



ENTREPRENEURSHIP NETWORK AND MICROFINANCE

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ABSTRACT

Banks and financial intermediaries, as the highways of financing and absorption of savings, are considered as the key players in promotion of welfare level in each society. In Iran, due to structural deficiencies and international sanctions, a revision of banking industry seems very essential. More specifically, via balancing of financial intermediaries (based on the notion of resilient economy's five-year vision coined by the supreme leader of the Islamic Republic of Iran), banks could be used as a tool for economic promotion as well as one of the basic means of resilient economy. This study introduces the structure of the banking industry in Iran and demonstrates its deficiencies. In this respect, a plan for the structure of financial intermediaries is suggested for three purposes: (i) facilitation of financing, (ii) reduction of transaction costs, and (iii) enhancement of the welfare level in society. In this regard, a structure is proposed, based on the entrepreneurial networks which will be realized via measurement, consultancy, and monitoring systems. Furthermore, this study seeks to reduce the credit default risk through increasing of the micro-insurance share compared to the traditional systems of the financing.



Keywords: Entrepreneurship network, Microfinance, Financing.

1. INTRODUCTION

Based on the objectives of the 20-year plan, Iran is to become the first economic, scientific, and technologic power of its region till 2026. Due to the extant sanctions, Iran's economy currently faces some challenges to reach this goal. In this situation, the supreme leader of the Islamic Revolution of Iran argued the idea of resilient economy. Resilient economy is an economic model, which provides growth, even in the time of economic pressure and sanctions, via turning of the pressures to opportunities for growth. In better words, this model suggests an economy, which, besides establishing international interactions, uses the facilities free trade. Therefore, the economic safety can be maintained in the time of environmental fluctuations (e.g. sanctions and threats) and these fluctuations would have the minimal adverse impact in the long-term (MASHOOF; MESHKANI, 2014).¹

Resilient economy shows how an economy would be able to withstand the impact of different shocks, and how it would preserve itself safely against these shocks. Hence, resilient economy is a discourse or economical/managerial model, which not only protects the local economy against the international threats, but also provides the country with strength to stand against the sanctions. In fact, resilient economy is productive, opportunity creator, endogenous, and at the same time exogenous (MOHAMIDI, 2013). Therefore, since the concept of resilient economy has a multifold nature, it could not be defined using a single index. However, it could be measured with some general qualifications such as low unemployment rate, high productivity of labor, lack of bipolarity in society², high social capital, diversification in export earnings, high economic growth rate, etc (GUERRERO et al., 2014).³ Given

¹ Based on Islamic Republic of Iran Parliament Reports, No. 12546 by Tari, F., Seyed Shekari, Kh., Kaviani, Z. (2012), "Resilient Economy 1 and the elements", No. 12546

² Class difference (made by differences in people's income) should not divide people into two groups of rich and poor. Poverty prevents people participation in the public programs. In such situation, disappointed poor class show no resilience against the pressures imposed from the outside.

³ We should differentiate between a resilient economy and a developed economy. It implies that every developed economy cannot be a resilient economy, because a resilient economy, is an economy which not only keeps the characteristics of an efficient economy, but also protects its independence. A resilient economy must try to have an effective role in the global economy, in a way that every sanction against the country imposes some risks to the global economy (TARI et al. 2012)



the mentioned issues, it is explicit that the most important feature of resilient economy, is mobilization of all capabilities of the country. The capabilities in case used in the production, could function as a vaccination against sanctions and lead to sustainable prosperity. The ability to convert existing potentials to actual capabilities will require changes in business and economic structures; among which financial sector (i.e. financial intermediaries) is one of the most important parts.

The latest economic crisis in the world, in 2007, originated from bank credits. Hence, special attention should be paid to this sector. Moreover, the study of the structure of the banking industry in Iran shows major weaknesses in this sector (e.g. see MASHOOF; MESHKANI, 2014). One of the main weaknesses of the Iranian banking system is related to high rate of accrued receivables. Table 1 indicates the receivable ratios in different bank sectors. This ratio, based on the international standards, is around 5%; while this ratio is much higher in Iran.

Table 1: Ratio of non-current receivables to total receivables

	2007	2008	2009	2010	2011	2012	2013 (Nov)
Commercial banks	11.4	16.9	21.5	18.2	20.5	18.4	18.2
Specialized banks	11.4	13.2	13.2	8.6	8.6	8.2	8.9
Public banks	11.4	16.1	17.7	12.9	12	12.5	12.6
Non-public banks	11.3	24.3	18.6	14.6	16.2	16.7	17.8

Source: Central Bank of Iran

One of the other indicators which can show the functional weakness of Iranian banks is the deposit to loans ratio (after subtracting of the legal reserve ratio and banks funds cash). Table 2 shows this ratio for different banks. According to this table, this ratio for most banks is more than the optimum amount of 85%. In other words, Iranian banks grant more than one unit of credit for per unit of deposit which they absorb, which implies the fact that banks are heavily dependent on external, especially governmental, financing for granting the credit.

Table 2: Ratio of loans to deposit (after subtracting the legal reserve ratio and banks funds cash) percentage

	2008	2009	2010	2011	2012	2013 (Nov)
Commercial-public	109.6	102.9	104.5	98.5	81.8	78.5
Specialized	163	162.1	235.7	213.7	228.9	220
Public	118.8	123.9	152.3	141	131.8	127.8
Newly non-public	-	89.6	89.4	90.1	80.8	81
Non-public	95.4	89.7	89.6	92.8	85.5	78.1
Completely non-public	95.4	89.6	89.5	91.2	82.8	79.7
Banking network	113.3	102.5	112.1	109.5	99.8	95.5

Source: Central Bank of Iran



Based the above indices as well as many empirical studies (e.g. see MASHOOF; MESHKANI, 2014), it could be concluded that the banking industry in Iran could not have a favorable performance in increasing of the consistent welfare as well as the improvement of the relative income in society. Nevertheless, due to the deficiencies in the capital market of Iran, the financial intermediaries play a key role in mobilizing of the savings towards the investment uses. In other words, financial intermediaries function as a bridge between supply and demand of the monetary resources. On the other hand, the pressure of the sanctions has raised the importance of financing for individuals and enterprises.

The empirical studies demonstrate the positive impact of microcredit and microfinance systems on the welfare level of society⁴. However, there is a major problem to this issue. Receiving the credits in Iran demands a high transaction cost as well as a guarantee. Even under these conditions a large portion of credits granted by banks remained pending and were never re-paid (Table 1).

