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AN EVALUATION OF FINANCIAL HEALTH IN THE ELECTRICAL ENGINEERING INDUSTRY

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Abstract

One of the characteristics of business competitiveness is business performance. Managerial decision making is one of the main factors that can affect the competitiveness of a company. Financial and economic analysis is an inseparable part of financial management in the practice of business entities. The aim of this contribution is to present several models of forecasting the financial situation of companies. By implementing the Taffler model, Springate model, and the Aspect Global Rating, we assess the financial health of a set of non-financial corporations that, with their net turnover, represents almost the entire electrical engineering industry in Slovakia. As Slovakia has a poorly developed capital market and a numerous private companies do not have publicly traded securities, in this paper we use models based on information from financial statements, an approach which is preferable to the use of market-oriented models. Financial data of selected non-financial corporations needed for the financial analysis were obtained from the Register of Financial Statements of the Slovak Republic, with data for the entire industry obtained from the CRIBIS database and results highlighting the financial health of individual electrical engineering companies. Relevant information should be beneficial especially for suppliers in order to avoid disruptions in their own production as well as for stakeholders, managers and auditors. Among other things, it is possible to monitor which companies have the strongest financial health and which are losing their competitiveness, thus are threated. A creditworthy model confirmed that the sector appears to be financially healthy.

Keywords: competitiveness, bankruptcy model, creditworthy model, financial analysis, Slovak industry
JEL Classification: G3, O16

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1. INTRODUCTION

Informed decision-making by managers has a significant impact on the competitiveness of the company. As is stated in Jencova et al. (2016), one of the characteristics of business competitiveness is business performance. For companies, the issue of competitiveness is highly relevant, especially during the current age of globalization, when even surviving in the market is difficult.

Industry competitiveness is not only an important part of the comprehensive competitiveness

of the country but also a factor influencing its economic development (Yuan-Qiang, 2018). Globalization has significantly influenced the electrical engineering industry as a specific carrier of the latest science and technology results by a synergistic effect which greatly improves the quality of production of other industrial sectors, especially the mechanical engineering industry (Sikula et al., 2003). At present, thanks to foreign investors, Slovakia is once again becoming the center of modern industry in Central Europe. The structure of the economy has not changed significantly for the decade, with one exception being the systematic increase in the share of industrial production and selected professional activities in GDP. On the contrary, the share of public services in GDP is decreasing. The electrical engineering industry represents one of the largest industries in the world, and in Slovakia, this industry together with the mechanical engineering sector embodying the main pillars of industry. The electrical engineering industry in Slovakia has grown at the fastest pace among all manufacturing industries, becoming one of the most attractive industries for foreign investors.

The electrical engineering industry is not created by one or just a few big companies. A large number of medium and small companies have a long tradition. These concerns grow despite the influx of large foreign investors who capitalize Slovakia from abroad. Relevant information regarding the financial health of a company is essential in order to avoid disruption to the firm's production and distribution schedules, especially when long-term contracts with selected suppliers are involved (Agostini, 2018). In addition, predictions and explanations regarding corporate financial health is important for certain stakeholders, managers and auditors. This paper provides an analytical view of the financial health of non-financial corporations in the electrical engineering industry.

The aim of this paper is to determine the financial situation of 138 non-financial corporations in the Slovak electrical engineering industry using two bankruptcy models and one creditworthy model. In addition, the paper briefly describes the Slovak electrical engineering industry as an overall sector of the economy.

2. THEORETICAL BACKGROUND

The term competitiveness has a number of definitions depending on the object of research. It can be studied at a microeconomic level with regard to an individual firm, at the level of industry policies, or at the macroeconomic level taking into account the competitive power of a country. At any of these levels, the foundational concept behind competitiveness studies remains the long-term performance of the subject related to its competitors (Vlachvei et al., 2016). As is stated in Chikán (2008), "there is no competitive national economy without competitive companies." "Business performance and industries performance play a crucial role within international competitiveness" (Arslan & Tathdil, 2012). Therefore, the concept of competitiveness should not be totally explained by only the capacity of a country's productivity, it should also be explained by competitiveness at the level of firm as well as an entire industry. Porter (1980) has claimed that a competitive strategy is based on the attractiveness of the industry in terms of the five competitive forces along with the company's position in the industry. "The basic criterion for a favorable position in the industry is a sustainable competitive advantage" (Fernández et al.,

2019). Every company should always be looking for opportunities to improve and strengthen its market position. Future planning and development forecasting is part of a company's commitment to financial health (Birchall, 2014), while "financial health is an ability to generate a certain level of profitability over a given period" (Vernimmen et al., 2014).

