HOW DO MICROFINANCE INSTITUTIONS COPE WITH RISK AND UNCERTAINTY?
A Literature Survey[1]

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ABSTRACT

Salah satu karakteristik penting dari pasar kredit mikro di negara sedang berkembang (NSB) adalah tingginya derajat ketidaksempurnaan informasi yang pada gilirannya menyebabkan tingginya derajat risiko dan ketidakpastian. Tulisan ini mengungkapkan bahwa lembaga keuangan mikro di NSB telah menerapkan praktik-praktik pengelolaan yang unik dan beraneka ragam yang berbasiskan pada institusi-institusi informal seperti norma dan sanksi sosial dalam upayanya untuk memecahkan masalah risiko dalam memberikan kredit pada pasar kredit mikro. Praktik-praktik pengelolaan tersebut — yang berakarkan pada institusi informal yang ada — telah berhasil mengurangi risiko kredit yang dicerminkan oleh kemampuan dari praktik pengelolaan tersebut dalam menurunkan kredit macet, khususnya dalam sebuah masyarakat yang homogen dengan nilai transaksi ekonomi yang relatif kecil. Namun demikian, ketika suatu masyarakat berkembang menjadi relatif heterogen dan transaksi ekonominya semakin besar, efektivitas institusi informal tersebut menurun. Dalam kondisi seperti ini, kehadiran institusi formal menjadi suatu keharusan.

Keywords: *microfinance institutions, risk, uncertainty, and informal institutions*

INTRODUCTION

A microfinance or microcredit institution is generally characterised by a collage of dynamic, innovative, and flexible arrangements that are tailored to the local economic and social environment (Adams & Fitchett, 1992). The institution is a complex phenomenon that has economic and socio-cultural dimensions. Using a literature survey method this paper attempts to discuss credit risk faced by microfinance institutions and how to cope with the risk in order to have a good performance and sustainable. This paper starts with the definition, characteristics, and practical arrangement of microfinance institutions in developing countries. The second part discusses some theories on the relationship between imperfect information and credit markets. The third part discusses the role of institutions, with emphasis on informal institutions, in overcoming the risk problem in rural credit market in developing countries. The last part is concluding remarks.

DEFINITION AND CHARACTERISTICS OF MICROFINANCE INSTITUTIONS

The definitions of microfinance institutions proposed by some scholars and organisation are seemingly different from one to another. However, the essence of the definitions is usually the same in which

microfinance refers to the provision of financial services, primarily savings and credit but also other financial services, to poor and low-income households that do not have access to commercial banks.

According to Ledgerwood (1999, p.1), the term microfinance refers to the provision of financial services (generally savings and credit) to low-income clients. The clients are often identified as traders, street vendors, small farmers, service providers (hairdressers, rickshaw drivers), and artisans and small producers, such as blacksmiths and seamstresses. She points out that many such clients have a stable source of income since they have multiple sources of income. Although they are poor, they are generally not considered to be "the poorest of the poor."

The Asian Development Bank (ADB) defines microfinance as the provision of a broad range of financial services such as deposits, loans, payment services, money transfers, and insurance to poor and low-income households and their micro-enterprises (ADB, 2000, p.6). The ADB definition includes low income households as well as those below the poverty line since there are a significant number of low-income households that are not below the poverty line, but have limited access to financial services, especially in rural areas.

Robinson (2001, p.9) points out that the term microfinance refers to small-scale financial services, primarily credit and savings, provided to people who farm or fish or herd; who operate small enterprises or micro-enterprises where goods are produced, recycled, repaired, or sold; who provide services; who work for wages and commissions; who gain income from renting out small amounts of land, vehicles, draft animals, or machinery and tools; and other individuals and groups at the local levels of developing countries, both rural and urban area. A slightly different definition is formulated by Meagher (2002). He suggests

that microfinance is lending small amounts of money for short periods with frequent repayments (Meagher, 2002, p.7). Concerning the definition of microfinance institution, Meagher (2002) argues that as a general principle, it is important to provide a definition that will enable market participants to be responsible, energetic, and innovative. The legal definition should be broad enough both to enable a focus on a sensible target group and to provide a wide range of appropriate financial services for that group.

In practice, some microfinance institutions provide social intermediation services such as group formation, development of self-confidence, and training in financial literacy and management capabilities among members of a group that intended to benefit low-income women and men (Bennett, 1998, Ledgerwood, 1999). Part of the reasons is because low-income people face strong barriers (such as illiteracy, gender discrimination, and remoteness) in trying to gain access to ordinary financial service institutions (Ledgerwood, 1999, p.63). This means that the skills and confidence of low-income people have to be developed in addition to credit provision. Therefore, the microfinance approach is not a minimalist approach that offering only financial intermediation but an integrated approach offering both financial intermediation and other services mentioned above (Ledgerwood, 1999, p.65). It can also then be expected to reduce poverty and to develop and strengthen the institutional capacity of local financial systems through finding ways to cost-effectively lend money to poor households (Ledgerwood, 1999, Morduch, 1999, Morduch, 2000, Otero, 1999, Snow, 1999).

