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FINANCIAL DETERMINANTS OF SMEs GROWTH IN THE TIME OF ECONOMIC DOWNTURN

Abstract

The importance of high-growth enterprises in national economies has been widely substantiated by economic research in recent years. There are a small number of papers that investigate determinants of growth in the time of economic downturn. This paper is focused on finding financial ratios that are determinants of growth in small and medium-sized enterprises (SMEs) which operate in downturn economies. The assumption of this study is that the time of economic downturn sets new challenges to SMEs and that fact should be reflected in their financial statements as well as in the growth prediction model. Our hypotheses have been tested on the sample of 1492 SMEs from Croatia over the period 2008-2013 in the time of economic downturn. Using logistic regression, a growth prediction model has been developed and tested. Results have shown that in the time of economic downturn, growth potential of SMEs increases with the increase of liquidity, turnover and profitability and with the decrease of leverage.

Keywords: Growth prediction, SMEs, logistic regression, downturn economy

1. Introduction

Understanding how enterprises grow, especially small and medium-sized enterprises (SMEs), is an important issue. In most industries, small firms account for much of the capital stock, employment, and a surprisingly large fraction of innovations (Savlovschi and Robu, 2011; Lukács, 2005). Studying firm growth can provide insights into the dynamics of the competitive process, strategic behaviour, the evolution of market structure, and perhaps even the growth of the aggregate economy. Additionally, a crucial role that high-growth companies play in national economies is reflected in the fact that increasing employment rate (or decreasing unemployment rate) is set as a top strategic goal in most countries in the world. The question of enterprise growth is one of the central issues of entrepreneurship research, besides innovation and venture creation (Delmar, 2006). Aligned with that, factors that influence growth potential of enterprises can be investigated on a national level and an enterprise level. In this paper, the focus has been put on enterprises as units of analysis and their financial statements as the main source of information for pre-

dicting growth. Despite a relatively high interest in research on enterprise growth, there is a lack of literature on growth determinants of privately-owned small and medium-sized enterprises, especially in the context of economic downturn. Due to their size and resource constraints, SMEs are particularly affected by the negative trends of economic downturn, yet little research has been done to identify the critical factors of survival in rough times (Soininen et al., 2012; Vermoesen et al., 2013). Besides, there is a lack of papers that are oriented towards finding the financial determinants of growth. This paper is directly focused on explaining these issues – finding financial ratios that are determinants of growth of SMEs that operate in downturn economies. Delmar et al. (2003) in their research state that growth is not a random or chance event but is associated with specific firm attributes, behaviours, strategies and decisions that are critical in a firm's ability to achieve and sustain rapid growth. Furthermore, a firm's prospects for growth are to a certain extent determined by its assets, financial structure, and some other variables, all of which can be extracted from the financial statements. In other words, a firm's potential for future growth depends on and can be predicted by the current state and structure of its assets, liabilities, equity, revenues and expenses. In that context, the goal of the study is to identify which financial ratios are the most important predictors of SMEs growth in the time of economic downturn.

From the macroeconomic perspective, an economic downturn is a period characterized by a decline in the rate of economic growth or even negative values of growth rates. The main features of an economic downturn include lower consumer confidence which can further reduce consumption or investment spending, and increase unemployment. In such environment, SMEs face a new set of challenges and it is reasonable to assume that their paths to growth will be different.

This produces the following hypotheses:

H1: In the time of economic downturn, SMEs are more likely to self-finance their growth (use internal sources for funding their business).

H2: In the time of economic downturn, SMEs with higher level of liquidity are more likely to grow.

H3: In the time of economic downturn, SMEs with higher business activity (measured by higher turnover ratios) are more likely to grow.

H4: In the time of economic downturn, SMEs with higher potential for growth tend to use their retained earnings to fuel the growth.

In order to extract the financial determinants that are significant in predicting growth potential and to test our hypotheses, a logistic regression model is developed.

The structure of the paper goes as follows. The next section sets the theoretical framework and provides an overview of the research on enterprise growth with the emphasis on studies devoted to SME sector. Section 3 is devoted to research methodology with subsections related to data and variables, and methods applied in the study. The results of the analysis are presented in section 4, while section 5 contains discussion, conclusion and implications for further research.