At present, there is a research gap in terms of the links between competitiveness and financial health, with a number of authors pointing out how the area of financial decisions is a determining factor for business competitiveness. Securing appropriate financial information allows the company to analyze investment needs, to determine the optimal capital structure, to regulate dividend policy, and thus to define an overall funding strategy (López Salazar et al., 2012). López Salazar et al. (2012) have noted that "the success or failure of the company influences the results of the entire industry."

2.1 The Electrical Engineering Industry in the Slovak Republic

In the area of strengthening industrial production, the cardinal aim is to ensure the optimal use of support to increase industry competitiveness, especially by increasing the efficiency of material and energy recovery through innovation of industrial processes and products. The electrical engineering industry is a priority sector with products of high and medium-high technology and with high value added (Jencova, 2018).

From a historical point of view, Slovakia is and will remain an industrialized state (Jencova et al., 2018). According to Rynik (2018), now one hundred years after establishment of Czechoslovakia, the biggest changes in the development of the Slovak industry have taken place since 1989. First, industry moved to Slovakia from the Czech Republic, then it developed during the formation of factories and from the 1990s on in international markets. By comparison, at the time of the establishment of Czechoslovakia in 1918 Slovakia was predominantly an agrarian region. At that time, only 18% of the active population worked in the industry, and three fifths in agriculture. Unlike Slovakia, in the Czech-Moravian part of the new state 40% of the population worked in industry and only 30% in agriculture. Nevertheless, in Slovakia, some industry did in fact exist after it began to be established in the second half of the 19th century. At that time, the Slovak industry focused mainly on primary production.

Several unique conditions prevail in the Slovak electrical engineering industry, with one of these being that the market economy began development only after 1989. This corresponds, for example, to development in the capital market for the financing of business development. Funding is largely limited to self-financing and loan financing. The possibilities of capital input through stock exchanges or through financing by loan securities are underutilized. Slovak companies have undergone a transformation process, by which a corporate culture and exact management methods, which had largely been absent, was created in these companies. In general, Slovak companies are strongly export-oriented, with many companies focused on targeted areas of economy support that had been realized in the recent past, especially in the automotive and electrical engineering industries, where cyclical swings of the world economy may have a strong correlation with a country's economy. A large part of the economy is specialized in few sectors, creating sustainability risks not only in terms of one particular country sector, but for the country's overall economy.

The Slovak electrical engineering industry was studied, for example, in Jencova et al. (2016), Jencova et al. (2017), Litavcova et al. (2017). According to the statistics of the European Union, the Slovak Republic is the most industrialized state in the European area. Industrial production is a principal element in ensuring economic growth in Slovakia. In 2016, the share of industry in GDP was 27.92%, the share of industrial production in GDP reached 23.97%, the share of employment in industry in the total employment of the Slovak Republic was 22.85%, and the share of industrial production in the total employment was 20.91%. We can consider this as the highest figure within the European Union. In 2017, compared with the previous period, the employment index for the NACE Rev. 2 group 26 – Manufacture of computer, electronic and optical products decreased from 104.4 percentage points to 98.6 percentage points, for the NACE Rev. 2 group 27 – Manufacture of electrical equipment reached 105.4 percentage points. The baseline labor productivity index and the basic index of sales increased positively. In 2017, revenue in absolute terms reached 9.450 billion EUR, costs were 9.703 billion EUR, and profit (EBT) was 308.26 million EUR. In 2017, 549,807 people worked in the Slovak industry, with 50,830 people working in the electrical engineering industry itself.