As noted in the introduction, Adams & Fitchett (1992) point out that microfinance institutions are generally characterised by a collage of dynamic, innovative, and flexible arrangements that are tailored to the local economic and social environment. They argue

that these arrangements are resilient and that many of them have grown over a long period (Adams & Fitchett, 1992, p.3). This flexibility is accorded by the limited regulation, along with smallness of size, with most microfinance institutions operating in a circumscribed area, or in a specific niche of the market where personal knowledge of borrowers is possible (Ghate, 1988). The type of transaction is small and short-term transactions, which are based on personal relationships or the institution's intimate knowledge of its clientele (Wai, 1992), and which usually occur close to where clients live, shop, or work. To facilitate the clients' entry, microfinance institutions also apply a simple application procedures and loans are disbursed quickly (ADB, 2000). The interest rates charged by microfinance institutions are market-oriented and intended to cover both their operational and financial costs, based on the assumption that the poor are willing to pay for access and convenience. To sum up, Wai argues that these arrangements are flexible, adapt to economic change, innovative, involve low transaction costs for both lender and borrower, and result in high loan recovery rates (Wai, 1992, p.340).

Regarding the transaction costs, a study in India lists four characteristics that explain why microfinance institutions exhibit lower transaction costs than modern banks (Ghate, 1992b, Timberg & Aiyar, 1984, p.44, 54). First, the microfinance institutions know their clients better than commercial banks. The lender has had adequate information on the borrower through previous credit transactions, or through community and neighbourhood ties. This reduces their information costs compared to those of commercial banks. Second, administrative costs are lower for microfinance institutions than for commercial banks because microfinance institutions' employees are paid less (and are less educated), the establishment is less elaborate, and the paperwork simpler than for commercial banks. Third, the interest rates of microfinance institutions are not regulated and therefore it can be adjusted fully

to market forces. Non-price competition is thereby kept down to an optimum level. Fourth, microfinance institutions are not subject to the reserve requirements that are imposed on modern banks.

IMPERFECT INFORMATION AND CREDIT MARKETS

As discussed in the previous sections, most microfinance institutions are located in rural areas and characterised by poor clients, who take out small loans, often with no collateral, and a simple and quick procedure. The credit mechanism is flexible and tailored to the socio-economic conditions of local people. This mechanism is mainly aimed to reduce credit risk (default) by delinquent clients, which could have negative effects on the financial performance and sustainability of the institutions. This section discusses some theories on the relationship between risk problem and rural credit market.

In an idealised credit market, credit is traded through competitive markets where supply and demand forces interact and the interest rate is determined through supply and demand (Besley, 1994, p.29). In the absence of externalities, competitive markets tend to reach a state of equilibrium (i.e., a state where no participant in the market can improve his/her position without making the position of some other participant worse). Besley points out that exchanges (Pareto improvements) will take place in the market until final equilibrium has been reached. When all Pareto improvements have been made, the market is said to have reached a Pareto optimum[2], where maximum efficiency is achieved. A Pareto optimum is a situation in which it is impossible to make anyone better-off without making someone worse-off (Varian, 1992). In the case of credit markets, this means that, at that ultimate stage, all borrowers would obtain the loan they were

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[2] Pareto optimum is called after the famous Italian economist Vilfredo Pareto (1848-1923).

looking for at a price corresponding to the supply/demand situation of the moment. To achieve such an optimum, competition must be allowed to drive the market, external interventions are not needed.

However, credit markets diverge from an idealised market because of imperfect information in these markets (Besley, 1994). The specificities of credit markets have led economists to amend the competitive market paradigm. Credit markets are said to be structurally imperfect markets. The imperfection stems from the nature of the goods exchanged in the credit markets. Credit is a special good because it requires repayment over a longer time span. However, repayment is not always made by borrowers, making the presence of external sanctions necessary to enforce claims. This is why Besley suggests that a lender's willingness to lend money to a particular borrower may hinge on having enough information about the borrower's reliability and on being sure that borrower will use the borrowed funds wisely (Besley, 1994, p.29). In addition, suppliers and borrowers in these markets do not share the same information, which creates imbalances between the two types of actors.

Besley (1994) also argues that even though credit markets are imperfect, they may still achieve a lower standard of efficiency and are referred to as Pareto constrained efficiency. In practical terms, this lower standard explains why the credit supply never meets all of the demand for credit. In other words, the presence of such imperfect information may explain why lenders choose not to serve some individuals. The key concepts of the imperfect information paradigm discussed here are asymmetric information, moral hazard, adverse selection, and credit rationing.

Asymmetric information refers to situations in which one party to a transaction has more information about the transaction than the other. This situation could cause markets to deviate from the behaviour patterns

conventionally and lead to moral hazard and adverse selection (Akerlof, 1970, Arrow, 1968, Hillier & Ibrahimo, 1993). Following Arrow (1963, 1968), Hillier and Ibrahimo (1993) point out that the problem of moral hazard occurs when one party, known as the principal, enters into a contract with another, known as the agent, who has some degree of autonomy over his consequent actions which cannot be perfectly monitored by the principal. These actions affect the outcome for both the principal and the agent and their preferences differ so that there is some degree of conflict between two parties. The principal, therefore, wishes to devise a contract which will include the agent to undertake actions, which the principal cannot fully monitored, desired by the principal. The application of this idea to the credit market as follows. Consider the bank to be the principal and the borrower to be the agent. If the interest rate to be charged on the loan affects the consequent behaviour of the borrower, then the bank may choose to set an interest rate which does not clear the credit market if it chooses the interest rate partly to influence the unobservable behaviour of the borrower and the use made of the loan. For instance, if a higher interest rate encouraged borrowers taking out loans for investment finance to invest in riskier projects it may be shown that banks may have an incentive to charge a less than market clearing rate in order to induce investment in less risky projects.

