Reduction and Growth Facility) agreement ; and the outcome of this, as we know from experience, may be either a sustainable process of stabilisation, or failure to stabilise (e.g. the 'bottom row' in Table 9.1 above) which sometimes, as in some of the cases documented below, leads into the whirlpool of increased inflation, capital flight, political crisis and violence, experimentation with alternative economic strategies, accelerated capital flight and inflation, and so on – a slide into the danger zone of Figure 9.1, possibly held at bay for a time by dictatorship or military government.

Clearly it is crucial to both governments and international financing agencies to optimise, as far as is feasible, the probability that a government, if hit by a shock, is able to work out a 'survival strategy', which keeps it out of the whirlpool. That task is attempted in the following section.

---

[198] This is because there are many poor gainers from a policy of aggressive devaluation, mostly in export sectors (China being an excellent example), whereas most people lose quite badly from increases on indirect taxes, which are deliberately placed on goods of essential consumption by the poor in order to take advantage of their low elasticity of demand. Our principle, of course, is in defiance of Cooper's insight (1972), from the period when fixed exchange rates were just giving way to flexible ones, that 'devaluation increased by thirty per cent the probability that the finance minister would lose his job in the following year, and by ten per cent the probability that the entire government would fall'. Even in a period of mainly floating exchange rates, devaluations have political costs, in rich and poor countries alike which we have somewhat discounted in what follows. Table 2 below provides some empirical support for the approach we have taken.

4.Empirical tests

We estimate the model of Figure 9.1 in the form of a composite political/economic model in which there are three steps:

(i)   the likelihood of stabilisation-induced political disturbances is estimated by means of the factors indicated in the previous section – in particular initial conditions and the benefits expected by the government from deployment of its 'assets'.

(ii)   These considerations define the government's optimum strategy, which is then bargained with the IMF and other financial agencies;

(iii)   Whatever stabilisation package emerges from this bargaining process – allowing for the possibility of deadlocked negotiations in many cases - is then implemented and, along with the standard factors of production, determines the rate of growth of GNP and, ultimately, the possibilities for poverty reduction also.

The flow diagram of the model is illustrated in Figure 9.2:

Figure 9.2. Flow diagram of the model
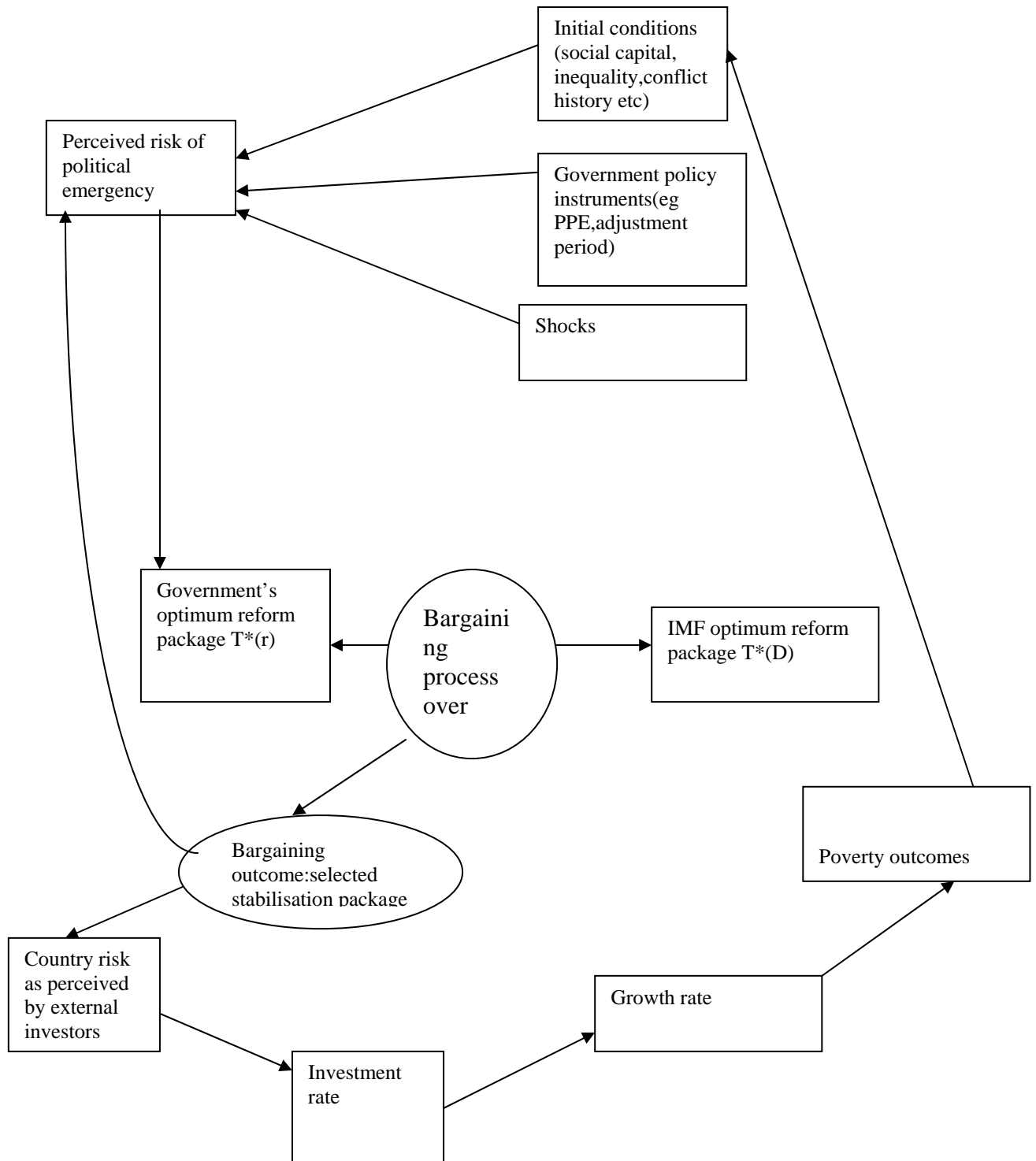
We begin by estimating the correlations between the variables of Figure 9.2 for a sample of 45 less developed countries as specified in the Appendix. This exercise (Figure 9.3) illustrates the potential for a vicious circle of political violence – low investment – low growth – poverty- and renewed violence to persist once triggered: in particular, all correlations are of the expected sign to enable such a vicious circle to persist. But not all correlations are significant: needless to say, opportunities to escape from the vicious circle exist. Three possible 'emergency escape routes' ,discussed above but confirmed by Figure 9 3 as showing promise, are: pro-poor expenditure, a slow and gradual (rather than rapid) rate of deflation of the money supply, and a high ratio of devaluation to tax increases as means of adjustment.

Figure 9.3. The 'macropolicy-growth-poverty' vicious circle: correlations
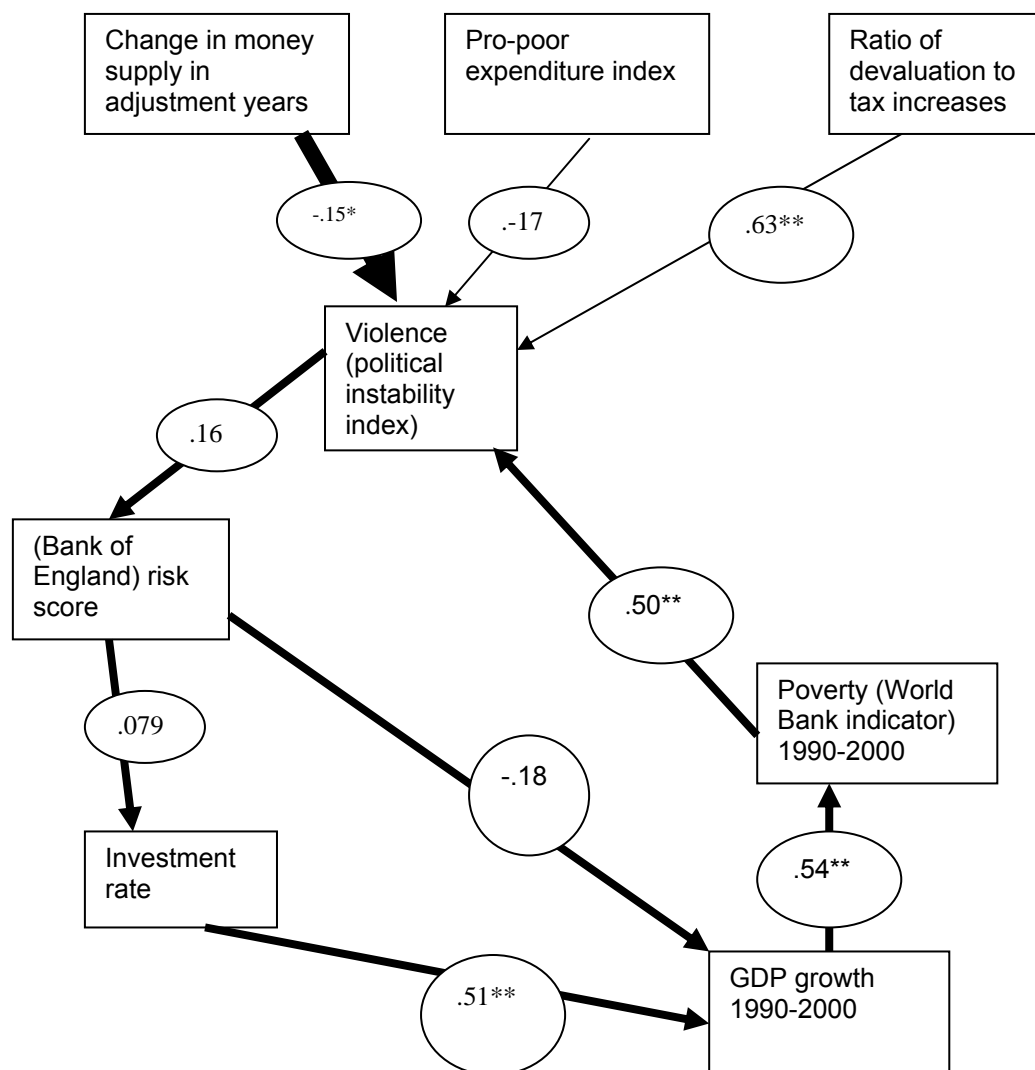
Our interest is in the extent to which governments facing an external disequilibrium, by appropriate 'portfolio management', can avoid being sucked into the vicious circle. To minimise the probability that this will happen, they need to forecast the social impact of a range of alternative stabilisation actions, and to frame a plan which, after negotiation with the financial agencies, will still leave them on the right side of the 'disaster line'. As a first step towards this plan, we estimate, in Table 9.2, the reduced-form equation for political violence from the Appendix below:

$$v = \alpha - \beta\, f_3[\, [I], \quad X, A, PPE, r/T, \quad S \,] \quad (10)$$
$$\text{(initial conditions)} \quad \text{(discretionary policy variables)} \quad \text{(exogenous shocks)}$$

where v = an indicator of political violence or disruption, I = a cluster of initial conditions (inequality, social capital, history of violence); the discretionary policy variables are X(loan size), r/T(ratio of real devaluation to tax increase; PPE(the pro-poor expenditure ratio), and A (length of adjustment period); and S is an indicator of the impact of exogenous shocks.

The equations are estimated by both ordinary and (in equations (3) and (5)) two-stage least squares, for a sample of 45 countries during periods of stabilisation (defined as periods of negative per capita income growth, during which either fiscal or monetary policy instruments were being deployed in a deflationary direction). That political violence is endogenous to the form of stabilisation is one of our basic arguments, and is empirically illustrated by equation (2). Less obviously, the form of stabilisation itself may be responsive to political conditions – indeed, it is one of our main arguments that it should be – and so in equation (3) it too is treated as endogenous, with the World Bank political instability indicator treated as the instrument. The full data-set is given in the Appendix.

Table 9.2 Regression analysis: determinants of a 'stabilisation-violence vicious circle'

Independent variables:	(1) Political violence indicator (OLS)	(2) Political violence indicator (OLS)	2) Political violence indicator (2SLS)	(3) World Bank political instability indicator (OLS)	(5) Growth (2SLS)[199]	(6) Poverty (WB indicator) (3SLS)
Constant	1.94 (0.88)	1.15** (6.33)	1.12** (4.99)	-2.27** (4.08)	12.28** (3.42)	5.49** (4.19)
Initial conditions						
Social capital I: Human rights		1.14 (1.08)			0.13 (0.33)	
Social capital II: World Values Survey						
Gini index of inequality	-0.06 (1.49)					0.046** (3.26)
Political violence indicator					-3.41* (2.34)	2.85 (1.77)
Asset variables						
Rate of growth of money supply during crisis episode	-0.04** (2.39)	-0.03** (3.25)	-0.07* (1.87)			
PPE expenditure index	2.19 (0.56)	3.88** (3.62)				-0.74* (2.31)
'Adjustment mix' (ratio of devaluation to tax increase)				0.25** (3.44)		
External shocks Terms of trade shocks	-0.11 (0.09)					
Number of observations	45	45	43	45	45	67

---

[199] Instrument for political violence: rate of growth of money supply (as per equation (2)).
Instrument for social capital : Gini index of inequality.

