

SME'S BUSINESS MODEL SUSTAINABILITY IN CROATIA

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Abstract Small and Medium sized Enterprises (SMEs) are important part of each economy. The paper studies the importance of SMEs in national economy, participation of different economic activities in SMEs business models, management actions in finding the answers to particular strategic questions in the process of creating an efficient and sustainable business models for SMEs. For creating a systemic efficiency measure, hybrid finance, liquidity, profitability and similar indicators are used for measuring efficiency of SMEs in Croatia. Analysis has pointed out the main problems and limitations, and finally indicates the necessity of improvement of SMEs business policies in Croatia. SMEs are exposed to different challenges, but analysis concluded different scope and manner of exposure across sectors, especially in the context of COVID-19 consequences. Paper is consisted of several parts, after introduction literature review presents significance SMEs in national economies, followed by chosen data, indicators and methodology, results and interpretations, concluding remarks and proposal for more efficient SMEs business models.

Keywords::

altman
score,
SME,
financial
ratios

1 Introduction

Entrepreneurial activity supports economic development of each country, creates new enlarged values and employs new people. Enterprise sector is an important segment of the whole national and world economy and that is why it's development is being stimulated and supported in many different ways. Small and Medium Sized Enterprises (SMEs) are, according to theory, source of innovations, creativity and new jobs. The majority of innovations in economy, according to empirical researches, occurs in small sized enterprises. Managers and owners of these subjects are faced with lack of capital and new resources for new investment opportunities and, as a result, the national wealth is being reduced because of missed investment chances (Pavković, 2007).

Small and medium size enterprises are very important and necessary part of all national economies. SMEs are more than ninety percent of all business units, employ more than half working force (World Bank, 2021), produce more than a half EU GDP and employ more than two thirds of working force (European Commission, 2021). According to actual data in Croatia 99,7 percent are SMEs in total number of business subjects and about three fourth of working force (Financial Agency, 2020).

Different methodologies of financial ratios are most used analytical tools for analysing the success of SMEs total activities and positions. The calculated ratios permit easier management decisions making in highly competitive financial market. In that sense the main goal of the paper is testing chosen methodologies of SMEs' performance indicators, especially the influence of their special activities on their overall efficiency, performance, completely market value, recovery and overall financial stability.

After the introduction, the second part of the paper covers the basic reference reviews on the topic, third part concerns the analysis based on existing and actual data background of SMEs financial indicators and the fourth part comprises composite index analysis with the relation of SME activities and positions.

The main goal of the paper is to analyse individual ratios and composite score of SMEs in Croatia in recent preCOVID and COVID years of relevant economy sectors and conclude which are the most exposed or resilient sectors to the consequences and challenges.

2 Literature review

Different authors present the benefits of entrepreneurial activities on national economy through general employment, innovations, economy growth, productivity (Biggs, 2002; Beck, 2005; Ayyagari et al., 2007; Aga et al., 2015). But despite the facts that authors note the importance of SMEs measured by economic indicators though employment rates there is a lack of concrete and direct uniform conclusions of their impact on economic growth and new jobs creation. But, on the other side, SMEs due to their business models, size and characteristics are exposed to concrete risks and relatively more often exit from the market than the larger firms (Stinchcombe, 1965; Freeman et al., 1983).

Also, the lack and limitations in SMEs performance are often based on bad managerial activities. One of the problems is the lack of quality finance tools and instruments. There are permanent problems with the own investment project financing in SMEs and there are also problems about the choice of relevant models for financing and overcoming the financial barriers. Small sized enterprise's financing problem is particularly expressed in transition and economies in development where financing techniques have not performed the satisfactory level of development and implementation yet (Pavkovic, 2007). Other problems and triggers for SMEs refer to the liquidity problems, profitability, debts volume and structure, etc. The researches additionally confirm that in crisis times the most relevant are liquidity issue despite the productivity or history of SME (Bosio et al., 2020). For example, performance indicators in numerous countries confirm the thesis that their SMEs have liquidity deficits, especially in situation of significant decrease or stopping of business activities because of COVID-19. In USA it is forecasted that about 50% SMEs liquidity reserves are optimal for less than fifteen days which indicate their vulnerability to the crisis (Didier et al., 2020). In Eurozone, SMEs indicate the lack of adequate funds as the most relevant business model problem which additionally enlarges the business problem in situation of liquidity

deficits (European Central Bank, 2020). World Bank points out the liquidity problems as the key ones for numerous business subjects (World Bank, 2021).