In Table 1, we present the NACE Rev. 2 structure of electrical engineering sub-industries of Slovakia.

Tab. 1 – Divisions and subdivisions of electrical engineering industry. Source: own compilation according to Eurostat database (2018)

Divisions and subdivisions of electrical engineering industry	
26	Manufacture of computer, electronic and optical products
26.1	Manufacture of electronic components and boards
	26.11 Manufacture of electronic components
	26.12 Manufacture of loaded electronic boards
26.2	Manufacture of computers and peripheral equipment
26.3	Manufacture of communication equipment
26.4	Manufacture of consumer electronics
26.5	Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks
	26.51 Manufacture of instruments and appliances for measuring, testing and navigation
	26.52 Manufacture of watches and clocks
26.6	Manufacture of irradiation, electromedical and electrotherapeutic equipment
26.7	Manufacture of optical instruments and photographic equipment
26.8	Manufacture of magnetic and optical media
27	Manufacture of electrical equipment
27.1	Manufacture of electric motors, generators, transformers and electricity distribution and control apparatus
	27.11 Manufacture of electric motors, generators and transformers
	27.12 Manufacture of electricity distribution and control apparatus

27.2	Manufacture of batteries and accumulators
27.3	Manufacture of wiring and wiring devices
	27.31 Manufacture of fibre optic cables
	27.32 Manufacture of other electronic and electric wires and cables
	27.33 Manufacture of wiring devices
27.4	Manufacture of electric lighting equipment
27.5	Manufacture of domestic appliances
	27.51 Manufacture of electric domestic appliances
	27.52 Manufacture of non-electric domestic appliances
27.9	Manufacture of other electrical equipment

2.2 Models of Forecasting in the Financial Analysis

Companies are largely managed through financial indicators (Dobrovic et al., 2018). The prediction of future development as part of the company's financial assessment requires extending a range of mathematical and statistical methods. Comprehensive business evaluation methods excel because of its transparent but suffer from a lack of precision. It is, therefore, necessary for financial analysts to use several predictive evaluation methods at the same time to identify the financial health of the company.

The issues of forecasting companies' financial health were studied in Kliestik et al. (2018); Kubickova & Jindrichovska (2015); Neumaierova & Neimaier (2005); Kamenikova (2005); Bondareva (2011); Kadarova & Turisova (2011); Vochozka (2011); Malega & Bjaloncikova (2012); Kabat et al. (2013); Gundova (2012); Kalouda (2016); Belas & Cipova (2011); El Khoury & Al Beaino (2014). Widely applied models assessing the financial health of the company are divided into bankruptcy models and creditworthy models. The bankruptcy models help predict the financial distress of companies (Valaskova et al., 2018). Bobinaite (2015) stated that bankruptcy forecasting classifies companies into the categories of bankrupt or non-bankrupt companies taking into account each company's characteristics. Using the creditworthy model, the position of companies within the space is based on two dimensions, namely financial performance and evaluation of enterprise success (Kiseľáková et al., 2018). "Creditworthiness risk is the uncertainty surrounding a company's ability to service its debts and obligations" (Benhayoun, 2013, p. 105). Both, bankruptcy and creditworthy models employ the most representative financial ratios (Pavaloaia & Strimbei, 2015).

There are several models that indicate the financial state of the company and its risk of possible bankruptcy. Linear discriminant analysis models include, for example, the Altman, Springate, and Taffler model. One of the first authors of the bankruptcy model, which is based on logistic regression, was Ohlson (1980). Applications of models using logistic regression can be found in various works. For example, they were used for construction industry of the Czech Republic (Slavicek & Kubenka, 2016), for construction industry of Lithuania (Harumova & Janisova, 2014), for small and medium-sized enterprises on the basis of data on enterprises from Presov and Kosice Region of Slovakia (Valecky & Slivkova, 2012), in a scoring model for Czech companies (Reznakova & Karas, 2014; Jakubik & Teply, 2011).