Adjusted R^2	0.508	0.237	0.09	0.89	0.655	0.30

Sources: Social capital index 1 (human rights): *The Observer*,   ; reprinted in Open University *U213 Summer School Booklet: ,* pp

Social capital index 2 (World Values Survey):

Gini coefficients of inequality: World Bank, *World Development Indicators 2003,* table 2.8, pp. 64-*66.*

Stabilisation period is periods of falling per capita GDP, if either monetary contraction or tax increases occurred during this period (source for per capita GDP: IMF *World Economic Outlook)*

Conflict indicator: takes value 0 if no riots or civil disturbances recorded during stabilisation period, 1 if less than 10 deaths recorded in riots and civil disturbances during this period, 2 if more than 10 deaths recorded during this period, 3 if more than 10 deaths recorded during this period and civil disturbances continued into the post-stabilisation period. Data from World Bank website, www. worldbank.org./wbi/governance/govdata2002/

External shocks: for IMF/ESAF countries from M.Mecagni, 'The causes of program interruptions' in H. Bredenkamp and S. Schadler, *Economic adjustment and reform in low-income countries,* Washington DC: IMF, 1999.

Bank of England country risk indicator: Bank of England.

IMF programmes: from IMF *Annual Reports.*

Interruptions to IMF programmes: until 1989 from M.Mecagni, 'The causes of program interruptions' in H. Bredenkamp and S. Schadler, *Economic adjustment and reform in low-income countries,* Washington DC: IMF, 1999; thereafter from IMF *Annual Reports.*

'*PPE (pro-poor expenditure) index'*: ratio of spending on (primary health and education + agricultural research and extension + rural water and sanitation, plus other social expenditures) to total expenditures. Original data from *IMF Government Expenditure Statistics Yearbooks.* For further detail see Mosley, Hudson and Verschoor(2003).

'Mix of stabilisation instruments': ratio of real devaluation to increases in indirect taxes, 1990-2000; data from IMF *International Financial Statistics and Government Expenditure Statistics,* various.

Preliminary conclusions which may be drawn from Table 9.2 are that:

(i)   Over-rapid stabilisation increases the risks of political violence; the relationship between the growth of money supply during the crisis episode and the conflict indicator is significant and negative for both conflict indicators used. Indeed there is no country amongst the forty-five in the Table 9.2 sample which, in response to crisis, deflated the real money supply by more than 10% and in which severe political violence did *not* occur – petering out quickly in some cases and in others tipping them 'into the whirlpool' - into a lengthy attritional process of the type suffered by Burundi, Zimbabwe, Sierra Leone, Yugoslavia and Venezuela. In all of these cases, there is of course difficulty in unscrambling the effects of economic and non-economic factors in causing conflict. And in several these cases the incumbent government survived for quite a long period during the violence – a factor discussed during the following case-study section;

(ii)   The tendency of rapid deflation to lead to violence is aggravated by external shocks, but can be mitigated by favourable initial conditions – including a history of favourable initial levels of social capital and growth rates, and also by judicious use of the ' policy assets' previously discussed – pro-poor expenditure and the mix between

external and internal methods of adjustment[200]. However, not all
governments are free to use these at all times; for example, CFA
countries are unable to vary their exchange rate in a flexible and
spontaneous manner and therefore cannot easily use the
'adjustment mix' instrument.

(iii)   Political violence impacts negatively on growth and the prospects
for poverty reduction, in a manner already extensively described by
Cornia, Stewart and Vayrynen (2000). As indicated in the table,
growth falls by 3.41 percentage points and poverty rises by 2.85
percentage points for each percentage point increase in the
political instability index. However, in both cases, 'pro-poor
expenditure' and reductions in the Gini coefficient of inequality act
as mitigating factors potentially capable of offsetting the effects of
conflict. These results are robust to the use of simultaneous-
equation methods of estimation to acknowledge the likely
endogeneity of the growth and violence variables.

Thus all the measures in the portfolio are apparently, *in the right
circumstances,* capable of providing some measure of insurance against
macro-economic risk. But sometimes they fail: there are large variations
around the central tendency . We now examine five 'negative' outliers from
the general pattern of Table 9.2, in order to understand why, not wishing to
get trapped in any vicious circle, they nonetheless succumbed.
These outliers are depicted on Figure 9.4, which depicts the scatter of the
case-study countries around the regression line of equation (3) in Table 9.2.

---

[200] Significant in relation to the World Bank index of political instability, but not according to the
'deaths from political violence' indcator.

Figure 9.4. 'The outliers': economic performance and risk management

(a) Violence in relation to policy stance
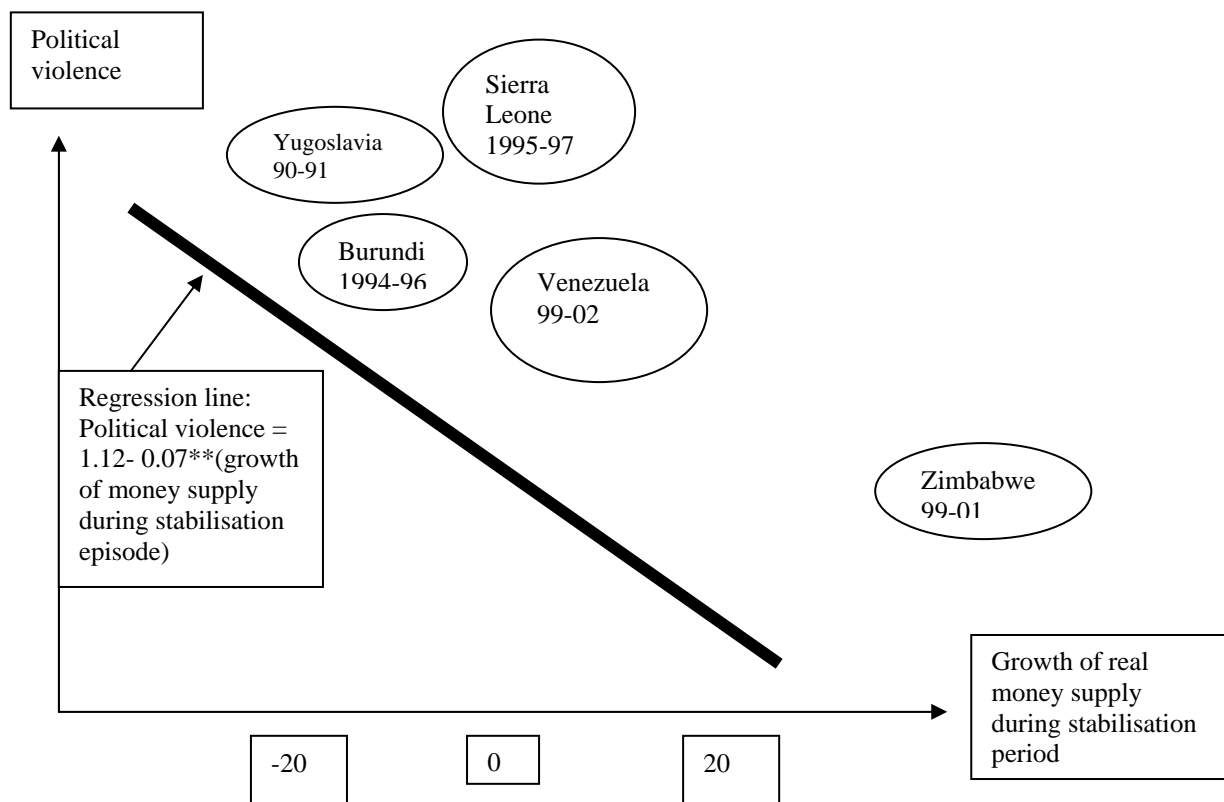
We now examine whether the exceptionalities in the experience of the 'outlier' countries can be explained in terms of our basic structure.

Macro-economic stance. There is no tendency for *overall* stabilisation failure to be associated with particularly drastic or particularly weak stabilisations, even though, as the regression line of Figure 9.4 shows, the probability of *short-term violence* is increased by the former. The most drastic stabilisation in our sample (Burundi – 24% annual reduction in real money supply 1988-89) and the weakest (Zimbabwe – 33% annual increase 2000-01) are both associated with the onset of a conflict –economic decline-conflict vicious circle.

The relationship of the overall macro-economic stance to advice given by the IMF and other donors is most varied. Zimbabwe and Venezuela represent clear cases of *fiscal laxity indulged in defiance* of the IMF's attempted conditionality[201] in order to indulge a populist lobby (urban in the Venezuelan case, rural in the Zimbabwean); whatever the reason for descent into the whirlpool was, it certainly was not an IMF-inspired deflation. Yugoslavia 1990-91 is the opposite – a deflationary overshoot, much *more drastic* stabilisation than any of the international finance institutions had

wanted, imposed in defiance of explicit warnings by both Fund and Bank[202].
Only in Sierra Leone, Burundi and possibly (recalling Rodrik's interpretation
above)[203] Indonesia (1998) do we encounter the stereotype case of a
government forced into political mayhem by politically unconscious IMF
conditionality. This has some implications for optimal conditionality which are
explored in the next section.

Use of risk management strategies. It is to be stressed that none of the risk
management strategies we mention are foolproof, and all contain their own
risks. None of the 'failed stabilisation' countries in our sample (even though
the majority were dictatorships or near-dictatorships) plunged heedlessly over
the precipice; none, on other words, ignored the potential of risk management
strategies to 'move the disaster line downwards', in terms of Figure 9. 1, and
provide them with room for manoeuvre. Zimbabwe in particular engaged in
copious pro-poor expenditure in support of agricultural development in the
communal areas (Table 9.3 below), targeted on and transparently intended to
offset the risk of uprisings among a particularly disaffected sector of the
mostly-poor, namely war veterans in rural Mashonaland. However, it mixed
this strategy with much higher-risk ventures, (such as military support for
Congo-Kinshasa in return for privileged access to copper and cobalt
reserves), thereby becoming trapped in a vicious circle of fiscal collapse,
reimposition of controls on prices and exchange rates, capital flight, declining
levels of social capital[204] and finally, as part of a desperate attempt to protect
its core constituency, compulsory acquisition of commercial farms (even those
owned by Zimbabwe citizens) and redistribution of these, by encouragement
of land invasion, among the ZANU-PF party faithful. By this stage control of
the macro-economy had been well and truly lost, with negative growth rates
from 1998 onward. As a consequence the country experienced a severe
increase in poverty levels, from 45% to 60% over the course of the 1990s. In
other 'stabilisation failure' countries, notably Venezuela and Indonesia there
was also an increase in the pro-poor expenditure ratio during the stabilisation
period, although, as we recall from Table 9.1, this was significantly less than
in the ' successful stabilisation' countries. In many countries this increase in
pro-poor expenditure was not simply implemented by government, but at least
in part mediated through a devolution of spending responsibilities to NGOs as
well (Mosley et al 2003: chapters 4, 5 and 8).

Most of the countries in the sample, in addition, made creative use of
exchange rate flexibility as a risk management strategy, including some which
had eschewed it until the moment of crisis finally came (such as Argentina in
2002). The conspicuous exception is the franc zone countries, famously Cote
d'Ivoire but in more limited ways also Mali, Benin and Togo, which lacking one
of the potential escape roads from the vicious circle turned out to be more
vulnerable to political violence, on balance, than Anglophone countries.

---

[202] Interviews, World Bank, August 1991.
[203] See page 3 above.
[204] See Mosley et al (2003), chapter 6.

External shocks. Burundi 1994-96(coffee export slump) Sierra Leone and Yugoslavia are the three clearest cases of countries whose ability to manage risk was overtaken by the conflict which overwhelmed them shortly after stabilisation began. In all of these cases, some intra-territorial armed violence was already occurring before the over-harsh stabilisation episodes chronicled in Table 9.3, creating the potential for groups opposed to the government to appeal to those who lost livelihoods through stabilisation to join the rebel cause.

Outcomes. The circumstances of those countries which experienced abnormal levels of violence, controlling for the intensity of stabilisation, are summarised in Table 9.3 . One message from the table is that all, significantly, either were outright dictatorships or imposed severe restraints on press or freedom of expression, encouraging the governments in question to believe that they could override, rather than needing to bow to, the political consequences of compressing living standards; however, as mentioned earlier, it was not that the 'outliers' completely ignored the need for risk management strategies, rather that (Zimbabwe) they chose some which were spectacularly misconceived, or (Sierra Leone and possibly Burundi) they were overwhelmed by an interaction between timid policy and spectacularly hostile initial conditions.

Table 9.3. 'The outliers': economic performance and risk management

Country (dictatorship or severe restraint of civil liberties in **bold)**	Stabilisation episodes	Size of reflation/deflation of money p.a. % during years of stabilisation	*Use of risk management strategies:*		*External shocks*	*Consequences:*		
			Pro-poor expenditure (1)	Adjustment policy mix (2)		Economy	Political violence	Government survival
Stabilisation failures: Zimbabwe	1992, 1999-2001	33.2	Significant (2)	1.8	Withdrawal of aid and many external capital flows since 2001	Negative growth rate since 1999	Persistent since 1998	Incumbent government still in power
Sierra Leone	1993-94	12.6	Negative	1.9	Withdrawal of aid and capital flows	Negative growth rate since 1993	Persistent 1993-2002	New civilian regime after eight years of civil war, 2002
Venezuela	1999-02	3.7	Minor		No	Negative growth rate since 1999	Persistent since 1999	
Yugoslavia	1990-1	-24.2	No	N/A		Negative growth rate through 1990s	Secession of Balkan republics after 1992 and associated conflicts	Incumbent in power until 1999
Burundi	1994-96	-24.1	Significant	1.4	No		Persistent through 1990s but now diminishing	

From the discussion so far, in any event, a recipient government can form a picture both of the main linkages from stabilisation to political violence and of the range of variation around these relationships, on which basis it can then prepare a negotiating position – a stabilisation package which is such that, *adjusted in the light of the expected outcome of negotiations with the international financial agencies*, it will keep the recipient government comfortably on the right side of the disaster line. This process is described graphically in the next section, and modelled in the Appendix.

