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SMEs Access to Finance in Croatia – Model Approach

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***Abstract*—**The goals of the research include the determination of the characteristics of SMEs finance in Croatia, as well as the determination of indirect growth rates of the information model of the entrepreneurs` perception of business environment. The research results show that cost of finance and access to finance are most important constraining factor in setting up and running the business of small entrepreneurs in Croatia. Furthermore, small entrepreneurs in Croatia are significantly dissatisfied with the administrative barriers although relatively to a lesser extent than was the case in the pre crisis time. High collateral requirement represents the main characteristic of bank lending concerning SMEs followed by long credit elaboration process. Formulated information model has defined the individual impact of indirect growth rates of the remaining variables on the model's specific variable.

***Keywords*—**Business environment, information model, indirect growth rates, SME finance.

I. Introduction

THE object of analysis in this paper is SMEs access to finance as well as entrepreneurs' perception of finance condition as a constraint on doing business and development. SMEs are a fundamental part of a competitive and stable economy. SME are important for the economic growth and its balance. This role requires huge investments and they, in turn, require the approach to financial resources to a suitable extent and under suitable terms. However, entrepreneurs have various difficulties to deal with. These facts present strong arguments for ensuring a stimulating environment for small entrepreneurship around the world.

The case of the current global financial crisis clearly shows how important are to maintain jobs and competitiveness by subsidies to small entrepreneurship. In many countries they employ over 50% of the formal workforce [1]. Furthermore, small firms and mature firms have the highest levels of total employment while small firms and young firms have the highest rates of job creation [2].

On the other hand, deficiencies of SME include limited managerial and financial resources, particularly in the stage of company growth [3], [4]. It happens more frequently that an entrepreneur is not able to perform managerial function in times when number of employees is growing and/or organizational structure is getting more complex. They face a higher failure rates, shorter asset maturities [5], orientation to less competitive and more restrictive financial markets [6], [4].

Obstacles for optimal financing of SMEs may include the very character of an entrepreneur – refusal to share control by emitting shares, refusal to apply for loans due to risk aversion – as well as the legal framework, e.g. bureaucratic. Finally, lack of adequate experience and education, including financial illiteracy, and insufficient corporate finance knowledge, may as well undermine the financing structure and jeopardise the survival of a business.

II. Literature Review

The entrepreneurs' approach to financial resources is the issue that both developing and developed countries are very interested in. Literature examining small businesses underlines agency costs and informational asymmetry. The reasons for SMEs' difficulties in ensuring external finance in appropriate amount and/or competitive terms, embrace issues such as higher uncertainty and imperfect information [7], [8]. Asymmetric information and clash of interests between different agents involved in lending process are further aggravated by qualitative factors such as lack of credit ratings, concentration of ownership and control in entrepreneurs' hands [9], [10]. Lack of credit ratings and inadequate transparency and late introduction of credit and movable property registry lead to high requirements for collateral and personal equity which SMEs usually lack.

Due to high monitoring costs and informational asymmetries, besides having a limited access to credit market, small businesses face obstacles in raising outside equity, too. Internally generated funds as well as loans and equity from the main shareholders are the primary sources of capital. External funds are dominantly provided by a subject having informational/ monitoring advantage mainly in form of credit extended by banks, suppliers as well as family and friends.

Recent research of SME finance in developing world confirms greater financial obstacles faced by SME than large firms [11]-[13]. Furthermore, SME in developing countries use less external finance, especially bank finance. Study based on enterprises survey in all the regions of the developing world has delivered interesting findings (130 000 firms in 125 countries were embraced although micro firms with less than 5 employees were excluded). SMEs are more likely to be credit constrained than large firms. Furthermore, they finance their investments mainly through trade credit and informal sources of finance. Development stage of the financial sector was found to be of importance. Namely, in countries with high private credit to GDP ratio firms are less likely to be credit constrained. Furthermore, the share of external funds used to finance investment is higher. Regarding the sources of finance

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study shows that trade credit and informal sources are more important than equity and formal debt compared to large firms. Furthermore, the use of formal debt is relatively high in all regions (South Asia excluded), with tendency of lover levels of formal debt for SMEs than for large firms [13].