All of these factors could confirm the fact that the credit structure in Iran needs general revisions. During this course of change, it must also be considered that no welfare cost should be imposed to any of the related sectors, and income distribution and poverty in the country should be directed towards a desired position.

This paper seeks to firstly identify the challenges of the banking industry. Secondly it reviews some global examples of making adjustments in credit policies for reduction of transaction costs. Finally, a local model for microfinance with regard to the main objectives of this study is presented.

The main contributions of the paper are as follows. The paper proposes a structure for banking industry, based on microfinance systems and entrepreneur network, specifically for countries with structural deficiencies and limited access for international funds, like in Iran as the case study. Moreover, it proposes an

⁴ For example Hossain (1998) found that the income of the households who have taken loans from the Grameen bank in Bangladesh is 43% higher than those who haven't in the rural areas. Credits have also been demonstrated to have a positive influence on food production in Nicaragua (Carter, 1989). In Bolivia, solidarity Bank has been able to have positive effects on developing employment and income (Hulme and Mosley, 1997). Ellis (2002) also found the positive impact of microcredit on employment in the two countries of Peru and Uganda. (See Sengupta, and Aubuchon, 2008 for a review)



enhancement of entrepreneurial networks through changing the structure of Iran banking industry and the communication between bank system and micro-entrepreneurs

2. THE FUNCTIONAL STRUCTURE OF THE BANKING INDUSTRY AND ITS CHALLENGES

Due to the deficiencies in the capital market of Iran, the banking sector plays a key role in mobilizing of the deposits and leading them toward investment uses. Hence, in the structure of the macroeconomic of the society, the function of the banking industry either in gathering of the deposit resources or in granting loans is considered as crucial (AKBARI; DARABI, 2014).

The overall function of the banking system includes three major economy's sections: the role of banks in the monetary market (determination of the profit rate), the role of banks in the capital market, and the role of banks in conduction of the fiscal funds. Inefficiency in any of these three sections could lead the economic structure to a point far away from resilient economy in the times of crisis and sanctions.

In this regard, one of the most important tasks of banks is to collect the excess liquidity in the form of deposits and lead them towards the best investment projects. However, difficult economic conditions and the mal-function of banking industry could exacerbate the poverty and inequality in a society. For more clarification, we shortly examine the banks' functional system in the macro-economic framework, and then we can discuss how the deficiencies in the market have caused inefficient allocation of resources and exacerbation of poverty and inequality in society.

Banks apparently, as economic units, tend to reach to the maximum profit. To fulfill this aim, they seek to receive cheaper deposits and grant them with the highest interest rates to the lowest-risk customers. However, uncertainty and asymmetric information under the aegis of brokerage effects in economy would cause the market to fail in efficient allocation of resource.

At the first stage of lending the loans, the lender has very little information about the borrower. Therefore, banks need to find a mechanism to reveal the hidden information of the borrower to reduce the risk. The second stage is when the lender



doesn't know how the borrower will use the credits in the future; for example whether one will put as much effort as the time the whole capital was their own.

The third stage is the time of capital return. The lender might not be able to assess the return of investment, and in this case, the borrower could be tempted to hide the true rate of investment return. The unequal information level of lender and borrower make all lenders (banks or other informal credit institutions) to search for some ways to overcome the misuses and to stabilize their expected profit. Moreover, the probability of misbehave is higher for commercial banks than local informal institutions (ABEDIFAR, 2013).

Since banks are not usually born inside the local communities, customers are not inherently loyal to them (DE AGHION; MURDOCH, 2011). In addition, since banks are not able to separate the high-risk from low-risk customers, they raise the interest rates to increase their expected profit. In such situation, low-risk customers who are usually more trusty and reliable have to go out of the credit market (STIGLITS; WEISS, 1981) and the loans would mostly be taken by high-risk customers.

The outcome of this adverse selection would be definitely unfair and inefficient (DE AGHION; MURDOCH, 2011). Receiving a rendition money from the potential lenders could be a solution to secure the repayment of the credits (The challenges would be discussed in the next section).

After credit granting, bank managers face some ambiguities which might affect their economic performance. One of the most important ambiguities is moral hazards (ABEDIFAR, 2013). For example banks usually do not have sufficient information about how hard a borrower tries to fulfill an investment projects; hence, they monitor their customers to understand their hidden efforts.

Accordingly, most banks in poor countries face high transaction costs of monitoring a large number of small exchanges which are more costly than monitoring a big exchange with a wealthy client. This issue makes banks more interested to loan to wealthier clients. As mentioned, banks can secure the repayment of a loan by asking for rendition money from a borrower; however poor clients even don't have that money to offer to the banks.



In classic economic systems, credits don't move towards poor people who become poorer every day. The rich receive most of the credits instead (DE AGHION; MURDOCH, 2011). After the implementation of the project, a borrower may "take the money and escape" which happens in case the lender does not completely monitor the profitability of the project. Even sometimes, the lender is not able to force the lender to repay the loan in spite of complete awareness of the profit level.

Therefore, both ambiguities (i.e. the brokerage as well as moral hazards issues), could cause the poverty and inequality to be increased for inefficient allocation of resources. As mentioned earlier, banks, as economic firms, tend to receive lower-cost deposits and grant them with highest rate of interest to less risky customers according to their estimation.

Their interest to reduce risk, on the one hand and asymmetric information in the market, on the other hand, lead social welfare level to be decreased. In deposit section, it is not interesting for investors to put their financial resources in banks since the interest rates have been decreased. Depositors essentially seek to enhance the value of their cash; hence they have to look for other substitute markets.

However, the substitute markets are different for the rich versus the poor depositors. The rich investors usually go towards investing on durable assets (e.g. real estate, currencies, and stock markets) to gain higher revenue, or they even enter the market as informal creditors in the way that they collect the cashes and pay more money comparing to banks interest rates.

On the other hand, poor people, who usually have little information, are not able to select the substitute profitable options, have to deposit in the banks or change their cash into useable commodities. Therefore, the wealth gap between the poor and the rich becomes deeper day by day. The situation is the same in credits received section.