The idea of adverse selection problem was developed by George Akerlof (1970) in his well-known article, "The Market for Lemons: Quality Uncertainty and the Market Mechanism," which analyses a market for used cars. The adverse selection problem occurs in markets where products of different quality are sold to buyers who, because of asymmetric information, cannot observe the quality of the products they purchase. In the used car example of Akerlof, the sellers are knowledgeable about the quality of each car offered for sale; the buyers are not. When buyers cannot distinguish, within a given type

of used car, between good cars (high quality products) and those bad cars (low quality products) which in America are known as "lemons", the sellers –who know the quality of each car- can offer the lemons at the same price as the high-quality cars. Akerlof (1970, p. 497-9) also points out that the adverse selection problem also exists in credit market in developing countries such as India. He points out that while the large banks in the central cities have interest rates of 6, 8, and 10 percent, the local money-lenders charges 15, 25, and even 50 percent in India. The answer to this seeming paradox is that credit is granted only where the granter has (1) easy means of enforcing his contract or (2) personal knowledge of the character of the borrower. The middleman who tries to arbitrage between the rates of the moneylender and the central bank is apt to attract all the "lemons" and thereby make a loss.

As noted above, both adverse selection and moral hazard exist in credit markets. These forms of asymmetric information will lead to credit rationing. The following section surveys developments in the theory of credit markets focusing on the credit rationing and their usefulness for policy analysis. The purpose here is to describe some of the main ideas in imperfect information credit models in the context of microfinance institutions and their experiences in developing countries.

Jaffee & Russel (1976) develop a specific model of how imperfect information and uncertainty can lead to rationing in loans markets. They analyse the behaviour of a loan market in which borrowers have more information about the likelihood of default than do lenders (Jaffee & Russel, 1976). Their model is a model of credit rationing with two types of borrowers: "honest" and "dishonest" (see Appendix 1). The honest borrowers accept only loan contracts that they expect to repay and, under their assumptions, they do in fact repay them. The honest borrowers repay their loans even when there is a financial incentive

to default. The dishonest borrowers, in contrast, default on loans whenever the costs of default are sufficiently low or financially advantageous. Since lenders cannot distinguish among borrowers, it might be the best to ration credit in order that dishonest borrowers will not default even though doing so reduces the profitability of lending to honest borrowers. Therefore, the optimal credit-rationing policy depends on the proportion of honest borrowers because of the adverse selection problem.

In their paper, Stiglitz & Weiss (1981) develop a model of a competitive banking system under the condition of asymmetric information (Stiglitz & Weiss, 1981). The banks (the lenders) are similar to Akerlof's uninformed used car buyer and the lenders, like the car dealers, are the informed. Similar to the quality of used cars being unknown to the buyers, the quality (risk profile) of the borrowers – their investment choice, honesty, risk tolerance, capacity and willingness to repay the loans, and so on- is unknown to the banks. As a result, the banks (lenders) may charge higher interest rates to offset risk caused by asymmetric information (the borrower knows more about her use of the loan and her repayment intentions than the bank does). While the higher interest rates increase the returns to successful loans, the average riskiness of loan applicants may increase because of low-risk borrowers may choose not to borrow at the higher interest rates (the adverse selection effect of interest rates).

Stiglitz and Weiss (1981) also point out a moral hazard problem. Increases in the interest rate, while raising the return to successful loans, may lead to adverse shifts in the risk composition of lenders' portfolios, increasing the probability of default. It follows that increases in the interest rate may lead to a decrease in the expected profit to lenders. Then the moral hazard and adverse selection effects may render a market-clearing interest rate non-optimal, leading to credit rationing. In brief, in this form of credit rationing the bank denies

credit to prospective borrowers not because of lack of funds but because of perceived risk related to asymmetric information.

However, Bester (1985) has a different point of view regarding the credit rationing. He argues that credit rationing might not be necessary in equilibrium if banks can compete by offering contracts with different collateral requirements and interest rates (Bester, 1985), an option not considered by Stiglitz and Weiss (1981). Perfect self-selection is obtained when high-risk borrowers choose contracts with higher interest rates and lower collateral. This result assumes that borrowers (in particular, those with low-risk) are not constrained by the amount of collateral they can provide. In 1986 Stiglitz & Weiss respond that the possibility of credit rationing remains under some conditions in real credit markets, including adverse selection and moral hazard (Stiglitz & Weiss, 1986).

Braverman & Guasch criticise Bester's view on the unnecessary of credit rationing. They argue specifically that credit rationing would remain in real rural credit markets and there is a real constraint in the markets. The collected evidence indicates that securing loans through collateral is not often feasible in rural areas (Braverman & Guasch, 1986, Braverman & Guasch, 1989). In fact, fair amount of loans are supplied without any collateral to small farmers lacking title to their property and producing under tenancy arrangements. That clearly hampers the self-selection equilibrium, throwing it back to credit-rationing as described by Stiglitz and Weiss (1981). Braversman & Guasch also point out that the adverse selection and moral hazard problems seem much less severe for the microfinance institutions (informal or village money lenders) than for the commercial banks (organised commercial lending institutions), indicated by the fact that the default rate for the latter much higher than for the former (Braverman & Guasch, 1986, p.1260, Braverman & Guasch, 1989, p.18). They argue that this condition is

caused by information available to the microfinance institution is more extensive, more accurate, and easier to obtain than for the commercial banks. Herath (1996) also reveals that the problem of asymmetric information (adverse selection and moral hazard) appear to be less serious in rural credit markets. The highly localised nature of these markets and greater availability of information has a risk-reducing effect (Herath, 1996, p.250).