Banks tend to be slow in loan decision making and too conservative in assessing risk ruling out higher risk and a medium rate of return on investments [14]. Fierce competition, undertaken acquisitions and modern risk management practice leaves floor for improved SMEs lending practice. SMEs' role in banks lending decreases with bank size. However, there is a trend among larger banks of paying greater attention to small businesses which is revealed in organization of special SMEs' sectors and marketing campaigns undertaken by larger banks. Hopefully, this will be accompanied by higher proportion of credits allocated to small businesses.

III. Croatian Entrepreneurs Perception of Finance Condition

Small businesses in Croatia are recognized as a locomotive for economic restructuring and unemployment reduction. Importance of small businesses may be revealed through its participation in total number of businesses, number of employees, total revenues as well as net income. Small and medium sized enterprises' share in the total number of businesses for the year 2010 is 99.6%. In the total number of employees they participate with 72.1%, while out of total revenue they have realized 51.6%.

While there are valuable improvements in the field of government services and administrative burden, as well as in the field of business infrastructure, the task of enabling small businesses to get appropriate access to establishment and growth finance is still a challenging one.

As far as the stimulating business environment is concerned, the possibility of financing to a needed extent and under favorable terms is one of the key factors of competitiveness and development, and as such perceived as a measure of quality of business environment. Banks are dominant financing institutions as well as the most important source of external financing of SME in Croatia. We have been witnessing the dominance of large and foreign banks (over 90% of banking assets). Although there is an increased interest of banks for SMEs, when granting loans, banks still rather support households than businesses, and prefer large enterprises to middle-size and small ones.

When business lending is considered, banks prefer lending to LSEs over SMEs. Primarily, since default risk is higher for SMEs than the larger firms, banks require higher equity capital as a precondition for lending to the SMEs. As a consequence, entrepreneurs may find high interest rates and bank charges as an important barrier for entry and. Market prejudice is responsible for excluding SMEs that do not meet collateral requirements from the commercial bank lending. Also, commercial banks seem to use a pseudo monopoly situation in the financial sector. As a consequence, banks skim deals from the market that have appropriate collateral, excluding SMEs that do not have it, which is, unfortunately, sound business and more profitable to the bank.

Small businesses access to capital is further aggravated due to uncompleted financial institutional structure-absence of (well funded) equity investors, a shallow and illiquid securities market. Besides creating an equity gap, especially for the earlier stage non-technology based SMEs, asymmetric information leads to imperfect lending (credit rationing) even for prospective SMEs with fast revenue growth. Providing finance is a heavy burden to small businesses especially in start-up phase. They are vulnerable and lacking both collateral and reputation.

The most important financial sources for start-up businesses are their own capital. This has been confirmed by the results of the research carried out in year 2008.The results showed that the owners' equity accounted for over 1/3 of the sources. Owners' equity used to participate to a much lesser extent in financing the investments in small entrepreneurship – only 19% of investments were financed from their own sources.

In order to shed light on the SMEs business environment a survey study is undertaken in the spring of 2013. The survey results presented in this paper are based on the written answers of the forty small and medium companies which agreed to participate, i.e. the sample presents 16% of the total target population. The small number of the responses precludes strong statistical conclusions. However the coverage of the survey responses gives us a significant look at a broad range of SME in Croatia.

Recent research reveals changed scheme of SMEs investment finance in Croatia in year 2013. Retained earnings and depreciation participated in the new investment finance with 51%. Share of bank loans have increased, too. Long term bank credits participated with 18% (almost doubled) and short term credit share has increased from 14% to 20%. In the same time, the shares of leasing and concessional (subsidised) finance have declined.