2. Theoretical Framework

Enterprise growth is a heterogeneous phenomenon that can be conceptualized in various ways depending on the specific feature that has been put in focus (e.g. determinants of growth, processes by which firm growth occurs, influence of external factors on enterprise growth, etc.). There are a vast number of various definitions of growth and researchers tend to use them interchangeably. Growth can be measured quantitatively, e.g. in terms of revenue generation, physical output or business volume expansion, and qualitatively, e.g. in terms of quality of products or market position. Defining growth is a very important step of the research process since the selected set of predictors and, ultimately, implications of the analysis results will depend heavily on the way growth variable is operationalized (Weinzimmer et al., 1998). Most commonly, growth is measured in terms of revenue generation (sales), employment and asset growth. However, sales are not always a good indicator for growth, and sometimes it is possible that assets and employment grow before any sales occur (Delmar et al., 2003). For the purpose of this study, growth is measured as an increase of assets since building an adequate combination of tangible and intangible assets is a crucial part of the process of economic growth.

Factors influencing growth in small firms have usually been understood in terms of three main categories: the entrepreneur, the firm and the strategy (Storey, 1994). In such a framework, many factors have been found to be particularly associated with high-growth firms. When it comes to characteristics of an entrepreneur, willingness to become involved in situations with uncertain outcomes, mid-management experience (Cassia et al., 2009), education and entrepreneur's aspiration to grow (Kolvereid and Bullvag, 1996) have been singled out as relevant growth factors. On the firm level, age and size of an enterprise, strategic orientation (Barringer et al., 2005; Morone and Testa, 2008; Freel and Robson, 2004), level of R&D (McGee and Dowling, 1994), innovation (Christensen and Bower, 1996; Fischer et al., 1997), financial structure and productivity (Mateev and Anastasov, 2010) are shown to positively influence potential for growth. Another study on SME growth prediction (Barringer et al., 2005) was aimed at finding growth-related attributes in four areas: founder characteristics, firm attributes, business practices, and human resource management practices. With regard to founder characteristics, the founders of the rapid-growth firms in the sample were better educated, had a more compelling entrepreneurial story (or motivation to be an entrepreneur), and had a higher incidence of prior industry experience. In terms of firm attributes, rapid-growth firms had a stronger commitment to growth, were more involved in inter-organizational relationships, and utilized a growth-oriented mission statement to a greater extent. From the perspective of business practices, rapid-growth firms added more unique value and had a deeper level of customer knowledge. Finally, in relation to human resource management practices, rapid-growth firms emphasized training, employee development, financial incentives, and stock options.

Financial determinants of growth are present in models developed in the previous studies. Helmers and Rogers (2011) in their research about determinants of SME growth concluded that the most important determinants seem to be the capacity to invest, particularly in R&D. Moreno and Casillas (2007) focused on the identification of the distinguishing factors of high growth SMEs, and they showed that rapid-growth firms are characterized by a lower availability of financial resources in the

years immediately preceding their growth. This is consistent with Stevenson and Jarillo (1990) and Baum et al. (2001) who concluded that searching for and exploiting opportunities contributes to accelerated growth more than efficiently managing acquired financial resources. On the other hand, Becchetti and Trovato (2002) showed that availability of external finance and internationalization are positively related to firm's growth. In the context of transition countries, Mateev and Anastasov (2010) have suggested that firm growth is determined not only by the traditional characteristics of size and age, but also by other firm-specific factors such as indebtedness, internal financing, future growth opportunities, process and product innovation, and organizational changes. Sampagnaro (2013) has identified the balance sheet ratios that enable managers to predict which enterprises are better candidates for a high-growth path. The study pointed out that firm size, firm age and, primarily, internal cash flows (despite bank loans), are of most relevance to the growth and success of a firm. Moreover, there is an unambiguous tendency of external financing resources to negatively affect growth. Furthermore, Segarra and Teruel (2009) performed a quantile regression using sales rates obtained from Spanish manufacturing data to assess the influence of financial variables on firm growth. Their study found a non-linear relationship between firm capital structure (mainly an increase in equity) and firm growth.

