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MICRO-INSURANCE IN INDIA:
TRENDS AND STRATEGIES FOR FURTHER EXTENSION

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Foreword

Microfinance phenomenon is one of the most remarkable socio-economic developments of our times. For a long time the poor, because of their economic circumstance, were considered non-bankable. However, the "micro-credit phenomenon" has shown that the poor can be made creditworthy if they are organized in small groups. This clearly has profound implications not just from a finance perspective but, more importantly, from the perspective of poverty alleviation.

Inspired by the Grameen experiment that started in Bangladesh around mid-70s, micro-credit has quickly spread in other parts of the developing world, including India. Micro-credit in India really started in a big way in the early 90s with the recognition of self-help groups as conduit for providing credit to the poor. In the late 90s, numerous agencies involved in micro-credit operations in India started adding other financial services, including micro-insurance to its micro-credit operations. Microfinance is surely coming of age in India.

The importance of microfinance must be looked against the fact that even with wide network of banks in India, the low-income people especially in rural areas, have been largely bypassed by the formal banking system. The government of India has been involved in its promotion in a variety of ways. This movement needs further guidance and direction from government.

This paper provides an overview of the micro-insurance scene in India and suggests strategies for its further extension. The paper should be useful for all those involved in microfinance.

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1 Introduction

Micro-insurance, the term used to refer to insurance to the low-income people, is different from insurance in general as it is a low value product (involving modest premium and benefit package) which requires different design and distribution strategies such as premium based on community risk rating (as opposed to individual risk rating), active involvement of an intermediate agency representing the target community and so forth. Insurance is fast emerging as an important strategy even for the low-income people engaged in wide variety of income generation activities, and who remain exposed to variety of risks mainly because of absence of cost-effective risk hedging instruments.

Although the type of risks faced by the poor such as that of death, illness, injury and accident, are no different from those faced by others, they are more vulnerable to such risks because of their economic circumstance. In the context of health contingency, for example, a World Bank study (Peters et al. 2002), reports that about one-fourth of hospitalized Indians fall below the poverty line as a result of their stay in hospitals. The same study reports that more than 40 percent of hospitalized patients take loans or sell assets to pay for hospitalization.[1] Indeed, enhancing the ability of the poor to deal with various risks is increasingly being considered integral to any poverty reduction strategy (Holzmann and Jorgensen 2000, Siegel et al. 2001).

Of the different risk management strategies[2], insurance that spreads the loss of the (few) affected members among all the members who join insurance scheme and also separates time of payment of premium from time of claims, is particularly beneficial to

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1 Such high percentage is also noted by some MFIs in the utilization pattern of loans advanced by them (see SHEPERD 2003 for example).

2 Depending on an individual response to dealing with risks, the literature classifies all risk management practices into three broad groups: risk reduction (RR), risk mitigation (RM) and risk coping (RC) strategies. The first two are ex ante risk management strategies (that is, used before a risky event takes place) whereas the third is an ex post strategy (that is after the event takes place). Insurance, similar to savings and borrowings, is a part of risk mitigation strategy (Brown and Churchill 1999, Holzmann and Joergensen 2000).

the poor who have limited ability to mitigate risk on account of imperfect labour and credit markets.[3]

In the past insurance as a prepaid risk managing instrument was never considered as an option for the poor. The poor were considered too poor to be able to afford insurance premiums. Often they were considered uninsurable, given the wide variety of risks they face. However, recent developments in India, as elsewhere, have shown that not only can the poor make small periodic contributions that can go towards insuring them against risks but also that the risks they face (such as those of illness, accident and injury, life, loss of property etc.) are eminently insurable as these risks are mostly independent or idiosyncratic.[4] Moreover, there are cost-effective ways of extending insurance to them. Thus, insurance is fast emerging as a prepaid financing option for the risks facing the poor.

In this paper, we analyse the early evidence on micro-insurance already available in this regard, highlight the current initiatives being contemplated to strengthen micro-insurance activity in the country, and suggest specific ways that can help promote insurance to the target segment. The paper is organised as follows. In section 2 we analyse the factors leading to the development of micro-insurance in India. In section 3 we analyse the developments on the supply and demand sides of micro insurance. In section 4, we highlight selected issues in extending insurance to low-income people; focussing on two specific issues, namely the effect of flexibility of insurance premium and of combining micro-insurance with micro-finance. Section 5 concludes.