5. Implications for conditionality

In the light of the above discussion it is possible to redefine the requirements for effective conditionality: for, as argued earlier, any imposition of conditionality which is bought at the price of a collapse of civil order will be a pyrrhic victory, scarcely worth having. Although the number of cases where this has happened seems on the evidence of the above argument to be rather small, and although there will always be argument about how much of the breakdown of civil order can be attributed to stabilisation, it seems important to try and specify what a sensible conditionality policy amounts to in the presence of risks of this kind. This is what we now attempt to do. The exposition in this section is graphical, with the mathematical development in the Appendix.

Figure 9.5. Reform decisions as seen by government: the 'politically aware optimum'

Recipient's 'political optimum'(A) and initial negotiating position

'Catastrophe line'; below this point the government expects to lose office

Perceived long-term economic gain from

'Politically unaware' IMF initial negotiating position(B1)

A'

'Enlightened' IMF negotiating position (B2)

Trade-off between risk and return

IMF optimum (B3)

Perceived short-term political loss from reform

Imagine a policy dialogue between a politically insecure developing country and the IMF; this is represented in Figure 9. 5, using the same framework as Figure 9..1. The country has just experienced an import-price shock, is losing reserves, and there is a risk of hyperinflation. What should the Fund do? The 'formally correct' answer is: use its economic model to produce a forecast of the rate at which aggregate demand needs to be cut, and instruct the recipient government to deflate accordingly[205]. However, if this answer

---

[205] Consider the following simplified version of the Khan,Montiel and Haque(1990) 'synthesis' of the Fund and Bank models (autonomus variables are starred)

1 $\Delta Y = \Delta Y^*$(growth target)   Y = income
2 $I = v\Delta Y$ (investment accelerator)   I = investment
3 X = ae (export response to exchange rate)   e = exchange rate
    4 Z = mY –ze (import response to income and   Z = imports
      (exchange rate)
5 C+I +X –Z (national income identity)   C = consumption

(say B1) produces an eventual solution to the right of the 'disaster line' it will (at least in the recipient government's perception) provoke an insurrection which will cause a collapse of the supply side, and frustrate the effects of any deflation. Hence, what a politically aware lender needs to do is to strike an initial bargaining position in its conditionality (B2) such that the *eventual outcome* of the game is an equilibrium comfortably to the left of the disaster line. Beyond this, it has at its disposal, in many cases, the three 'flexible weapons' already discussed for reducing the conflict and disruption potential of any stabilisation that does take place: time-period of adjustment, expenditure mix, and instrument mix. These, suitably deployed, offer the possibility of raising the feasibility locus(i.e. of extracting a greater amount of economic benefit per unit of political loss caused by stabilisation), such that the recipient ends up with a higher level of utility (B3) than that which would have occurred in their absence. There will, of course, be lags in the impact of all these instruments, and the art of conditionality is to buy, through standbys or PRGFs, the necessary time to enable these instruments to work without running into moral hazard problems. The particular merit of the PRGF, as we argue in our conclusion, is that it uses the first of these instruments (extension of the time-period of adjustment) in a planned and coordinated way, rather than as an *ex post* adjustment to circumstance. A formula for optimum conditionality, based on the principle that the recipient government and the IMF are bargaining the level of 'tightness' of conditionality between options A and B2 on the expectation that each party is trying rationally to advance its own interests, is proposed as equation (18) in the appendix.

---

6 $C = C_p + C_g$, $C_p = (1-s)(Y-tY)$ t= tax rate on disposable income

7 $\Delta R = X+Z +A^*$ (Balance of payments identity, with reserves set at target level and foreign inflows autonomous)   R = reserves

8 $\Delta Y = \Delta M_d$ v(Money demand) M_d = demand for money

9 $\Delta M_s = \Delta R + \Delta DC$(Money supply) M_s supply of money

Letting growth ΔY be the target and substituting for exports,imports and consumption into the national income identity (5) we have the reduced form;

10 $Y^* = \dfrac{1}{v- (s+m)(1-t)}(vY_{-1} + C_g + (a-z)e)$

Assuming that the propensity to save s and the propensity to import m cannot be influenced by policy in the short term, this leaves as the main parameters able to be influenced by the Fund the marginal propensity to raise tax revenue out of income (t) and the responsiveness of exports and imports to the exchange rate (a and z).

Alternatively, letting reserves ΔR be the target and substituting for exports and imports from (3), (4) and (7),

11 $\Delta R = (a-z)e - m(Mv) +A^*$

Either of (10) or (11) can serve as a 'technocratic', politically innocent, decision rule for setting the key instruments M, e and t so as to get growth or reserves 'right'. It is the political limits on the implementation of such rules that we seek to model in the text.

6. General policy implications

As we have seen, there is a risk that especially where initial conditions are unfavourable – in particular, where there is not enough social capital to absorb an unexpected negative shock – excessively rapid rates of stabilisation may plunge a deficit country into a vicious circle of lack of assets, failed coping strategy, conflict, decapitalisation, renewed fiscal crisis, and deepened poverty at the macro-level, just as surely as many low-income households in developing countries experience such a circle at the micro-level. All that is different in the macro-cases reviewed here is that the 'botched coping strategy' consisted of a national-level fiscal and monetary adjustment operation and that the conflict was not just an intrahousehold matter but cost the levels of anything up to several thousand (in Sierra Leone and Yugoslavia) people. In both the micro- and the macro-cases, what we are seeing is poverty caused or aggravated by failed risk management, and it is worth spending a little time to examine the lessons from those failures.

The first general lesson is that *speed of adjustment matters.* Contrary to Vaclav Klaus's famous metaphor, the abyss of macro-economic adjustment can be crossed in small steps if enough bridging finance is made available, and attempts to cross by means of too large a leap may span the funding gap but not the political one, especially where a history of inequality, conflict or thin social networks enable a dissident group to use the social costs of stabilisation as a lever to rise up against the government. The entire concept of the IMF Poverty Reduction and Growth Facility was intended, as we have elsewhere argued (Bird and Mosley 2003:   ), as '(the IMF's) attempt to eliminate the mismatch between the type of loan facility it supplies and the type which the poorest and most desperate end of the market is demanding', but on the evidence of this paper, it is the spirit and not just the formal organisational framework of the PRGF which needs to be further extended – indeed, of the 'catastrophically fast' stabilisations which we have examined in section 5, Sierra Leone and Burundi were both ESAFs (the predecessor of the PRGF). In particular, we have observed some cases where IMF conditionality can be made more 'politically conscious' – and therefore, we argue, poverty-conscious – through extension of the term of adjustment ,and we propose a formula in the Appendix to suggest how this idea might be incorporated into the design of optimal conditionality.

A second policy lesson is that, again as in the micro-economic field *insurance,* properly designed, may be a risk management tool which can complement the effects of stretching out the period of stabilisation in steering the economy away from the whirlpool. We have focussed here on two forms of insurance: a shift in the expenditure mix towards *pro-poor expenditure* and a switch from *tax increases to devaluation* as an instrument of stabilisation, both of which hold the potential to buy off an important motivation to conflict by reducing the number of poor losers, and increasing the number of poor gainers, from stabilisation. However, there is another form of insurance which may be worth considering, and this is enabling lenders, in particular the IMF, to not just lend but take *an equity stake in the borrower,* which of course gives

distressed debtor countries more flexibility in managing their liabilities. The essence of the proposal is that the Fund would charge interest on its loans in two parts: a 'basic rate' (r) which would cover its share of the costs of borrowing and administration (but no more) and a surcharge (r*) which would be proportionate to the change in the economy's growth rate since the loan was taken out (g – g(0)), if this change were positive. Thus for each loan:

R = r + r*, r = c, r* = α (g – g(0)) if and only if g is less than g(0)

The surcharge r* is to be sen as a form of quasi-equity, a dividend which is paid if and only if the IMF's loan achieves its desired result. This would have the following benefits:

(i)   for the borrower, some matching of payments to ability-to-pay, with modest relief on repayments during the hard initial year or so of a loan agreement when change in living standards is often negative as a result of expenditure cuts and import price increases from devaluation, without the benefits of stabilisation having been achieved, and as a result the risk of conflict is greatest;

(ii)   for the borrower, a political dividend from being able to adapt out-payments (and hence the budget) more effectively to cash-flow;

(iii)   for the lender, a performance incentive, with profits being made contingent on ability to deliver growth; but the potential for quite substantial profits, in what is often a quasi-monopoly lending situation, if the premium α is set correctly (see below), which would help to pay for some of the costs of lending long-term;

(iv)   for the borrower, an incentive to graduate to the international capital markets as soon as feasible, given that the premium α is set at a level to maximise the IMF's monopoly profit and therefore will be higher than the free-market interest rate[206];

(v)   for the global economy as a whole, it would help to offset the procyclical tendency of Fund lending as a whole (Snowden, 1997, Figure 2), thereby helping to stabilise international capital movements.

It may be, therefore, that thinking in terms of survival strategies which will augment risk efficacy may be a useful approach to pro-poor strategy at the macro as well as the micro level. Specifically, the combination of insurances, quasi-equity, and political awareness in choosing the pace of adjustment potentially represents an asset base which can steer even insecure and divided regimes through the dangerous waters of adjustment: precisely by protecting the poor against loss.

---

[206] Determination of the 'profit markup' α. By the previous argument (iv) this markup should be set at the profit-maximising monopoly level (1+1/e) where e is the interest-elasticity of demand for international borrowing. For many countries which have difficulty borrowing from international markets, e will be less than one, and the markup proportionately high, reflecting the difficulty which countries will experience, during a crisis and if past repayment reputation is poor, in obtaining loans from any other source.

Appendix

(i)   Data matrices

Table 9. 4a. Initial conditions and outcomes

	Initial conditions(I)			*External shocks (s)*	*Stabilisation period*	Outcomes:					
	Social capital 1(human rights index) 1997 *Low values denote high social capital*	Social capital 2 (World Values Survey)	Gini coefficient of inequality 1990-95 *(i)*			GDP growth rate 1990-2001	Conflict indicator *(v)*	World Bank political instability indicator 2002	Poverty (World Bank) (change, in headcount index, percentage points, 1990-2000)	Poverty trend (IFAD) (change 1990-2000)	Infant mortality
1 Argentina	35.2		37.9	no	2001-2	3.6	2	0.81	-7	down	
2 Bangladesh	30.5		31.8	no	none	4.9	0	-0.61			
3 Benin	9.5				1991-3	4.8	1	-0.20			
4 Bolivia	21.2		44.7	Collapse in foreign capital inflows	1999-03	3.8	2	-0.20	+3	no trend data available	
5 Burkina Faso	10.0		48.2	Cotton price collapse	1993-5	4.5	1	-0.10		decline, especially rural	
6 Gambia			47.8			3.4	0	0.55			
7 Lesotho			56.0			4.0	0	-0.06	+13		
8 Malawi	13.7		49.2		1992-94	3.6	1	0.31			
9 Mauritania	19.1		37.3		1989-90	4.2	0	0.43		Decline, both urban and rural	
10 Nepal	27.4		36.7	no		4.9	2	-1.63	-3	no trend data available	
11 Nicaragua	22.7		60.3	no	1988-91	2.8	1	0.15			
12 Pakistan	56.5		33.0		1997	3.7	1	-1.26		decline	
13 Sri Lanka	68.2		34.4		1987,2001	1.7	2	-0.90	-3	decline	
14 Uganda	20.0		37.4	Coffee export surge 94-95		6.8	0	-1.46	-18	Decline, mostly urban	
15 Sudan	46.2				1988-89	5.6	3	-1.94			
16 Burundi	36.3		33.3	Coffee export slump	1994-96	-2.2	3	-2.00			
17 Ghana	21.0		39.6	Aid cuts, 1994		4.2	0	-0.11	-12	Decline, mostly rural	
18 Guinea	12.1		40.3	Aid cuts		4.2	1	-1.78			