Crisis has affected investment climate, including financing terms, and consequently the rate of investment which deteriorated across the country. Investment in 2011 (32,990 bill. HRK) more than halved compared to pre crisis year 2007. In the same period number of investors in long term assets shrank by one third [15]. The scheme of financing can be partly explained by the entrepreneurs' perceptions of the terms and availability bank loans, and other important obstacles to doing business in Croatia. Financial and economic crisis have strongly influenced conditions of operation and development of Croatian SMEs. Entrepreneurs find cost of finance as the most important constraining factor on doing business and development. Approach to finance saved its high second rank. In the period of crisis banks have both taken more precocious approach to SMEs lending and increased interest rates/fees. So the smaller portion of the SME has managed to secure creditworthiness. Usually banks estimate SMEs as not being transparent enough, and not having favorable the profit-cost ratio compared to households and large companies. Furthermore, this situation may be explained by the hypothesis of foreign [16] and large banks barriers [17]-[19]. Large foreign banks prefer transaction lending as opposed to relationship lending and lack real understanding of local markets leading to preference of large enterprises lending. As a consequence characteristic of SME bank lending as perceived by entrepreneurs is excessive credit insurance along with time-consuming processing (Table I).

High collateral requirement represents the main characteristic of bank lending concerning SMEs followed by long credit elaboration process. Numerous documentation requirement, high fees and high interest rates are regarded as very important feature of SME bank lending, too. The main constraining factor confirms the view of too rigorous banking approach in lending process, lack of application of Basel II opportunity for banks to recognize character of small businesses as opposed to financial strength based on financial statements and therefore urges diversification of finance sources.

TABLE I
CHARACTERISTIC OF BANKS LENDING

Characteristic	*Rank 2013*	*Rank 2008*
High collateral requirement	1	1
Long credit elaboration process	2	6
Numerous documentation requirement	3 and 4	3
High fees	3 and 4	5
High interest rates	5	4
Lack of adequate information	6	7
Difficult approach to long term credits	7	2

Source: Survey

IV. SME BUSINESS ENVIRONMENT - MODEL FORMULATION AND INDIRECT GROWTH RATES

The research results show that cost of finance and access to finance are most important constraining factor in setting up and running the business of small entrepreneurs. Furthermore, small entrepreneurs in Croatia are significantly dissatisfied with the administrative barriers although relatively to a lesser extent than was the case in the pre crisis survey, which may be explained by increased law enforcement (Table II).

TABLE II
CONSTRAINTS ON DOING BUSINESS IN CROATIA

Constraint/importance	*Rank 2013*
Costs of finance	1
Access to finance	2
Administrative barriers	3
Supporting infrastructure	4
Working skills of employees	5
Legal system	6
Lack of entrepreneurship knowledge	7

Source: Survey

Supporting institutions and policies are still important obstacle although it appears that financial crisis has diminished its relative importance.

Information model of the entrepreneurs' perception of constraints for operation and development in Croatia will be formulated. Growth model will be applied to determine interrelations of relevant factors, and their growth rates. Variables of the model are defined with estimate of the current values of the model variables based on theoretical as well empirical research. Taking into account previous considerations values of the model variables for the base year 2013 are quantified (on a scale from 1 to 100, presuming that 100 presents optimal value of the variable impact) as follows: 1. Costs of financing- 23; 2. Supporting infrastructure – 32; 3. Administrative barriers – 28; 4. Approach to financial resources – 26; 5. Lack of entrepreneurs knowledge – 38; 6. Legal system – 34; 7. Working skills of employees – 33.

Quantification of the variables of the model will take into consideration synergy effects of the following scientific aspects: i) scientific theoretical aspects of individual variables of the model; ii) values and importance of variables of the model in the current period, i.e. 2013; iii) expected values of variables of the model in 2016 and iv) expected values of the variables in 2020. Model formulation is based upon previously determined model variables. We start with the assertion stating that "n" inter-reliant elements reflect the entrepreneur's satisfaction with bank's lending. The value of an individual variable of the model is expressed as y_{if} and y_{it-1} of the i variable in the period t and t-1.