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3 According to Zeller and Sharma (1998), in spite of vibrant informal markets that can be observed in many [developing countries], financial services for the poor remain inadequate. For credit market imperfections see Besley 1995.

4 Insurability of risks depends on the characteristics of risk (see Jütting 2002, Brown and Churchill 1999, Siegel and Alwang 1999).

2   Development of Micro-insurance in India

Historically in India, a few micro-insurance schemes were initiated, either by non-governmental organizations (NGO) due to the felt need in the communities in which these organizations were involved or by the trust hospitals. These schemes have now gathered momentum partly due to the development of micro-finance activity, and partly due to the regulation that makes it mandatory for all formal insurance companies to extend their activities to rural and well-identified social sector in the country (IRDA 2000). As a result, increasingly, micro-finance institutions (MFIs) and NGOs are negotiating with the for-profit insurers for the purchase of customized group or standardized individual insurance schemes for the low-income people. Although the reach of such schemes is still very limited---anywhere between 5 and 10 million individuals---their potential is viewed to be considerable. The overall market is estimated to reach Rs. 250 billion by 2008 (ILO 2004).

The insurance regulatory and development authority (IRDA) defines rural sector as consisting of (i) a population of less than five thousand, (ii) a density of population of less than four hundred per square kilometer, and (iii) more than twenty five per cent of the male working population is engaged in agricultural pursuits. The categories of workers falling under agricultural pursuits are: cultivators, agricultural labourers, and workers in livestock, forestry, fishing, hunting and plantations, orchards and allied activities.

The social sector as defined by the insurance regulator consists of (i) unorganized sector (ii) informal sector (iii) economically vulnerable or backward classes, and (iv) other categories of persons, both in rural and urban areas.[5]

The social obligations are in terms of number of individuals to be covered by both life and non-life insurers in certain identified sections of the society.[6] The rural obligations are in terms of certain minimum percentage of total polices written by life insurance companies and, for general insurance companies, these obligations are in terms of percentage of total gross premium collected. Some aspects of these obligations are particularly noteworthy. *First*, the social and rural obligations do not necessarily require (cross) subsidizing insurance. *Second*, these obligations are to be fulfilled right from the first year of commencement of operations by the new insurers. *Third*, there is no exit option available to insurers who are not keen on servicing the rural and low-income segment. *Finally*, non-fulfillment of these obligations can invite penalties from the regulator.

In order to fulfill these requirements all insurance companies have designed products for the poorer sections and low-income individuals. Both public and private

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5   (i) unorganized sector includes self-employed workers such as agricultural labourers, beedi workers (beedi an unfiltered cigarette made by rolling tobacco in a dry leaf of a particular plant; it is an inexpensive substitute for cigarette used mostly by the poor smokers), brick workers, carpenters, cobblers, construction workers, handicraft artisans, handloom workers, lady tailors, leather and tannery workers, street vendors, primary milk producers, rickshaw pullers, salt growers, sericulture workers, sugarcane cutters, washerwomen, working women in hills, or such other categories; (ii) informal sector includes small scale, self-employed workers typically at a low level of organization and technology, with primary objective of generating employment and income, with heterogeneous activities, with the work mostly labour intensive, having often unwritten and informal employer-employee relationship; (iii) economically vulnerable or backward classes persons who live below poverty line; and (iv) other categories of persons include persons with disabilities and who may not be gainfully employed, as well as persons who tend to the disabled.

6 Social sector obligation is applied to all insurers and it includes covering five thousand lives in the first financial year, seven thousand five hundred lives in the second, ten thousand lives in the third, fifteen thousand lives in the fourth, and twenty thousand lives in the fifth year. In case of a general insurer, the obligations specified include insurance for crops also. Rural sector obligation for a life insurers is set in terms of percentage of total policies written: seven percent in the first financial year, nine per cent in the second, twelve per cent in the third, fourteen per cent in the fourth, and sixteen per cent in the fifth year. Such obligations for general insurers are in terms of total gross premium income written in a year. It is two per cent in the first financial year, three percent in the second, and five per cent thereafter.