Currently, there exist many predictive models, but unfortunately, few of them are applicable to Slovak companies, as they were developed in other countries, and for other conditions. In the Czech Republic, there are popular, but little-used models IN95, IN99, IN01, IN05 of Czech authors Neumaier & Neumaierova (2005), or Kralickov index (Kralicek, 1993). A Beerman discriminatory function is suitable for a manufacturing enterprise. As stated in Baran (2006), in Slovakia, the Altman model (Altman, 2000) is often used as a bankruptcy model, and the Index of creditworthy as a creditworthy model. According to Kislingerova & Hnilica (2005), there are a lot of methods and approaches to assessing the company's creditworthiness, predicting possible bankruptcy. Financial institutions mostly keep their practices secret because they are their know-how. However, financial indicators play a crucial role in all models. Complex approaches include sophisticated statistical processes that work with historical time data and calculate the different probabilities of company failure based on certain values of financial indicators. For example, bankruptcy models were described in Bordeianu et al. (2011).

The disadvantage of most models is their focus on the price book value. It is problematic to determine the market value of the company's equity, as the capital market of the Slovak Republic is not developed, and more than 80% of enterprises have a legal form of Limited Liability Company. In the case of developed economies' capital markets, several studies have confirmed that market-oriented models are better compared to models based on accounting data. However, for the Slovak Republic, which has a poorly developed capital market and a large number of private companies that do not have publicly traded securities, market-oriented models are losing the meaning, and models based on information from financial statements are preferable.

The models of the multiplicative discriminatory analysis reliably describe the financial state of the company. Every financial analyst can generate own model for assessing the financial situation of the business entity. Based on the results of the financial and economic analysis, the financial manager should focus on one aggregate indicator to predict the company's situation.

3. RESEARCH OBJECTIVE, METHODOLOGY AND DATA

The main aim of this contribution is to determine the financial situation of 138 non-financial corporations from the Slovak electrical engineering industry, using two bankruptcy models and one creditworthy model.

The basic dataset was made up of 138 companies from the electrical engineering industry of the Slovak Republic. We use financial data of these non-financial corporations for the period from 2012 to 2016. These data were obtained from the Register of Financial Statements of the Slovak Republic. The specific business names of these companies are shown in Table 5.

In this paper, for the purpose of determining the financial situation of non-financial corporations, we use the following prediction models: Taffler model – Zt (1), Springate model – SM (2), Aspect Global Rating model – AGR (3), where used abbreviations mean: EBT – Earnings before Taxes, CL – Current Liabilities, TATR – Total Assets Turnover Ratio, S – Sales, L – Liabilities, A – Assets, NWC – Net Working Capital, EBIT – Earnings before Interests and Taxes, RE – Retained Earnings, E – Equity, EBITDA – Earnings Before Interest, Taxes, Depreciation and

Amortization, EAT – Earnings after Taxes, D – Depreciation, FA – Financial Assets, CR – Current Receivables.

$$Zt = 0.53 \cdot \frac{EBT}{CL} + 0.13 \cdot \frac{TATR}{L} + 0.18 \cdot \frac{CL}{A} + 0.16 \cdot \frac{S}{A} \quad (1)$$

$$SM = 1.03 \cdot \frac{NWC}{A} + 3.07 \cdot \frac{EBIT}{A} + 0.66 \cdot \frac{EBT}{CL} + 0.44 \cdot \frac{S}{A} \quad (2)$$

$$AGR = \frac{EBITDA}{S} + \frac{EAT}{E} + \frac{EBIT}{A} + \frac{S}{A} + \frac{E}{A} + \frac{EBIT + D}{D} + \frac{FA + 0.7 \cdot CR}{CL} \quad (3)$$

Therefore, we can say that the financial situation of a company can be evaluated through indicators such as profitability or activity ratios (Rajnoha et al., 2016).

For the Taffler model, if Zt > 0.3, there is a low probability of bankruptcy and the company thrives. If Zt < 0.2, there is a high probability of bankruptcy. The resulting values in the range of 0.2 < Zt < 0.3 interpret the financial situation for which it is not possible to evaluate or predict further development. In the Springate model, for SM < 0.862, problems can be expected in the enterprise. The benefit of the Taffler model lies in the possibility of external diagnostic analysis based on the financial statements. The limitation of the Taffler model and the Springate model is that they do not take into account the sectoral and regional specificities of the operation of economic subjects. The weights of the indicators are determined on the basis of statistics, which express dynamics of the development of enterprises under conditions that are significantly different from those of Slovak enterprises.

