

Theory of Microcrediting in Transitional Economies

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Abstract

In the early 1970s, Bangladeshi banker and economist Dr. Muhammad Yunus designed microcrediting – a socially sensitive and rightful system of fighting poverty and high unemployment rates. His Grameen Bank for the poorest of the poor in Bangladesh has so far lifted more than 3.2 million of individuals and their families out of poverty. After initial successes at home, microcredit was put into service for reducing unemployment and alleviating poverty in numerous countries throughout the world.

This paper explores specific problems that a typical transitional country (like Croatia), is likely to face, with unemployment – the source of a vast number of related problems in a transitional society – as the focal point. The authors have attempted to incorporate particularities of a transitional economy into the original microcrediting principles. As a solution to problems afflicting the domestic economy, the authors define a global microcrediting system framework on the macroeconomic level, assuming at the same time that microcrediting of socially vulnerable groups can resolve many problems of modern transitional societies. Arising from the authors' primary intention – to consider in depth the functionality of microcrediting in general transition conditions – a transitional microcrediting system has been defined in general terms, and a corresponding financial and mathematical model developed.

Keywords: unemployment, microcredit, lending group, self-employment

1. Introduction

Transition as a political, economical and sociological concept represents the state of an entire nation; transitional processes go back deeply into the very pores of overall human actions in a certain country. While living in the country which is currently enduring a transitional period, people learn about new values, they accept new standards of living and new behavioral patterns. We could say that transition affects an individual like no other political, economical or social force. Specifically, transitional economy bridges the gap between two other extreme phases of the nation's development:

1. the phase of state-planned economy, often accompanied by a number of negative trends, in various areas of life, and
2. the phase of free market economy, which is distinctive for the highly developed societies of the west.

Transformation of economical systems is a complex social phenomenon which pushes nations through a vast number of processes while the country is trying to improve the lives of its inhabitants. Nations and countries are being changed through those processes, ultimately reaching the level of overall prosperity. History has written that countries of the world have endured periods of transition in different periods of world's history. For instance, colonialism has influenced many countries, shifting them from the medieval darkness to a phase of accelerated transition. These countries have built their further development and prosperity on the advantages gained in periods of colonial transition. Other major transitional

period in world's history has been triggered by industrialization. Some countries have seized numerous industrial opportunities and dived into new transition.

Rapid transitional movements all over the globe are being motivated by the overall *globalization processes* of today. Like stated earlier in the text, previous transition periods have been boosted by *colonial conquests*, or *industrial revolutions*. The difference between old transitional processes and this new one, started by the globalization, lies in one pure fact: transitional countries of today are handling much more complex processes of adjustment. It is difficult to be in transition today; it's too dynamic and too complicated.

Republic of Croatia is currently in the transitional momentum, together with other countries – members of transitional circle in Central and Southeastern Europe. These countries are being constantly faced with complex processes of wide restructuring and adjustment of old economies, societies and organizations. The aim of transformations is to bring national identities closer to the more successful models of human existence, which have prospered in western countries, unhindered, for decades and centuries. Transitional path of Croatia in last eighteen years has been marked by processes of modernization, consolidation, reorganization, reengineering and many others.

Finally, every process listed above is just a small part of a greater, meta-process, called *globalization*, which motivates the countries of modern world to recognize and improve their weaknesses, quickly and efficiently. Also, globalization encourages particularities and strategic advantages of transitional countries, in order for them to become global comparative advantages of those countries. *Globalization's motivation power* determines the world like it is today.

Global integration tendency, which generates modern transitional transformation, have caused a vast number of major problems. These problems have emerged suddenly, but have to be resolved quickly. It is happening because transitional countries undergo some major transformations in very brief periods, while western economies thrived for decades, having enough time for dealing with emerging problems. In those conditions, specific transition problems are being extremely intensified.

This paper explores *unemployment*, which is a source for many other transitional problems. When dealing with unemployment, microcrediting framework will be implemented on a macroeconomic level, assuming that many other linked problems will be resolved through the implementation of microcrediting system.