An increase of the input value of the i variable of the model is defined by:

$$\Delta y_{it} = y_{it} - y_{it-1} \tag{1}$$

An indirect growth rate of the i variable in relation with j, is defined as the relation of the input growth of the *i* variable of model, Δy_{it} and the input value of the *j* variable of the model in the period *t*, i.e.:

$$r_{ijt} = \frac{\Delta y_{it}}{y_{it}} \tag{2}$$

where: *i*, *j*=1, …, n, whereas $y_{it-1} \neq 0$.

Indirect growth rates can be expressed in a form of matrix of growth of the model variables:

$$r_t = \begin{bmatrix} r_{11} & r_{12} & \cdots & r_{1nt} \\ r_{21} & r_{22} & \cdots & r_{2nt} \\ \cdots & \cdots & \cdots & \cdots \\ r_{n1t} & r_{n2t} & \cdots & r_{nnt} \end{bmatrix} \tag{3}$$

where *t*=1, …*t*.

Indirect growth rates can be defined in relation to the inputs of the *j* variable of the model in the period *t*=1, using:

$$r'_{ijt} = \frac{\Delta y_{it}}{y_{j,t-1}} \tag{4}$$

where *i*, *j* = 1, …, n

The next inter-relation reflects the connection among the

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indirect growth rates:

$$r_{ijt} = \frac{r'_{ijt}}{1 + r'_{i,jt}} \quad \text{and} \quad r'_{ijt} = \frac{r_{ijt}}{1 - r'_{j,jt}} \tag{5}$$

where *i, j* = 1, …, n.

The matrix type can be determined through the external vector of the model variable. The vector of the growth of the model variables: $\Delta y_{it} = \left(\Delta y_{it}, \ldots \Delta y_{m\cdot t}\right)$.

The vector of the reciprocal values of the model variables is defined by:

$$\left(\frac{1}{y_t}\right) = \left(\frac{1}{y_{1t}}, \ldots, \frac{1}{y_{nt}}\right) \tag{6}$$

where *i, j* = 1, …, n, whereas $y_{i\bullet t-1} \neq 0$.

The growth matrix of the model of bank lending in Croatia defines the external vector of the growth of the coefficients of the model variables and the vectors of the reciprocal values:

$$R_{pt} = \Delta y'_t \left(\frac{1}{y_t}\right) = \begin{bmatrix} \Delta y_{1t} \\ \Delta y_{mt} \end{bmatrix} \cdot \left(\frac{1}{y_t}, \ldots, \frac{1}{\Delta y_{nt}}\right) \tag{7}$$

$$R_{pt} = \begin{bmatrix} \dfrac{\Delta y_{it}}{y_{1t}} & \ldots & \dfrac{\Delta y_{1t}}{y_{nt}} \\ \ldots & & \ldots \\ \ldots & & \ldots \\ \dfrac{\Delta y_{mt}}{y_{1t}} & \ldots & \dfrac{\Delta y_{mt}}{y_{nt}} \end{bmatrix} = \begin{bmatrix} r_{11t} & \cdots & r_{1nt} \\ \cdots & & \cdots \\ \cdots & & \cdots \\ r_{m1t} & \cdots & r_{mnt} \end{bmatrix}$$

TABLE III
VALUES OF THE VARIABLES OF THE MODEL FOR 2013 TO 2016 PERIOD

	Variables	*Inputs y_{it}* 2013	2016	2020	*Growth* 2013/20
1.	Costs of finance	23	30	45	22
2.	Supporting infrastructure	32	38	53	21
3.	Administrative barriers	28	34	80	52
4.	Access to finance	26	31	64	20
5.	Lack of entrepreneurs knowledge	38	42	50	12
6.	Legal system	34	43	86	52
7.	Working skills of employees	33	36	57	24

If we analyze only direct growth rates, then the growth of a variable is expressed independently regarding the growth of the others. When we analyze indirect growth rates, that is, growth rates of the *i* variable in relation to *j* (*i, j* = 1, …, n), it is possible to determine the structure of the growth of the variables and express all relationships via the growth matrix in the total system.

Based on previously elaborated basic researches and on assumed estimation of the variables for the years 2016 and 2020 (on a scale from 1 to 100), growth rates of the model variables have been obtained (Table III).