The creditworthy model Aspect Global Rating (AGR) is an additive sum of seven ratios: return on sales measured using EBITDA, return on equity, basic earning power, total assets turnover ratio, coverage of depreciation, current ratio, financial autonomy. Rating has 9 degrees, namely (Kubickova & Jindrichovska, 2015): AAA – an optimal managed business entity approaching an ideal business; AA – a very good managed business entity with strong financial health; A – a stable and financially healthy business entity with minimum reserves in profitability or liquidity; BBB – a stable and mediocre managed business entity; BB – a mediocre managed business entity; B – a business entity with clear reserves and issues that need to be very well tracked; CCC – a under-moderate managed business entity, whose profitability and liquidity require recovery; CC – a financially unhealthy business entity with short-term and long-term problems; C – a business entity on the brink of bankruptcy with considerable risks and frequent crises.

4. RESULTS AND DISCUSSION

Based on the results of the bankruptcy models, we divided the analyzed corporations into appropriate intervals, with the exact number in each considered interval for the Taffler model and Springate model shown in Table 2, with percentages in Table 3. In the analysis of the Taffler model for 2012, 18 companies were not included; for 2013, 3 companies were not included; for 2014, 2 companies were not included; and for 2016, one company was not included. In 2012, there were 10 companies within the Zt < 0.2 range, specifically, Siix Ems Slovakia, s.r.o., Nitra; Elektronika Slovensko, a.s. (in 2016 with the business name Robertshaw); Air Liquide Welding

Central Europe, s.r.o.; VUKI, a.s., Bratislava; Neways Slovakia, a.s., Nová Dubnica; VEM Slovakia, s.r.o., Piešťany; ZVT-Print, a.s., Banská Bystrica; Elvin, s.r.o., Rabča; Kiwa, s.r.o., Nitra (in 2017 in restructuring); OVP Orava, s.r.o., Trstená.

According to the Springate model, based on our results, in 2012, 39 companies acquired values below the mentioned limit (0.862); in 2016, the result was 42 companies.

Tab. 2 – Number of non-financial corporations included in the intervals applicable for the Taffler model and Springate model. Source: own research

Interval Zt, SM	2012	2013	2014	2015	2016
Zt > 0.3	106	120	125	121	115
0.2 < Zt < 0.3	4	6	3	7	8
Zt < 0.2	10	9	8	10	14
SM ≥ 0.862	81	95	95	96	96
SM < 0.862	39	41	42	42	42

Tab. 3 – Number of non-financial corporations (in percentage) included in the intervals applicable for the Taffler model and Springate model. Source: own research

Interval Zt, SM	2012	2013	2014	2015	2016
Zt > 0.3	88.33	88.88	91.91	87.68	83.94
0.2 < Zt < 0.3	3.33	4.44	2.2	5.14	5.83
Zt < 0.2	8.33	6.66	5.88	7.53	10.21
SM ≥ 0.862	67.5	69.85	69.34	69.56	69.56
SM < 0.862	32.5	30.14	30.65	30.43	30.43

According to the results of the AGR model, for the period 2012-2016 the number of non-financial corporations classified by a AGR rating is presented in Table 4, with the percentage shown in Figure 1. The largest number of corporations fell within the AAA group, indicating that the industry is financially healthy. Nevertheless, according to this model the number of entities on the brink of bankruptcy with significant risks and frequent crises was higher. In the analysis of the AGR model for 2016, Panasonic AVC Networks Slovakia, s.r.o., Krompachy was not included (the company moved production to the Czech Republic and changed the trend in modern technologies). In addition, for the period 2012-2015, Bizlink Technology, s.r.o. was also not included.