2. General microcrediting principles

General microcrediting system has been developed by Bangladeshi banker dr. Muhammad Yunus. He described microcrediting as socially sensitive and just system, created for one and only purpose: alleviating poverty in the world. Yunus's concepts lie in assumption that every man wishes to take control of his life, but he lacks funds to do so [18]. When starting his work in Bangladesh, Yunus has become aware of certain shocking facts. More than 90 % of his countrymen were poor, and they were in no condition to earn decent wages. Most of the people were trapped in a form of modern slavery: usurers have been borrowing money weighted with heavy and high interest rates, and poor people had no other options but to take inequitable credits in order to ensure their very existence [10].

For his efforts in alleviating poverty in the world, Muhammad Yunus received Nobel Peace Prize in 2006. Today, modified systems of microcrediting are being implemented throughout the world, and microcrediting has become most efficient way of dealing with unemployment and poverty. Yunus has established Grameen bank for helping the poorest of the poor, which sells low interest rate credits to those who need it most.

When referring to the *microcredit* term, it must be considered through next dimensions, also defined by Yunus [19]:

- generally, credit is a basic human right.
- The purpose of microcredit is to help poor families in fighting poverty.

- Grameen microcredit is not based on firmly defined contracts, but basically on trust between microcredit users.
- Microcredit should ensure self-employment and raise standards of living.
- Microcrediting does not use principles and practices of classical business banking; it lies on the new ideology of solidary lending groups.
- Microcredit banks should go to potential clients and help them – clients should not ask for help, it belongs to them automatically.
- In order to receive a loan, borrower has to join a group of borrowers, which leads to formation of solidary lending groups.
- Loans are issued in continuous sequence, exactly when borrower needs it. Borrower can receive a new loan only if he has paid out the last one.
- All payments are delivered in exact time intervals (e.g. once a week).
- Loan borrowers must participate in obligatory common savings programs.
- Microcredits are issued primarily through nonprofit organizations or through institutions owned by borrowers. In specific situations, profit organization can issue a microcredit as well.
- Great attention is devoted to the creation of social capital and human relationships. Borrowers are educated in order to successfully run their businesses supported by modern technologies.

Some highly developed countries, such as United States of America [15], are using microcrediting principles as well. Microcrediting models used in these countries are somewhat different from the original microcrediting system; modifications were made in order to match particularities of developed societies.

3. Hypothesis and problem definition

Primary assumption of this paper is that original microcrediting principles, developed by Yunus, can be implemented in transitional transformation. After considering transition in its true nature, and after it is recognized as inevitable social process, it is important to stress that transition is being formed on the levels of countries, nations, cultures, organizations, values and people. In each of these transitional dimensions, there are many emerging problems.

When considering this vast number of complex transitional problems, we can calmly state that they appear suddenly, almost revolutionary. Upon their emergence, population is faced with nationwide changes, and it is easy to conclude that the adaptation itself will be even harder if strong national awareness of the problems is simply missing. With difficulties and seriousness of necessary technical changes (like unpopular law adoptions), transitional problems can be intensified by revolutionary tendencies of broad masses of population.

In Croatia, as well as in other modern transitional countries, problems can be identified in a very similar pattern. After democratic changes, which have enabled the beginning of transitional transformation, industrial production has fallen into a state of stagnation, even recession. Number of investments in new companies and products has suddenly dropped to a very low rate. Foreign investors become much more prudent when investing in transitional country – investments are riskier and not completely secured. Additional negative trends, like undemocratic elections, political instability, militaristic intentions of groups of population, push the country towards international isolation.

When transitional country's economy begins to collapse, *unemployment* emerges and it becomes the root of massive discontent. Majority of other transitional problems have their source in the unemployment itself. From a general economical view, unemployment leads to economical crisis: good employees are no longer being used in the process of creating new values, and they become burden on the shoulders of state. When high inflation rates are reached, and when those rates begin to influence the cost of basic human needs, unemployment reaches its final stage. It allows massive discontent to protest.

There are five basic groups of citizens affected by the problems listed above: unemployed persons, retired persons, young persons, single parents and workers in the grey economy. These target groups can all benefit from microcrediting system, which will allow them to create their own small businesses, in situations when nobody else would hire them for work. Each of these groups is shortly described below.

