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FINANCIAL HEALTH OF COMPANIES SUPPORTED BY EUROPEAN FUNDS

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Abstract

This article is focused on the financial health of companies supported by European funds in the Czech Republic. Czech financial support programmes use their own prediction formulas. Each programme has its own methodology. Results of specific model which is used by ROP NUTS II North-East Operational programme will be compared with results which will be provided by Altman prediction model. The Altman Z-Score was originally published in 1968, and is used as an easy formula and is globally accepted. In reality programmes support not only enterprises but also nongovernmental organizations, regions, municipalities and public companies. We are interested in business concept, so we will pay attention only to enterprises and their financial health. Results will be statistically evaluated. As the conclusion, a comparison of specific approaches and the Altman formula will be presented.

Keywords: Financial health, Altman prediction model, financial support programmes, Czech Republic.
JEL Classification: G30, G33, M21, E32.

Introduction

This article is focused on the financial health of companies supported by European funds in the Czech Republic. Financial support programmes are a contemporary issue in the Czech Republic as well as in other European countries which entered the European Union in 2004 or later. European funds are very important sources because for running period of 2007-2013, the Czech Republic has € 26.69 billion available (Ministry of Regional Development CZ, 2012). Companies can try to obtain these non-returnable subsidies. Doors are opened. On the other hand, anything is for free. All programmes have their own conditions and requirements which should be fulfilled by applicants if they would like to become beneficiaries. Among the conditions you can always find financial health of an organization because no one wants to support a business unit which is likely to go bankrupt. The critical question is how to predict financial problems and the reliability of this prediction.

Czech financial support programmes use their own prediction formulas. Each programme has its own methodology. This article is focused on the reliability of prediction models. Results of specific models will be compared with results which will be provided by Altman prediction model. The Altman Z-Score was originally published in 1968, and is used as an easy formula and is globally accepted. We will narrow the data set of supported organizations because we will analyse only classical profitable units. In reality programmes support not only enterprises but also nongovernmental organizations, regions, municipalities and public companies. Methodology of programmes has specific approaches according to the type of organization. General bankruptcy or prediction models are applicable only to profitable companies. This is the clear reason for narrowing which is necessary to be done.

Financial support programmes

Financial support programmes are still the contemporary issue in the Czech Republic because the running period 2007-2013 has come to its second half. There are four major groups of programmes which are financed thanks to European money:

- Thematic Operational Programs
- Regional Operational Programs
- Operational Programs Prague
- European Territorial Cooperation

Three first groups contain together 19 operational programmes which support Objective 1 and 2. Last group contains 7 programmes which support Objective 3 of the economic and social cohesion policy implemented in the Czech Republic. Objective 3 is usually reported and evaluated itself but still 19 programmes fulfilling Objective 1 and 2 seem to be a high number. Table 1 shows how the projects are divided among operational programmes. Approved projects are coded as finalized, ongoing and cancelled.

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Table 1. Number of approved projects under the Operational programmes (Čámská, 2011a)

Operational programmes	Number of projects			
	All	Cancelled	Finalized	Ongoing
Integrated Operational Program	6942	81	5349	1512
OP Czech Republic-Poland	1638	25	699	914
OP Transport	130	---	63	67
OP Human Resources and Employment	3120	20	7	3093
OP Enterprise and Innovation	6586	528	2162	3896
OP Prague Adaptability	486	6	66	414
OP Prague Competitiveness	209	11	105	93
OP Fishing	630	26	17	587
OP Technical Assistance	105	4	43	58
OP Research and Development for Innovations	73	---	---	73
OP Education for Competitiveness	5733	2	7	5724
OP Environment	3578	2	1733	1843
ROP NUTS II South-East	543	7	385	151
ROP NUTS II South-West	552	7	308	237
ROP NUTS II Moravia-Silesia	489	4	273	212
ROP NUTS II North-East	537	5	271	261
ROP NUTS II North-West	291	10	131	150
ROP NUTS II Central Bohemia	490	7	253	230
ROP NUTS II Central Moravia	538	4	419	115
All programmes	**32 670**	**749**	**12 291**	**19 630**

Data set - selected programme ROP NUTS II North-East

Governments regularly publish a list of beneficiaries. Beneficiaries are applicants who have already received financial support which means that these units were proved as financial healthy organizations. This will be the first source of data – a list of current beneficiaries. This article is one of the outputs from the research project "Analysis and evaluation of investment projects financed from European funds" and it functions as a preliminary research. All programmes will not be analysed. The programme ROP NUTS II North-East was selected because it is one of the biggest regional operational programmes and its methodology for assessing the financial health is publicly available. We often encounter the difficulty how to get the methodology of other programmes.