Most of the studies on predicting SMEs growth were conducted on data from the time of economic prosperity. There are a small number of papers that investigate determinants of growth in the time of economic downturn. Burger et al. (2013) combined firm level data with country level data and studied determinants of firm performance and growth during recession in case of Central and Eastern European countries. They were interested in growth in employment and investment. Concerning the firm level data, they found out that a drop in demand reduces growth in employment and it is less severe in exporters compared to non-exporters. Also, the reduction of cash flow has a negative influence on investment growth where exporters adjust their investment activity to cash flow to a larger extent than non-exporters. Fort et al. (2013) realized that during recession, young and small enterprises tend to reduce the number of employees more than large

and established enterprises. They found out that young and small enterprises are suffering from reduced cash flow from the downturn and due to that they are less able to finance their activities. In addition, they are also more credit constrained. Difficulty to get external financing during the downturn is one of the main determinants of enterprise's growth. Kroszner et al. (2007) realized that sectors highly dependent on external finance tend to experience a greater contraction of value added during a crisis in deeper financial systems than in countries with shallower financial systems.

The assumption of this study is that the time of economic downturn sets new challenges to SMEs and that fact should be reflected in their financial statements as well as in the growth prediction model.

3. Methodology

3.1 Data and variables

The data set for this research is collected from SMEs in Croatia. In the period from 2003 to 2007, Croatian economy recorded a dynamic growth in economic activity. Growth drivers were the internal demand, increased investment and personal consumption. All of this was accompanied by strong lending activity of banks. The reduction in economic activity started in the second half of 2008, which led to a decrease in the annual growth rate to 2.1% in that year. Due to the impact of the global economic crisis and the lack of action measures of the state to mitigate the impact of the crisis, in 2009 deterioration of the economy continued with the decline in the annual growth rate of gross domestic product at -7.4%. In 2010, the crisis continued, GDP annual growth rate was -1.7%, primarily due to a decline in personal consumption, investment and internal demand. GDP annual growth rates were -0.3%, -2.2% and -1.1% in 2011, 2012 and 2013 respectively.

In the period from 2000 to 2010 Croatian SMEs recorded the highest net profit of 11.3 billion HRK in 2007 (approximately, 1 EUR = 7.5 HRK). In 2008, net profit fell to 7.8 billion HRK, in 2009 to 1.2 billion HRK, and in 2010 they recorded 6.5 billion HRK net loss. In 2011, net loss was 952 million HRK, in 2012 net loss was 1.9 billion HRK and in 2013 SMEs in Croatia made a net profit of 86 million HRK. According to this data, Croatia has been

in the recession since 2008. The present research covers the time period from 2008 to 2013.

The sample used in this research consisted of 1492 privately-owned SMEs in Croatia. They were chosen from the dataset of the Financial Agency (FINA) which is a central agency in Croatia that collects financial statements of all the companies. The whole dataset is comprised of 53,434 SMEs which existed over the period from 2008 to 2013. Definition of growth enterprises follows the methodology applied by OECD (2010) and defines an enterprise as high-growth if it has an average annualized growth in assets greater than 20% a year, over a three-year period, from 2010 to 2013. Out of the total number of SMEs, 746 enterprises met this criterion. The development sample included 650 high-growth SMEs, while the validation sample consisted of 96 high-growth SMEs. The other 746 SMEs which are not high-growth were selected randomly from the whole data set. They were divided in the same way as high- growth enterprises.

Independent variables (in the form of financial ratios) for growth prediction model are created for every enterprise in the sample for years 2008, 2009 and 2010 and the percentage change (for the 2008-2009 and the 2009-2010 periods) of the ratios is calculated. In total, 111 variables are created. The best models were developed with the ratio calculated for year 2010. Descriptive statistics and description of the variables for the year 2010 used in the research is given in Table 1.

Looking at the table it can be noticed that high-growth SMEs have higher liquidity compared to non-high-growth SMEs. Concerning the turnover ratios, it can be seen that high-growth enterprises have better turnover than non-high-growth. High-growth SMEs are more efficient at using fixed as well as current assets. They are faster at collecting their claims but they also have to pay their suppliers more quickly than non-high-growth SMEs. Total-debt-to-total-assets as well as total-debt-to-equity are lower in high-growth SMEs compared to non-high-growth SMEs. Profitability ratios also tend to be better for high-growth SMEs. Looking at the industry sector, it can be noticed that the industry of information and communication has the highest percentage of high-growth SMEs compared to all other industries.