Banks tend to reduce risks of uncertainty in the market, and they seek for customers who are able to pay higher interest rates or can secure the repayment of a loan by a guarantee (JAFARI MOGHADAM et al., 2014). It is obvious that the poor are unable to pay high interest rates and they can't receive credit from formal sources (i.e. banks) for being inherently poor, not having durable assets, and the existence of social rents.



Therefore, they have to look for alternative ways of micro-finance. For example, the credit market is divided into two groups: formal resources and informal illegal sources. Most micro-finance sources for poor people are provided by informal illegal sources with very high interest rates usually up to 100%⁵.

Given the above, the economy must find a solution to overcome this problem. Perhaps the first and closest solution seems giving subsidies to the poor through state banks. However, studies have shown that this approach could not be an optimal solution to eliminate the vicious cycle of poverty⁶.

Hoff and Stiglitz (1998) argue that the long-term injection of financial sources cannot cause the equilibrium interest rates to be decreased in the market either (Case study in India and Thailand⁷). Therefore, how the economy could solve this problem? In better words, how is it possible to grant loans to the poor with regard to the fact that they are not able to pay rendition money? How to reduce the cost of credit transactions? These questions could be responded with microfinance systems

3. THE MICROFINANCE SYSTEMS

Microfinance based systems⁸ have been created for eradication of poverty and income inequality since long ago, and over the past decades, they have developed to

⁵ Why these rates are so high? As mentioned, these informal illegal sources are exclusive and the poor, who don't have a guarantee to get credit from banks, have to get credit from them. The illegal sources also reduce the risks of transaction in this way.

⁶ Braverman and Guasch (1986) argue that first, subsidy banks dominate over informal sources of microfinance (which the poor are dependent on them); second, interest rate cause a mechanism for rationing based on which more efficient projects receive credit. Subsidy system, on the contrary, remove this function of rationing. Hence, less efficient projects can also receive microfinance. Third, the continuous flow of capital transfer by government reduces the incentives for bankers to collect public deposits. Fourth, the state banks are put under some political pressures to grant loans to certain people in certain times. This issue causes the elimination of incentives for creating powerful economic institutions in society.

⁷ It issue increases the illegal creditors in the market. Moreover, competition costs among the illegal creditors makes the interest rates to be increased.

⁸ At the beginning of this section, it is necessary to distinguish between microcredit and microfinance, based on the size and amount. Microfinance generally refers to small amount of money (there is no single definition of microfinance). Microfinance is that credit which is used for decreasing poverty or running a small business (usually in the form of self-employment). In respect to the conditions of granting the credit in microfinance, it is a kind of credit is easily accessible, its conditions are flexible, and the contract can be simply adapted to local



the current position. There are some basic ways for micro-financing. One of the simplest ways of which is to use 'rotating savings and credit associations' (ROSCAs).

Such associations have a simple structure by having a group of individuals who have agreed to give their microcredits to a common fund in periodical courses (e.g. monthly). Within each course, the collected money would be given to one of the members (BOUMAN, 1983).

Such associations seem to have a simple but efficient structure which has made it quite fashionable around the globe. The lifetime of ROSCA is clear with a pre-defined beginning and end. The accounting procedure is also quite transparent and simple. The only challenge for the group would be 'who should receive credit from the fund?'

The answer to this question could be either predetermined or completely random, and it needs to become determined in the beginning of each period, or even by an auction⁹. It is also obvious that in each of the above formats, information asymmetries cause uncertainty about the behavior of the actors in the market and probability of doing wrong by each of the contract parties¹⁰.

Despite such information asymmetries, researchers still believe that ROSCAs increase utility and social welfare¹¹ of societies¹² (HEVENER, 2006). In fact,

situation. Microfinance is beyond micro-credits and includes loans, savings, and microfinance institutes (MIF). The topics that must be considered in microfinance is how these financial sources provided by the above institutes are being used, and how the credits are given to people (especially poor and economically vulnerable people) to create employment for them.

⁹ Read *De Aghion and Murdoch, 2011*, p.117 for a review

¹⁰ For example when the order of taking money from the fund is pre-set, the member who is at the end of the line may tend to violate from the contract for monthly payment of a specific amount of money. Since one person is always the last one, this procedure cause the fragmentation of credit associations, in a way that all members go out of the association (Besley, Coate, and Loury, 1993, pp. 795-797). The other challenge is related to those people who have already received money from the fund, how can one guarantee that they pay back the money up to the last period? Radford (2000) argues about the most common concern in sustainability of such associations that is the people who receive money within early stages of the fund may tend to escape.

¹¹ For more information, read Besley et al. (1993); Besley et al. (1994); Callier (1990); Calomiris and Rajaraman (1998); Krahnhen and Schmidt (1994)



ROSCAs reduce transaction costs in economy since they consist of individuals who have close relationships and are accordingly aware of one another's credit potentials. In addition, they don't have the loaning costs the banks have (e.g. monitoring costs both before and after credit payment, or rendition money).

In sum, lower cost makes these associations more free to grant loans and enhance efficiency accordingly (CHAMI; FISCHER, 1995, p. 362). Other advantages of such associations include accessibility and flexibility. Low transaction costs increase the speed of credit receiving by people and thus improve doing of the transaction (SHANMUGAM, 1989, p. 360-361). Besides, important characteristics such as the amount of loan, the time of repayment, the order of the courses, and the selection of the borrowers, all depend on the users' needs and decisions, and are therefore revisable (HENEVER, 2006).

Besides developing countries, ROSCAs also exist in developed countries and have been quite practical for microfinance of small projects (DEUTSCH; TOMANN, 1995; SCHOLTEN, 2000). The inclusivity of these associations around the world indicates their usefulness and efficiency. However, they have some limitations¹³ which made economy planners to modify the structure.

The new structure was formed in the way that it provided some participants with the possibility of more savings and some others with the possibility of more borrowing. It became also possible to grant credit to more than one person at one time. With this approach, ROCSAs have changed into an 'accumulating saving and credit association (ACSCAs) (DE AGHION; MURDOCH, 2011; BOUMAN, 1996; RADERFORD, 2000).

ACSCAs could be considered as a credit union with an important advantage: the savers no longer need to borrow and the amount of loan could vary according to

¹² For example, Besley et al. (1993) concluded that both forms of ROSCAs, including random and bidding, enhance economic utility comparing to the primary autarky stage. Moreover, Besley et al. (1994) identified that ROSCAs are preferred to the financial markets in case of being accessible for all people.