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insurance companies are adopting similar strategies of developing collaborations with the various civil society associations. The presence of these associations as a mediating agency, or what we call a nodal agency, that represents, and acts on behalf of the target community is essential in extending insurance cover to the poor. The nodal agency helps the formal insurance providers overcome both informational disadvantage and high transaction costs in providing insurance to the low-income people. This way micro-insurance combines positive features of formal insurance (pre paid, scientifically organized scheme) as well as those of informal insurance (by using local information and resources that helps in designing appropriate schemes delivered in a cost effective way).[7]

In the absence of a nodal agency, the low resource base of the poor, coupled with high transaction costs (relative to the magnitude of transactions) gives rise to the affordability issue. Lack of affordability prevents their latent demand from expressing itself in the market. Hence the nodal agencies that organise the poor, impart training, and work for the welfare of the low-income people play an important role both in generating both the *demand* for insurance as well as the *supply* of cost-effective insurance.

3 Supply and Demand Side Developments

3.1 *Supply of micro-insurance*

Recently, the ILO (2004a) prepared a list of products of all insurance companies, public as well as private, for the disadvantaged groups in India. Some of the observations made on the basis of the list are presented below:

- Out of 80 listed insurance products, 45 (55%) cover only a single risk. The other products, covering a package of risks, mostly focus on 2 (20%) or 3 (18%) risks.
- The available products cover a wide range of risks. However, the broad majority of the insurance products cover life (40 products or 52%) or accident-related risks. The health coverage remains very limited (12 products).

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[7]   For more on the role of nodal agency in extending micro-insurance see Ahuja 2004.

- Most life insurance products (23 out of 42) are addressed to individuals. However, some products may be bought both by individuals and groups.

- Most life insurance products (55%) have been designed to cover anextended contract duration ranging from 3 to 20 years.

- Out of 42 life insurance products, 23 are pure risk products. The other 19 products propose various types of maturity benefits.

- Out of the 12 currently available health insurance products, 7 have been designed and are restricted to groups.

- Out of the total 12 health products, 7 products propose the reimbursement of hospitalization expenses while the other 5 have chosen to narrow down the coverage to some specific critical illnesses.

- Most of the health insurance products specifically exclude deliveries and other pregnancy-related illnesses. Most of these products also mention amongst their exclusion clauses, HIV/AIDS.

- Most products whether life or non-life require a single payment of premium (i.e., a one-time payment) upon subscription.

- Private insurance companies have three times more products than the public companies.

As per the IRDA statistics, the public insurance companies still play a predominant role in the present coverage of the rural and social sectors. This is only to be expected since the incumbent public insurers have been in the market for a number of years now.

3.2   *Demand for micro-insurance*

On the demand side too, the ILO (2004b) has recently prepared an inventory of micro-insurance schemes operational in India. Based on this list some of the observations are made below:

- The inventory lists 51 schemes that are operational in India.

- Most schemes are still very young, having started their operations during the last few years. Of the 39 schemes for which this information is available, around 24 schemes came up during the last 4 years, and about 7 schemes have operated for more than a decade.

- As regards the beneficiaries, the 43 schemes for which the information is available cover 5.2 million people.

- Most insurance schemes (66%) are linked with micro finance services provided by specialized institutions (17 schemes) or non-specialized organizations (17 schemes). Twenty two percent of the schemes are implemented by community based organizations, and 12% by health care providers.

- Life and health are the two most popular risks for which insurance is demanded: 59% of schemes provide life insurance and 57% of them provide health insurance.[8] In SEWA's[9] experience health insurance tops the list of risks for which the poor need insurance.

- Twenty-five out of 37 schemes received some external funds to initiate their schemes. Twenty out of 32 schemes received external technical assistance in the form of advisory services, technical services, training or even referral services for their schemes.

- In the majority of the schemes special staff had been recruited to manage the insurance activities. The other schemes kept relying on their regular staff while recognizing them the additional responsibilities linked to the management of the scheme.

- Most schemes (74%) operate in 4 southern states of India: Andhra Pradesh (27%), Tamil Nadu (23%), Karnataka (17%) and Kerala (8%), and the two western states (Maharashtra (12%) and Gujarat (6%)) account for 18% of the schemes.

- 56% of schemes deal with one single risk.

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8 Many MFIs and NGOs are in the process of introducing health insurance.

9 SEWA is a labour union of informal economy women workers based in Ahmedabad city of Gujarat. Its operations now run in other states such as Madhya Pradesh, Delhi.