Tab. 4 – Number of non-financial corporations included in the intervals applicable for the Aspect Global Rating. Source: own research

Rating	Index AGR	2012	2013	2014	2015	2016
AAA	8.5 < AGR	28	36	45	37	36
AA	7 ≤ AGR < 8.5	11	12	18	16	13
A	5.75 ≤ AGR <7	15	19	14	16	15
BBB	4.75 ≤ AGR < 5.75	19	19	14	23	16

BB	4 ≤ AGR < 4.75	11	17	14	11	17
B	3.25 ≤ AGR < 4	13	10	13	12	18
CCC	2.5 ≤ AGR < 3.25	9	12	9	9	6
CC	1.5 ≤ AGR < 2.5	3	3	2	5	5
C	AGR < 1.5	5	8	8	8	11

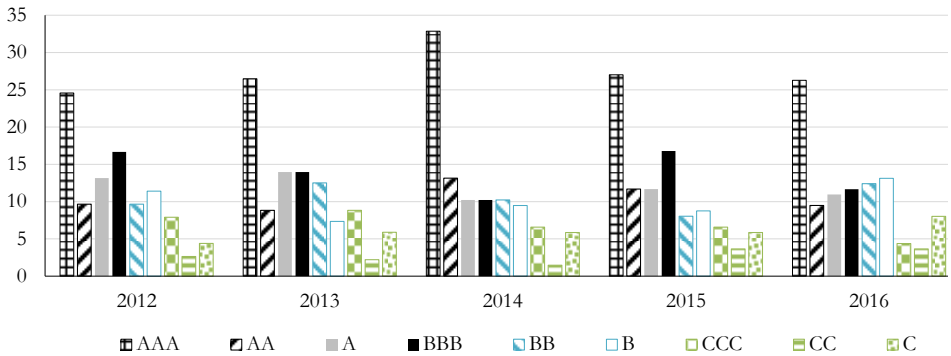

Fig. 1 – Number of non-financial corporations (in %) included in the intervals applicable for Aspect Global Rating. Source: own research

The calculated values of the used models for each of the 138 non-financial corporations of the electrical engineering industry are presented in Table 5. (see Appendix I.).

Based on the results of a multidimensional discriminatory analysis by applying the Taffler bankruptcy model, we can say that the non-financial corporations of the Slovak electrical engineering industry are prosperous. According to the Springate model, 27.53% of companies could have expected problems in the last two years. According to the Aspect Global Rating, the most frequent rating was AAA (for 26.27% of all enterprises) as an optimally managed business entity approaching an ideal business, with 8.02% of all enterprises on the brink of bankruptcy.

The presented results are the starting point for a further elaboration on the models as well as the basis for further discussion. For further research (e.g., to create a logistic model), it is necessary to take into account qualitative variables, e.g., a region-related variable or the size of a company, as company size is an important factor in predicting the failure of new companies. Small businesses have a higher tendency toward bankruptcy than do large companies. On the other hand, for large companies, a lower failure rate can be presumed, as due to their size they can carry out more extensive transactions under more favorable conditions and so on. For an overall assessment of the electrical engineering industry, it would be beneficial to complement the follow-up research with a cluster analysis aimed at grouping companies based on economic efficiency indicators. It is necessary to map the production potential of Slovak electrical engineering companies to create a database of all non-financial corporations and to support these results with those from subcontractors in other fields of industrial production (e.g. automotive, engineering). An optimal level

of investment in this industry is required, as the current rate of investment is currently insufficient to sustain the development trend is needed to strengthen competitiveness.

5. CONCLUSION

Financial aspects are key factors in the process of company's development (Stefko et al., 2016). Knowledge regarding the company's financial health can help the company thrive in a highly competitive market. Atiya (2001) has pointed out that negative earnings may indicate that company is losing its competitiveness. Forecasting methods concerned with the financial situation of individual non-financial corporations can provide insights into their financial health.