¹³ The first limitation of these associations is that the size of the fund and the individuals' contribution rate over the life cycle of the community are not flexible. The second problem is that rotating savings and credit associations, use the local financial sources, but they don't have a systematic way to mobilize and transfer those sources outside the particular group (De Aghion and Murdoch, 2011, p.117). Many people use these associations for saving and not a tool for receiving credits.



the individuals' needs¹⁴. These associations collect the capital from those individuals who are able to save to those people who are willing to do investment or use. Even though ROCSAs and ACSCAs have some common characteristics¹⁵, their significant differences cause them to have a separate structure of microfinance¹⁶.

However despite all the above benefits, the above associations have some disadvantage. Adams (1995: 11) states that most of them are fragile and have weak

¹⁴ However, this type of financing has historical roots, as pioneered in the 1850s by Friedrich Raiffeissem who had a similar program in a village in Germany. It was later expanded to Italy, Japan, Korea, Taiwan, Canada, and also America (Adams, 1995)

¹⁵ They are both independent and voluntary associations with specific goals, member, structure, and rules. They also have similar regulatory structure for the poor and the wealthy. As financial institutions, both are independent without any external monitoring on them. Therefore they are independent from legal and financial structure of their countries. In fact, the policy of no external intervention on ROSCA and ASCRA let them expand faster and more flexible. Some people criticize ROSCA and ASCRA models for their limited lifetime comparing to other permanent credit unions, whereas these unions tend to become formal after a while, they have higher administrative expenses and they are more exposed to external risks. In addition, the capability of replacing risky members with new members is low with these permanent credit unions. On the contrary, the flexibility as well as instability of ROSCAs and ASCRAs let them make new strategies in accordance with contingencies.

¹⁶ Firstly, ROSCAs members do not have to wait for their turn for receiving a loan, and there also no need to increase the interest rate to take a loan. Secondly, all the participants in the union – either the savors or borrowers- are considered as stakeholders, and the key decisions would be made based on their votes. Thirdly, the same as ROSCA participants, they also have some common links and interests, which enables them to ensure the contracts by some punishment and social forces (De Aghion and Murdoch, 2011: p. 120). In ROSCAs, financial sources are rotating mode as soon as they are formed which makes their dissolution completely automatic. The lifetime of such associations have been rarely more than one year and they lack a legally registered structure. Furthermore, no protection would be done for available financial sources.

On the contrary, in ACSCAs, financial sources would be accumulated and distributed based on member's viewpoints. Sometimes they never get closed and they also have a recorded and documented legal structure. The legal sources need protection and the group assets would be put in the banks. In ROSCAs, a single loan would be given to each member (unless members have more than one share). Granting a loan would be done automatically and under specific regulations. Therefore necessity would not change the priority of giving a loan. The amount of credit received is based on the degree of one's deposit. The loan repayment period is quite short such that inflation does not have an impact on it. On the contrary, in ASCRA, members are able to receive multiple loans, and decision making would be made by the members, thus emergency can change the priority of granting the loans. The interaction between credit and savings are not balance, and a big loan may be given to someone with little savings. The repayment period might be short or long and it would go under inflation effect.



capital structure. They have limitations for access to external sources to provide cash, and thus under the effect of inflation since they can't share the risks.

These associations also face some challenges during their growth: Increasingly, they lose their information advantages, are compelled to rely on first salaried managers instead of volunteer ones and second sanctions and formal punishments for guaranteeing and executing their contracts.

The issues related to employees and brokers, transaction expenses and precautionary rules, are increased in line with credit unions expansion (DE AGHION; MURDOCH, 2011, p. 128). But, what does modern microfinance add to this structure? And how is it supposed to minimize structural weaknesses? Below, we will explain how microfinance might be used as an instrument to sharing risks and mutual subsidizing of borrowers to each other to improve its efficiency, but also could increase the group accessibility to external financial resources and re-establishing the foundations of a professional management structure.

Modern financing systems are organized to remove the weaknesses of the traditional financing systems. Integrating the structure toward a modern system, i.e. group lending, laid the foundations for microfinance. The above mentioned model refers to a structure in which individuals can get together and form groups taking out loans from a lender. The most important feature of this method is that clients are capable of taking out a loan individually.

However, if one member faces serious problems in loan repayment, all members be jointly liable for a loan. The best example, in this case, is Grameen Bank that has played a fundamental role in the development of Bangladesh. With all the merits of group lending, here too, there are information asymmetry issues.

For example, some of the ambiguous questions here include: Is it possible that the group members conspire collectively with the lenders not to repay the loan? Is there an advantage in not including the borrower group under punishment and social sanctions? What would happen if the potential borrower population is dispersed and therefore, local information is unavailable and accessing to it is expensive?

In sum, experimental studies indicate that group lending system causes the credit rationing problems resulting from adverse selection. As mentioned above, adverse selection occurs when lenders are not able to differentiate high-risk



borrowers from low-risk ones. However, if conditions are satisfied in a way that lenders could classify borrowers according to their risks, and consider different interest rates for each class, adverse selection would be avoided.

Studies indicate that group lending with joint liability, can minimize this inefficiency (GHATAK, 1999; LAFFONT; N'GUESSAN, 2000). The fact that groups are encouraged to self-form can overcome the adverse selection problem through group lending, in a way that potential borrowers can use their information for finding the best partners. Since there is a joint liability for loans, forming groups with low-risk members is better than with high-risk ones. Therefore, low risk customers have the right to select and join other low risk customers.

High risk borrowers, on the other hand, have no choice but to form groups with other high risk customers. Considering the fact that investment projects run by high risk borrowers fail more often than those run by low risk borrowers, high risk borrowers usually have to repay the overdue repayments of their peers (as they are using group lending).

This way, other low risk borrowers are obligated to bear defaulting on the loans of high-risk borrowers. This takes the risk from banks to high risk borrowers and low risk borrowers bear lower interest rates. In addition, banks are currently safer with regard to defaulting on their investments, therefore they can decrease average interest rates for both high and low risk borrowers and still remain profitable. Low interest rates in markets can encourage low risk borrowers and stop them from leaving the market (DE AGHION; MURDOCH, 2011, p. 152)¹⁷.