Limitations and externalities of SMEs can be activated in crisis times. Global COVID-19 virus pandemic has resulted with the strong decline in economic activities in 2020 and 2021 globally. SMEs are more affected due to different reasons: because of riskier core economic activities and business activities in countries which have more intensive COVID crisis, they are more exposed to COVID than the larger firms, and they have less possibilities to answer to the crisis (Adian et al., 2020). Also, heterogeneity in health measures, difference in quality of crisis management, and uncertainty of their future businesses put them more vulnerable and exposed to old and new risks and challenges. Consequently, strong decrease of business activities in SMES is evident during the 2020 (European Central Bank, 2020).

In Croatia, the survey of 226 SMEs in November and December 2020 indicates problems of decline of activities, employment salaries, loans and leasing servicing and additionally problems with profitability and liquidity (Best Advisory d.o.o., Croatian Employers' Association and Croatian Managers' and Entrepreneurs' Association, 2020; SMEs and Entrepreneurship Policy Center, 2020).

With the aim for optimal and balanced government support measures implementation based on COVID impact on SME's activities, Financial Agency prepared methodology and calculated the COVID score in 2020. The tool is based on nine elements and includes business subject category, core business, decrease in the number of employees, expected revenues decrease, liquidity projections and forecasts for a month, three months, to the end of 2020, etc. For instance, larger ponder is dedicated to the most vulnerable micro entrepreneurs from touristic sector (Financial Agency, 2020).

3 Data

Statistical data on SMEs' economic activities in Croatia were downloaded from info.BIZ database. Among others, balance sheets, profit and loss accounts positions and performance indicators are analysed for last five years. According to entrepreneurs' size, data are classified into four categories measured by total balance

sheet amounts, the number of employees. The criteria for entrepreneur's classification by size is presented in Figure 1.



Figure 1: SMEs classification in Croatia

Source: according to Accounting law (Official Gazzette 78/15, 134/15, 120/16, 116/18, 42/20, 47/20)

Additionally, entrepreneurs are classified into sectors according to statistical classification of economic activities in European Union - NACE¹ Rev. 2 into 21 activities, alphabetically ordered from A to U. The highest percentage of entrepreneurs and revenues in Croatia are from sector G - retail sector and vehicle construction (28% and 23%) but by the number of employees and total assets in sector C – manufacturing (28% i 23%).

In analysed period from 2016 to 2020, as a consequence of positive macroeconomic indicators all the observed indicators have constantly increased in Croatia. The number of entrepreneurs has increased for 18.5%, total assets for 12.8 and total revenues for 13.5%. The most numerous are micro subjects in Croatia (about 90% of subjects and a third of total revenues), but large subjects own more than a third

¹ Statistical Classification of Economic Activities, NACE Revision 2.

of total assets and total revenues, although constitute about 0.2% of total number of entrepreneurs in Croatia (Financial Agency, info. BIZ, 2021).



Figure 2: Entrepreneurs in Croatia from 2016 to 2020, size levels

Source: adopted according to Financial Agency, info. BIZ, 2021

4 Methodology and results

The most often used methodology for firm's efficiency evaluation is ratio analysis based on financial statements and other information and reports. Individual ratios are categorized in similar groups in function of liquidity, debt, economics and profitability. Different results indicate the levels of risks, safety, strengths, funding structure, vulnerability, etc. Individual ratios can be useful but they should be analysed as a mixture of ratios and it is necessary to have known how for their interpretation in context of macroeconomic and microeconomic specificities of activity, size, jurisdiction, tax frame, etc.

Opposite to individual ratios, synthetic indicators represent weighted sum of different ratios and they measure the firm's overall performance. Comprehensive index can summarises complex and multidimensional facts, it is simpler to interpret, it can include more information, it can be progressed, etc. Also, summarising index has the consequence of wrong syntetise processs, interpretation, failing in core chosen dimension and intepretation, etc.

In that context, Atman Z-score is derived to compare the relationship between financial ratios and failure possibility. Altman's Z-Score is a numerical indicator that is used to predict the probability of a business going collapse in the next two years. The model was developed by American finance professor Edward Altman in 1968 and it is often used as a measure of the financial stability of companies. Firstly, the model is used for larger companies, but in 1983 model is developed for smaller companies too. Altman Z-score indicates the firms' possibility to fail, so if it is larger the possibility is weaker. Financial strength firms' Z -score is bigger than 2.6, but opposite problematic and risky firms have the score smaller than 1.1.

The modiflicated formula for Altman Z-score is:

$$Z\text{-score} = 6,56x_1 + 3,26 x_2 + 6,72x_3 + 1,05x_4 \quad (1)$$

x_1 = working capital / total assets

x_2 = retained gains/ total assets

x_3 = earnings before interest rate and taxes (EBID)/ total assets

x_4 = equity/total liabilities.