- Most schemes require single yearly premium at the time of subscription. Of the 43 schemes, 6 use a monthly payment for their contribution, while 2 others have linked the contributions to some other activities developed with their members (disbursement of loan etc.).

- Most of the schemes (27) rely on voluntary contribution, while 10 schemes imposed compulsory contributions, and 7 adopted a mix of voluntary and compulsory contributions (based on the type of service provided).

Any nodal agency keen on buying insurance for their members now have a choice of insurers and approach those who offer them the best deal. According to the ILO inventory, 8 schemes have already entered into partnerships with at least 2 insurance companies (public or commercial), and 3 schemes have already entered simultaneous partnerships with both public and commercial insurance companies.[10]

Clearly, health and life are two most important risks for which insurance is demanded. Indeed, at low-income level, when much of the income goes into meeting basic needs, the scope of having varying priority needs is very limited. On the supply side we observe that out of 80 odd products only 7 products are health insurance products that provide for reimbursement of hospital expenses. Admittedly, compared to life insurance, which is a relatively straightforward business, health insurance is a much more complex service as it involves addressing the provision of healthcare that is location specific. The design and sale of products are currently driven by the objective of meeting the regulatory obligation and the making of profits or reducing losses. In this situation, there is a danger of certain priority needs getting neglected by the insurance companies.

Most products require single yearly premium at the time of subscription. It is well known that rural incomes are irregular and uncertain to enable payment of premium in one go, and more so when only a part of the remuneration is paid in cash. In the above,

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10 Twenty (20) schemes have already developed partnerships with public insurance companies and 14 schemes have already developed partnerships with commercial insurance companies.

we find only a few schemes offer flexibility in paying premium. This could act as a serious drawback in increasing the membership.

We find that most of the schemes are concentrated in the southern region of the country. The southern regions are well known for the social mobilization of low-income people. In contrast, the northern region is bereft of such mobilization as the nodal agencies are either non-existent or dysfunctional. Creating and nurturing nodal agencies can be quite involved and can take a long time to develop. Local government, that can also perform the role of nodal agency, will take a long time to strengthen as a result of decentralization process currently underway in most Indian states. There has to be alternative approaches to extending insurance in regions where nodal agencies do not exist.

Even before insurance is bought for all important contingencies, affordability constraint is likely to kick in, especially for the low-income people. The issue then is how to cover for these other important contingencies. One of the ways suggested is to impose a tax at industry level (this could be on the turnover or profits of the industry), and use the tax proceeds for the benefit of workforce involved in activities peripheral to the industry.

Finally, the type of contingency and the number of people covered under it are important parameters, but so is the extent of benefit provided should the contingency happen. Currently, the benefit or protection provided under some insurance schemes is quite shallow.

The attitude of insurers on these obligations has been mixed. Some have taken a positive view of the regulatory obligations and have made a genuine attempt to understand the rural and low-income segment of the market. Indeed, a few insurers have actually surpassed their obligations by a wide margin. These companies have realised that there is potential in the rural and low-income segment but tapping that potential requires a different kind of approach. In some cases, insurance companies have actually cross-

subsidised their micro-insurance products while in other cases insurers have been able to find a donor for paying premium, at least in part, on behalf of the low-income people.

The impact of rural and social obligations on extending insurance to the intended people has been positive. However, development of micro-insurance needs further guidance from the insurance regulator by way of supplementary provisions. Sensing this, the insurance regulator has already come out with a concept paper on micro-insurance[11] in which it has spelled out its thinking on what these supplementary provisions could be.

4   On Extending Micro-insurance

Prior to the introduction of social and rural obligations, insurance to the low-income people took the form of (i) a nodal agency tying up with one of the public insurance companies (the intermediate model), and (ii) a nodal agency itself underwriting risk i.e., performing the role of an insurance company (the insurer model). However, with the social and rural obligations the insurer model is becoming less common and is getting subsumed in the intermediate model. To further promote this model, the IRDA is thinking of introducing supplementary provisions outlined in its concept note on micro-insurance in which it defines 'micro-insurance' and 'micro-insurance agent'. The concept note suggests how a single insurance company can offer composite insurance product to the low-income people, sets a ceiling on the commission that can be paid to insurance agents, minimum coverage to make insurance meaningful, and so forth. [12]

At a time when the supplementary provisions on micro-insurance are still under consideration by IRDA, two aspects that need to be considered are: (i) the role of flexibility in premium collection, and (ii) micro-insurance taken up by MFIs as distinct from non-MFIs. We elaborate each of these two points below.