Another serious problem in banking industry is moral hazards; when banks issue credits, as the result of difficulty in monitoring the performance of borrowers, might face moral hazards. Group lending with joint liability can minimize this problem

¹⁷ Note that in this method, borrowers form groups with other borrowers and have enough information about other members. Therefore, the adverse selection issue is solved. But, what if this assumption is rejected; i.e., we assume that the conditions in a society is such that individuals have not enough information about other members of the society, can we claim that group lending might improve the welfare of the economy? Aghion et al. (2000) introduce the concept of limited liability and argue that in this case, the conditions of both high and low risk borrowers are better than in individual lending.



to a large extent. Stiglitz (1990) believes that group lending alleviates moral hazard through encouraging borrowers.

Laffont and Ray (2003) argue that group members are influenced by the efforts put by the other members. That is to say that they would find approaches for punishing individuals who had put less effort and have high risk potentials for the group. Meanwhile, there is another concern; borrowers might be tempted to take the revenues and flee away. Studies show that in these conditions also group lending contracts functions better than individual ones.¹⁸

The nature of group lending is delegating the liability from the bank personnel to borrowers. Traditionally, bank lending staff choose customers, control their performance, and guarantee contract enforcement. In group lending, borrowers too share a part of this burden. The privilege for customers is achieving loans with reasonable and right prices.

However, in adverse selection, most of the customers do not aim at establishing a bank just to take loans¹⁹. Another issue is group meetings which is the core to group lending model. Here, combined approaches are taken. A criticism is that attending the group meetings and monitoring group members might be expensive (MURDOCH; DE AGHION, 2011, p. 180).

Yet another issue is related to the fact that group lending functions through delegating the liability from the bank to customers. This liability might bear hidden costs. In addition, group lending can bring about additional risks for risk averse borrowers; that is, here borrowers face not only the risk of capital loss, but also their partners' capital loss.

However, if monitoring the contracts are free, borrowers can take into the account the moral hazards and alleviate them. But the fact is that for people who are too close to each other, monitoring is expensive, therefore there is always a way for incurring moral hazards. Accordingly, Madajewicz (2003) argues that the advantages of group lending are moderated with its costs.

¹⁸ For further information see Besley et al. (1994) De Aghion (1999); Laffont and Rey (2003); Rai and Sjöström. (2004).

¹⁹ For example regarding a small credit plan in Bolivia, Ladman and Afcha (1990) conclude that finding potential borrowers to volunteer for leading their own group is difficult.



These costs occur when borrowers are risk averse and monitoring is expensive. Additionally, as financial indicators of capital loss increase with the loan amount, monitoring costs also increase with the loan amount. There is another problem in this structure; borrowers might conspire against banks and reduce the banks' capabilities in monitoring social collateral.

Strong social links act as a double-edged sword and, in some cases, not only can increase loan repayment amounts, but also raise the possibility of collusion²⁰. Nevertheless, Rai and Sjöström (2004) believe that micro-lenders can make subtle changes in group lending, choose better methods than group lending, moderate many current problems and make the system more efficient.

One of these methods is progressive lending in which bigger loans are promised to individuals and groups with good performances²¹. This lending type, reduces the administrative costs per currency unit and allows lenders to test first-time borrowers and detect the worst prospects before increasing the loan size (GHOSH; RAY, 1997).

According to previous studies, lenders play a third role which is crucial. Micro-lenders can get more repayments through making bigger loans to borrowers who pay their debts. This lending system increases the opportunity costs for non-payment and consequently reduces the possibility of non-payment in future (DE AGHION; MURDOCH, 2011, p. 209).

However, microfinance institutions in the modern world use complementary approaches to repayment guarantee. For example, one of the main assumptions in microfinance is that most of the client are poor and have no property to guarantee their loans. Therefore, they guarantee repayment through non-traditional methods

²⁰ Laffont and Rey (2003) argue that group lending functions better than individual lending only if borrowers do not conspire.

²¹ Indeed, the fact that an individual knows he can take loans from an institution only once, raises the possibility of overdue loan repayment. Experimental results show that most borrowers tend to take more than one loan from a bank (Pulley, 1989). The same reason, will increase the willingness of individual clients to repay faster and in due time.



such as group lending. However, a number of microfinance institutions (e.g. BRI, Indonesia) ask borrowers for guarantees²².

It might be the case that the market value of the above mentioned assets is not equal to the whole loan value, but the subjective value of the asset for the poor borrower is such that it lowers their tendency to non-repayment²³. Another approach is to design methods for developing financial assets and grant loans to borrowers based on the created assets. This way, banks can take out from savings account to lessen the possibility of full payment, and take advantage of the acquired information about the repayment period for checking the conditions of the applicants.

For example, lenders observe the capability of lenders for making deposits in a particular period and grant loans to the applicants based on their observations²⁴. Bangladesh Collaboration Association adopted another method. They generalized loan repayments instead of offering group loans.

In other words, loans are offered to individual applicants, but group meetings are still held and repayments are made collectively²⁵. Therefore, even when there is no group lending, still mechanisms for acquiring information from clients could be designed. Other alternatives include: visiting the house or office address of the applicant (ZEITINGER, 1996) (by a Russian institution); Providing a guarantor and confirmation of Rural Credit Committee (by an Albanian institution); Churchill believes

²² Experimental studies show that most people have acceptable assets to be used as a guarantor.

²³ Read more in Ray (1999) and Benjamin and Lendgerwood (1999)

²⁴ Observations include the capability of managing credits and regular deposit-making functions. Experimental studies show that the above features correlate highly with the characteristics of a committed borrower. For example, Grameen Bank follows a similar policy. To read more, see de Aghion and Murdoch (2011, p. 225).

²⁵ This scheme has significant advantages; first, lenders can use social label avoidance as a motivating factor for individual borrowers for loan repayment without providing a guarantor (Rahman, 1999). Meanwhile, public repayments remove the possibility of such disrespects. Second, a part of transactional expenses by the bank staff will be reduced through holding meetings with a group of borrowers in particular times and places. Third, groups are useful resources for acquiring some information about borrowers engaged in fraudulent behaviors and put proper pressures on them. Fourth, group meetings can facilitate training and learning. Fifth, the welfare of clients will increase through this methods. And finally, maintaining transactions in public repayments can improve internal monitoring and minimizing fraud (de Aghion and Murdoch, 2011, p. 228).



that troubled families are mostly problematic borrowers, therefore, they study stable family life as a signal²⁶ (CHURCHILL, 1999, p. 56).