An article by Hoff and Stiglitz (1990) discusses specifically the relationship between imperfect information and rural credit markets. They point out that rural credit markets are based on the following three observations (Hoff & Stiglitz, 1990, p.237):

1. Borrowers differ in the likelihood that they will default, and it is costly to determine the extent of that risk for each borrower. This is known as the *screening* problem;

2. It is costly to ensure that borrowers take those actions which make repayment most likely. This is the *incentives* problem; and

3. It is difficult to compel repayment. This is the *enforcement* problem.

To solve the three problems, Hoff and Stiglitz (1990, p.238) suggest two types of mechanisms. First, indirect mechanisms rely on the design of contracts by lenders such that, when a borrower responds to these contracts in his own best interests, the lenders obtains information about the riskiness of the borrower and induces him to take actions to reduce the likelihood of default and to repay the loan whenever he has resources to do so. Second, direct mechanisms rely on lenders expending resources to screen applicants and enforce loans. It follows from this that high interest rates may reflect the high costs of these activities. Perhaps more important, however, these direct mechanisms (through, for instance, personal relationship, trade-credit linkages, usufruct loans) lead to a monopolistically competitive structure with interest rate spreads between different segments of rural credit

markets. Moreover, this suggests that the money lenders' power is unlikely to be broken by the entry of institutional credit, unless the new institutions themselves find substitutes for the direct mechanisms used by moneylenders to overcome the problems of screening, incentives, and enforcement.

Besley (1994) points out three features of rural credit markets. The first feature is scarce of collateral. Besley states that one solution to the repayment problem, as a result from moral hazard and adverse selection problems, is to have the borrower put up a physical asset that the lender can seize if the borrower defaults. However, in rural credit markets generally the borrowers are too poor to have assets that could be collateralised. The second feature is underdevelopment of complementary institutions. In rural areas of developing countries, poorly developed communications may also make the use of formal (commercial) bank arrangements costly for many individuals. In addition, complementary markets may be missing such as insurance markets that could mitigate the problems of income uncertainty. If individuals could ensure their incomes, default might be less a problem. Another way to mitigate default problem is to assemble individual credit histories and to sanction delinquent borrowers. Such means are commonplace in developed countries. However, they required reliable systems of communication among lenders that seldom exist in rural areas of developing countries. Therefore, policy interventions are needed, for example, through programs that raise literacy levels that could improve the operation of credit markets (Besley, 1994).

The third feature is covariant risk and segmented markets. A special feature of agriculture is the risk of income shocks because of weather fluctuations as well as changes in commodity prices. Such shocks affect the operation of credit markets if they create a potential for a group of farmers to default at the same time. This risk could be averted if lenders held loan portfolios that were well diversified. However, credit markets in rural areas tend to be segmented. A lender's portfolio of loans is concentrating on a group of individuals facing common shocks to their income, in one particular geographic area, for example, or on farmers producing one particular crop, or on one particular kinship group.

In summary, the most important factors affecting the allocation of credit, particularly in rural credit markets, are: (1) lack of collateral on the part of the borrower since finiteness of borrowers' wealth, (2) adverse selection problems, (3) moral hazard problems, and (4) insufficient number of instruments for screening and enforcement problems. The following section discusses how developing countries deal with these problems.

INSTITUTIONS AND CREDIT RISK

Douglas C. North defines institutions as the rules of the game in a society, or, more formally, the humanly devised constraints that structure human interaction (North, 1994, p.360, North, 1991, p. 97, North, 1990, p.3, North, 1995, p.23). In a more practical way, institutions can be defined as the rules or procedures that shape how agents (people) interact and the organizations that implement the rules and codes of conduct to achieve desired outcomes (Brinkerhoff & Goldsmith, 1992, p.371, World Bank, 2002, p.6). Institutions include laws, formal (government) regulations, cultures, conventions, social norms, and self-imposed code of conduct. Thus, institutions are important because they provide a structure for everyday life by defining and limiting the set of choices of individuals and organizations. Accordingly, institutional environment is defined as the set of fundamental political, social, and legal ground rules that establishes the basis for production, exchange, and distribution (Davis & North, 1971, p.6).

Institutions are classified in two types which are formal and informal institutions (North, 1994, p. 360, North, 1991, p.97, North, 1995, p.23, World Bank, 2002, p.6). Formal institutions include the rules written into the law and regulations by government, rules codified and adopted by private institutions, and public and private organizations operating under public law. Informal institutions, which often are operating outside the formal legal system, reflect unwritten codes of social conduct such as social norms and sanctions and using social mechanisms to assess creditworthiness based on the reputation of the agents involved. It is argued that in situations where formal institutions (regulations) fail, informal institutions will come into play to reduce uncertainty and provide constancy to individuals and organizations (Besley, 1995, Braverman & Guasch, 1986, Braverman & Guasch, 1989, North, 1990, World Bank, 2002). On the contrary, when informal institutions fail, formal institutions will play their role (World Bank, 2002). Another possibility is integrating informal and formal institutions. The World Bank (2002) argues that building bridges between informal institutions and formal institutions is an effective means of enhancing the success of formal institutions. However, as argued by the World Bank (2002, p.172), building formal institutions that complement existing informal institutions needs an adequate attention paid to norms and culture in order to deliver desired outcomes.