3.1. Unemployed persons

Unemployed people are in the focus of our consideration, and solution presented further in text will be oriented primarily towards the unemployed. According to the data published by Croatian Central Bureau of Statistics, there were 291 616 unemployed persons in the 2006 [5]. Most of them were women – 175 097 persons. When employed, this labor force could accelerate the growth of economical activity. Another devastating data refers to 11 808 unemployed persons with certain academic degree, still waiting for their knowledge to be validated.

3.2. Retired persons

Croatian Retirement Insurance Institute has registered 1 587 050 policy holders [14], while there is 1 135 526 persons actively using their insurance. With so many retired persons, Croatia is one of the leading countries in Europe when considering number of retired persons compared to total population. Pensions are very small, and growing inflation has the greatest impact on retired persons. Because of extremely difficult living conditions, many retired persons decide to work again, mostly considering self-employment. This endangered group of people needs help in realizing employment after retiring, in order to live through their third age with dignity.

3.3. Young persons

Young people have many problems while attempting to enter labor market, especially if they don't have work experience. In 2005 there were 618 800 young persons in Croatia (twenty to twenty-nine years old), according to the Central Bureau of Statistics [5]. Young persons have certain advantages, like willingness to work and learn, but they often have problem finding a job which suits their ambitions, capabilities, and of course, their knowledge. Many of them decide to enter entrepreneurialism. A greater problem for transitional country emerges when young, educated and creative persons decide to leave their country, to seek better job opportunities abroad. Multinational companies have mechanisms of recognizing and rewarding young potential experts, so when they leave their homeland, the often don't return.

3.4. Single parents

Single parents are often unemployed, while faced with raising children on their own. In 2003 there were 190 000 single parents, most of them being single mothers [12]. When faced with great financial problems, self-employment can be efficient solution for these persons.

3.5. Workers in the grey economy

Problem of the grey economy is always present in a transitional society, as well as in developed ones. We should assume that every worker working in the grey economy wants a regular employment, and they should be helped in obtaining it. Workers are often forced to work in grey economy, having trouble finding a regular job. Regarding Croatia, some data indicate that 16 to 30 percent of entire labor force is employed in the grey economy. Many of these workers would probably embrace an opportunity to work honestly, so microcrediting should give them that special opportunity.

3.6. Projection of total number of microcrediting users in Croatia

After defining all relevant target groups important for our work, we can begin structuring a solution. We have made a real projection of the number of potential microcrediting users in Croatia, based on previously stated statistical data. The projection includes:

- total number of unemployed persons in Croatia – 291 616 persons,
- 20 % of total number of retired persons in Croatia, which is a realistic assumption according to the interest for work after retirement – 227 105 persons,
- 40 % of total number of young persons in Croatia – 247 520 persons,
- 40 % of total number of single parents in Croatia – 76 000 persons,
- 150 000 workers in the grey economy, which is a free estimation, in the absence of reliable data.

If we sum the numbers of persons listed previously, we will be presented with total number of potential users of our microcrediting solution – 992 341 persons. Projection with the structure of target groups is shown in Figure 1.

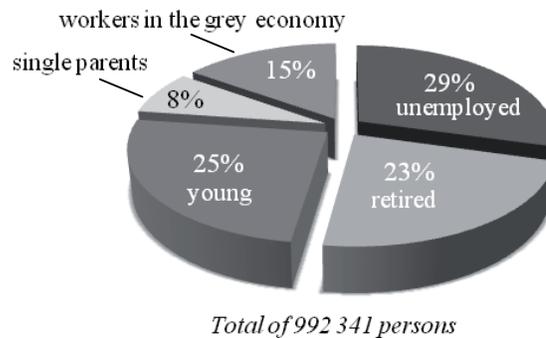


Figure 1. Potential microcrediting users in Croatia

4. Microcrediting solution

As a solution to Croatian problem of unemployment, we have constructed a framework for the implementation of general microcrediting principles into a transitional environment. We called this framework a *transitional microcrediting model*, assuming its implementation on macroeconomic (nationwide) level [8]. When synthesizing original microcrediting with the particularities of transitional transformation, we developed a system which is:

1. *socially sensitive* – according to the general microcrediting principles,
2. *commercial* – in a special manner, according to the general principles of modern capitalism, and
3. *widely accessible and available* – to various target groups of population, via numerous specific microcrediting products.