Table 1 Descriptive statistics of the financial ratios used in the model development separately for high-growth and non-high-growth enterprises for the development sample

Variable code	Description of variable Median (interquartile)		High-growth Median (interquartile)	Non-high-growth Median (interquartile)
Liquidity ratios				
L_CLEQ*	current liabilities/equity		0.35 (3.06)	0.49 (1.91)
L_QR	(current assets-inventory)/current liabilities		0.92 (1.82)	0.88 (1.85)
L_CATA*	current assets/total assets		0.83 (0.42)	0.76 (0.58)
L_CASH*	cash/current liabilities		0.12 (0.57)	0.09 (0.47)
L_CAS*	current assets/sales		0.37 (0.51)	0.56 (0.78)
Turnover ratios				
T_TRTA*	total revenue/total assets		1.79 (2.58)	0.99 (1.61)
T_TRFA*	total revenue /fixed assets		9.61 (26.26)	3.81 (14.31)
T_TRCA*	total revenue /current assets		2.39 (3.9)	1.71 (2.41)
T_STA*	sales/total assets		1.66 (2.52)	0.84 (1.56)
T_SNC	sales/net working capital		0 (6.07)	0.52 (4.52)
T_CAIS*	(current assets-inventory)/sales		0.31 (0.42)	0.4 (0.57)
T_DSR*	365/receivables turnover		36.55 (86.85)	54.48 (117.09)
T_APP*	365/payables turnover		43.08 (120.8)	69.97 (147.53)
T_INT*	sales/inventory		9.66 (31.69)	5.39 (17.16)
Leverage ratios				
FL_TDTA*	total debt/total assets		0.71 (0.59)	0.79 (0.87)
FL_TDE*	total debt/equity		0.44 (3.7)	0.77 (2.76)
FL_BLTA*	bank loan/total assets		0 (0)	0 (0.06)
FL_LDCA*	long-term debt/current assets		0 (0.04)	0 (0.26)
Profitability ratios				
P_ROS	net income/sales		0.02 (0.08)	0.21 (0.07)
P_NPM	net income/total revenue (%)		1.17 (23.6)	1.16 (17.15)
P_ROA	net income/total assets (%)		1.9 (31.91)	0.84 (9.45)
P_ROE *	net income/equity (%)		23.64 (56.17)	8.38 (33.78)
P_RETA*	retained earnings/total assets		0 (0.78)	0.04 (0.35)
Other variables				
NTA	non-tangible assets/total assets		0.02 (0)	0 (0)
IND #	Industry sector	Agriculture	2.32	97.68
		Manufacturing	1.4	98.6
		Construction	1.33	98.67
		Trade	1.21	98.79
		Transportation and storage	0.9	99.1
		Accommodation and food service	1.32	98.68
		Information and communication	2.12	97.88
		Financial activities	1.46	98.54
		Professional and scientific services	1.4	98.6
		Social, education and other services	1.71	98.29

* statistically significant difference according to Mann-Whitney test
 # percentage of high growth and non-high-growth in each industry sector
Source: Authors' research

3.2 Methods

In this paper the dependent variable Y – whether a firm will become high-growth or not – is binominal and therefore logistic regression was used. For r independent variables x_1, x_2, ... x_r the logistic function would be:

$$p = \frac{e^{\beta_0+\beta_1 x_1+\beta_2 x_2+\cdots+\beta_r x_r}}{1+e^{\beta_0+\beta_1 x_1+\beta_2 x_2+\cdots+\beta_r x_r}} \quad (1)$$

where p is the probability that a firm will reach high growth rates. The goal is to obtain β_i, $i=1,2,....,r$. Clearly, the above logistic function is not linear, but by denoting $g(x)=\beta_0+\beta_1 x_1+\beta_2 x_2+...+\beta_r x_r$ and through logistic transformation it becomes:

$$logit(y) = \ln\frac{p}{1-p}$$

$$= \ln\frac{\frac{e^{g(x)}}{1+e^{g(x)}}}{1-\frac{e^{g(x)}}{1+e^{g(x)}}}$$

$$= \ln\frac{\frac{e^{g(x)}}{1+e^{g(x)}}}{\frac{1}{1+e^{g(x)}}}$$

$$= \ln e^{g(x)}$$

$$= g(x) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_r x_r. \quad (2)$$

For a sample of size n, for $i=1,...n$, we denote y_i to be observed variables if an enterprise is high-growth or not, and $x_i'=(1, x_{i,1}, ..., x_{i,r})$ to be the corresponding r explanatory variables. The probability density function of Y is:

$$f(y_i|\beta) = p_i^{y_i}(1-p_i)^{1-y_i} \quad (3)$$

where $p_i = \frac{e^{g(x_i)}}{1+e^{g(x_i)}}$ (Jobson, 1992). For the entire sample the likelihood function conditional on x_i is:

$$L(\beta|\boldsymbol{y}) = \prod_{i=1}^{n} p_i^{y_i}(1-p_i)^{1-y_i} \quad (4)$$

In order to simplify the maximization of equation (4), the logarithm of it is used:

$$\ln L(\beta|\boldsymbol{y}) = \ln \prod_{i=1}^{n} p_i^{y_i}(1-p_i)^{1-y_i}$$

$$= \sum_{i=1}^{n} \ln p_i^{y_i}(1-p_i)^{1-y_i}$$

$$= \sum_{i=1}^{n} \ln p_i^{y_i} + \ln(1-p_i)^{1-y_i}$$

$$= \sum_{i=1}^{n} y_i \ln p_i + (1-y_i)\ln(1-p_i) \quad (5)$$

Further steps in maximizing the equation (5) include partial differentiation, but there is no analytical result for β. The solution is obtained using iterative processes (Czepiel, 2002).

Finally, KS (Kolmogorov-Smirnov) and the ROC (receiver operating characteristic) curve are used to evaluate the quality of the model (Řezáč, 2011; Fawcett, 2005).

4. Results

Several different models were developed by using backward and forward selection procedures in the process of logistic regression modelling. Models with the best hit rates, Kolmogorov-Smirnov statistics and area under curve (AUC) were selected. Among these models, the one with the best interpretability was chosen. The results of the model are presented in Table 2.

Table 2 Results of the logistic regression for high growth potential prediction model

	Variable	Regression coefficient
Liquidity ratios		
L_CLEQ	current liabilities / equity	0.0014
L_CATA	current assets / total assets	0.4181*
Turnover ratios		
T_STA	sales / total assets	0.2595***
T_TRFA	total revenue / fixed assets	0.0002
Leverage ratios		
FL_TDTA	total debt / total assets	-0.0320*
Profitability ratios		
P_ROE	net income / equity (%)	0.0004*
P_RETA	retained earnings / total assets	-0.0037*
Other variables		
NTA	intangible assets / total assets	1.4585**

Accuracy of the model:
Total hit rate=69.08%;
Hit rates for non-high-growth = 72.09%;
Hit rates for high-growth = 65.15%
AUC=0.721, KS=39.57%

* statistically significant at 10%
** statistically significant at 5%
*** statistically significant at 1%
Source: Authors' research

The sign of the regression coefficients represents a positive or negative influence of a particular predictor on the dependent variable. For instance, positive value of coefficients related to activity ratios indicate that companies that are, given the same assets value, better at generating revenues by employing those assets, will have better prospects to grow. Though the magnitude of coefficient cannot be interpreted the same way as in linear regression, the meaning of regression coefficient implies that for every unit increase of a predictor variable, the dependent variable ($\ln \frac{p}{1-p}$) increases by the amount of units indicated by the regression coefficient.

Variables presented in the model can be divided into five groups of indicators: liquidity, activity (turnover ratios), leverage, profitability and the ratio of intangible assets and total assets. Each group represents an area of business critical for growth.