4. FINDINGS AND CONCLUSION

To propose a productive microfinance framework, reviewing the microfinance systems used in Iran might be helpful. It is believed that financial experiences in Iran could be classified as follows: first, using lessons from the conventional banking systems for providing financial services to target groups; Interest Free Funds are among the most important experiences included in this group²⁷.

The second class is microfinance experiences in the form of cooperatives as member-oriented organizations²⁸; and the third class is related to new microfinance approaches. On this basis, during last years, three key plans are administered in Iran: 1) The plan for supporting rural microfinance services; this plan was brilliant because of its use of group lending models, and the repayment rates of credits paid without asking for collateral; 2) Social Mobilization Plan and granting micro credits; using chain guarantors, granting uncollateralized loans, using local information, take advantage of the linkage between local organizations and other local institutions and chose to organize collaborative groups. But its' activity criteria was little and relied upon particular organizations for financing; 3) Micro credit funds for rural women in which methods such as group lending, peer pressure, dynamic incentives and social punishment are used.

While each of these plans have relative positive impacts, there are deficiencies and weaknesses including: in spite of the fact that one of the most important reasons of the income difference and uneven distribution of wealth within the society is the inefficiency of saving structure, in the most of the above models there is no mention of savings.

Additionally, with regard to the target groups in the above plans, the endeavors made are fruitless in comparison to market scope. It should be mentioned that most of the plans are classified as small ones. In addition, the overall result of

²⁶ For further information about other mechanisms see Churchill (1999).

²⁷ For further information see Mohajerani et al., (2002).

²⁸ For further information see Najafi (2006).



the plans conducted in the state indicates that group approaches bring about better results in comparison to individual methods (EBADI et al., 2008)²⁹.

Nevertheless, to achieve resilient economy, no integrative and efficient microfinance system has been put to practice that can be efficient in country level and be capable to eradicate poverty and be resistant to sanctions and external shocks. Therefore, the revision of the banking industry structure seems to be necessary.

As mentioned before, the emphasis on micro credit and microfinance as two distinct concepts lead the planned systems to focus less on saving aspects and its management. On the other hand, the history of credit systems in Iran and around the globe indicates weaknesses. Moreover a successful system in one country does not necessarily guarantee healing the weaknesses of other countries.

Therefore, to reach a resilient economy we need to develop a microfinance system through revising the financial intermediaries. Further, the researchers will try to propose a productive and inclusive financing framework.

Preparing a productive and inclusive financing framework requires a few key factors: first, changing the structure of banking industry³⁰ in Iran; second, communication between the banking system and micro-entrepreneurs; and third, communication between consuler entrepreneurs and micro-entrepreneurs.

In the traditional financing systems, there is an interaction between micro-borrowers and banks through which clients obtain credits using their rents and the collaterals they can provide to banks. As shown in Figure 1, in these structures banks as financial enterprises, tend to receive micro-deposits with lowest prices and offer it to their best clients for maximum profit.

²⁹ For further detail about these plans see Aqababaie (2007). To read about the weaknesses and strengths of each plan see Ebadi et al. (2008).

³⁰ In the first step, we need to take into the account that banking knowledge includes various scientific layers as for the nature of modern banking industry. The first layer is macro economy. On the other hand, since banks are economic enterprises, entrepreneurship, human resources, modern banking approaches, making use of information technologies could be taken as the second layer for banking knowledge. Psychology and sociology include the third modern banking knowledge layer. To attain an advanced banking system, banks need to have full constant communication with the first, second and the third layer.



As noted in section 2, as the result of asymmetric information, there are deficiencies in all sectors which aggravates poverty and raises the possibility of vulnerability of economy to shocks. As explained before, in the present structure, the market fails to allocated resources optimally and is not able to distribute wealth in the society properly. Therefore, modern financial systems tried to find remedies for these deficiencies through removing collaterals and guarantors from the system to help the poor in accessing credits.

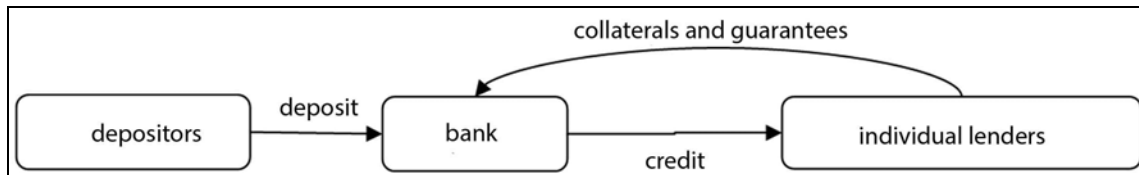


Figure 1: the functional structure of traditional banking industry

As noted earlier, standard financing systems tried to eradicate poverty and improve welfare in the society through removing physical guarantees and reducing the possibility of defaulting on credits. The standard structure of a micro-finance is summarized in Figure 2.

In this structure, less attention is paid to collecting deposits and more focus is put on granting credits. However, a few institutions such as Grameen Bank in Bangladesh consider small mandatory deposits for individuals who apply for loans. Grameen opens savings accounts for its clients, these accounts, however, are shackled by the laws to the extent that they could be barely considered as saving accounts³¹.

These plans mostly were mandatory saving accounts³². However, as mentioned earlier, in the financing section, individuals organize correlated groups in which monitoring and social punishment systems substitute for guarantees related to loans. Banks grant micro credits based on monitoring and social punishment and the group, in return, is liable for repaying credits to the banks.

In this case, inter-group relations are especially important; leading the relations to the right direction could result in defaulting on bank credits and alleviating

³¹ For further information see de Aghion and Murdoch, (2011, p. 252).

³² The importance of saving aspect led Grameen make some modifications in the rules and regulations of Grameen 2 and collect cheap savings to three or four-fold the credits granted to their clients. This has resulted in decreasing Grameen's dependence on external resources.



poverty in society. As noted earlier, while the current structure is capable of alleviating moral hazards and averse selections in the market, it suffers from deficiencies. In addition, it needs to be localized since according to experimental evidences, the same structure which is administered by Grameen has failed in some countries (WOOLCOCK, 1999). Scholars believe that factors such as dependence to public financial resources (HOLLIS; SWEETMAN, 1998), preferential and controlled interest rates (HELMS, 2006), not paying attention to education aspects to be used as productive (SNOW; BUSS, 2001; BHATT et al. 2001), not considering institutional, social and cultural conditions of the target group (GOETZ et al. 1996; WOOLCOCK, 1999) are regarded as the main reason for unsuccessful microfinance plans (MOTAVASSELI; AQABABAIE, 2008).