19 Guyana	24.0		44.6	no	1988-90, 2000	..	1	-0.49		
20 Mali			50.5	no	1991-93	4.1	1	-0.10		
21 Yugoslavia	79.9				1989-91	..	3	-0.90		
22 Lao PDR			37.0			6.4	0			
23 Mozambique	16.2		39.6	Aid disbursement delay	1992	6.7	0	0.55		
24 Niger	16.2		50.5		1990-92	2.5	2	-0.30	+29?	
25 India	41.0		37.8		1991	5.9	1	-0.84	-5	Decline
26 Senegal	19.5		41.3		1993	3.9	0	-0.36	-19	
27 Tanzania	22.4		38.2	no	no	3.2	0	-0.25	-27??	
28 Togo	24.4			Foreign aid suspension	1992-93	2.2	1	0.01		
29 Vietnam	29.7		36.1	no	no	7.7	0	0.49		
30 Honduras	38.5		59.0	Coffee price boost, 1994	1999	3.1	0	-0.14	-7	Decline
31 Kenya	54.1		44.5		1992-93	2.0	2	-0.86	0	
32 Madagascar	7.3		46.0		1991	2.4	2	0.30		
33 Nigeria	61.7		50.6		1998-9	2.5	2	-1.49		
34 Sierra Leone	14.4		62.9		1995-99	-4.4	3	-1.47	+36??	
35 Rwanda	26.3		28.9		1993-94	0.8	3	-1.35		
36 Zimbabwe	18.9		56.8		1992, 1999-00	1.8	3	-1.62	+10	Increase in both urban and rural poverty, but urban most significant
37 Romania			30.3		1989-92	-0.4	1	0.42	+2	Rapid increase
38 Botswana	26.9		63.0		1993	5.2	0	0.75		
39 Brazil	46.1		59.1		1990, 1998-9	2.8	1	0.17	-6	Increase
40 Chile	34.7		57.5		1999	6.3	0	1.04	-1	
41 Colombia	83.9		57.1		1999	2.7	2	-1.78	+15	Decline
42 Costa Rica	10.6		45.9		1996	5.1	0	-1.06	-2	
43 Ethiopia	12.2		48.6		1991-93	4.7	1	-1.20	-7	Decline
44 Indonesia	96.1		30.3		1998-99	3.8	2	-1.37	-2	Big secular fall to 1998, then rise; now falling again
45 Venezuela	59.4		49.1		1999-2002	1.5	3	-1.20	+6	

Sources: *Social capital index 1* (human rights): *The Observer*,   ; reprinted in Open University *U213 Summer School Booklet: ,* pp

     Social capital index 2 (World Values Survey):

     Gini coefficients of inequality: World Bank, *World Development Indicators 2003,* table 2.8, pp. 64-*66.*

     Stabilisation period is periods of falling per capita GDP, if either monetary contraction or tax increases occurred during this period (source for per capita GDP: IMF *World Economic Outlook)*

Conflict indicator: takes value 0 if no riots or civil disturbances recorded during stabilisation period, 1 if less than 10 deaths recorded in riots and civil disturbances during this period, 2 if more than 10 deaths recorded during this period, 3 if more than 10 deaths recorded during this period and civil disturbances continued into the post-stabilisation period. Data from World Bank website, www. worldbank.org./wbi/governance/govdata2002/

External shocks: for IMF/ESAF countries from M.Mecagni, 'The causes of program interruptions' in H. Bredenkamp and S. Schadler, *Economic adjustment and reform in low-income countries,* Washington DC: IMF, 1999.

World Bank political instability indicator: from World Bank website, www. worldbank.org./wbi/governance/govdata2002/(for a gloss, see also Kaufmann et al. (2003)).

Poverty trend (World Bank) from World Bank, *World Development Reports,* various. Dubious data are marked ? or ?? and not included in regressions (Table 9.3)

Poverty trend (IFAD), from IFAD, *Rural Poverty Report 2002,* Rome.

Table 9. 4b. Policy processes

	Stabilisation period	Speed of decline of real money supply during stabilisation period (a)	IMF programmes	Programme interruptions	PPE index(1990-2000) *(symbol PPE)*	Mix of stabilisation instruments *(symbol r/T)*	Bank of England country risk indicator
1 Argentina	2001-2			Nov01-Jan02			
2 Bangladesh	none			Dec 89-Aug1990	-0.098		56
3 Benin	1991-3	-2.3		June 1990-Aug 1991			
4 Bolivia	1999-03	7.6		(i)Dec 87-July 88 (ii)Nov 90-July 91 (iii)Apr 93-Apr 94 (iv) Feb 2003	0.5295	4.7	
5 Burkina Faso	1993-5			Mar 92-Mar 94			
6 Gambia							
7 Lesotho							
8 Malawi	1992-94	21.0				3.7	29
9 Mauritania	1989-90	-3.6			0.0592		
10 Nepal	2002	1.1			0.4377	3.1	
11 Nicaragua	1988-91	2.5		(i)Nov 90-Oct 92 (ii)Oct 93-Apr 94 (iii) mid 1994-mid 1995	0.5871	6.5	125
12 Pakistan	1997	20.5			-0.175	1.3	25
13 Sri Lanka	1987,2001	-11.1			0.2878	1.4	6
14 Uganda				(i)March-Oct 1989 (ii) Oct-July 1995	0.0022	6.4	78
15 Sudan	1988-89						142
16 Burundi	1994-96	-24.1		(i)1987-88 (ii)July 1990-Nov 1991 (iii)1993-		0.8	
17 Ghana					0.5725		93
18 Guinea					0.176		
19 Guyana	1988-90, 2000	38.0					
20 Mali	1991-93			(i)Jan 91-Aug 92 (ii)Aug 93-Mar 94			
21Yugoslavia	1989-91	-24.2					
22 Lao PDR				(i)Sept 90-April 91 (ii) June 1994-April 1995			
23 Mozambique	1992	6.6		(i)Dec 1993-June 1994 (ii) all 1995			

24 Niger	1990-92	-2.9		Dec 89-Sep 90	0.0737		
25 India	1991	8.7			0.2372		11
26 Senegal	1993	-9.0					
27 Tanzania	no			All 1993	-0.113		81
28 Togo	1992-93	-14		June 1991-May 1992		5.1	
29 Vietnam	no					7.4	
30 Honduras	1999	-3.1		July 1993-Jan 1995	0.105		99
31 Kenya	1992-93	-1.3		Mar-Dec 1993	0.4423		94
32 Madagascar	1991	23.5		June-Dec 1991	0.2371		
33 Nigeria	1998-9	14.2			-0.0085		99
34 Sierra Leone	1995-99	10.8		1987-94	-0.34	1.9	
35 Rwanda	1993-94	12.6			-0.2645	2.3	
36 Zimbabwe	1992, 1999-00	33.5		June 1994-Sept 1995	0.4787	1.8	18
37 Romania	1989-92	-17			0.616		
38 Botswana	1993	0.3			0.5353		74
39 Brazil	1990, 1998-9	7.4			0.364		72
40 Chile	1999	29.5			0.6695		8
41 Colombia	1999	14.3			0.4039		11
42 Costa Rica	1996	-0.3			0.8070		33
43 Ethiopia	1991-93	2.6			0.4632	3.2	
44 In donesia	1998-99	-14.2			0.4401		6
45 Venezuela	1999-2002	3.7			0.1427		39

Sources: Bank of England country risk indicator. Bank of England.

IMF programmes: from IMF *Annual Reports.*

Interruptions to IMF programmes: until 1989 from M.Mecagni, 'The causes of program interruptions' in H. Bredenkamp and S. Schadler, *Economic adjustment and reform in low-income countries,* Washington DC: IMF, 1999; thereafter from IMF *Annual Reports*.

'*PPE (pro-poor expenditure) index'* : ratio of spending on (primary health and education + agricultural research and extension + rural water and sanitation, plus other social expenditures) to total expenditures. Original data from *IMF Government Expenditure Statistics Yearbooks.* For further detail see Mosley, Hudson and Verschoor(2003).

'Mix of stabilisation instruments': ratio of real devaluation to increases in indirect taxes, 1990-2000; data from IMF *International Financial Statistics and Government Expenditure Statistics,* various.

(ii) Model

(a) Political-economic optimisation by the recipient government:

(i)The recipient government seeks to maximise the probability of survival: to attain an optimum point on the locus (Figure 9.1) relating 'economic gain from reform' to political loss from reform' . Greater intensity (tightness) of reforms pushes one east along the locus; softer reforms push one west.

Thus it maximises the gap between its utility from, and its perceived political loss from, reform.

Its utility from reform is a negative function of the tightness of reform[207] (and a positive function of the amount of finance it is able to secure during the adjustment operation);

$$U = f_1(t, X) \qquad (1)$$

(ii) Its expected political loss from reform, including the associated risk of conflict, depends as previously argued on initial conditions (social capital, inequality, history of conflict, etc), and incidental shocks:

$$L = f_2(I, S, t) \qquad (2)$$

(iii) Thus the recipient government maximises the expected gain from reform (U-L) subject to the requirement that the risk of conflict, which we see as proportional to the *ratio* of expected gain to expected loss, not fall below some disaster level[208]:

$$R = (U/L) < R^* \qquad (3)$$

(iv)The risk of conflict (the ratio (U/L) can be managed by means of various short–term instruments: the period of adjustment, the pro-poor expenditure ratio and the ratio of real exchange rate devaluation to tax increases, each of which has the potential to reduce the resentment and anger which the losers from adjustment feel:

$$(U/L) = f_3(A, PPE, r/T) \qquad (4)$$

Thus, maximising government utility ((1)-(2)) subject to the constraint (3) and incorporating (4), the optimal level of the tightness of reform, t, is that which solves

$$\frac{\partial(U-L)}{\partial t} - \lambda[(U/L) - R^*] = 0 \qquad (5)$$

i.e. $(\partial/\partial t)[f_1(t, X, A, PPE, r/T) - f_2(I, S, t) - \lambda(f_1/f_2 - R^*) = 0 \qquad (6)$

Further, from (4a) $\lambda = \dfrac{(\partial U/\partial t) - (\partial L/\partial t)}{[(U/L) - R^*]}$

Hence $\dfrac{\partial f_1}{\partial t}(t, X, A, PPE, r/T) = \dfrac{\partial f_2}{\partial t}(I, S, t) + \dfrac{(\partial U/\partial t) - (\partial L/\partial t)}{[(U/L) - R^*]} \qquad (7)$

Solving for optimal tightness t*,

---

[207] Notation is contained in table 9.5 below.

$T_r^* = \quad f_3 (X, A, PPE, r/T , I, S) \qquad\qquad (8)$

(This solution value T^*_r, optimum tightness from the recipient's point of view, corresponds to the point A on Figure 9.5).

and, as shown on Figure 9. 4 above, political violence v is in a simple linear relationship to the tightness of adjustment

$v = \alpha - \beta t$ [209] $\qquad\qquad\qquad (9)$

i.e substituting for optimal conditionality t*,

$v = \alpha - \beta f_3[$ [I], $\qquad$ X, A, PPE, r/T , $\qquad\qquad$ S $\quad$] (10)
(initial conditions) $\quad$ (discretionary policy variables) $\quad$ (exogenous shocks)

This is the reduced form estimated in Table 2 of the main text above.

(b) 'Politically optimal conditionality'

Without loss of generality we can write the reduced form (8) expressing the *recipient's* constrained optimum, as a linear function expressing his utility as a function of the tightness of the reforms he expects to undertake under his optimal bargaining position t* :

$$U_j = X - \beta(A, PPE, r/T , I, S)t^* \qquad\qquad (11)$$

where j = recipient subscript, t = tightness and number of conditions imposed, p = proportion of loan conditions implemented, X = value of lending. (The full notation is set out in Table 9.5).

We now consider the motivation of the lender. As a first approximation we may suppose that he will try and extract as much policy reform (t) as he can from a given recipient over a given time period. At the technical level, if government-imposed institutional and policy distortions are thought to be the major barrier to growth in developing countries, then the more distortions the lender is able to buy out in a given operation, the more successful the operation; and at the level of staff motivation, the more policy-reform conditions a country loan officer is able to negotiate as part of a particular loan agreement, the more impressed her superiors in operating departments of the lending institution are likely to be. What matters at both levels, however, is the amount of conditionality actually implemented (tp), not the amount demanded in the initial bargaining stage (t). In addition, the donor wishes to avoid the risk of conflict (c) which as we saw above is linearly related to the time-period of adjustment.

---

[209] The relationship from our sample is Political violence indicator = 1.15 - 0.07**(growth of money supply during stabilisation episode)[209] – from table 9.1 above.