As the Slovak Republic has a poorly developed capital market and a large number of private companies do not have publicly traded securities, in this paper we used models based on information from financial statements, the use of which is preferable than that of market-oriented models. We determined the financial situation of 138 non-financial corporations in the Slovak electrical engineering industry using the Taffler model and Springare model as bankruptcy models, with the Aspect Global Rating as a creditworthy model. In addition, as the electrical engineering industry is one of the largest industries in the world, we briefly described the Slovak electrical engineering industry as an overall sector of economy. The results of the Taffler model evidenced that the non-financial corporations within the Slovak electrical engineering industry are prosperous. On the other hand, in the last two years, 27.53% of the analyzed companies could expect problems according to the Springate model. The Aspect Global Rating model showed that the most frequent credit rating was AAA (for 26.27% of all non-financial corporations), a finding which provides information about an optimally managed business entity approaching an ideal business, whereas 8.02% of all enterprises were on the brink of bankruptcy (rating C).

Comprehensive business evaluation methods have a degree of transparency, but at the same time are disadvantageous because of their inaccuracy. Therefore, financial analysts should use several predictive methods to assess and clarify the financial health of companies. Unlike Western companies, with Slovak firms it is necessary to use multiple methods to evaluate the company objectively, and to then compare the obtained results before predicting possible business developments. Any financial analyst can generate his/her own model to assess the financial situation of the business entity, but while taking into account the results of the financial and economic analysis, the financial manager should focus on a single aggregate indicator on the basis of which he/she might predict the situation of the company.

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Appendix I.