We now show the growth matrix of the model through the variables in line with the present and future values in the 2013 to 2020 (Table IV).

TABLE IV
GROWTH MATRIX OF THE MODEL OF MODEL OF THE CONSTRAINT FACTORS FOR 2013 – 2020

Model Variables (in%)	*1.*	*2.*	*3.*	*4.*	*5.*	*6.*	*7.*
1.	*48.9*	41.5	27.5	47.8	44.0	25.6	38.6
2.	46.7	*39.6*	26.3	45.7	42.0	24.4	36.8
3.	115.6	89.1	*65.0*	113.0	104.0	60.5	91.2
4.	44.4	37.7	25.0	*43.5*	40.0	23.3	35.1
5.	26.7	22.6	15.0	26.1	*24.0*	14.0	21.1
6.	115.6	98.1	65.0	113.0	104.0	*60.5*	91.2
7.	53.3	45.3	30.0	52.2	48.0	27.9	*42.1*

The research has provided the direct and indirect growth rates of the variables of model of entrepreneurs' perceptions of the constraint factors (Table IV). The highest direct growth rates will have variable administrative barriers (65.0%) followed by: legal system (60.5%), cost of finance (48.9%), access to finance (43.5%). Here is the analysis of the synergetic interrelation of the variables of the information model for the year of 2020 through their indirect growth rates.

The analysis of Fig. 1 proves that the variable *Costs of finance* will be mostly affected by the variable *Access to finance* having an indirect growth rate of 47.8 %, whereas the variable *Legal system*, with an indirect growth rate of 25.6 % will have the least influence.

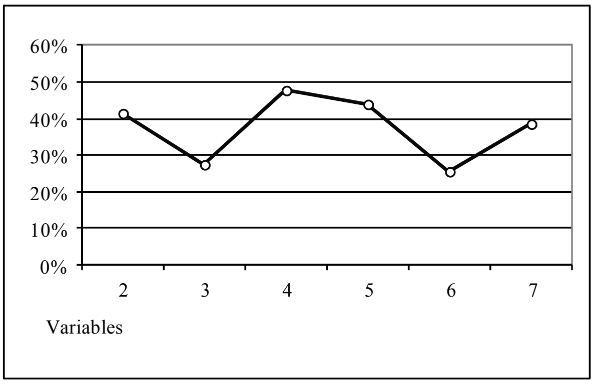

Fig. 1 Impact of the indirect growth rates of the remaining variables on the variable *Costs of finance*

International Journal of Business, Human and Social Sciences
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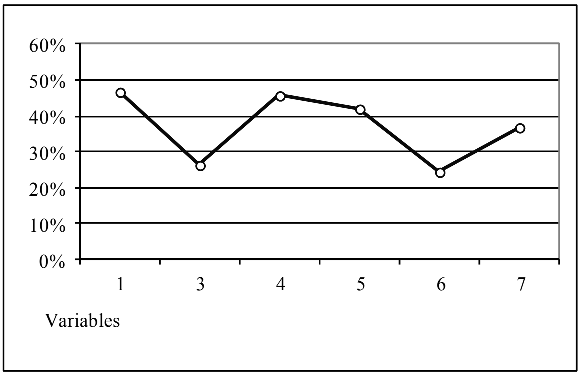

Fig. 2 Impact of the indirect growth rates of the remaining variables on the variable *Supporting infrastructure*

Fig. 2 shows that the variable *Costs of finance* will have the greatest influence on the variable *Supporting infrastructure* due to its indirect growth rate amounting to 46.7 %, whereas the variable *Legal system*, having the indirect growth rate of 24.4 %, will have the least impact.