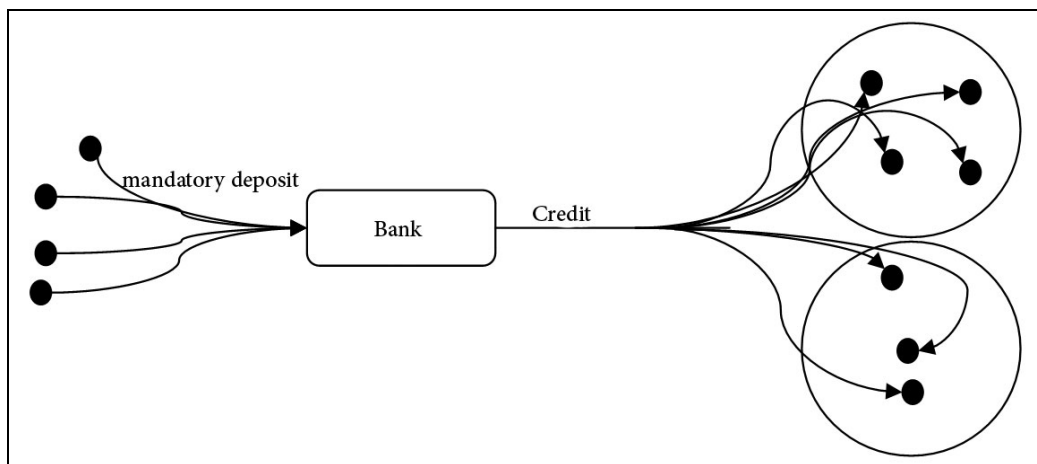


Figure 2: Functional structure of banking industry in traditional microfinance system

The structure introduced so far is almost similar to Grameen Bank of Bangladesh which focuses only on inter-group interactions. However, we need to note that public businesses are based upon personal knowledge and have deficiencies which will be explained later in the paper. Microfinance systems like Figure 2 are able to compensate for one of people’s problems, i.e. microfinance.

But, on what people expend their credits, if they access to it? Does covering their living expenses mean improving their welfare? Can one guarantee that they will choose a proper business? The answer, reasonably, is no. Unfortunately most of micro-credit receivers lack enough economic knowledge and they are not capable of using the credits for developing a long term business.

Therefore, the microfinance-based market system will fail. The problem needs to be solved. But if we assume that micro-borrowers are capable of developing businesses, can they sell their products in the market?

Clearly, micro-producers would face problems regarding marketing their products and services. Therefore, even with a successful production, they will not be able to sell their products as the result of the gap in the marketing system; poverty circle would appear again and the microfinance-based system might fail again.

On the other hand, the system has no outcome for people who tend to obtain a constant risk-free income from their currency excess. In other words, traditional systems are not capable of satisfying the needs of depositors; and as the result of industry structure, they cannot lead the outcome from currency use to the macro-economy target markets.

Therefore, the saving problem still exists for poor families, to the extent that scholars such as Robinson (2001, p. 21) believe that deposit services are more valuable for poor families than credit granting services³³. Studies have revealed that poor families take avid interest in saving (BOSE, 1997). In other words, they save to leave up their minimum living conditions in the long run. In addition, most families are not interested in spending all their credits on high risk personal businesses and need a risk free constant profit (DE AGHION; MURDOCH, 2011, p. 267).

However, in many societies including Iran, low income households have not access to secure institutions for saving money. Institutions like banks, in the long term, make those families poorer rather than raising their incomes. For example, in the economy of Iran, the real interest rates are negative as the result of high concentration in deposit attraction market, severe financial suppression in this sector as well as high inflation rate.

Therefore, in this failed financial structure, depositors sustain losses rather than making profits. In other words, instead of helping the poor to root out poverty,

³³ There are opposing views about savings; one view assumes that low income families are not capable of saving and show slight tendency toward it. In other words, in this level living requirements for the individual is more important than saving ones. Therefore, according to this view, granting credits is more valuable than offering saving services.



banks punish the poor and get them caught in poverty more than before (read more about this issue in section 2).

All these cases prove that focusing on savings is highly important, while it is not effective in distributing income as financing is. Therefore, according to the above, the banking industry structure needs to be adjusted and be more flexible. Figure 3 shows the researchers' proposed model for a monetary system. In the proposed model, banks can use the proposed system beside their conventional approaches as the main creditors and the main attractors of excess currency in the nation. The current system has other advantages in addition to focusing on financing which include:

- 1- The system puts prime focus upon making deposits.
- 2- It focuses on using loans and repaying it.
- 3- Rising employment is another important objective of the system.

As mentioned earlier, the function and efficiency of banking industry reveals that this industry needs to be conscious, in other words, with regard to collecting public deposits and allocates a substantial portion of the welfare of the applicant families to itself, the present industry cannot help the welfare of the society, to the extent that regarding the high concentration of risk free deposits and attracting them, it aggravates poverty through paying lower interest rates than inflation rate. From the institutional perspective, collecting deposits is easier than granting credits. More importantly, here all the risk is posed upon depositors and the information asymmetries faced by bankers during making loan, are removed.

One of the limitations of banks is that collecting small deposits, beside other legal expenses, bears more transactional costs per currency unit in comparison to large deposits. Therefore, banks tend to remove poor depositors from their systems (DE AGHION; MURDOCH, 2011, p. 272).

For these conditions, more flexible deposit attraction and alleviating financial suppression is proposed; banks need to be able to compete with each other to attract more deposits to level up the interest rates in national economy. Reasonably, increasing the interest rates can improve the conditions of micro-depositors or at least prevent any financial loss in inflation conditions. In addition, banks can use the



acquired information from depositors as a signal for granting credits to them. This way, banks will be able to reduce their dependence on external resources, they can also act as a lever for controlling inflation and managing currency in due conditions.