The wide nature of presented solution has required the definition of certain global framework which will enable the implementation of microcrediting in practice. In the end, only implementation on a national, macroeconomic level can assure the successful startup of general transitional microcrediting model. According to that, the structure of our idea has been built by a top-down method – in the very beginning, institutions, regulations and general principles have been described. When we entered deeply in the problem domain, it was necessary to develop specific financial and mathematical models relevant to the core of our idea – microcrediting in transitional practice.

Generally speaking, there is no appropriate institutional infrastructure for dealing with transitional problems by the means of microcrediting [17]. Our microcrediting system, based on a national level, implies a central microcrediting institution, which will be in charge of

issuing microcredits to clients in Croatia. We gave a name to this fictional institution: *Microcrediting Bank of Croatia* (further in the text: *MBC* or simply *Bank*).

MBC will be able to issue microcredits to its clients, and depending on their special needs, clients will have the ability to choose a microcrediting product best suited for their needs. Microcredits, distributed by the MBC, should encourage clients to start their own business. Bank's primary function will be providing self-employment for endangered groups of population [9]. Best suited legal forms for realizing self-employment through microcrediting definitely include small trades and manufactures, which nurture craftsmanship and fine production [11]. Entire microcrediting system should encourage entrepreneurial creation for the purpose of creating new added values [1].

The Bank should be self-regulated, and totally independent from the private capital, state politics, and business banking sector. Also, common state policy on interest rates should not affect activities of the Bank; the institution will have its own interest rate policy. On the other hand, MBC has to be commercial, in order to sustain the costs of primary banking activities. Furthermore, the question of establishing and constituting MBC is a very sensitive one. After careful consideration, we suggest several stakeholder groups which would possibly be interested in the process of Bank foundation:

- government (state funds),
- business banks, venture and investment funds,
- small investors – ordinary citizens, MBC clients.

An interesting way to present the idea to investors is initial public offering. And by allowing state funds to enter the ownership of the Bank, government shows its social sensitiveness, and actively takes part in the program of fighting unemployment and poverty. On the other hand, allowing private business banks to take part in the project is an extremely wise and important move. If founded, MBC will have a privileged position in the domestic banking sector. Such a position would be definitely earned by the means of privileged interest rates. This scenario puts MBC in a slight advantage in relation to classical banks, and the same scenario may not be accepted very well among those banks. By taking an active role in the MBC's activities, classical business banks would gain an additional way of placing their own capital on the credit market.

We have roughly estimated the amount of funds in order for MBC to start its core business. Approximately 50 million Croatian kunas would be enough for startup. This total amount will be divided into shares of equal nominal value, and shares will be sold out accordingly to the next proposed model:

- 30 % of shares will be offered to small investors on a capital market, through IPO. The overall value of these shares is 15 million kunas,
- 50 % of shares goes to the state, where 30 % (about 15 million kunas) will be a direct donation to the Bank's vault, and remaining 20 % (about 10 million kunas) stays in real state ownership,
- 20 % of shares will be divided among interested business banks, where every bank receives the same amount of shares. Total value of shares belonging to the business banks is 15 million kunas.

Every further investment in the Bank's activities would be just an ordinary donation. According to the described founding model, 30 % of shares (donated by the state) belong to the MBC itself. These shares are reserved for the potential future users of microcrediting products. By actively participating in the Bank's programs, clients can earn the shares of the Bank. This is one of the most important long-term objectives of the general transitional microcrediting system. By owning the Bank's shares, microcredit users become more devoted to the ideals of alleviating unemployment. It is a step toward creating a necessary social capital, which is a vital force of microcrediting.

Bank's programs and products should be very approachable. We suggest a network of MBC business offices, throughout the state. Enabling rural population to reach Bank's products is a matter of crucial importance here. In 2006, there were 127 cities and towns in Croatia, according to the data of Central Bureau of Statistics [5]. Consistent with that number,

127 offices would be sufficient for Bank to reach its clients. When such complex network reaches its realization phase, government should be of great assistance, donating appropriate space and equipment for Bank's branches.