Table 9.5. Notation and empirical estimates of parameters

Symbol	Meaning and dimension of measurement	Method of measurement	Source
t	'Tightness' of conditionality	Number of policy conditions imposed	ESAF(PRGF) countries 1987-99:Mecagni 1999, table. Other countries: IMF *Annual Reports.*
$X_{(\tau)}$	Value of loan finance granted by creditor i to debtor j ($bn)(in period τ)		IMF *Annual Reports.*
p	Compliance with conditions(%); hence (1-p) = a measure of slippage on agreed conditions (%)		
I	Gini coefficient of inequality		
S	Social capital indicator		
D	Debt service ratio (debt service payments due as a percentage of exports) (%)	Sample average: 31.7%	
A	Intensity (speed) of adjustment	Decline in real money supply per year during adjustment period	IMF *International Financial Statistics*
PPE	'Pro-poor' expenditure ratio	Ratio of [primary health and education, plus agricultural research and extension, plus rural water and sanitation, *less* military spending] to total public expenditure	Original source *IMF Government Expenditure Statistics.* Full data arrays in Mosley, Hudson and Verschoor (2003)
i	Donor subscript		
j	Recipient subscript		
α	Subjective utility attached by donor to one extra unit of tightness negotiated with the recipient (i.e. if α=1, one extra condition imposed on the recipient adds one extra unit to the donor's utility)	0.5	
β	Subjective (dis) utility attached by recipient to one extra unit of tightness negotiated by donor (e.g. if β=-2, one extra condition imposed on the recipient subtracts two units from the recipient's utility)	0.5	

q	Refinance (i.e. refinance as percentage of value as previous loan) (%) Can be used in its inverse (1-q) as a measure of 'punishment', i.e. of the *failure* of a donor to refinance a particular recipient		

There does exist a constraint on the enforcement of conditionality: which is that a financial institution, whether a quasi-commercial operation such as the World Bank's IBRD (hard-loan) department, a revolving fund such as the IMF, or a bilateral aid agency, needs to spend its budget if it is to maintain its viability. For a bilateral aid agency, the penalty for failing to do this is simply gradual attrition, since the agency's inability to spend its budget in a given financial year will weaken its ability to bid for funds from the finance ministry in competition with other government agencies (Mosley, Harrigan and Toye, 1995). For a commercial operation such as the IMF or the 'hard windows' of the World Bank or the regional development banks the penalty is more immediate, since very many potential borrowers from these institutions are debt-distressed countries who are at risk of defaulting on their obligations to the World Bank and IMF themselves, as well as to commercial banks[210], and if disbursement of a programme loan is held up because policy conditions attached to that loan have not been implemented, the recipient may not be able to maintain repayments on that and other borrowings. In this sense, although the *imposition* of conditionality is supposed to be a substitute for collateral, its *enforcement* may have the opposite effect of making loans harder and not easier to repay, and the lender will face the creditor's dilemma of choosing between enforcement of the commitment to implement policy conditions attached to a loan and enforcement of the commitment to repay the loan itself. In consequence of this conflict between lending and leverage the lender's utility function will be of the form:

---

[210] In the 1980s, for the first time, the World Bank and IMF, although in principle protected by government guarantees, began to suffer serious arrears on their lending to developing countries. The value of loans to the Bank and Fund 'in nonaccrual status' (i.e. more than six months overdue) at 30 June 2002 was:

Country	Arrears to IMF $m	Arrears to World Bank $m	Total $m
Sudan	956	6	962
Zambia	790		790
Russian Federation	450		450
Iraq		69	69
Congo-Kinshasa	125	100	225
Former Yugoslav Reps.	1100	1590	2690
Liberia	326	276	602
Syria		180	180
Panama	146		146
Congo-Brazzaville		100	100
Somalia	75		
Total	*4207*	*2121*	*6428*

Source: World Bank, *Annual Report 2002,* vol. 2.

So far, with the exception of Russia, it is mainly countries with relatively small debts owing to the Bank and Fund which have defaulted on their obligations to these institutions. It was a major objective of Bank and Fund policy, during the recent global crisis, to prevent them being joined by large debtors such as India, Indonesia or Brazil, an outcome which could cause, in particular, a major deterioration in the credit rating of the World Bank and the regional development banks. If such a large default were to occur, the risk premium attached to the rate of interest at which these banks lend would be pushed up so far that most of these banks' good' customers would desert them, leaving them lending only to the high-risk governments which can borrow nowhere else.

$$U_i = g\ (tp,x,c);\ g_t > 0,\ g_x > 0,\ g_p > 0,\ g_q > 0,\ g_c < 0 \tag{12}$$

where in addition to the notation introduced in (1),
i = donor subscript
p= proportion of loan instalments due which is actually repaid.
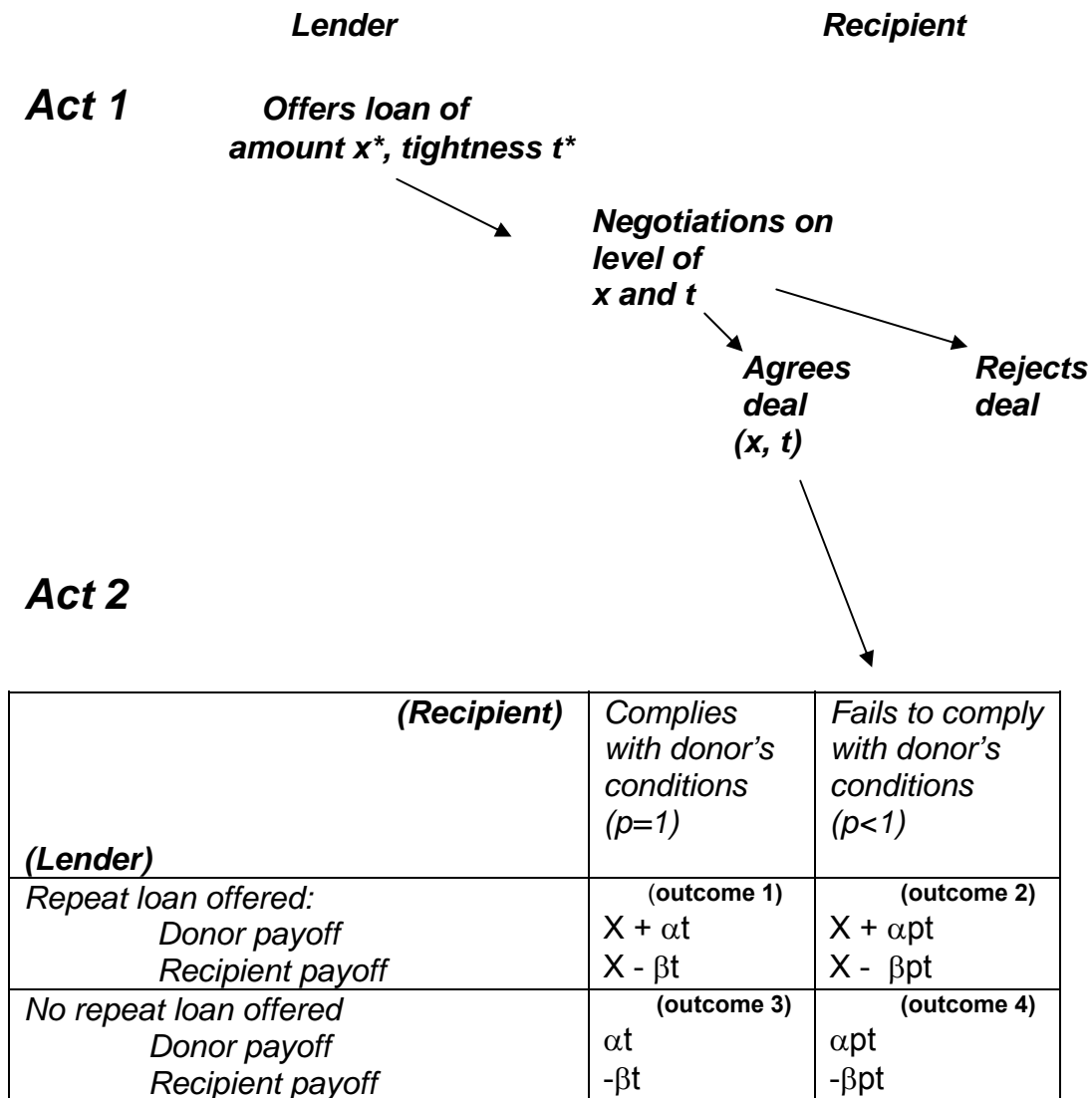c = risks to repayment arising from conditionality, as perceived by the lender.

By analogy with (11) this can be linearised as

$$U_i = X + \alpha\ (x,c\ )tp \tag{12a}$$

The lender and the recipient, then, have conflicting interests concerning the implementation of conditions and a common interest in spending the lender's budget. We now consider, in two stages, the manner in which the conflict is resolved.

Let us begin by representing the financing relationship between lender and borrower as a two-period, noncooperative game. In the first period the donor and recipient seek to negotiate the transfer of a loan of size X and tightness t, and in the second period, *simultaneously,* the recipient decides whether or not to comply with sufficient conditions to keep the donor happy and the donor decides whether or not to grant a repeat loan. It is not too outrageous to begin by treating the loan transfer and refinance decision as simultaneous since – especially with World Bank/ regional development bank-type conditions, such as the reform of taxation, protection or state enterprise - a decision about refinance typically has to be taken before it can be determined whether the recipient government has effectively implemented policy reform. With both parties confined to these two strategies, the game tree and the payoffs for both parties in the crucial second period following the disbursement of the loan, with the donor's payoff written first, are as represented in Figure 9.6:

Figure 9.6. Structure of 'two-act conditionality game' and Act 2 payoffs

Lender   **Recipient**

Act 1   **Offers loan of amount x*, tightness t***

Negotiations on level of x and t

Agrees deal (x, t)   **Rejects deal**

Act 2

(Recipient) (Lender)	Complies with donor's conditions (p=1)	Fails to comply with donor's conditions (p<1)
Repeat loan offered:	(outcome 1)	(outcome 2)
Donor payoff	$X + \alpha t$	$X + \alpha pt$
Recipient payoff	$X - \beta t$	$X - \beta pt$
No repeat loan offered	(outcome 3)	(outcome 4)
Donor payoff	αt	αpt
Recipient payoff	$-\beta t$	$-\beta pt$

This game is an asymmetric prisoner's dilemma, with gains from exploitation in only one (the top right-hand) and not both of the off-diagonal cells, since the recipient has an incentive to not comply with conditionality if the lender refinances, but the lender has no incentive to not refinance if the recipient complies with conditions. It has a dominant strategy equilibrium in the top right-hand cell of the table, in which the recipient always breaches any conditionality that may be imposed and the lender always provides refinance (i.e. the borrower optimum A is imposed in defiance of whatever the lender negotiating position B may be)[211]; this 'exploitative' outcome may be contrasted both with the orthodox prisoner's

---

[211] In one simple formulation of this game (where $\alpha = \beta = p = 0.5$, $X = t = 2$) the numerical value of the Act 2 payoffs in Figure 1 (donor's payoff written first) are
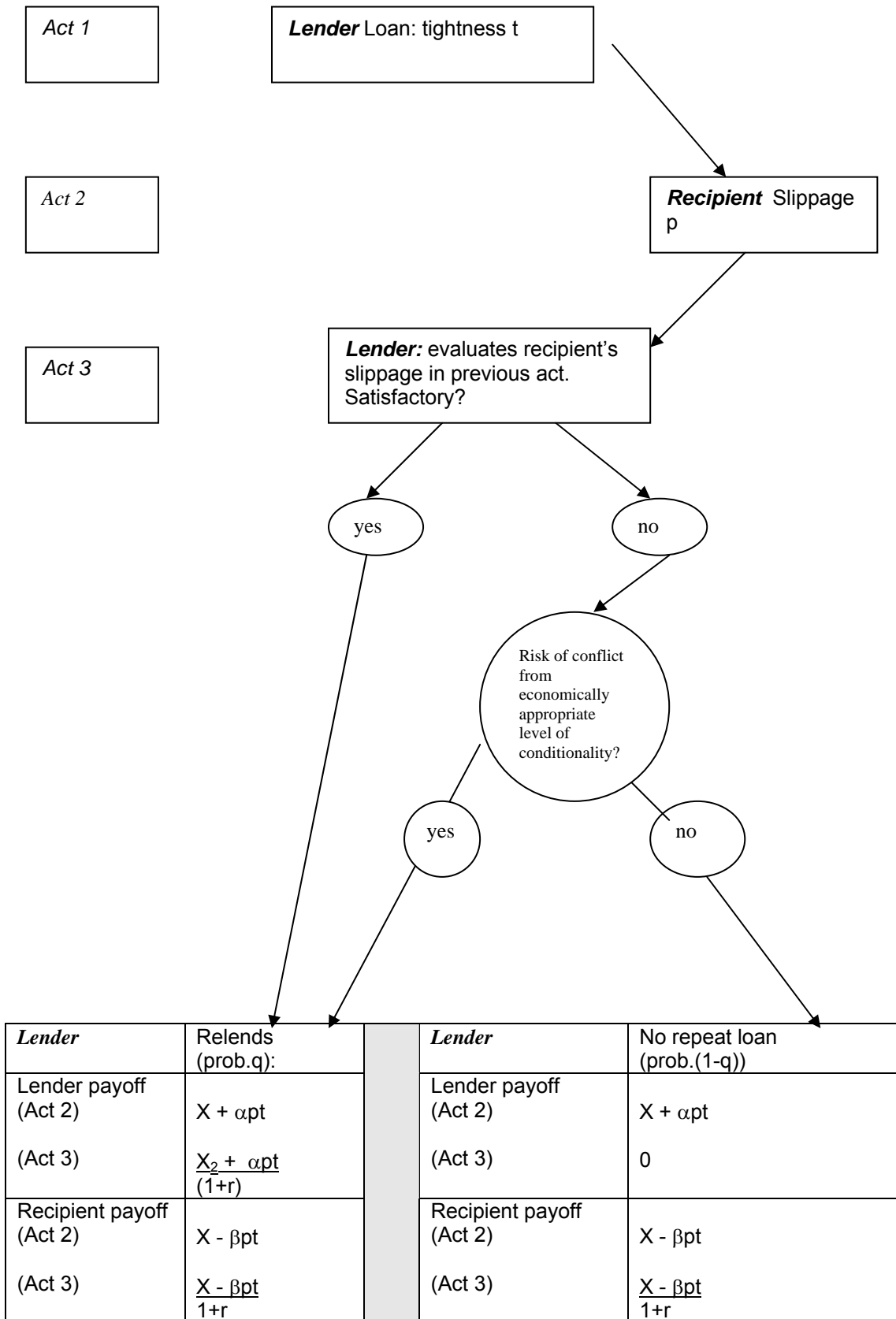
dilemma outcome in which negotiations break down and the equilibrium is in the bottom right-hand corner of the table, and also with the outcome desired by the lender, which is in the top *left-* hand corner of the table. The 'top right-hand corner' equilibrium is optimal for the recipient because, whether he gets refinance or not, some slippage is politically better for him than no slippage ($-\beta t<0$); if this were not the case, it would have made sense for the recipient to implement some part of the reforms requested by the donor without any form of inducement from him. It is optimal for the donor because, whether the recipient's compliance is satisfactory or not, it is better to lend within the framework of an existing country support programme (and thus meet pre-set spending targets) than not to disburse. If the lender gains financially from providing support (as in the case of the IBRD wing of the World Bank, or the regional development banks) or is under pressure to disburse an amount related to 'recipient need' (for example if the level of support given relates to the recipient's balance of payments deficit) this motivation is intensified. Thus it is rational for a recipient to commit slippage on conditions, foreseeing that the lender will, quite rationally, forgive it. The moral hazards implicit in such an equilibrium need no underlining: recipients lack an obvious incentive to engage in serious adjustment effort because to do so will, *especially if it is successful*, put future aid flows and thus short-term economic welfare at risk; and lenders have an incentive to underwrite the avoidance of adjustment because it is the payments and budgetary deficits resulting from such avoidance which rationalise future financial flows. These moral hazards have received publicity in the context of the recent financial crisis in the Far East, with the IMF complaining that in a situation where its financial safety net exists, it is sometimes difficult to separate requests for help arising from genuine need (such as an unexpected external shock) from requests arising from excessive macro deficits which arise only because the safety net also exists.