Institutions influence individuals' decision making by signalling which choices are acceptable and determining which norms and behaviours are socialised in a given society (Powell & DiMaggio, 1991). Institutions also affect the actions of organizations by constraining which actions are acceptable and supportable within the environment (Aldrich & Fiol, 1994). There are many studies in the literature that discuss the influence of institutions - both formal and informal institutions - on the performance and sustainability of economic/ business entities or firms. The evidence strongly suggests that the success and sustainability of firms, including microfinance institutions, has been very much influenced by their institutional – both formal and informal institutions - environments (Baum & Oliver, 1991, Carrol, 1993, Chaves & Gonzales-Vega, 1996, DiMaggio & Powell, 1983, Meyer & Rowan, 1977, Oliver, 1997, Rhyne & Otero, 1992, Snow, 1999).

In one of his articles on credit market, Besley (1995) argues that the developing countries have developed non-market institutions (informal institutions) for coping with risk and providing credit (Besley, 1995). Besley uses the term "non-market institution" as a catchall for many different arrangements of practical microfinance such as in credit cooperatives, informal credit and insurance arrangements, and rotating savings and credit associations. In most cases, those institutions make relatively little use of formal contractual obligations enforced through a codified legal system. There can, however, be well-defined rules of operation among the members of institution, which are either embodied in a constitution or time-honoured tradition such as social norms, historical patterns, and management procedures (Braverman & Guasch, 1986). Such arrangements tend to be non-anonymous, with parties to any transaction knowing each other well.

The informal institutions tend to exploit a comparative advantage in monitoring and enforcement capacity compare to formal institutions (Arnott & Stiglitz, 1990, Stiglitz, 1990). They argue that the comparative advantage of informal institutions in terms of monitoring is that individuals who interact in a variety of non-market contexts tend to know each other well. Thus they have a greater ability to monitor each other than do formal financial institutions, such as banks. This can explain why many non-market institutions function effectively where formal institutions fail.

A more recent article (Fuentes, 1996) proposes microfinance institutions to utilise a member of rural (local) community to act as an agent in screening potential borrowers and collecting repayment. Fuentes argues that by incorporating village-level information on borrower risk characteristics, this mechanism helps to mitigate the information problems that hamper the performance of financial institutions when lending to low-income people, both in rural and urban areas (Fuentes, 1996, p.189). In addition, by gaining access through the agent to village-level enforcement mechanisms (such as social sanctions), the financial institution may also mitigate some of the problems it faces when collecting repayment.

There have been wide variations of the use of village agents that have been utilised in microfinance delivery system. Onchan (1992) states that in Thailand, the Bank for Agriculture and Agricutural Cooperatives (BAAC) has attempted to reduce transactions costs by considering using farmers leaders, that is, village headmen, to act as its "agents" in the village (Onchan, 1992, p.114-5). The Ministry of Finance directs BAAC to provide relatively large amounts of loans to groups of low-income farmers. The credit is given to the groups with no collateral. In order to reduce transaction costs, BAAC uses farmer leaders, that is, village headmen, to act as its agents in the villages. These agents help BAAC in loan processing by using their knowledge of borrowers and they are paid for their services by the bank. The BAAC attempts to access the information about potential borrowers in the village through this innovation. As its loan agent, BAAC expects the village leader to help improve the loan processing procedure and the repayment rate. Even though the agents cannot be informal lenders, they usually are respected by farmers. Therefore, their personal contacts may improve the operational efficiency, particularly in regard to the transaction costs of the bank.

Bangladesh experiences with Bangladesh Rural Advancement Committee's (BRAC), Grameen Bank, and Proshika, have shown how loan facilitators or 'brokers' have been used to connect the institutions and the low-income clients (McGregor, 1988, p. 475-6). Specifically, McGregor states that the bank-broker relationship has probably been the most common in Bangladesh. Donor funded and non-governmental development projects act as broker in the relationship between target population and the banks. There is a little or no direct contact between the target group and the banking system. Potential borrowers are identified by project (broker) staff, and greater parts of the process of arranging credit are taken out of the hands of both the bank and the target population. Activities under taken by the project (broker) may include: the decision as to who will be eligible loans, the writing out of loan applications, the submission of applications to the bank, and the collection of repayments.

Many Indonesian microfinance institutions, such as Sub-district Credit Institution (Badan Kredit Kecamatan or BKK) of Central Java and Village Credit Institution (LPD) of Bali, have already incorporated village agents into their credit delivery systems (Arsyad, 2005b, Arsyad, 2005c, Arsyad, 2005, Chaves & Gonzales-Vega, 1996, Yaron, 1992). Chaves & Gonzales-Vega (1996) call this technique as character-based lending. They argue that the character-based lending is very advantageous and cheap technique because local information about borrower is a sunk cost, in the sense that it is an asset that does not have a value outside the local financial market and is acquired in a slow fashion, the only needed expense resulting from having been in the location for a sufficiently long period of time. Local agents can also acquire additional information at lower costs than outsiders (Chaves & Gonzales-Vega, 1996, p.70-1). Moreover, Chaves & Gonzales-Vega also point out that character-based lending and local monitoring have been comparatively

efficient in avoiding costly mistakes in assessing the probability of loan repayment.