There is an office manager administrating the activities of every office, while regional manager navigates operations of several Bank offices. Office manager should be familiarized with the regional particularities, in order to forge good relationships with prospect users of microcredit. The social mission of MBC has to reflect in the daily operations of Bank's employees, while working with clients, getting acquainted with their problems and offering them constant help.

When we were faced with adjustment of original microcrediting principles to domestic environment, one of the hardest problems we had to resolve was setting up an amount of funds which users can receive in a form of microcredit. The lower and upper boundary of that amount had to be set up, while considering several factors – costs of registering a firm, tax policy, interest rates policy, credit return dynamics and others. While having these factors in mind, we determined limits to the funds which can be issued to Bank's clients:

- minimum amount of funds which client can borrow at once is 1.000,00 kunas,
- maximum amount of funds available to clients at once is 25.000,00 kunas.

Interest rates bounded to microcredits must be lower than commercial credit interest rates. Although this kind of interest rates policy lowers the Bank's final profit, it enables a social dimension of Bank's mission. Average interest rate on classical credits (in kunas) was 9.07 percent in 2006 [5]. Having that in mind, we defined an interest rate of 2.5 percent bounded to the first microcredit issued to a client. For every further microcredit amount issued to a client, a different interest rate shall be calculated. To determine the value of those interest rates, it is necessary to introduce next term into our solution: *solidary lending groups* [7].

One of the great particularities and a key to success of microcrediting in the world are so called solidary lending groups – associations of Bank's clients, every one of them having 5 to 10 persons. For the needs of this paper, we will assume that each lending group has a total of five members [13]. Clients of the Bank are encouraged and obligated to join an existing lending group, or they can form a new lending group. Members of the group grade each other based on their performance and individual financial strength [7]. It is a mechanism of determining the strongest and the weakest member of the group. Also, the information on the strongest and weakest group member influences the course of receiving microcredit funds. A group member which is the weakest one and has strongest financial needs will be the first one to receive funds. Members of the group choose a leader among themselves, a leader who takes care of group performance. Leader has a special relationship with the Bank: only after every member of his group has fulfilled his duties and obligations regarding the return of borrowed funds, he gets to receive the funds he needs. There is a great responsibility lying on the shoulders of lending group leader.

For situations when group member doesn't fulfill his duties, another group mechanism has been developed. Mechanism of *common saving* serves as an emergency fund; every group member has to donate a small amount of money, every month. If group member has certain paying problems, he will be given certain amount of money to endure the time of crisis.

Internal organization of MBC, which is a multilevel institution, can be observed in few dimensions. Solidary lending groups represent the first level of self-organization. Mechanisms of lending groups enable clients to receive loans, in exactly determined manner. Second level is represented by Bank's office managers, whose role in creating quality relationships with potential clients is virtually essential. Final level of self-organization lies in the process of revising client's entrepreneurial idea and final issuing of microcredit, where business plans have enormous importance. Business plan is a ground document which enables future entrepreneur to express his ideas and ambitions, and to plan future business activity [2].

Important microcrediting concept is a possibility of purchasing Bank's shares at very low prices. After client proves himself in the process of business realization, he gets a chance to buy the shares of Bank, and when doing so, strong bonds are created between the Bank and its clients. These bonds enable even better future cooperation.

4.1. Mathematical and financial analysis

Microcrediting Bank of Croatia will be in possession of certain financial assets. This part of paper describes how these funds will be used for issuing microcredits to potential clients.

We have developed a way of differentiating individual members of certain lending group. A practical measure of individual financial strength, called *group member creditworthiness*, represents the ability of client to return loan. Also, every lending group differs from another, so we introduce the measure of *lending group creditworthiness*. It represents the ability of group to meet its obligations.

Initially, group member creditworthiness has the value of 1, but this measure can vary between 0 and 1 during client's history. Group member creditworthiness (Cw_i) is calculated as shown below:

$$Cw_i = Cw_{i-1} - \frac{NV}{TC},$$

where:

Cw_i represents the new creditworthiness of and individual group member,

Cw_{i-1} represents previously calculated (old) creditworthiness of client,

NV represents unreturned amount of funds,

TC represents total amount of funds issued to a client.