ROP NUTS II North-East supports projects in the Regions of Hradec Králové, Liberec and Pardubice. The main aims of this programme and money allocation among the objectives are displayed in Figure 1.

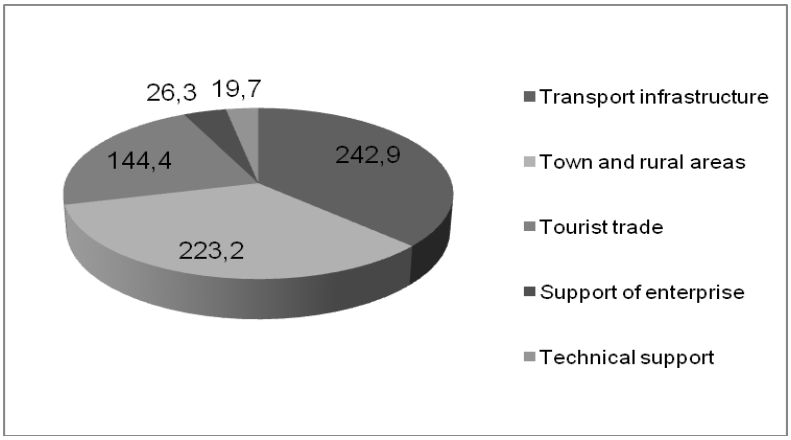

Figure 1. Allocation among different objectives (Regionální rada NUTS II, 2011)

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ROP NUTS II North-East can be found in Table 1 but that table is not updated because a list of beneficiaries used for creating that table is valid to September 2011. For research we are working with the newest list of beneficiaries which was published 4th February 2012. Table 2 shows number of approved projects of ROP NUTS II North-East in February 2012.

Table 2. Number of approved projects of ROP NUTS II North-East (Regionální rada NUTS II, 2011)

Operational programmes	Number of projects			
	All	Cancelled	Finalized	Ongoing
ROP NUTS II North-East	553	7	317	229

It is necessary categorize beneficiaries because programmes in general support not only enterprises but also nongovernmental organizations, regions, municipalities and public companies. Focus of our research is narrowed only to classical profitable companies. All limited companies and join stock companies were filtered of sample for further analysis. Distribution of approved projects among different legal entities is displayed in Table 3. It is obvious that profitable companies represent minority but their importance still remains indisputable because 25% of amount allocated is invested by profitable companies.

Table 3. Beneficiaries as different legal entities (Regionální rada NUTS II, 2011)

Type of entity	Number of projects
Profitable companies	88
Regions	114
Cities and towns	137
Small municipalities	60
Associations of municipalities and regions	23
Regional Council of Cohesion Region	36
Public benefit corporations	21
Individuals	15
Others	59

Joint stock companies and limited companies were divided according the year when they became beneficiaries. The year is crucial because condition of financial health should be fulfilled year/s before application and becoming a beneficiary. Distribution among years is shown in Table 4.

Table 4. Allocation years and number of approved projects and supported companies (own calculation based on data from Ministry of Regional Development CZ, 2011)

	Total	2008	2009	2010	2011
Number of projects	88	18	18	14	38
Number of companies	77	18	15	12	36
Number of analysed companies	51	13	9	8	21

The year of allocation is important as it is mentioned before and it will be crucial for the analysis. Financial health of the company will be checked one year before the year of allocation. It means if the company gets nonreturnable subsidies in the year 2008 its financial health would be investigated with the help of 2007 data. It ensures comparability with the results of the methodology of the operational programme. Methodology of the operational programme and research is described in the next chapter.

Methods

Financial support programmes use specific prediction models which should evaluate the financial health. Only healthy organization has enough chances to avoid bankruptcy. Results of the specific model used by ROP NUTS II North-East will be compared with results which will be provided by Altman prediction model. The Altman Z-Score is globally accepted and it was originally published in 1968 (Altman, 1968). Altman Z-score was tested many times and was not replaced by any other better model yet (Maňasova, 2007). We would like to answer this question: when using the general Altman model, do the results alter or is it a fair test?