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[11]   The concept paper on micro-insurance can be downloaded from : www.irdaindia.org

[12]   Discussions on the several provisions under the concept note are already underway and the regulator has an open mind on the subject. A noteworthy point is that the concept paper is very much in line with promoting insurer-agent model.

4.1   *Flexibility in Premium*

In the IRDA's concept note on micro-insurance there is no provision that explicitly calls for allowing flexibility in premium collection which is necessary for extending the reach of micro-insurance. Although some micro-insurance products allow for half-yearly, quarterly and even monthly payment of premium, most products whether life or non-life require single, yearly payment of premium upon subscription. This can be a serious drawback in extending the reach of insurance to the low-income people, especially in rural areas. Often nodal agencies adopt several methods to facilitate premium collection. These methods may take the form of soft loans for paying premium, collecting premium in kind, collecting smaller amounts but more frequently, having insurance contract of shorter durations and so forth. Where a nodal agency collects annual premium in one go, there is not much involvement of the agency.

Rural incomes display seasonality. Moreover, for the low income people premium constitutes a significant proportion of their income. Therefore, flexibility in premium collection has a bearing on their joining or not joining an insurance scheme, and hence, on the membership size. The literature on micro-insurance cites the importance of appropriate 'timings' for premium collection. In particular, premium collection schedule should match with the cash flows. The cash flow varies for different categories of workers. For example, the cash flows in case of farmers would depend on the number of crop cycles in a year as well as on the timings of harvest whereas a self-employed household worker may have a more stable income stream. Therefore, synchronizing premium collection with the harvest time is necessary for farmers whereas for self-employed household workers paying premium in small but regular installments may be easier. Also, cash flows for the rural poor may be different from those of the urban poor.[13]

The 'type' of flexibility needed in premium collection would depend very much on (i) the pattern of income stream of the target population, and (ii) the spread of risk for

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13 Rural poor get lump sums in the agricultural seasons whereas urban poor get small amounts frequently (Sinha 2002).

which insurance is sought. As noted above the former is necessary for increasing the membership. The latter is needed to induce insurance company to allow for flexibility in premium collection. To elaborate on this, supposing for a one year insurance contract, premium is collected twice a year in equal installments. If the risks for which insurance is bought are unevenly distributed between the two sub-periods that make up a year then the interest of insurance company needs to be protected against the possibility of greater outflow (on account of higher claims) than the premium inflow in the first sub-period. The protection could come when either the nodal agency provides for some implicit guarantees or when the insurance contract is initiated in a sub period having lower risk or when flexibility in premium collection is built taking this fact into account.

Thus, flexibility in premium collection needs to be appropriate from the viewpoint of both the insurer and the insured.[14] An explicit provision in this respect in the concept note would be a significant step forward.

Formally, we demonstrated this below:

Supposing in a single period case, a risk averse, utility maximizing agent faces two states of nature: a good state, whose probability is denoted by (1-p), yields income y, and a bad (loss) state, with probability p, yields income denoted by y-L. Faced with these uncertain income prospects, the agent's expected utility is given as:

$$(1-p) \, u(y) + p \, u(y-L)$$

To convert this uncertain prospect into a certain prospect, supposing the agent has the option of buying insurance at an actuarially fair price.[15] Faced with this option, the

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14 According to Tenkorang (2001), several studies on Africa show that demand for health care services is often hindered by immediate cash payments involved.

15 Actuarially fair price is the price at which insurance company selling insurance makes zero-expected profits. This condition characterises competitive insurance market. In the absence of zero transaction costs, the actuarially fair price is the same as probability of bad state showing up.

standard result in insurance theory suggests that the agent would buy full insurance (see Mas-Colell et al. 1995, pp. 187-188). The utility the agent would get after buying full insurance is given as: u(y-pL), where pL denotes actuarially fair premium paid by the agent. This stylized result holds when the agent in question has sufficient income to buy insurance. In case of the poor, who often live on day-to-day basis, the analysis needs to be modified. While the poor may be able to afford premium on the basis of his average annual income, he may not be able to pay premium in a single installment.