If group member creditworthiness drops below zero (which is possible in our model), value should be automatically set to 0. In this situation, client becomes incapable for returning annuities and should be denied further funding. Highest value of group member creditworthiness is interpreted in favor of the client: this individual can be the first one to use microcrediting product, before others in the same group. It also means that the same client has the greatest need for funding at the moment. Group member creditworthiness is a changeable measure – it changes after few microcrediting cycles, especially if borrower has problems with returning total credit amount. Possible problems will initiate the change of his creditworthiness, but creditworthiness of an entire lending group will be changed as well. Lending group creditworthiness (Cw_G) is calculated a shown below:

$$Cw_G = 2 \cdot \frac{Cw_1 + Cw_2 + \dots + Cw_n}{n} = \frac{2 \sum_{i=1}^n Cw_i}{n},$$

where n is a number of individual group members. The value of this measure can vary between 0 and 2, and it is used in calculating an interest rate bounded to a microcredit. Solidarity among group members can be easily described in a fact that lending group creditworthiness actually affects the interest rate of a group member. If lending group creditworthiness drops to zero (or gets even near that value), group members will not be allowed to receive further funding. Mathematically speaking, lending group creditworthiness is doubled arithmetic mean [6] of all individual group members' creditworthinesses. Described mechanism is strongly built into the very roots of our solution, since it allows us to measure the strength of an individual, as well as the strength of lending groups.

Next measure developed for the needs of our model is *risk coefficient* (C_R). It describes how the value of total amount of funds issued to a borrower affects the safety of the Bank's investment. Bigger the amount of issued microcredit, greater the risk coefficient. We developed next formula to calculate this measure:

$$C_R = 1 + \left(\frac{M_i - 1000}{24000} \right),$$

where M_i is the size of certain microcredit. Every new microcredit issued to a client will have a different risk coefficient, because microcredits can vary in size. It implies that interest rate bounded to every issued microcredit does not have to be the same, as later will be shown.

Impact of the risk coefficient to the final value of the interest rate is not very big, but it is discernible. We have determined that clients can be issued loans in minimum amount of 1.000,00 kunas, while maximum amount reaches 25.000,00 kunas. That restriction is implemented in our model, and here is a brief proof:

$$\begin{aligned}
 1 &\leq C_R \leq 2, \\
 1 &\leq 1 + \left(\frac{M_i - 1000}{24000} \right) \leq 2, \\
 0 &\leq \left(\frac{M_i - 1000}{24000} \right) \leq 1, \\
 0 &\leq M_i - 1000 \leq 24000, \\
 1000 &\leq M_i \leq 25000.
 \end{aligned}$$

Now we can define *investment safety coefficient* (C_{IS}). We will calculate this measure according to the next formula:

$$C_{IS} = \frac{C_{WG}}{C_R} + 1.$$

If lending group creditworthiness improves, the investment safety coefficient will be improved as well, so we can conclude that value of C_{IS} is reversely proportional to the value of lending group creditworthiness. Safety of investment will be better if lending group has an ability to completely fulfill its duty. If this is not the case, investment risk grows, while safety of the investment drops down. There is a reason for calculating lending group creditworthiness as an arithmetic mean of group member's creditworthinesses. It is done for purpose of stressing the importance of creditworthiness to a total sum of funds issued to a client in one microcrediting cycle. Creditworthiness of an entire lending group has greater importance in the process of calculating an interest rate than issued amount itself. On the other hand, formula for calculating C_{IS} was constructed to be less sensitive to the changes of the value of total amount of funds issued to a client [4].

Next part of the paper analyzes the interest rates itself. Every potential client has to create a business plan, where he will describe his entrepreneurial idea. Also, dynamics of receiving and returning microcredit annuities must be considered. Finally, microcrediting process starts when MBC accepts this plan. As said before, each microcredit has a different interest rate tied to the equity, while the first one constantly equals to 2.5 %. Further interest rates are calculated according to the next formula:

$$IR_i = 2.5 + \frac{p}{C_{ISi}},$$

where p represents the coefficient of business we plan to enter, and C_{ISi} represents the investment safety coefficient for i -period, in which we calculate the current interest rate, IR_i .