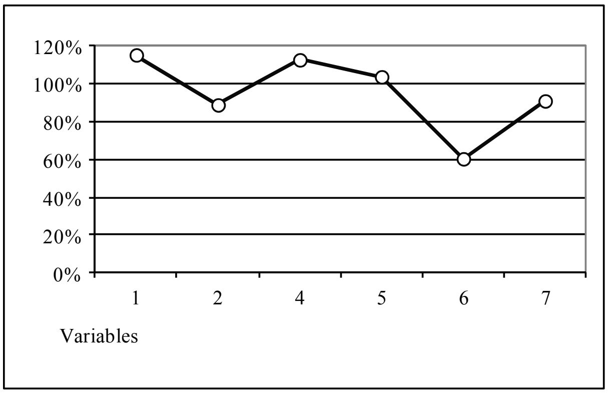

Fig. 3 Impact of the indirect growth rates of the remaining variables on the variable *Administrative barriers*

The analysis of Fig. 3 proves that the variable *Administrative barriers* will be least affected by the variable *Legal system* having the indirect growth rate of 60.5%, while the greatest influence will exert the variable *Costs of finance* reaching the indirect growth rate of 115.6%.

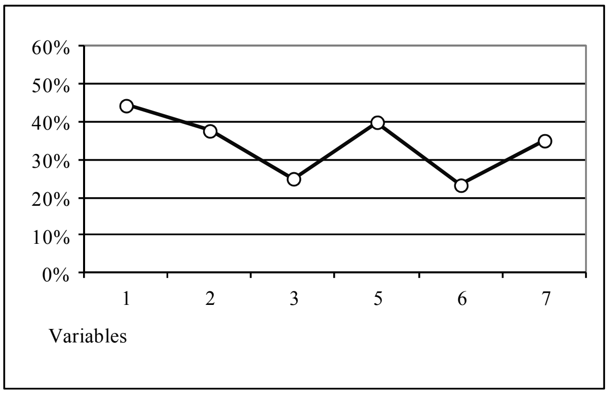

Fig. 4 Impact of the indirect growth rates of the remaining variables on the variable *Access to finance*

The analysis of Fig. 4 proves that the variable *Access to finance* will be mostly affected by the variable *Costs of finance* owing to its indirect growth rate of 44.4%, whereas the variable *Legal system*, having the indirect growth rate of 23.3%, will affect the variable *Access to finance* the least.

V. Conclusion

SMEs are a fundamental part of a competitive and stable economy. They are important for the economic growth and its balance. This role requires huge investments and they, in turn, require the approach to financial resources to a suitable extent and under suitable terms. Researches of SME finance confirm greater financial obstacles faced by SME than large firms. The reasons for SMEs' difficulties in ensuring external finance in appropriate amount and/or competitive terms, embrace issues such as higher uncertainty and imperfect information. Due to high monitoring costs and informational asymmetries, besides having a limited access to credit market, small businesses face obstacles in raising outside equity, too. Banks tend to be slow in loan decision making and too conservative in assessing risk ruling out higher risk and a medium rate of return on investments.

High collateral requirement represents the main characteristic of bank lending in Croatia concerning SMEs followed by long credit elaboration process. Numerous documentation requirement, high fees and high interest rates are regarded as very important feature of SME bank lending, too. The main constraining factor confirms the view of too rigorous banking approach in lending process, lack of application of Basel II opportunity for banks to recognize character of small businesses as opposed to financial strength based on financial statements and therefore urges diversification of finance sources. The research results show that cost of finance and access to finance are most important constraining factor in setting up and running the business of small entrepreneurs. Furthermore, small entrepreneurs in Croatia are significantly dissatisfied with the administrative barriers although relatively to a lesser extent than was the case in the pre crisis survey, which may be explained by increased law enforcement.

Information model of entrepreneurs` perception of constraints for operation and development is formulated. Formulated model gives information to the economic policy decision makers that are necessary to direct small businesses growth. Based on determination of main factors influencing quality of SMEs business environment, their evaluation for the year 2013 and their projections for the year 2016 and 2020 construction of the model resulted. Implementation of growth matrix rendered indirect growth rate of the variables.

The analysis has shed light on the importance of the well diversified supply of finance, supporting infrastructure and legal environment. Furthermore, friendly SMEs business environment calls for different approach of banks concerning collateral requirement and length of screening procedure.

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