That is, while y-p L > c, (the aggregate income less the premium is greater than the basic consumption denoted by c), he may not be able to pay premium in one go, if this aggregate income y is earned in different periods, whereas the insurance contract is for the entire period. In particular, if the agent earns his income y, in two equal installments, and his consumption is also split evenly over this two periods, then assuming that risk is also spread evenly, the more appropriate representation of his expected utility is not (1-p) u(y) + p u(y-L) as assume above, but rather

2 {(1-p/2) u(y/2) + p/2 u(y/2-L)}, that is, two times the utility the agent gets in a sub-period (the expression in the curly braces represents utility in a sub-period).

Notice that we cannot split the loss in the two sub-periods in the same way as we do for income and consumption because of the lumpiness of it (the bad state is defined as the state in which agent's experiences loss, L).

We continue to assume that the agent earns this total income in two sub-periods, while the insurance contract is for the entire two periods. It is easy to check that the best strategy would be to collect premium in two installments. In the absence of savings the agent may not be able to pay premium if it is collected in one installment. That is, if y/2-pL< c/2, the agent would not be able to pay premium and hence not buy insurance.

However, if the agent is charged premium in two equal installments he may be able to buy insurance. We demonstrate this below. Expected utility of agent when he is fully insured and the premium is spread over two sub periods is:

$u((y-pL)/2) + u((y-pL)/2)$

or

$2u((y-pL)/2)$

That the agent is better off with insurance than without it (that is, $u((y-pL)/2) > \{(1-p/2)\ u(y/2) + p/2\ u(y/2-L)\}$), follows straightaway from the fact that insurance at actuarially fair price makes risk averse agent better off. This suggests that periodicity in premium collection should match the income schedule of the target community under consideration. In the above we assumed symmetry with respect to risk as well as income. We allow for asymmetries in risk and income below. In particular we consider two cases: case (i) when risk is asymmetric, and case (ii) when income is asymmetric.

Case (i): When risk is asymmetric

Supposing now that the risk over these two sub-periods is not spread evenly. Let's assume that the risk is higher $(2p/3)$ in the first sub-period than in the second sub-period $(p/3)$. In the absence of insurance, agent's expected utility would be given as:

$\{(1-2p/3)\ u(y/2) + (2p/3)\ u(y/2-L)\} + \{(1-p/3)\ u(y/2) + (p/3)\ u(y/2-L)\}$

The two expressions in the curly braces represent agent's utility in each of the sub-periods.

In this case too if insurance premium is spread out evenly, agent's expected utility continues to be the same as in the previous case $(2\ u(y-pL)/2)$. However, if the premium is spread out evenly, the insurer may actually stand to lose if the agent, having lived the first (more risky) sub-period, fails to pay second installment. In this situation, from

insurer's viewpoint the premium collection in the first sub-period (pL/2) will fall short of the claims (2pL/3). For this reason, the insurer is likely to oppose the collection of premium in two equal installments in each of the sub-periods. Alternatively, insurer may prefer to initiate insurance contract during the sub-period when the agent has lower risk (because the premium collection (pL/2) would exceed claims (pL/3), and therefore insurance company faces no risk of losing out in case agent fails to repay during the second sub-period).

Case (ii): When income is asymmetric

Consider another situation where the asymmetry between the two sub-periods is not in terms of risk but in terms of income. Supposing that now the agent earns 2/3 rd of his income in the first sub-period and the remaining in the second sub-period. In the absence of insurance his utility is:

$$\{(1-p/2)\ u(2y/3) + (p/2)\ u(2y/3\text{-}L)\} + \{(1-p/2)\ u(y/3) + (p/2)\ u(y/3\text{-}L)\}$$

His utility in case of insurance when the premium is distributed evenly is;

$$u(2y/3\text{-}pL/2) + u(y/3\text{-}pL/2)\}.$$

From the agent's perspective it is better to pay higher premium when his income is higher. (The agent is unlikely to pay half the premium amount in the second sub-period when his income is lower.) From an insurer's perspective, it is better to collect premium in equal installments since risks are distributed evenly. Collecting premium in two unequal installments (lower installment when the agent's income is lower) gives rise to the same problem as discussed above: that the agent may not pay the second installment. A way to get around this problem is to collect premium in two unequal installments but beginning from higher installment in the period in which agent has higher income.