The comparative advantage of informal institutions in terms of enforcement has two features (Besley, 1995, p.118). Firstly is the scope of sanctions. In most social structures, mechanisms of social control already exist to limit antisocial behaviour. Hence, an individual who fails to honour an obligation can be punished, even if no written contract has been violated. Secondly is the depth of sanctions. In developing countries, many formal institutions, such as banks and insurance companies, are new, but there is a long history of cooperation in informal settings. This may reflect relative immobility that comes from regional and kinship ties. In regard to the sanctions, cultural norms and practices (non-market institution) can act as an enforcement mechanism, replacing external supervision with internal self-supervision and external legal sanctions such as fines with internal emotional sanctions such as guilt and shame (Casson, 1993, p.418). Arsyad (2005, 2005b, 2005c) also points out that informal institutions such as social sanctions and cultural norms have a significant influence on the performance and sustainability of Village Credit Institutions of Bali, especially its loan repayment rate.

The informal institutions, however, could become less effective as the number of trading partners of an institution grows and they become more socio-culturally diverse (World Bank, 2002, p.172). Ellickson (1991) as cited by Klein (2000) also points out that the social norms, as 'customary law', can be superior to administrative or judicial dispute resolution among people with close social ties (Klein, 2000). Moreover, since informal institutions often function by restricting access to new members, they can be inaccessible for many market participants and may hinder competition in markets. Dealing with this potential problem, the existence of formal institutions supplanting community norms as

the World Bank suggests (World Bank, 2002, p.177) are indispensable to prevent or overcome such a problem in the future, since the changes in the number of credit transactions and a more diverse socio-cultural aspect are inevitable as results from socio-economic development. Building new formal institutions that complement existing informal institutions is not an easy task. When inadequate attention is paid to norms and culture, the formal institutions will not deliver desired outcomes.

CONCLUDING REMARKS

One of the characteristics of rural and microcredit markets is the high degree of imperfect information, and hence a high degree of risk. In order to cope with the risk problem in providing microcredit for low income people, microfinance institutions in developing countries have employed unique and diverse practical arrangements that are based on informal institutions. Microfinance institutions make relatively little use of formal contractual obligations enforced through a codified legal system. But there have been well-defined rules of operation among the members of the institution, which are either embodied in a constitution or time-honoured tradition such as social norms, historical patterns, and management procedures.

The informal institutions tend to exploit a comparative advantage in monitoring and enforcement capacity. The comparative advantage of informal institutions in terms of monitoring is that individuals who interact in a variety of non-market contexts tend to know each other well. Thus they may be greater ability to monitor each other than do formal financial institutions, such as banks. This can explain why many informal institutions function effectively where formal institutions fail.

The informal institutions, however, could become less effective as the number of trading partners of an institution grows and they

become more socio-culturally diverse. Dealing with this potential problem, the existence of formal institutions supplanting community norms are indispensable to overcome such a problem in the future, since the changes in the number of credit transactions and a more diverse socio-cultural aspect are inevitable as results from socio-economic development.

REFERENCES

Adams, Dale W. & Delbert A. Fitchett, editors. 1992. *Informal Finance in Low-Income Countries*. Boulder, CO.: Westview Press.

ADB. 2000. Finance for the Poor: *Microfinance Development Strategy.* Manila: Asian Development Bank.

Akerlof, George A. 1970. The Market for "Lemons": Quality Uncertainty and the Market Mechanism. *Quarterly Journal of Economics*, 84(3): 488-500.

Aldrich, Howard E. & C. Marlene Fiol. 1994. Fool Rish In? The Institutional Context of Industry Creation. *Academy of Management Review*, 19(4): 645-70.

Arnott, Richard & Joseph E. Stiglitz. 1990. Moral Hazard and Nonmarket Institutions: Dysfunctional Crowding Out or Peer Monitoring. *American Economic Review*, 81(1): 179-90.

Arrow, Kenneth J. 1968. The Economics of Moral Hazard: Further Comment. *American Economic Review*, 58: 537-39.

Arsyad, Lincolin. 2005b. An Assessment of Microfinance Institution Performance: The Importance of Institutional Environment. *International Journal of Business*, 7(3): 391-427.

Arsyad, Lincolin. 2005c An Assessment of Performance and Sustainability of Microfinance Institutions: A Case Study of Village Credit Institutions of Gianyar, Bali, Indonesia. Unpublished Ph.D Thesis, Department of Business Economics, Flinders University, Adelaide, Australia.

Arsyad, Lincolin. 2005. Institutions Do Really Matter: Important Lessons from Village Credit Institutions of Bali. *Journal of Indonesian Economy and Business*, 20(2): 105-19.

Baum, Joel A.C. & Christine Oliver. 1991. Institutional Linkages and Organizational Mortality. *Administrative Science Quarterly*, 36: 187-218.