When considering a sort of business which can be pursued by a client, it is necessary to state that every business differs from another, so the perspective of each business is not the same as well. Some are more perspective, cost-effective, but some are not. We developed a measure (p) which will show exactly how much cost-effective business can be. This measure can vary between values of 3 and 6, where the value of 3 implies a business with good perspective in our country, and the value of 6 implies a bad entrepreneurial perspective. So, greater business coefficient indicates smaller business perspective and higher interest rates, and vice versa, smaller business coefficient indicates greater business perspective and smaller interest rates. Transitional microcrediting model suggests that borrowers pursue various business opportunities in industries like agriculture and farming, tourism, craftsmanship, trade and exchange, and others [16]. It is not very costly to start a business in industries listed above; a good will and small amount of funds is all it takes. Some of suggested business coefficients are listed in Table 1.

<i>business</i>	<i>p</i>
animal husbandry	5
fruit-growing	4
bakery	4.2
viticulture	3.9
tourism	3.8

Table 1. Suggested business coefficients

Table 2 describes preliminary range of interest rates, through the dimension of values used in interest rate calculation.

	<i>min</i>	<i>middle</i>	<i>max</i>
Cw_G	2	1,5	0,5
C_R	1	1,5	2
C_{IS}	3	2	1,25
p	3	4,5	6
IR	3,5	4,75	7,3

Table 2. Interest rates tied to an issued microcredit

Comment:

- first interest rate of 2.5 % is not included in this table,
- if lending group creditworthiness equals zero, group members shall not be allowed to receive funds; the minimum lending group creditworthiness in order for group members to receive funds should at least reach 0.5,
- for minimum interest rate, best creditworthiness of an entire lending group was used, as well as smallest risk coefficient (which indicates the safest investment), and of course, a business with a greatest perspective,
- for smallest interest rate, smallest group creditworthiness was used, as well as greatest risk coefficient and the business with the worst perspective,
- for average interest rates, averages values of relevant measures were used.

Until now we discussed interest rates bounded to microcredits and calculated prior to loan issuance. Finally, it is necessary to define the return interest rate. The main idea is to allow an individual to repay each part of total loan amount with a special interest rate, according to an interest rate calculated prior to the loan issuance [3]. On the other hand, it is a difficult thing for an individual to constantly calculate the appropriate return interest rate, so we developed a common interest rate. It is calculated as shown below:

$$\overline{IR} = 100\overline{r} - 100,$$

$$\overline{r} = \frac{\sum_{i=1}^n \left(M_i (r_i)^{\frac{t_i}{12}} \right)}{\sum_{i=1}^n M_i},$$

where:

- \overline{r} represents an average decursive interest rate factor,
- M_i represents the total amount of microcredit,
- r_i stands for decursive interest rate factor of microcredit M_i
- t_i represents the time passed from the moment of receiving funds M_i to the beginning of loan return cycle.

5. Conclusion

After detailed analysis of theoretical assumptions which have been developed throughout our project, we came to conclusion that transitional microcrediting model can be realized, but only if several stakeholder groups, like state government, business banking sector and small investors, would take their place in the project's concept. In long term, if implemented, microcrediting system will initiate the reduction in number of unemployed persons in Croatia. Microcrediting infrastructure will also enable positive trends to appear, especially concerning overall living standards in our country.

Facing overall economical crisis, microcrediting reaches its goal, and it's new, intensified dimension: a small microcredit loan becomes a tool for creating simple jobs, which is a good base for many (technically advanced) industries to grow and recover. Every man, even poor one, has a wish to be recognized and valued, and that wish for self actualization can be boosted by the means of microcrediting.

Acknowledgements

We would like to thank dr. sc. Zlatko Erjavec, who was always patient enough to hear about our problems and who supported our intentions in creating this work. Also, we would like to thank dr. sc. Blaženka Divjak, dr. sc. Marina Klačmer Čalopa and dr. sc. Tihomir Hunjak, for encouraging us while working, and for providing us with invaluable information and insights on various topics.

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