The first hypothesis states that in times of economic downturn, SMEs are more likely to self-finance their growth. Negative coefficient of leverage ratios indicates that SMEs with the lower levels of debt have better prospects for growth. This may be a reflection of two things. First, SMEs are more likely to face difficulties in obtaining external finance than large firms as banks and similar financial institutions perceive SMEs as more risky than large firms. Therefore, faced with the lack of opportunities to finance their growth externally, SMEs are encouraged to set their strategy for an organic growth. Previous studies reached a similar conclusion in terms of the role that leverage plays in predicting growth (Mateev and Anastasov, 2010). Second, SMEs are led in an entrepreneurial way as opposed to corporate management style typical for large companies. Entrepreneurial way of thinking implies forming partnerships with self-selected stakeholders to reduce the uncertainty and expanding their business without taking on additional risk that comes from borrowing money from financial institutions. Negative regression coefficient of total debt to total assets confirmed our first hypothesis.

Regarding the second hypothesis, it is stated that in times of economic downturn, potential for SMEs growth is positively related to the higher level of liquidity. In line with the previous research (Burger et al., 2013), SMEs with higher level of liquidity or more specifically, with bigger share of current assets (accounts receivable, inventory and cash) relative to total assets or total equity, are more likely to grow in the next period. Additionally, higher current liabilities indicate a higher potential for growth since they suggest that the management team uses the payable period to slow down cash outflows. Using this type of short-term financing is typical for SMEs as they are usually less able to take advantage of discounts than large enterprises and have fewer sources of credit open to them. In this way, we confirmed the second hypothesis.

The third hypothesis states that in times of economic downturn, the potential for SMEs growth is positively related to higher business activity. Turnover ratios point out that SMEs that are faster at converting their fixed assets and total assets into revenues have better prospects to grow. This notion has been implied by previous research as well. Wiboonchutikula (2002) showed that the fastest growing SMEs are characterized by lower levels of capital intensity and higher levels of labour productivity relative to slow growing SMEs. According to the study, both of these factors lead to higher flexibility that is critical for growth. Furthermore, Mateev and Anastasov (2010) found a positive relationship between capital and labour productivity and SME growth (measured in sales and assets). With this evidence we confirmed the third hypothesis.

In the fourth hypothesis it is stated that in times of economic downturn, retained earnings will be used to fuel the growth. Previous research showed that high-growth enterprises are characterized by lower availability of financial resources in the years immediately preceding their growth (Moreno and Casillas, 2007). This is even more emphasized in times of economic downturn as banks become increasingly cautious and perceive SMEs to be even more risky than in times of economic prosperity. Therefore, in the absence of other funding sources, SMEs have to primarily rely on their internal sources – current profits and retained earnings. It can be seen in the logistic regression model that enterprises with higher potential to grow are the ones that are able to generate high return on equity and are inclined to reinvest their profits back into business as opposed to saving them in the form of retained earnings. With this results we confirmed our forth hypothesis.

Looking at the logistic regression model for growth prediction, it can be noticed that besides the selected group of financial ratios, there is one more ratio – intangible-assets-to-total-assets. Since intangible assets represent corporate intellectual property, this is in line with the previous research which proved that R&D is one of the most important determinants of enterprise's growth (Helmers and Rogers, 2011). A certain share of intangible assets serves as a predictor for future growth since intangible assets commonly represent a source of competitive advantage.

With the developed logistic regression model it is possible to predict a growth potential for SMEs. The model is tested on the validation sample. The total hit rate is 69.08%, the hit rate for non-high-growth SMEs is 72.09%, and for high-growth SMEs it is 65.15%. The area under ROC curve is 0.721, Kolmogorov-Smirnov statistic is 39.57% and Gini coefficient is 0.442. Validation results show good model accuracy. Generally, growth potential of SMEs increases with the increase of liquidity, turnover and profitability and with the decrease of leverage. Specifically, growth potential of SMEs increases with the increase of the following financial determinants – current liabilities to equity ratio, fixed assets turnover, sales to total assets ratio, return on equity, share of intangible assets in total assets and share of current assets in total assets, and with the decrease of the following financial determinants – total debt to total assets and retained earnings to total assets.