Our first source of data is the list of beneficiaries which has been already mentioned above. Another source of data will be financial data from corporate databases which are an essential input for Altman formula. Financial health of the company is analysed the year before getting the subsidiary. There were 77 supported companies during the time period 2007-2011. Unfortunately we are not able to work with 77 units because financial statements of all organizations are not publicly available. We have analysed 51 companies as it is shown in Table 4.

We have already discussed that methodology of ROP NUTS II North-East has specific approaches for companies, nongovernmental non-profit organisations, regions, municipalities and public companies. We are interested in business concept, so we will pay attention only to enterprises and their financial health. The model of valuation is simple and understandable. The potential receiver can get maximum 10 points which are distributed among four criteria (Regionální rada NUTS II, 2011):

- enterprise history
  - without history 0 point
  - at least one year history 3 points
- profitability
  - Enterprise was profitable last year. 1 point
  - Enterprise was profitable last two years. 2 points
  - Enterprise was profitable recent three years. 3 points
  - Other results 0 point
- leverage (classical debt ratio - all debts divided by total assets)
  - Result is = < 0.5. 2 points
  - Result is > 0.5. 0 point
- liquidity (classical liquidity ratio – current assets divided by short-term liabilities)
  - Result is => 1.5. 2 points
  - Result is < 1.5. 0 point

Critical comments of this methodology could be following (Čámská, 2011b). All categories make a sense but there is one serious mistake in financial ratio. When they count liquidity they use only part of short-term liabilities because they completely omit short-term bank loans which can be in accountancy of many subjects very important. This formula is easy but it does not respect any specific (company size or industry branch). The weight of history seems to be too high because unprofitable company with history gets 30% of points.

All analysed companies are already beneficiaries of ROP NUTS II North-East which means that they had to fulfil the condition of financial health. We do not validate financial data in the specific approach. We calculate Altman formula for publicly not traded companies. Results are statistically tested.

Altman Z Score formula which is used for our analysis is written bellow (Altman, 2012)

$$Z\ Score = 3.107 \times \frac{EBIT}{A} + 0.998 \times \frac{S}{A} + 0.42 \times \frac{E}{L} + 0.847 \times \frac{RE}{A} + 0.717 \times \frac{NWC}{A} \quad (1)$$

where

EBIT	Earnings Before Interest and Tax
A	Total Assets
S	Sales
E	Equity
L	Total Liabilities
RE	Retained Earnings
NWC	Net Working Capital.

Table 5. Evaluation of Z Score

Evaluation	Z Score
Unhealthy	Z <1.23
Grey Zone	1.23<Z<2.89
Healthy	2.89<Z

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Discussion

Altman Z Score was applied to financial data. Results are summarized for different years in Table 6. Years are shifted one year back because the organizations are evaluated with the help of the latest data. Results are not convincing because many companies were not enough financial healthy according to Altman formula. More than half of companies achieve at least grey zone or better result. Especially figure 2 shows that companies with negative value of Altman formula are the most complicated. It is not easy to decide if the specific approach of operational programme works reliable and sufficiently.

Table 6. Basic statistics of Altman formula in different years

		2007	2008	2009	2010	All
N	Valid	13	9	8	21	51
	Missing	0	0	0	0	0
Mean		.8796880954	2.88923391844	2.700626013	2.26000334305	2.08831625118
Median		1.1598246000	2.07940800000	2.885994900	2.23319720000	1.7442235
Minimum		-.70302090	-.115072034	-.3516819	-.131558370	-.7030209
Maximum		2.62407260	10.364813000	4.6132097	6.711945000	10.364813
Percentiles	25	-.4546271400	1.46104370000	1.22253280000	1.22253280000	1.1301454
	50	1.1598246000	2.07940800000	2.23319720000	2.23319720000	1.7442235
	75	2.0038623500	3.50189615000	3.18452930000	3.18452930000	2.7641494