However, although slippage on conditionality certainly occurs, it is by no means always 100%, and so it is unreasonable to treat the dominant strategy equilibrium of the previous game as the only possible solution. Another possibility, and a more plausible one, is that the lender does not make an all-or-nothing decision, but rather evaluates the level of the recipient' s slippage in the light of, first, its size and, second, whether the refusal of follow-on finance is going to increase the risk of conflict and collapse of the supply side beyond the critical limit R*. Only if neither condition is satisfied if follow-on finance refused. This produces a game tree of the type found in Figure 9. 7:

Recipient Donor	Complete compliance with conditions	Incomplete compliance with conditions
Repeat loan	3,1	2.5,1.5
No repeat loan	1,-1	0.5,-0.5

In such a case the donor's task, if she wishes to move the equilibrium in the top right-hand corner up to the top left-hand corner where her conditions are met, is to work out a set of incentives that will increase the recipient's payoff under complete compliance to more than 1.5 (or alternatively, a set of disincentives that will reduce his payoff under incomplete compliance to less than 1). In the final section of this article we discuss three carrots (compensation payments to losers, more 'empirically credible' conditions, and above all reductions in indebtedness) which may be able to achieve this, and also two sticks (loss of reputation, and 'down payments' of reform) which may be able to achieve the same effect.

Figure 9. 7. The conditionality game in extensive form

Act 1	**Lender** Loan: tightness t
Act 2	**Recipient** Slippage p
Act 3	**Lender:** evaluates recipient's slippage in previous act. Satisfactory?

yes / no

Risk of conflict from economically appropriate level of conditionality?

yes / no

Lender	Relends (prob.q):		**Lender**	No repeat loan (prob.(1-q))
Lender payoff (Act 2)	$X + \alpha pt$		Lender payoff (Act 2)	$X + \alpha pt$
(Act 3)	$\dfrac{X_2 + \alpha pt}{(1+r)}$		(Act 3)	0
Recipient payoff (Act 2)	$X - \beta pt$		Recipient payoff (Act 2)	$X - \beta pt$
(Act 3)	$\dfrac{X - \beta pt}{1+r}$		(Act 3)	$\dfrac{X - \beta pt}{1+r}$

The expected value of the donor's payoff is:

$$R = q\left[p, \frac{u}{L}\right]\left[X - \beta pt + \frac{X_2 - \beta pt}{(1+r)}\right] + \quad (1-q)(X - \beta pt) \qquad (13)$$

$$\xleftarrow{\text{payoff if lender}}_{\text{does not punish}}\xrightarrow{} \qquad \xleftarrow{\text{payoff if lender}}_{\text{punishes}}\xrightarrow{}$$

where q is the probability that the donor will relend, either because the level of slippage is satisfactory, or because he believes the political consequences of failure to relend, in terms of wages not paid and expenditures not undertaken, will be so grave as to wipe out any gains from the enforcement of conditionality. By hypothesis, the recipient cannot foresee this probability. Differentiate (13) with respect to the level of slippage p and set this function equal to zero to determine the recipient's optimal reaction function, p*:

$$\frac{\partial R}{\partial p} = \left[X - \beta t(1+q) + q'(p)\left[\frac{X_2 - \beta pt}{(1+r)}\right]\right] = 0 \qquad (14)$$

whence:

$$p^* = -\frac{(1+r)(X - \beta t(1+q + X_2)}{\beta t q'(p)} \qquad (15)$$

where q'(p) is the recipient's expectation of the donor's behaviour: formally, his subjective expectation of the likelihood that a given change in slippage (dp) will cause a change in the donor's evaluation of his performance, and hence in the likelihood of punishment. If we differentiate (11) with respect to tightness t, we get:

$$\frac{\partial p^*}{\partial t} = \frac{\beta t q'(p)^2 - q'(p)(1+r)(X - \beta t(1+q(p)) + X_2)}{\beta t q'(p)^2} \qquad (16)$$

The overall sign of (16) is ambiguous. If a plausible range of values[212], however, is applied to each of the coefficients in (16), the absolute value of (16) always turns out negative, in other words, it appears a priori that high levels of tightness may prejudice implementation performance. It is notable that as the recipient's distaste for reform β and his probability of escaping punishment q increase, so his propensity to implement conditionality $\frac{\partial p^*}{\partial t}$ goes towards minus infinity; whereas that propensity increases, and ultimately becomes positive, as the size of the expected loan in Act 3, X_2, is stepped up.

The reaction function (15) then becomes a constraint within the lender's utility function:

$$U_i = g(tp, x, c) \qquad (12)$$

Substituting the recipient's 'optimum slippage reaction function' p*, as derived in (15) into (12), we have the following expanded utility function which the lender must maximise in order to determine the tightness of its conditionality in Act 1:

$$U_i = g\left(t\left[\frac{(1+r)(X - \beta t(1+q + X_2)}{\beta t q'(p)^2}\right], x, c\right) \qquad (16)$$

Since the volume of lending X does not relate directly to tightness we may immediately differentiate (11) with respect to tightness to solve for its optimal level t*:

---

[212] Q = 0.5 to 1, β=0.5, t=10-20, r=0.05 to 0.10, X_2 = 10 .

$$\frac{\partial p^*}{\partial t} = g'(t,x,c) = 0 \tag{17}$$

whence, using the function of a function rule and disregarding the negative root of the resulting quadratic equation,

$$t^* = X + \frac{X^2}{2} - \frac{2(1+r)(1+q(p)+ X_2}{2\beta^2 q(p)} \tag{18}$$

We offer (18) as a potential decision rule for conditional lenders seeking to maximise the effectiveness of their lending in a manner that is conscious of the conflict risks arising from over-harsh conditionality. The key parameters determining the size of optimal tightness are: loan size X; recipient's distaste for conditionality β (which is linked to the perceived probability of political breakdown via (12a)) and the likelihood of punishment (per unit slippage) q.

Chapter 10. Final summary

Our main claim is that an effective strategy for pro-poor growth depends on effective management of the risks to which the poor are subject. This is not an original thesis and indeed has been explicitly put forward by the World Bank as part of the new approach to poverty reduction contained in the *2000 World Development Report.* We strongly agree with a number of the new emphases (for example, on 'vicious circles', on insurance, on social capital and on conflict prevention), contained in the Report. And yet our emphases and policy conclusions often differ quite sharply from the Bank's. It will therefore be convenient to use the approach to pro-poor growth presented in the *Report* to identify what is new and what is old about our own approach.

One thing which is seriously old, and indeed old hat, is our emphasis on labour markets. These are a centrepiece of the Bank's first 'new' essay on poverty, in 1990, but by the millennium had slipped almost off the edge of its intellectual map, and are scarcely mentioned in the 2000 *Report.* They are central to any poverty strategy simply because the poorest people have no other source of income but labour and many policy instruments which have nothing to do with the labour market directly, such as microfinance, depend for a lot of their impact on being able to lever labour markets into action. Taking note of this may have policy significance; for example, if the labour market spinoffs are taken into account, much of the emphasis on 'targeting of the poorest' currently preoccupying the microfinance movement becomes irrelevant, because the poorest are often more effectively reached by labour market spinoffs than by direct loans. Our own treatment of the labour market is gender-differentiated, and we find much greater sensitivity of female than male labour to seasonal and cyclical fluctuations, as in other countries and earlier historical periods. Thus, as per the conventional wisdom, the woman bears much of the labour-market risk. This theme is taken up in much greater detail in our companion report (book) on *Gender and Labour Markets.*

Also seriously old is our emphasis on agriculture, and specifically on productivity change in foodcrops – indeed, much of the thrust of the aid

donors' earlier attempt in the 1970s, under MacNamara, to achieve 'poverty focus' consisted of a set of integrated rural development programmes seen as a counterpoise to the earlier, and certainly not pro-poor, emphasis on heavy industry. This book (especially in Chapter 7) emphasises the risk-reducing qualities of modern seed varieties – including genetically modified varieties, where appropriate. But it also examines the specific risks for men and women, and here the results do not echo the conventional wisdom, which is that women are condemned to lower crop yields. We show that this is only true, as a general rule, for *female-headed* households; women in partnership households, with a stronger fallback position and a stronger propensity to invest (often stronger social capital also) , have higher average yields on the plots which they control. It is therefore reasonable to propose the extension of the green revolution to poorer parts of Africa and South Asia as an explicitly pro-female measure; but the disparities between women need to be borne in mind, and the problem of female-headed households remains.

Somewhat newer is our discussion of integrated risk management – indeed SEWA and BRAC, the two institutions which form the subject of our case-study, in Chapter 8, have always existed well outside the mainstream of the Washington consensus and have only submitted, uneasily, to its embrace since the rebirth of poverty focus in the 1990s. Our conclusion is that integration has transparent merits for the service provider, but genuine advantages for the recipient also – advantages which have shown themselves during the recent round of global macro-economic crises to have macro-economic importance. The essential argument is that a package of quasi-welfare services may provide a relational asset which enables the service provider to grow through a recession – and take at least its clients, in Indonesia much of the small business economy also, with it. This package of 'quasi-welfare services' is part of an NGO mini-welfare state, which in very many countries is growing as the state proper retreats.

In our only 'global' chapter, chapter 9, we take up the Bank's theme of the link between security risks and poverty reduction; but the form of security we look at is political instability caused by stabilisation policies. The risks which

these cause if wrongly implemented have never been properly factored into the policies of international organisations, tragically so given the cost in terms of poverty created. To understand how to protect developing countries from 'falling into the whirlpool', we use the same kind of asset-creation framework as in earlier chapters, and the task as before is to find 'assets' which will deliver a satisfactory and reliable rate of return; but in this context the assets which matter are policies and institutions. We identify three in particular – pro-poor expenditure, a high ratio of external to internal instruments of adjustment, and the duration of the stabilisation exercise. These approaches have implications for the conditionality of international financial institutions, including in particular the IMF's Poverty Reduction and Growth Facility.

Both at micro and at macro level, what is therefore being asked for is *insurance for the poor* – a market failure almost everywhere. Through the book as a whole, but especially in chapter 4, we examine a range of institutions which have somehow bucked this market failure, sometimes using novel methods, including experimental economics. We assess what these institutions have have been able to achieve: in relation to the range of risks which cause anxiety and poverty in developing countries, they are still a small and endangered species, clustered in the area of health and life insurance and as yet unborn in some badly-needed areas such as climatic and even personal property insurance.

There is, therefore, much still to do, both at the micro and at the global level; we hope this book takes us some little part of the way.

Bibliography

(Outputs from our research programme (R7614/7615/7617),
Labour markets, incentives and pro-poor growth, are in **bold.**)

Jennifer A. Adams(1991) 'Female wage labour in rural Zimbabwe' *World Development,* vol. 19, pp. 163-177.

Addison, Tony, and S. Mansoob Murshed,(2003), 'Explaining violent conflict: going beyond greed versus grievance', *Journal of International Development,* vol. 15 (May), 391-397.

Addison, Tony, and L. Laakso(2003) 'The political economy of Zimbabwe's descent into conflict', *Journal of International Development,* vol. 15 (May), 457-471.

Akerlof, George(1984), *An economic theorist's book of tales,* Cambridge; Cambridge University Press.

H. Alderman and C. Paxson (1990)*Do the poor insure? A synthesis of the literature on risk and consumption in developing countries,* World Bank Working Paper 1008.

Alesina, Alberto, and Dani Rodrik, (1994) 'Distributive politics and economic growth', *Quarterly Journal of Economics,* vol.   , pp. 465-489.

Alesina, Alberto, and Roberto Perotti (1996) 'Income distribution, political instability, and investment', *European Economic Review,* vol. 40, pp. 1203-1228.

Alesina,Alberto, and E. La Ferrara (2000) 'Participation in heterogeneous communities', *Quarterly Journal of Economics,* vol.   (August), 847-904.