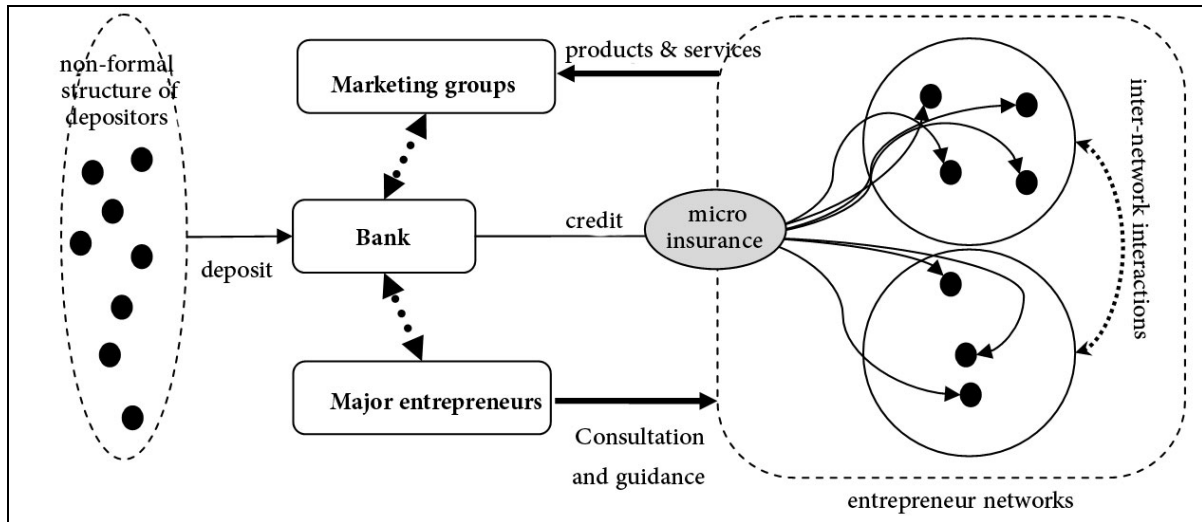


Figure 3: Proposed structure for banking industry based on microfinance systems and entrepreneur networks

On the other hand, financing sectors requires extensive modifications. Most of the micro borrowers will not be able to use the received credit resources efficiently as the result of lack of knowledge, and therefore they will not only be incapable to get rid of poverty, but also be indebted after receiving the credit. Unable to use their credits inefficiently, they will mostly spend their credits on living expenses.

Therefore, the current system needs external orientation to lead micro borrowers toward small businesses. The proposed structure is shaped based on entrepreneurial networks and consulting approaches. According to the above structure, as in group lending models, individuals are positioned in correlated groups with definite interactions. These structures will remain stable as there are face-to-face relations and trust links among the members (PRINZ, 2002).

In this structure, in addition to the correlated inter-member interactions, there are series of interactions between each correlated group with large-scale entrepreneurs based on purposeful structures. We call this “inter-network interactions”.

Experimental studies show that entrepreneurial networks play a crucial role in innovative firms (ZALI et al., 2011) the quality and quantity of occupational and

professional outcomes of entrepreneurs, managers and experts (DOUGHERTY, 2001; JAFARI MOGHADAM et al., 2014) to the extent that we can claim that the more an individual obtains social and interactional skills, the more success he achieves (BARON; MARKAM, 2003, p. 13). These studies show that there is a positive relation between networking and business success (WOLFF; MUCK, 2009). In addition, entrepreneurs need to link their organizations with the networks (RAUCH; FRESE, 2000; SALAMZADEH; KAWAMORITA KESIM, 2015).

Improving the network-building skills among entrepreneurs will improve the legitimacy of their businesses and therefore result in a more successful behavior in the field of entrepreneurship (BATJARGAL, 2010, p. 12, as cited in PESQUEUX, 2013). To guarantee the entrepreneur and small business behaviors, powerful network links are needed to be established between them.

Therefore, we need to establish entrepreneurial network behaviors in the proposed system (JAFARI MOGHADAM; SALAMZADEH, 2016). Based on this network a multi-dimensional network is created which includes banks, depositors, rural home businesses, large-scale entrepreneurs, and consulting institutions. This network tracks the process of collecting micro-deposits, their proper application through consulting, and marketing and cooperating with large-scale experienced entrepreneurs (MARKOVIC; SALAMZADEH, 2012).

In the implementation process, mutual interaction between them will help the success of each party and the performance of the whole network. Indeed, entrepreneurial network is a monetary system. This system needs to be developed by an institution based on a regular processes and well-constructed economical contracts. In the above system, each institution plays a role:

- Large-scale entrepreneurs can play role in marketing and buying from small businesses; they can even supply them with primary requirements. This way, large-scale entrepreneurs are capable of minimizing the expenses of small business interactions.
- Institutions that provide consultation on training, guiding, and providing information about markets and their characteristics as well as their future, can play a role for small and rural businesses and guide them through spending bank credits based on their own experiences.



- Network manager can be chosen from the consulting institution or large-scale entrepreneurs or even from banks (the manager can also be selected from other institutions than these three institutions). The manager is responsible for monitoring and enforcing the designed strategic prospect.

This system helps active groups in the system, such as traditional microfinance models, do not get separated like islands and leads their activities through a particular direction. In addition, the numerous problems resulting from moral hazards and adverse selection could be overcome through developing inter-bank information interactions, marketing groups and large-scale entrepreneurs. The information acquired by marketing groups and large-scale entrepreneurs from individual borrowers can be used as a signal to be indicative of the possibility of defaulting on credit by borrowers which helps banks reduce credit risks.

Other innovations could be designed in the financing context to minimize risks. Experimental studies show that low income individuals are more vulnerable to economic fluctuations, will fall into severe depression and will be unable to repay their debts, if unforeseen events unfold. Therefore, as systems who aim at improving the conditions of the low income, microfinance-based systems need to minimize the vulnerability of the poor to economic shocks.

One of the most influential solutions which is used in modern finance systems as a solution for mitigating risks, is micro-insurance³⁴. Through arranging insurance systems, new business activities could be guaranteed and the risks of non-repayment resulting from unpredictable events could be minimized. Therefore, designing a system for offering micro-insurances could be used to guarantee and reduce the possibility of defaulting on the received credit by small businesses.

³⁴ Micro-insurance is the process of protecting low-income population against possible risks for regular premium payments proportionate to the likelihood and cost of the risk involved (CHURCHILL, 2006).

Institutions such as Grameen Bank and Self Employed Women's Association have provided insurance services for a long time. Today, organizations such as International Labor Organization and the African Micro-credit have taken this responsibility. Among the most important insurances include health insurance, life insurance, rainfall insurance etc. For further information see Brown and Churchill (1999, p. 2000) and Murdoch (2002).



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