In order to analyse SMEs in Croatia, the data for six most significant economic sectors in period of 2016 to 2020 measured by number of entrepreneurs, employees and total assets are considered. According to mentioned examined sectors are:

- sector C – manufacturing
- sector F – construction
- sector G - wholesale and retail trade; repair of motor vehicles and motorcycles
- sector I - accommodation and food service activities
- sector J – information and communication
- sector M - professional, scientific and technical activities

Table 1 below presents Altman Z-score calculation for chosen activities in five-year period. The results in average clearly present the highest value for small and middle subjects, but the lowest values refers to the micro firms. If different sectors are compared, the highest value refers to the sector J (information and communication), but the lowest is in sector I and the sector F (construction). Negative indicator values for certain sectors and firm size are primary connected to the negative working capital and the deficit of short-term assets compared to long-term assets.

According to data in period of 2016 to 2019 the clear growing trend is viewed of Z-score in all analysed activities which is directly connected with positive macroeconomic circumstances in Croatia. As a consequence of COVID-19 pandemic, Z-score has slowly decreased in all activities in 2020 or it stayed unchanged. The best economic sector with the reference values higher than 2.6, independent of firm's size, is sector J - information and communication, which can be interpreted as the most resilient sector.

Table 1: Altman Z-score for referent economic activities and SMEs

Source: calculation based on Financijska agencija, info. BIZ, 2021

NACE activity and size	2016	2017	2018	2019	2020
C (manufacturing)					
Micro	-1,1	-0,9	-0,4	0,3	0,3
Small	2,2	2,3	2,2	3,0	3,3
Middle	2,7	2,8	2,9	2,9	3,3

Large	2,5	1,3	2,2	2,9	3,0
Total	2,0	1,6	2,0	2,4	2,7
F (construction)					
Micro	0,3	0,3	0,2	-0,1	0,0
Small	0,7	1,1	1,7	1,7	2,1
Middle	1,3	1,4	1,7	1,7	2,3
Large	-0,3	-1,1	-0,3	1,1	1,2
Total	0,4	0,4	0,7	0,8	1,0
G (wholesale and retail trade; repair of motor vehicles and motorcycles)					
Micro	0,0	0,0	0,3	-0,4	0,4
Small	2,7	3,3	3,8	4,2	4,3
Middle	3,0	3,3	3,4	3,8	4,3
Large	-0,9	-1,1	-0,5	1,8	1,7
Total	0,9	1,0	1,4	2,1	2,5
I (accommodation and food service activities)					
Micro	-0,6	-0,5	-0,1	-0,2	-0,6
Small	-0,1	-0,1	0,5	0,9	0,2
Middle	0,0	0,7	0,8	1,0	0,8
Large	2,2	2,6	2,4	2,7	1,6
Total	0,4	0,7	0,9	1,1	0,5
J (information and communication)					
Micro	2,2	2,7	3,0	2,6	3,9
Small	3,8	4,3	4,3	4,4	5,0
Middle	3,8	3,5	5,4	5,7	5,1
Large	3,9	3,1	3,8	3,4	3,7
Total	3,4	3,1	3,7	3,5	3,9
M (professional, scientific and technical activities)					
Micro	1,0	2,3	2,2	2,3	1,6
Small	1,9	3,3	3,3	2,7	2,8
Middle	0,7	-0,1	1,0	2,3	3,2
Large	3,4	1,9	0,5	3,5	1,8
Total	1,7	2,0	1,9	2,4	2,1
Total activities in Croatia					
Micro	0,0	0,2	0,3	0,3	0,2
Small	1,6	2,0	2,3	2,6	2,6
Middle	2,0	2,1	2,4	2,5	2,7
Large	1,1	-0,1	0,4	2,4	2,1
Total	1,1	0,8	1,1	1,8	1,8

5 Conclusion

Both number of SMEs and number of employees in SMEs sector increased constantly in Croatia in recent years. In period from 2016 to 2019 also total revenues and assets were growing, but in 2020 it is evident the stagnation because the COVID-19 effects. The paper has analysed the strengths and weaknesses of traditional and classical methods through financial statements analysis, but complementary introducing more relevant synthetic score which minimizes the negative obstacles of mentioned ratios and measures and includes weighting in the calculation.

Results represent inputs to the opinion makers for conclusion based on individual ratios and comprised score about challenges, triggers in business and area for improve to retain the business during and after the COVID-19 and make their business stronger and more resilient. The best indicators were calculated for sector J - information and communication. Since this sector is seen as flywheel of development of national economies worldwide, it is necessary that Croatia foster this sector's development by national measures and supports and market-oriented instruments. It would directly influence SMEs financing relief and both their development and development of entire economy.

COVID-19 virus and epidemic measures, in first phase closure and stoppage the most of economic activities, had the strong impact on economic activities and performance of business subjects, especially SMEs. In that sense the Government introduced different support measures through the 2020 and 2021. Despite this, complementary SMEs internal management measures and activities are necessary for more strengthen and resilient business.

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