M. Allais (1953?), 'The foundations of a positive theory of choice involving risk and a criticism of the postulates and axioms of the American school', *Econometrie* 5,40, pp. 257-332. Translated in O. Hagen(ed) (1979) *Expected utility hypothesis and the Allais Paradox,* Reidel Publishing Company, Dordrecht, Holland.

S. Appleton(2002?)

K. Arrow(1971)'Political and economic evaluation of social effects and externalities', in M.D. Intriligator (ed),*Frontiers of Quantitative Economics,* Amsterdam: North-Holland.

K. Arrow(1972) 'Gifts and exchanges' *Philosophy and Public Affairs,*vol 1(4), 343-362.

T.G Arun and Paul Mosley 2003. 'Improving Access to Rural Finance in India: Supply Side Constraints'. Contribution to *Report on Access to Rural Finance in India*: World Bank report, forthcoming late 2003.

A. Barr (2003) 'Trust and expected trustworthiness: experimental evidence from Zimbabwean villages', *Economic Journal,* vol. 113(July), 614-631.

Barro, Robert, and Xavier Sala-I-Martin, *Economic Growth,…*1995.

P.T. Bauer, *Inequality, the Third World and Economic Delusion,* Allen and Unwin, 1975(check from J.T.)

Beck, Ulrich (1992) *Risk society: towards a new modernity,* London: Sage.

H. Binswanger (1980) 'Attitudes towards risk: experimental measurement in rural India', *American Journal of Agricultural Economics,* vol. 62, 395-407.

H. Binswanger (1981)'Attitudes towards risk: theoretical implications of an experiment in rural India', *Economic Journal,* vol.91 (December), 867-890.

C. Bliss and N. Stern (1982) *Palanpur: Studies in a Village of Rural India,* Oxford: Oxford University Press, 1982.

Boserup, Ester(1965) *The conditions of agricultural growth,* London: Allen and Unwin.

Boserup, Ester (1970/1998) *Woman's role in economic development,* London: Earthscan.

Bourguignon, Francois, and Christian Morrisson (1992) *Adjustment and equity in developing countries,* Paris: OECD.

S. Bowles and H. Gintis (2002), 'Social capital and community governance', *Economic Journal* 112 (November), F419-F436.

Bredenkamp,Hugh, and Susan Schadler (1999) *Economic adjustment and reform in low-income countries: studies by the staff of the International Monetary Fund,* Washington DC: IMF.

W. Brown (2001) 'Microinsurance: the risks, perils and opportunities', *Small Enterprise Development,* vol.12:1(March 2001), 11-25.

W. Brown and C. Churchill(1999)'Investing in micro-insurance: briefing paper', New York: Ford Foundation.

W. Brown and C. Churchill (2000) *Insurance provision in low-income communities. Part II: initial lessons from micro-insurance experiments for the poor.* Bethesda, Maryland: Development Alternatives International Microenterprise Best Practices Project.

J. Burnette (1999), 'Labourers at the Oakes: Changes in the demand for female day-labourers at a farm near Sheffield during the agricultural revolution', *Journal of Economic History,* vol. 59, pp. 41-67.

Chavan Pallavi, Ramakumar R. 2002. Micro-Credit and Rural Poverty: An Analysis of Empirical Evidence. *Economic and Political Weekly*. March 9.

M. Chen and E.Dunn (1996) *Household economic portfolios.* Unpublished report presented to United States Agency for International Development (AIMS project: Assessing the Impact of Microenterprise Services, aims@msi-inc.com)

S. Chipika, M. Chisvo and J. Chipika (2003) *Economic reform and smallholder communal agricultural development in Zimbabwe,* Harare: SAPES Books.

Cramer, Chris (2003) 'Does inequality cause conflict?', *Journal of International Development,* vol. 15, pp. 397-413*.*

D. Collard (1976) *Altruism and economy,* London: Harvester Wheatsheaf.

Collier, Paul and J.W. Gunning(1995) 'War, peace and private portfolios',*World Development,* vol. 23, pp. 233-241.

Collier, P. and J. W. Gunning(1999) 'The IMF's role in structural adjustment', *Economic Journal,* vol. 109(November), F634-F652.

Collier, P. and Dollar, D.(2002) 'Aid allocation and poverty reduction', *European Economic Review,* vol. 46, pp. 1475-1500.

Conway, Patrick(2003) 'Endogenous IMF conditionality: theoretical and empirical implications', unpublished paper presented at conference on *The Impact of Globalisation on the Nation-State from Above,* Yale University, 25-27 April.

Dadhich CL. 2002. Microfinance Movement for Poverty Alleviation in India. *Financing Agriculture*. Agricultural Finance Corporation Limited.

Daiyan, Shaikh Abdud, (2001) *Rural health program of Grameen Kalyan,* unpublished paper.

De Haan, Arjan (2003*) '*Globalisation and social policy – thoughts for international development cooperation', *chapter 3 in* P. Mosley and E. Dowler *(eds) Poverty and social exclusion in North and South, London: Routledge.*

De Haan, J. and C. Siermann(1996) 'Political instability, freedom, and economic growth', Economic Development and Cultural Change, vol. 44, pp. 339-350.

S. Dercon(1996) 'Risk, crop choice, and savings: evidence from Tanzania', Economic Development and Cultural Change, vol. , 485-513.

S. Dercon and P. Krishnan(2000) 'In sickness and in health: risk sharing within households in rural Ethiopia', *Journal of Political Economy,*vol. 108(2000), 688-727.

S. Dercon and P. Krishnan(2003) 'Risk sharing and public transfers', *Economic Journal,* vol. 113(2003), C86-C95.

Drèze Jean. 1990. Poverty in India and the IRDP Delusion. *Economic and Political Weekly* 25(39) pp. A95-A104.

J. Dreze and A.K. Sen(1990) *Poverty and hunger,* Oxford: Oxford University Press.

M. Duraisamy and P. Duraisamy(1996) 'Sex discrimination in Indian labour markets', *Feminist Economics,* vol 2, 41-61.

Eichengreen, Barry(1999) *Towards a new international financial architecture,* Washington DC: Institute for International Economics.

Elbadawi, Ibrahim, and Nicholas Sambanis(2000), 'Why are there so many civil wars in Africa?' Understanding and preventing violent conflict', *Journal of African Economies,* vol.9,pp. 244-269.

F. Ellis(1998) 'Household strategies and rural livelihood diversification', *Journal of Development Studies* 35(October), 1-38.

D. Elson(1999) 'Labour markets as gendered institutions: equality, efficiency and emplowerment issues', *World Development,* vol 27, pp. 611-627.

Evans, Alison (1996) Agricultural development and rural labour markets in the smallholder sector of Uganda. Mimeo. School of African and Asian Studies, Univ. of Sussex.

Fehr, Ernest, and Simon Gachter (2000)'Cooperation and punishment in public goods experiments',*American Economic Review,* vol. 90, 980-994.

Fernandez A. 1998. The MYRADA Experience: Alternative Management Systems for Savings and Credit for the Rural Poor. MYRADA: Bangalore.

Fine, Ben, (2000) *Social capital…*

I.Finkelshtain and E. Feinerman, 'Framing the Allais paradox as a daily farm decision problem; tests and explanations', *Agricultural Economics* 15(1997) 155-167.

A. France and A. Hoogvelt(1999) 'Disengaged and disaffected: the experience of young people in Sheffield excluded from the New Deal programme', unpublished paper, University of Sheffield and Joseph Rowntree Foundation.

D.K. Freebairn(1995) 'Did the green revolution concentrate incomes? A quantitative study of research reports',World Development, vol. 23, pp. 265-279.

A.Foster and M. Rosenzweig(1994) 'A test for moral hazard in the labor market: contractual arrangements, effort, and health', *Review of Economics and Statistics,* vol. 76, pp. 213-227.

G.Gamanou and J. Morduch,(2002) 'Measuring vulnerability to poverty', Helsinki: WIDER Discussion Paper 2002/58.

S. Garikipati, 'Evaluating the effectiveness of microcredit programmes in rural India', unpublished paper, University of Liverpool.

E.Glaeser et al. (2002) 'The economic approach to social capital' *Economic Journal* 112 (November), F437-F458.

L. Haddad, J.Hoddinott and H. Alderman(eds) (1997) *Intrahousehold resource allocation in developing countries: models, methods and policy*, Baltimore: Johns Hopkins University Press.

Haggard, Stephan, Jean-Dominique Lafay and Christian Morrisson (1995) *The political feasibility of adjustment in developing countries,* Paris: OECD.

Haque, M.Shamsul (2002) 'The changing balance of power between the government and NGOs in Bangladesh',International Political Science Review 23(2002), 411-435.

Hartog, J.,A. Ferrer-I-Carbonell and N.Jonker(2002) ,'Linking measured risk aversion to individual characteristics', *Kyklos,* vol. 55, 3-26.

Hashemi SM, Schuler SR, Riley AP. (1996). Rural Credit Programs and Women's Empowerment in Bangladesh. *World Development* 24(4), pp. 635-653.

Hashemi, Syed, with Maya Tudor and Zakir Hossein(2000) *Linking microfinance and safety net programs to include the poorest: the case of IGVGD(Income generation for Vulnerable Group Development) in Bangladesh,* Washington DC: CGAP.

D. Hamermesh (1993), *Labor demand,* Princeton NJ: Princeton University Press.

Heald, Suzette [1989]. *Controlling anger. The anthropology of Gisu violence.* James Currey, Oxford.

Henrich, Joseph, et al(2001) 'In search of *homo economicus:* behavioural experiments in 15 small-scale societies', *American Economic Review Papers and Proceedings,* vol 91(May), 73-77.

Holzmann, Robert (2003) 'Risk and vulnerability: the role of social protection in a globalising world', chapter 4 in P. Mosley and E. Dowler (eds) *Poverty and Social Exclusion in North and South,* London: Routledge.

S. Horrell, H. Johnson and P. Mosley(2003) *Gender, time use and rural poverty*, draft report to Department of International Development.

M. Hossain (1988). *Credit for Alleviation of Rural Poverty: The Grameen Bank in Bangladesh.* Research Report No. 4. International Food Policy Research Institute: Washington DC.

Hulme, David, and Mike Edwards,(1994) *Beyond the magic bullet:*

Hulme, David, and Paul Mosley (1996) *Finance against Poverty,* 2 vols. London: Routledge.

S. Humphrey and A. Verschoor, 'Decision-making under risk in rural Uganda', unpublished paper, Universities of Nottingham and Sheffield. (Output from this project R 7617)

IFAD(2001*) Rural poverty report 2001,* Rome: International Fund for Agricultural Development.

ILO (International Labour Organisation), *2001,* Women organising for social protection – the Self-Employed Women's Association's Integrated Insurance Scheme, India. *Geneva: International Labour Organisation (STEP programme).*

International Monetary Fund (1997) *The ESAF at ten years: economic adjustment and reform in low-income countries, summary report.* Washington DC: IMF.

International Monetary Fund(1998) *External Evaluation of the ESAF(*Enhanced Structural Adjustment Facility). Washington DC: IMF.

International Monetary Fund(2002) *Review of the Poverty Reduction and Growth Facility: Issues and options,* Washington DC: IMF, Policy Development and Review/ Fiscal Affairs Department.

C. Jackson and R. Palmer-Jones(2000) 'Rethinking gendered poverty and work' in S. Razavi(ed) *Gendered poverty and well-being,* Oxford and Malden, Mass: Blackwell Publishers, pp. 145-170.

Journal of International Development, special issue, May 2001, *AIDS in Africa.*

N. Kabeer (2001). Conflicts Over Credit: Revaluating the Empowerment Potential of Loans to Women in Rural Bangladesh. *World Development* 29 (1), pp. 63-84.

Kahneman, Daniel, and Amos Tversky, *Econometrica,* 1979.

J. Kazembe(1986) 'The women issue' in I.Mandaza(ed) *Zimbabwe: The Political Economy of Transition 1980-1986,* Dakar: CODESRIA.

Kanbur, Ravi (2001) 'Economic policy, distribution and poverty: the nature of disagreements', *World Development,* vol. 29(June) 1083-1094.
Karmakar KG. 1999. *Rural Credit and Self-Help Groups: Micro-Finance Needs and Concepts in India*. Sage: New Delhi.

J. Kerr and S. Kolavalli(1999*) Impact of agricultural research on poverty alleviation: conceptual framework with illustrations from the literature,* Washington DC: IFPRI, Environment and Production Technology Division, EPTD Discussion Paper 56.

Kabeer, Naila, *World Development,* 2001.

Khan, N. and E. Stewart (1992) 'Institution building and empowerment in three women's village organisations: participation, ownership, autonomy', Dhaka: BRAC Research and Evaluation Division, unpublished paper.

S. Knack, 1999, *Social capital, growth and poverty: a survey of cross-country experience.* World Bank Social Capital Initiative: Working Paper 7.

S. Knack and P. Keefer (1997) 'Does social capital have an economic impact? A cross-country investigation' *Quarterly Journal of Economics* 112(4), 1252-1288.

P. Krugman(1993) 'Towards a counter-counterrevolution in development theory', *World Bank Economic Review Supplement (*Proceedings of the Annual World Bank Conference on Development Economics), 1993.

Kydd, Jonathan (2002) paper presented at FAO, 11 July.

D.Lall (1983), *The Poverty of 'Development Economics',* Hobart Paper…., London: Institute of Economic Affairs.