Bennett, Lynn. 1998. Combining social and financial intermediation to reach the poor: the necessity and dangers.In Kimenyi, Mwangi S., Robert C. Wieland, & J.D. Von Pischke, editors, *Strategic Issues in Microfinance*. Aldershot, England: Ashgate.

Besley, Timothy. 1994. How Do Market Failures Justify Interventions in Rural Credit Markets. *The World Bank Research Observer*, 9(1): 27-47.

Besley, Timothy. 1995. Nonmarket Institutions for Credit and Risk Sharing in Low-Income Countries. *Journal of Economic Perspective*, 9(3): 115-27.

Bester, Helmut. 1985. Screening vs. Rationing in Credit Markets with Imperfect Information. *American Economic Review*, 75(4): 850-55.

Braverman, Avishay & J. Luis Guasch. 1986. Rural Credit Markets and Institutions in Developing Countries: Lessons for Policy Analysis from Practice and Modern Theory. *World Development*, 14(10/11): 1253-67.

Braverman, Avishay & J. Luis Guasch. 1989. Rural Credit Reforms in LDCs: Issues and Evidence. *Journal of Economic Development*, 14(1): 7-34.

Brinkerhoff, Derick W. & Arthur A. Goldsmith. 1992. Promoting the Sustainability of Development Institutions: A Framework for Strategy. *World Development*, 20(3): 369-83.

Carrol, Glenn R. 1993. A Sociological View on Why Firms Differs. *Strategic Management Journal*, 14(237-249).

Casson, Mark. 1993. Cultural Determinants of Economic Performance. *Journal of Comparative Economics*, 17: 418-42.

Chaves, Rodrigo A & Claudio Gonzales-Vega. 1996. The Design of Successful Rural Financial Intermediaries: Evidence from Indonesia. *World Development*, 24(1): 65-78.

Davis, Lance E. & Douglass C. North. 1971. *Institutional Change and American Economic Growth*. Cambridge: Cambridge University Press.

DiMaggio, Paul J. & Walter W. Powell. 1983. The Iron Cage Revisited: Institutional, Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review*, 48(April): 147-60.

Fuentes, Gabriel A. 1996. The Use of Village Agents in Rural Credit Delivery. *The Journal of Development Studies*, 33(2): 188-209.

Ghate, Prabhu. 1988. Informal Credit Markets in Asian Developing Countries. *Asian Development Review*, 6(1): 64-85.

Ghate, Prabhu. 1992b. *Informal Finance: Some Findings from Asia*. Oxford: Oxford Universty Press.

Herath, Gamini. 1996. Rural Credit Markets and Imperfect Information: A New Perspective. *Savings and Development*, 20: 242-53.

Hillier, Brian & M. V. Ibrahimo. 1993. Asymmetric Information and Models of Credit Rationing. *Bulletin of Economic Research*, 45(4): 271-304.

Hoff, Karla & Joseph E. Stiglitz. 1990. Introduction: Imperfect Information and Rural Credit Markets-Puzzles and Policy Perspective. *The World Bank Economic Review*, 4(3): 235-50.

Jaffee, Dwight M. & Thomas Russel. 1976. Imperfect Information, Uncertainty, and Credit Rationing. *Quarterly Journal of Economics*, 90(4): 651-66.

Klein, Peter G. 2000. New Institutional Economics.In Bouckeart, Boudewijn & Gerrit de Geest, editors, *Encyclopedia of Law and Economics*. Chentelham, UK: Edward Elgar.

Ledgerwood, Joanna. 1999. *Microfinance Handbook: An Institutional and Financial Perspective*. Washington, D.C.: The World Bank.

McGregor, J. Allister. 1988. Credit and the rural poor: the changing policy environment in Bangladesh. *Public Administration and Development*, 8: 467-82.

Meagher, Patrick. 2002. Microfinance Regulation in Developing Countries: A Comparative Review of Current Practice, *Mimeo*. College Park: IRIS Center, University of Maryland.

Meyer, John W. & Brian Rowan. 1977. Institutionalized Organizations: Formal Structure as Myth and Ceremony. *American Journal of Sociology*, 83(2): 340-63.

Morduch, Jonathan. 1999. The Microfinance Promise. *Journal of Economic Literature*, 37(December): 1569-614.

Morduch, Jonathan. 2000. The Microfinance Schism. *World Development*, 28(4): 617-29.

North, Douglass C. 1994. Economic Performance Through Time. *American Economic Review*, 14(3): 359-68.

North, Douglass C. 1991. Institutions. *Journal of Economic Perspective*, 5(1): 97-112.

North, Douglass C. 1990. *Institutions, institutional change, and economic performance*. Cambridge, MA: Harvard University Press.

North, Douglass C. 1995. The New Institutional Economics and Third World Development.In Harriss, John, Janet Hunter, & Colin W. Lewis, editors, *The New Institutional Economics and Third World Development*. London & New York: Roudledge.

Oliver, Christine. 1997. Sustainable Competitive Advantage: Combining Institutional and Resource-Based Views. *Strategic Management Journal*, 18(9): 697-713.

Onchan, Tongroj. 1992. Informal Rural Finance in Thailand.In Adams, Dale W. & Delbert A. Fitchett, editors, *Informal Finance in Low-Income Countries*. Boulder, Colorado: Westview Press.

Otero, Maria. 1999. Bringing Development Back, into Microfinance. *Journal of Microfinance*, 1(1): 8-19.