The above analysis highlights the need for having flexibility in premium collection and, moreover, the type of flexibility depends very much on the risks and the income of the target community. Thus, appropriately flexible mechanism from the viewpoint of both the insurer and the insured is essential for ensuring higher membership in micro-insurance scheme.[16]

4.2   *Micro-insurance and micro-finance*

Micro-finance activity in the country is leading to the spread of micro-insurance among its members/clients. For MFIs, integrating insurance with their credit and savings activities makes logical sense as it helps them to reap scale economies in financial management, provides them with a captive market, and enables them to use their existing network and distribution channels to sell insurance. Besides, linking micro-insurance with micro-credit makes it cheaper for the borrower to have both these financial services.

Indeed, the natural linkage between micro-insurance and micro-finance is well reflected in the ILO inventory referred to earlier. Not only are the specialized micro-finance organizations the most numerous in initiating the micro-insurance schemes, but many organizations involved in other activities are also providing micro-finance services to their target groups. Since most of the larger micro-finance organizations operate in the three southern states of Andhra Pradesh, Tamil Nadu and Karnataka, the existence of micro-insurance schemes in the south appears directly proportional to the growth of micro-finance activities in that part of the country.

Insurance helps in reducing interest rate charged on credit. With insurance interest rate together with the premium may be lower than interest rate charged in the absence of insurance. The intuition runs as follows: contingencies such as illness, accident, life etc. have a bearing on project performance and thereby on loan recovery. Health insurance, for example, by improving financial access to medical care of the insured who takes

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16 According to Tenkorang (2001), several studies on Africa show that demand for health care services is often hindered by immediate cash payments involved.

loan/credit, reduces disruption in the economic activity for which loan is taken, and thereby enables the borrower to repay loan. Higher loan recovery is an important determinant of interest rate charged by a lending agency. The higher the loan recovery, the lower is the interest rate charged by a lender. Thus, insurance, by reducing the risk of loan default due to the contingency against which insurance is bought, reduces interest rate charged by the lender. For this reason it makes better sense for micro credit organizations to introduce micro-insurance. Important here is to stress that when insurance is integrated with credit the total amount charged (i.e., interest plus premium) may be lower than the interest charged in the absence of insurance.

Below we formally demonstrate why integrating micro-insurance with micro finance makes better sense.

Let us first look at the issue from a *borrower's perspective*. Supposing u (y) denotes the utility that a risk averse agent (characterised by standard concavity assumptions made on the utility function) gets from his income, y. Supposing in a two-period setting, the agent's income in the first period is y, and he runs the risk of not being able to earn this usual income in the second period if he, for example, falls sick. In the event of sickness, whose probability for the sake of simplicity is 0.5, his income reduces by z. His 2-period utility is given as:

$$u(y)+(1/2)[u(y)+u(y-z)]$$

Note that, we have assumed the discount rate to be 1 (this is a simplifying assumption). If the agent has access to insurance he would be better off with insurance than without it as his utility with insurance would be strictly greater than without it i.e., $[u(y-z/2)+ u(y)] > u(y)+(1/2)[u(y)+u(y-z)]$. But our starting point is the case when the agent (or the borrower) does not have access to insurance.[17]

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[17] Another way of looking at the absence of insurance is to consider the agent to be at his subsistence level and therefore cannot afford insurance premium even when he has access to it.

Against this backdrop, let's examine the case in which the agent takes credit for some productive activity in period 1. Let L denote the loan amount, R denote the return the borrower generates on the investment made from the loan amount, and r denote the rate of interest the borrower has to pay to the lender. We assume that the activity for which loan is taken is *per se* risk free i.e., there is no inherent risk in the project for which the loan is taken. This is a simplifying assumption motivated by the fact that the risk of the failure of micro enterprises (distinct from that of loan default) is negligible. We further assume that the loan default occurs if the individual falls sick, in which case he neither repays the loan amount nor gains from the borrowed loan. Under these assumptions, his two-period utility would be:

$$u(y)+(1/2)[u(y+(R-r)L)+u(y-z)]$$

We have assumed that the loan taken in the first period cannot be used as consumption loan. It has to be strictly invested in an income generating activity (hence L does not figure in the first period utility). The borrower reaps the benefit from the activity only in the second period if he stays healthy. However, if he falls sick, the value of the income generating activity depreciates. For simplicity we assume that this value becomes nil (i.e., L=0) so that neither the lender nor the borrower is able to recover anything from the investment.