Larson, Donald, and Klaus Deininger 2001. Crop markets and household participation. Ch. 6 in: Ritva Reinikka & Paul Collier. *Uganda's recovery – The role of farms, firms, and government.* Fountain Publishers, Kampala, Uganda.

Leonard, Kenneth (2002), 'When both markets and states fail: asymmetric information and the role of NGOs in African health care',*International Review of Law and Economics* 22(2002), 61-80.

Levene, Ross, and David Renelt(1992) ' Sensitivity analysis of cross-country growth regressions', *American Economic Review,* 1992.

Lewis, W. Arthur, 1958? *Theory of Economic Growth,* London: Allen and Unwin.

S. Lichtenstein and P. Slovic, (1971), 'Reversals of preferences between bids and choices in gambling decisions', *Journal of Experimental Psychology*, vol. 89, pp. 46-55.

E.Ligon, J. Thomas and T.Worrall(2002), 'Informal insurance with limited commitment: theory and evidence from village economies', *Review of Economic Studies,* vol.69,pp. 209-244.

M. Lipton (1967), 'The theory of the optimising peasant', *Journal of Development Studies,* vol. 4, 327-351.

M.Lipton and R.Longhurst (1989) *New seeds and poor people*, London: Allen and Unwin.

Lister, Sarah, (2002), *Journal of International Development,* conference issue.

F. Lund and S. Srinivas (2000) *Learning from experience: a gendered approach to social protection for workers in the informal economy,* Geneva: ILO (STEP and WIEGO programmes).

M. McCord (2000). 'Microinsurance in Uganda: a case-study of an example of the partner-agent model of microinsurance provision', unpublished paper, Microsave Africa.

M. McCord (2001) 'Health care microinsurance – case studies from Uganda, Tanzania, India and Cambodia', *Small Enterprise Development,* vol. 12:1 (March 2001), 25-39.

A. McKay and P. Mosley(2003) 'Poverty impacts of the green revolution: results from a multi-market model of Uganda', University of Sheffield: Gatsby Charitable Foundation occasional paper   .

Marshall, Alfred(1890) *Principles of Economics,* Cambridge: Cambridge University Press.

Mecagni, Mauro(1999) 'The causes of programme interruptions', chapter 9 in H. Bredenkamp and S. Schadler, *Economic adjustment and reform in low-income countries,* Washington DC: International Monetary Fund.

Moore, Mick(1998) 'Death without taxes: democracy, state capacity and aid dependence in the fourth world', in M. Robinson and G. White (eds) *The democratic developmental state; politics and institutional design.* Oxford: Oxford University Press.

Morduch J. 1999. The Microfinance Promise. *Journal of Economic Literature.* XXXVII, pp. 1569-1614.

Morrissey, Oliver (2002) *Pro-poor conditionality for aid and debt relief in East Africa,* unpublished paper, University of Nottingham. (Research Project on Risk, Labour Markets and Pro-poor Growth: Occasional Paper 2.)

Mosley, Paul, (1976) 'Towards a "satisficing" theory of economic policy', *Economic Journal,* vol 86, pp. 59-73.

Mosley, Paul (1987) *Conditionality as Bargaining Process,* Princeton NJ: Princeton Papers in International Finance 168.

P. Mosley, 1987,'', *Savings and Development.*

P. Mosley (1996). India: Regional Rural Banks. In Hulme and Mosley (1996, Vol. 2)

Mosley, Paul, (2001) 'International institutions and the fight against global poverty', unit in *U213 Challenging development,* Milton Keynes: Open University.

P. Mosley, 2001a, " 'Insurance against poverty?' The 'new generation' agricultural microinsurance schemes', *Small Enterprise Development,* vol 12:1 (March 2001), 51-59.

P. Mosley, 2001b, 'Microfinance and poverty in Bolivia', *Journal of Development Studies,* vol. 37, pp. 101-132.

Mosley, Paul (2001c) 'The IMF after the Asian crisis', *The World Economy,* vol. 24, 597-629.

P.Mosley(2002) 'The African green revolution as a pro-poor development strategy'*, Journal of International Development ,*

Mosley, Paul and June Rock, 2002, 'Assessment of 'wider impacts' of microfinance in Africa', unpublished report to Department of International Development.

Mosley,Paul (2003a) 'Microinsurance: scope, design and assessment of wider impacts', *IDS Bulletin,* **(October 2003) (Output from this project R7615). Discussed with survey sponsor (FINCA Uganda) and at Ford Foundation IMPACT conference, Polokwane, South Africa, 5-9 May 2003.**

Mosley, Paul, (2003b) 'Pro-poor politics and the modern political economy of stabilisation', unpublished paper, University of Sheffield (Forthcoming, New Political Economy) (Output from Project R7617)

Mosley, Paul (2003d)'The World Bank and the reconstruction of the 'social safety net' in Russia and eastern Europe', unpublished paper presented at conference on 'The impact of globalisation on the nation-state from above', Yale University, 25-27 April.

P. Mosley and R. Krishnamurthy, 1995, 'Can crop insurance work? Evidence from the Indian Comprehensive Crop Insurance Scheme', *Journal of Development Studies,* **vol.   , pp.**

Mosley Paul, Rock June. 2003. Mirofinance, Labour Markets and Poverty in Africa: A Study of Six Institutions. *Journal of International Development.* **Forthcoming.**

Mosley, Paul and Arjan Verschoor(2003) 'Risk attitudes in the 'vicious circle of poverty',paper presented at CPRC conference on Chronic Poverty, University of Manchester, 7-9 April (Output from this project R7615).

Mosley, Paul , John Hudson and Arjan Verschoor (2003) *Aid, poverty reduction and the 'new conditionality',* **unpublished paper, Universities of Sheffield and Bath, submitted to** *Economic Journal* **(Output from Project R7617).**

G. Myrdal, *Economic theory and underdeveloped regions,* London: Allen and Unwin, 1964.

NABARD. 1999. *Task Force on Supportive Policy and Regulatory Framework for Micro Finance: Summary and Recommendations.* National Bank for Agricultural and Rural Development: Mumbai.

Nafziger, Wayne, Frances Stewart and Raimo Vayrynen(2000) *War, hunger and displacement: the origins of humanitarian emergencies.* Oxford: Oxford University Press.

Narayan, Deepa and Lant Pritchett (1999) 'Cents and sociability: household income and social capital in Tanzania', *Economic Development and Cultural Change,* vol.   (1999), 871-897.

Narayan, Deepa, Anne Rademacher and Sarah Koch-Schulte(2000) *Can anyone hear us? Voices of the Poor.* New York: Oxford University Press

Noponen, Helzi 1999, 'Crises, setbacks and chronic problems – the determinants of economic stress events among poor households in India', unpublished paper, PRADAN and University of Wisconsin.

Noponen, Helzi and Paula Kantor, 1999b, 'Empowerment of women through credit, cooperatives and union interventions: a longitudinal study of SEWA members',unpublished paper.

O'Neill, Onora, (2002) *A question of trust,* Reith Lectures 2002, Cambridge: Cambridge University Press.

O'Riordan, Tim, editor(1995) *Readings in environmental psychology,* London: Academic Press.

Osmani SR. (1989). Limits to Alleviation of Poverty through Non-Farm Credit. *Bangladesh Development Studies* 17 (4), pp. 1-18.

_____. 1991. Social Security in South Asia. In Ahmad E, Drèze J, Hills J and Sen A (eds). *Social Security in Developing Countries*. Clarendon: Oxford.

R. Putnam, 1993, *Making democracy work: civic traditions in modern Italy,* Princeton NJ: Princeton University Press.

V. Puhazhendi (2000). Evaluation Study of Self Help Groups in Tamil Nadu. National Bank for Agriculture and Rural Development: Mumbai.

V. Puhazhendi and KJS Satyassi (2000). Microfinance for Rural People – An Impact Study. National Bank for Agriculture and Rural Development: Mumbai.

V. Puhazhendi and K.C.Badatya, 2002. *SHG-Bank Linkage Programme for Rural Poor - An Impact Assessment*. National Bank for Agriculture and Rural Development Paper presented at the Seminar on SHG-bank linkage programme: New Delhi.
Paper also available at www.nabard.org/roles/mcid/puhazhendi.pdf

Rodrik, Dani (1999) *The new global economy and developing countries; making openness work,* Washington DC: Overseas Development Council, Policy Essay No 24.

P. Rosenstein-Rodan(1943), 'Problems of industrialisation of Eastern and South-Eastern Europe', *Economic Journal,* 1943; reprinted in A.N. Agarwala and S.P. Singh, *The economics of underdevelopment,* Delhi: Oxford University Press, 1973.

A. Rapoport and A.M. Chammah, 1965, *Prisoner's dilemma: a study in conflict and co-operation.* Ann Arbor: University of Michigan Press.

M. Rothschild and J. Stiglitz (1976) 'Equilibrium in competitive insurance markets: an essay on the economics of imperfect information', *Quarterly Journal of Economics,* vol.   , pp. 629-649.

Sachs, Jeffrey(1995) 'Do we need an international lender of last resort?', Frank D. Graham lecture, Princeton University.

M. Safavian, D. Graham and C. Gonzales-Vega, 2001, 'Corruption and microenterprises in Russia', *World Development,* vol. 29, 1215-1224.

K. Saito (1994) *Raising the productivity of women farmers in sub-saharan Africa,* Washington DC: World Bank Discussion Paper 230.

J. Sebstad and M. Cohen, (2001) *Microfinance, risk management and poverty,* Washington DC: United States Agency for International Development.

S. Sinha(2002) *Strength in solidarity: insurance for women workers in the informal economy,* Ahmedabad: SEWA.

Sivramkrishna Sashi, Panigrahi Ramakrushna. 2001. An Economic Model of Self-Help Groups: Policy Implications for Banks and NGO Initiatives. *Journal of International Development* 13, pp. 1119-1130.

P. Slovic, B. Fischhoff and S. Lichtenstein(1982)'Facts versus fears: understanding perceived risk', chapter 33 in D. Kahneman, P. Slovic and A. Tversky (eds.) *Judgment under uncertainty: heuristics and biases,* Cambridge: Cambridge University Press, 1982.

R. Solomon and F.Flores, 2001, *Building trust in politics, relationships and life.* Oxford: Oxford University Press.

I.Singh(1990) *The great ascent,* Baltimore: Johns Hopkins University Press*.*

C. Starmer, 'Developments in non-expected utility theory: the hunt for a descriptive theory of choice under risk', *Journal of Economic Literature*(2000?)

J. Temple, Jonathan and Paul Johnson (1998) 'Social capability and economic growth', *Quarterly Journal of Economics,* vol. 113, vol. 965-990.

J. Tobin(1957) 'Liquidity preference as behaviour toward risk' Review of Economic Studies, vol.   , 65-86.

Todd Helen. 1996. *Women at the Centre: Grameen Bank Borrowers After One Decade.* Westview: Colorado.

Townsend, Janet, Gina Porter and Emma Mawdsley, 2002, 'The role of the transnational community of non-governmental organisations: governance or poverty reduction? ' *Journal of International Development,* vol. 14,pp. 829-839.

A. Tversky and D. Kahneman(1982) Judgment under uncertainty; heuristics and biases', chapter 1 in D. Kahneman, P. Slovic and A. Tversky (eds.) *Judgment under uncertainty: heuristics and biases,* Cambridge: Cambridge University Press, 1982.

United Nations Conference on Trade and Development (UNCTAD), *Least Developed Countries Report 2002: Escaping the Poverty Trap,* Geneva: UNCTAD.

UN World Food Programme, 'Round three impact evaluation report on women who participated in the 1992/94 VGD cycle', unpublished paper, Dhaka.

Webb, Patrick, Jennifer Coates, Robert Houser, Zahidul Hassan, Md. Zobair, 2001, 'Expectations of success and constraints to participation among IGVGD women', unpublished paper, Medford, MA: Tufts University

J. Weeks, 'Uncertainty, risk, and wealth and income distribution in peasant agriculture', *Journal of Development Studies,* vol 9(1972), 28-36.

A.Whitehead, 2001, 'Trade, trade liberalisation and rural poverty in low-income Africa: a gendered account', background paper for UNCTAD 2001 Least Developed Countries Report.

P. Whiteley, 2000, 'Economic growth and social capital', *Political Studies,* vol. 48(2000), 443-466.

Winters, Alan, 2000, *Trade liberalisation and poverty,* unpublished paper, Department for International Development.

Wood, Geoffrey, 2001, 'Desperately seeking security…', *Journal of International Development.*

G. Wood(2003) 'Governance and the common man: embedding social policy in the search for security', chapter 5 in P. Mosley and E. Dowler(eds) *Poverty and Social Exclusion in North and South,* London: Routledge.

M. Woolcock, 1998, 'Social capital and economic development: toward a theoretical synthesis and policy framework', *Theory and Society,* vol. 27, 151-208.

M. Woolcock and D. Narayan, 'Social capital; implications for development theory, research and policy', *World Bank Research Observer,* vol 15 (Aug 2000), 225-249.

World Bank, *World Development Report 2000/01: Attacking Poverty,* Johns Hopkins University Press

Wolf, M. (1999) 'A new mandate for the IMF', *Financial Times* (15 December),p.25.

H. Zaman, 1999, *Assessing the impact of micro-credit on poverty and vulnerability in Bangladesh,* World Bank Policy Research Working Paper 2145.