5. Conclusion and discussion

This paper examines the role of financial determinants in predicting the potential for growth of small and medium-sized enterprises which operate in the time of economic downturn. Growth prediction model was developed based on information from financial statements of 1492 SMEs in Croatia during the period from 2008 to 2013. This period is characterized with a decline in the rate of economic growth or even negative values of growth rates, reduced consumption and investment spending, and increase of unemployment. Best predictors of firm growth were determined by the logistic regression procedure and the analysis identified specific financial ratios related to liquidity, activity, leverage and profitability of an enterprise. Moreover, the findings show that in the time of economic downturn SMEs with high potential for growth are the ones that are capable of using payables as a source of short-term funding, that are efficient at using their assets, and have set their strategies for an organic growth and self-financing business expansion. One of the key ideas when building this model was to keep it simple in terms of lowering the number of predictor variables so that prospective users of the model (entrepreneurs, managers, business owners) can use it as a simple tool for navigating their strategy into the right direction. A set of growth predictors derived from the financial statements points to the area of business critical for enterprise's growth and serves as a guidepost in business decision making.

While the level of analysis in this study was a firm, to explain the results and derive a conclusion, it is necessary to look at the broader context of economies in downturn such as Croatia. First, access to external sources of funding is limited in a way that banks are reluctant to give loans to small enterprises, especially in the first years of their existence, and informal investors, such as business angels and venture capital investors, usually have a limited presence in such economies. Therefore, SMEs rely on internally generated sources to support their growth. The government, banks and other relevant stakeholders should recognize this challenge and try to create an environment that is more supportive for SMEs growth. Second, during the time of economic crisis, lack of liquidity emerged as one of the major issues of many national economies and low liquidity levels became a standard in many industries. Limited access to external finance emphasized this issue even more since SMEs were forced to rely more on extending payable period to finance their business activities. Third, it seems that regardless of whether we are talking about downturn economies or growing economies, investment in research and development is one of the most important determinants of growth. Forth, during the time of economic downturn, it is important for SMEs to try to have turnover ratios as high as possible. In such a way, they can pass through the crises more successfully and even increase their potential to growth.

The financial perspective, though unarguably fundamental and directly linked to company growth, is not the only aspect of business that is related to growth prospects. Unlike other information about the firm (such as marketing strategy, competition landscape, etc.), financial information is standardized and accessible for the entire population of SMEs, and therefore easier to compare and utilize in decision making process. However, using only financial information in growth prediction represents a certain limitation. To get a broader picture of growth determinants, further research should focus on investigating the effects of other non-financial determinants such as strategy characteristics, managerial attributes, reasons for growth and environmental dimensions. Besides, the influence of government and other policy makers in all economies, especially downturn economies, can significantly change the growth path of a particular industry. Therefore, incorporating macroeconomic variables might increase the predictive power of the model and give additional insights into this complex phenomenon.

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FINANCIJSKE ODREDNICE RASTA MALIH I SREDNJIH PODUZEĆA U VRIJEME EKONOMSKE KRIZE

Sažetak

Uloga brzorastućih poduzeća u nacionalnim gospodarstvima intenzivno je proučavana u ekonomskim istraživanjima posljednjih godina. Ipak, tek mali broj studija istražuje odrednice rasta u vrijeme ekonomske krize. Ovaj je rad usredotočen na identificiranje financijskih pokazatelja koji služe kao odrednice rasta malih i srednjih poduzeća u recesiji. Polazišna pretpostavka je kako vrijeme ekonomske krize postavlja nove izazove pred mala i srednja poduzeća, i ta je činjenica vidljiva u njihovim financijskim izvještajima, kao i u modelu predikcije rasta. Hipoteze rada testirane su na uzorku od 1492 mala i srednja poduzeća u Republici Hrvatskoj koja su poslovala u razdoblju od 2008. do 2013., odnosno u vrijeme ekonomske krize. Model je predikcije rasta razvijen i testiran primjenom logističke regresije. Rezultati pokazuju kako u vrijeme ekonomske krize potencijal za rast malih i srednjih poduzeća raste s porastom likvidnosti, poslovne aktivnosti (učinkovitosti) i profitabilnosti te smanjenjem zaduženosti.

Ključne riječi: predikcija rasta, mala i srednja poduzeća, logistička regresija, ekonomska kriza