Powell, Walter W. & Paul J. DiMaggio, editors. 1991. *The New Institutionalism in Organizational Analysis*. Chicago: The University of Chicago Press.

Rhyne, Elisabeth & Maria Otero. 1992. Financial Services for Microenterprises: Principles and Institutions. *World Development*, 20(11): 1561-71.

Snow, Douglas. 1999. Microcredit: An Institutional Development Opportunity. *International Journal of Economic Development*, 1(1): 65-79.

Stiglitz, Joseph E. 1990. Peer Monitoring and Credit Markets. *The World Bank Economic Review*, 4(3): 351-66.

Stiglitz, Joseph E. & Andrew Weiss. 1986. Credit Rationing and Collateral.In Edwards, J., J. Franks, C. Mayer, & S. Schaefer, editors, *Recent Development in Corporate Finance*. New York: Cambridge University Press.

Stiglitz, Joseph E. & Andrew Weiss. 1981. Credit Rationing in Markets with Imperfect Information. *American Economic Review*, 71(3): 393-410.

Timberg, Thomas A. & C.V. Aiyar. 1984. Informal Credit Markets in India. *Economic Development and Cultural Change*, 33(6): 43-59.

Varian, Hal R. 1992. *Microeconomic Analysis*. Third ed. New York: W.W. Norton & Company.

Wai, U Tun. 1992. What Have We Learned About Informal Finance in Three Decades?In Adams, Dale W. & Delbert A. Fitchett, editors, *Informal Finance in Low-Income Countries*. Boulder, Colorado: Westview Press.

World Bank, The. 2002. World Development Report. Washington, D.C.: The World Bank.

Yaron, Yacob. 1992. Successful Rural Finance Institutions, *World Bank Discussion Papers*. Washington, D.C.: The World Bank.

APPENDIX 1

The Model of Borrowing Behaviour

A. Honest Borrowers

Using a two-period Fisherian consumption model, Jaffee & Russel (1976) assume a large number of individuals who are identical in all respects and who are honest (in the sense indicated below). Each individual has a utility function, $U [C_1, C_2]$ defined over his consumption in the two periods and for which we assume quasi-concavity. Each individual has an exogenous income stream for the two periods (Y_1, Y_2), which is paid at the beginning of each period. They assume for the moment that individuals can borrow in perfect capital markets, taking as given the one-period interest rate r. Loans are taken out at the beginning of the first period (to augment period-1 consumption) and are repaid with interest at the beginning of the second period (reducing period-2 consumption). The demand curve for loans of an individual can be determined from the solution to the problem:

Maximize $U [C_1, C_2]$ with respect to C_1, C_2,

subject to $C_2 = Y_2 - (C_1 - Y_1) (R)$.

R is the interest rate factor, defined as $R = 1 + r$.

The loan quantity is given in the budget constraint by $(C_1 - Y_1)$, and the use of this constraint implies the assumed condition of honesty.

It is useful to restate the problem with explicit notation for the loan quantity. Thus, let the budget constraint take the form

$$C_1 = L + Y_1, \tag{1}$$

$$C_2 = Y_2 - LR. \tag{2}$$

where L is the loan principle. With the substitution of (1) and (2) into the utility function $U [C_1, C_2]$, the problem can now be stated as an unconstrained maximization:

Maximize $U [L + Y_1, Y_2 - LR]$ with respect to L.

The first-order condition for the solution is

$$\frac{dU}{dL} = U1 - U_2 R = 0, \tag{3}$$

where U_i is the partial derivate of U with respect to its i th argument.

This will lead to a loan demand function of the form

$L^* = L^*[R],$ (4)

where, for convenience, we have suppressed the fixed values of Y_1 and Y_2. We assume that dL^*/dR is negative, that L^* is zero at some finite R, and that L^* approaches infinity as R approaches zero.

It is also useful to derive the iso-utility curves of the individual in (L, R) space. These are derived from the condition

$U [L + Y_1, Y_2 - LR] = K$ (a constant), (5)

by varying the parameter K.

B. Dishonest Borrowers

Dishonest borrowers are identical to honest borrowers except that they default on their loans whenever their utility is increased by doing so. Jaffee 7 Russel (1976) introduce, however, two additional conditions that come into play when default is considered:

(i). *The observed loan demand of dishonest individuals must equal the loan demand of honest individuals*. If this condition were not met, then lenders could distinguish honest and dishonest individuals. The result, of course, would be that lenders would grant no loans to the evidently dishonest borrowers.

(ii). There is a cost to default that is measured by a constant Z and which is subtracted from the second-period income Y_2 when default occurs. This penalty for default may be interpreted as a reduction in the earning capabilities of dishonest individuals following their revealed default. The dishonest individual must make a decision, operating under these constraints, between two possible courses of action. He will attempt to maximize the utility function $U[C1, C_2]$ either by the following the honest course that yields

$C1 = Y1 + L^*$

$C_2 = Y_2 - L^*R$

or by the following the default course that yields

$C_1 = Y_1 + L^*$

$C_2 = Y_2 - Z,$

where L^* is still the demand of equation (4). In both courses the C_1 consumption reflects the L^* demand by direct force of condition (i) above. The two courses thus differ only in their C_2 level, and dishonest individuals choose default whenever $Z < L^*R$; that is, whenever the penalty of default is less than the contracted repayment.