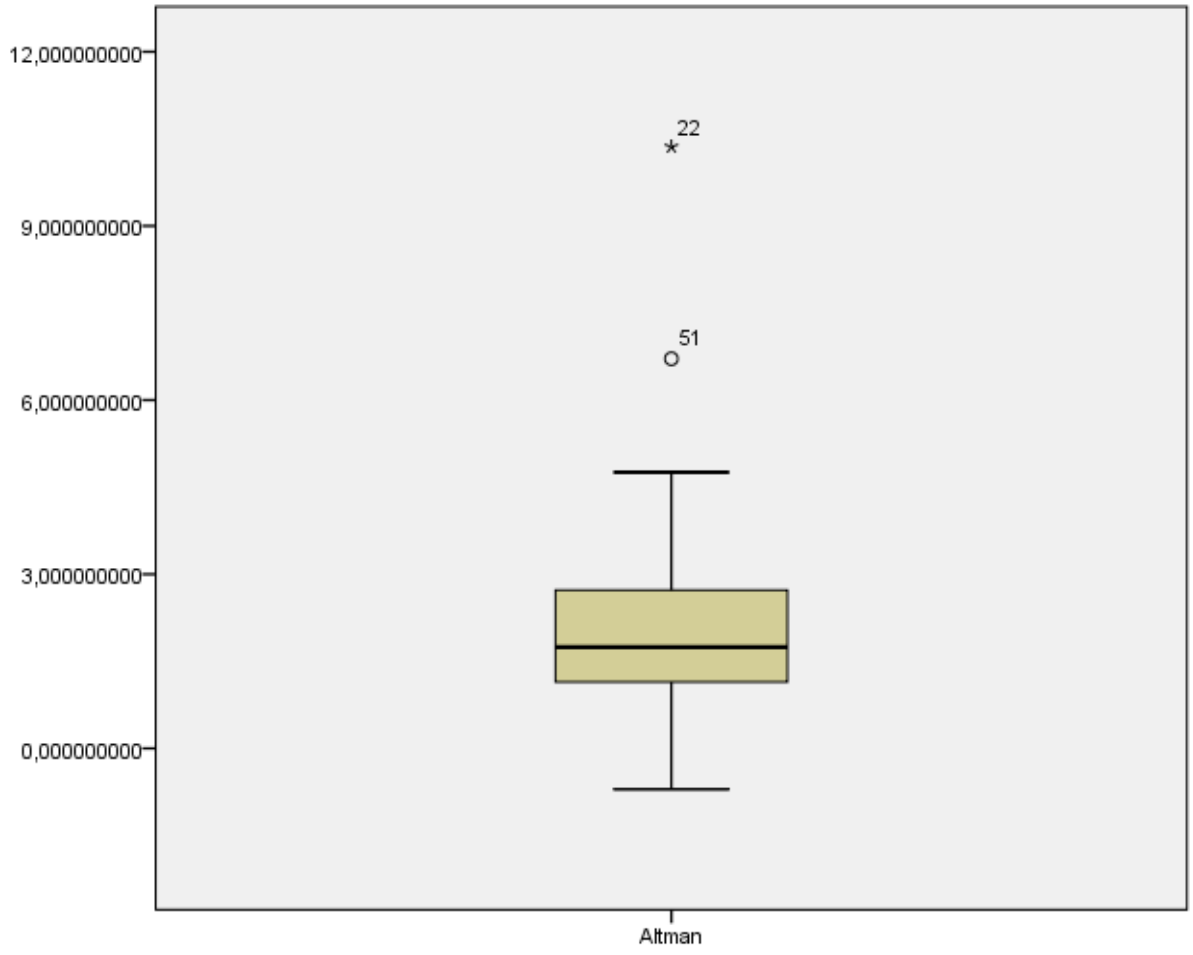

Figure 2. Results of Altman formula for all companies

Figure 3 helps to interpret results of figure 2 in the way of number of companies. Most companies finish in grey zone as it is usual with using bankruptcy models. Proportion of unhealthy companies is significant because it is almost one third.

Figure 3. Results of Altman formula for all companies – evaluation of Z Score

Conclusion

Results of our preliminary research have been discussed above. Unfortunately evaluation of Altman Z Score does not seem satisfactorily because almost one third of companies represent unhealthy layer. It opens new questions because no analysed unit has gone bankrupt. All companies meet an assumption of going concern principle. It proves that government specific approaches could be justifiable enough and could be used in the following programme period. Difficulty with the use of Altman formula is that many companies operate in specific branches such as social services – education, health care or sport. Although these organizations are set up as profitable companies their objective does not have to be profit on the first place. Second difficulty is type of Altman formula. We have chosen type for manufacturing organizations but several organizations of sample are more operating in commercial branch. Third difficulty is if Altman formula is the best indicator for predicting bankruptcy or if we should use another approach such as Taffler index or Czech national indexes IN.

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