Supposing that the agent has an option of buying insurance by paying actuarially fair premium in the first period. Since insurance is available at actuarially fair premium (z/2), the standard result in the literature shows that the agent would go for full insurance cover.

His utility after purchase of insurance would be:[18]

$$u(y-(z/2))+u(y+(R-r)L)$$

From *lender's perspective* there are two cases:

Case I: when the agent (the borrower) doesn't have insurance

In this case, the lender would charge interest rate so that the amount he gets back is greater than (or equal to) the amount he has to pay i.e., the cost of credit to the lender denoted by s. This condition is shown below.

$r_0 L/2 \geq sL$, where r_0 is the interest rate charged by the lender

$$\Rightarrow r_0 \geq 2s. \quad \dots\dots\dots\dots(1)$$

In equilibrium, this inequality will hold as equality.

Case II: when the agent (the borrower) has insurance

In case the agent has insurance, the probability of loan default is zero in which case the lender is able to recover full amount he lends. So the rate of interest he charges is greater than the cost of funds to the lender i.e.,

$$r_1 L \geq s L. \quad \dots\dots\dots\dots\dots(2)$$
where r_1 is the interest rate charged by the lender

In equilibrium this inequality will hold as equality.

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[18] Note that if we believed in the previous footnote then given higher income of agent in the second period, he will be able to afford insurance if consumption loan were available.

From (1) and (2), it is straightforward to check that r0>r1.

From the borrower's perspective it would be better to have insurance when the interest rate plus the premium that he is lower than the interest rate charged in the absence of insurance. This would be the case if r0>r1+z/2. Substituting the equilibrium values of r0 and r1 yields the condition: 2s > s+z/2 or 2s>z. Thus from borrower's perspective it may make good sense to buy insurance along with loan only when the above condition holds.

The lender whose clients do not have access to insurance would end up charging higher rate of interest and this would tend to turn his borrowers away from him and towards the lender who also provides insurance. So, from the lender's perspective it makes good sense to integrate insurance with their finance operations.

Given the beneficial outcome of integrating micro-insurance with micro-finance, it is necessary to have a pro-active policy that would promote such integration. Currently, the MFIs are not even regulated and therefore the scope of public policy in promoting this integration or even promoting micro-insurance in general is very limited. Furthermore, besides MFIs, microcredit is also being extended by the government through several programs. It becomes imperative for the government to have a clear thinking on how to promote micro-insurance on the one hand and microcredit with its positive impact on poverty reduction and empowerment on the other. At present, the concept note does not make any distinction between micro-insurance through micro-finance institutions and micro-insurance through other agencies.

5   Conclusions

Policy-induced and institutional innovations are promoting insurance among the low-income people who form a sizable sector of the population and who are mostly without any social security cover. Although the current reach of 'micro-insurance' is

limited, the early trend in this respect suggests that the insurance companies, both public and private, operating with commercial considerations, can insure a significant percentage of the poor. Serving low-income people who can pay the premium certainly makes a sound commercial sense to insurance providers. To that extent imposing social and rural obligations by insurance regulator (IRDA) is helping all insurance companies appreciate the vast untapped potential in serving the lower end of the market.

However, it is becoming increasingly clear that micro-insurance needs a further push and guidance from the regulator as well as the government. IRDA has already come up with the concept note on micro-insurance, which suggests the regulator's bias towards insurer-agent model. Even so, two areas in which having explicit provisions would aid the development of micro-insurance are: one, flexibility in premium collection, and two, encouraging micro-insurance among micro-finance institutions (MFIs).

Given irregular and uncertain income stream of the poor, flexibility in premium collection is needed to extend the micro-insurance net far and wide. Moreover, MFIs are playing a significant role in improving the lives of poor households. Quite apart from this, linking micro-insurance with micro-finance makes better sense as it helps in bringing down the cost of lending. Given this, there is a case for strengthening the link between micro-insurance and micro-credit. At present microfinance business in the country is unregulated. Regulation of MFIs is needed not only to promote micro-finance activity in the country but also to promote the linking of micro-insurance with micro-finance which as demonstrated in the paper makes a good sense.

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