Tab. 5 – Values of models for individual corporations. Source: own research

Id.	Electrical engineering non-financial corporations	Taffler model					Springate model					Aspect Global Rating				
		2012	2013	2014	2015	2016	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016
1	Samsung Electronics Slovakia	1.24	1.41	1.17	1.17	1.1	2.65	2.57	2.24	2.16	2.07	AAA	AAA	AAA	AAA	AAA
2	Foxconn Slovakia	0.53	0.55	0.66	0.63	0.67	1.46	1.07	1.02	1.5	1.73	BBB	BB	BB	AA	AA
3	ZKW Slovakia	0.37	0.52	0.54	0.43	0.57	**0.49**	1	1.11	**0.66**	1.08	B	A	A	B	BBB
4	Whirlpool Slovakia	0.54	0.56	0.62	0.69	0.59	**0.83**	**0.72**	0.86	0.86	**0.54**	BBB	BBB	AA	AA	BB
5	TRW Automotive (Slovakia)	0.56	0.65	0.79	0.77	1.15	**-0.21**	**0.14**	**0.7**	1.3	3.08	C	CCC	BB	BBB	AAA
6	Universal Media Corporation	0.53	0.59	0.61	0.42	0.58	1.73	1.43	1.54	1.28	1.67		BB	AA	AAA	CC
7	Visteon Electronics Slovakia			0.46	0.7	0.68			**0.76**	1.11	1.71			CC	BB	A
8	Hella Slovakia Signal-Lighting	0.38	0.38	0.34	0.38	0.37	**0.82**	**0.69**	**0.59**	**0.39**	**0.34**	B	B	B	B	B
9	Panasonic Industrial Devices Slovakia	0.65	0.79	0.91	0.86	1.1	1.27	1.9	2.28	2.15	2.89	BB	A	AA	A	AAA
10	Datalogic Slovakia	0.56	0.52	0.79	0.72	0.64	1.27	1.08	2.23	1.61	1.15	AAA	AAA	AAA	AAA	AAA
11	BSH Drives and Pumps	0.72	0.79	0.77	0.72	0.69	1.84	1.82	1.69	1.46	1.43	A	AA	A	A	A
12	Hella Slovakia Front-Lighting	2.11	0.71	0.69	0.61	0.47	3.77	1.65	1.6	1.31	**0.78**		AA	A	BBB	B
13	Vertiv Slovakia (Emerson, a.s.)	0.62	0.54	0.6	0.53	0.7	1.32	1.08	1.16	0.98	1.39	AA	A	AA	AA	AAA
14	Leoni Slovakia	0.49	0.6	0.61	0.75	0.44	0.85	1.27	1.25	1.24	**0.61**	BB	BBB	A	BBB	BB
15	Osram	1	0.73	0.81	0.91	1.08	2.39	1.81	2.12	2.29	2.7	AA	AA	A	AA	AAA
16	Elster	0.86	0.5	1.05	1.31	0.8	2.19	**0.58**	2.56	3.22	1.86	AA	CC	AAA	AAA	AA
17	Semikron	0.7	0.92	0.92	0.85	0.79	1.42	2.22	2.2	1.88	1.68	A	AA	AA	A	A
18	Shin Heung Precision Slovakia	0.77	0.37	0.7	0.66	0.55	1.87	**0.69**	1.68	1.55	1.18	A	B	AA	BBB	BBB
19	Topaz LGP	0.87	1.06	1.11	1.04	0.82	1.61	2.02	2.17	1.58	1	AA	A	AAA	A	BB
20	KraussMaffei Technologies	0.6	0.36	0.68	0.67	0.68	0.87	**0.23**	1.09	0.96	1.26		C	BB	CCC	BB
21	Enics Slovakia	0.88	0.81	1.08	0.75	0.8	1.95	1.87	3.09	1.79	1.78	BBB	A	AAA	BBB	A
22	Delta Electronics	0.5	0.59	0.93	0.8	0.67	1.15	1.29	1.83	1.41	1.09	BBB	AA	AAA	AA	AA
23	Seong Ji Slovakia	1.29	1.19	1.1	1.07	1.11	2.95	2.59	2.52	2.26	2.65	AAA	AA	AAA	AA	B
24	Eltek	0.49	0.54	0.61	0.61	0.48	1.27	1.3	1.4	1.36	**0.67**	BBB	BBB	A	BBB	B
25	Samsung Display Slovakia	0.8	0.54	0.42	0.36	0.46	1.5	**0.82**	**0.6**	**0.56**	**0.71**	BB	CCC	CCC	B	CCC
26	PPA Energo	0.59	0.66	0.83	0.76	0.72	1.26	1.67	2.26	2.02	1.91	AAA	AAA	AAA	AAA	AAA
27	Dometic Slovakia	0.37	0.48	0.65	0.85	1.02	**0.82**	**0.73**	1.47	2.02	2.55	BBB	BB	BBB	BB	AAA
28	PPA Controll	0.56	0.5	0.54	0.56	0.5	**0.81**	**0.73**	1.01	1.01	**0.8**	A	AAA	AAA	AAA	AAA
29	OMS	0.38	0.38	**0.17**	0.34	**0.27**	0.95	0.94	**0.21**	**0.71**	**0.59**	B	BB	C	CCC	C
30	Vicente Torns Slovakia	0.49	0.49	0.5	0.51	0.42	1.21	1.22	1.2	1.13	0.9	BBB	BBB	BBB	BB	B
31	Askoll Slovakia	0.56	0.59	0.55	0.43	0.16	1.28	1.31	1.19	**0.83**	**0.14**	A	BBB	BBB	BB	B
32	Siix Ems Slovakia	**-0.53**	**-0.14**	0.43	0.41	0.64	**-1.92**	**-0.78**	0.88	1.02	1.77	C	C	BB	BB	A
33	Draka Comteq Slovakia	0.78	0.82	0.91	0.5	0.43	1.71	1.91	2.24	**0.68**	**0.34**	A	AA	AA	A	B
34	Bizlink Technologi				0.16	0.32				**-0.09**	**0.24**					CC
35	ABB	0.8	0.78	0.89	0.89	0.84	2.11	2.04	2.41	2.42	2.29	AAA	AAA	AAA	AAA	AAA
36	Bel Power Solutions	0.53	0.64	0.58	0.6	0.52	**0.78**	1.26	1.00	1.15	1.37	CCC	BBB	B	BBB	BB
37	ALCATEL-LUCENT SLOVAKIA	0.53	0.55	0.6	0.56	0.64	1.16	1.2	1.36	1.23	1.4	BBB	A	A	A	AA
38	Robertshaw (Elektronika Slovensko)	**-0.51**	0.5	0.5	**0.21**	**0.3**	**-0.2**	**-0.1**	**-0.47**	**0.24**	**0.46**	BBB	CCC	C	CC	C
39	Enpay Transformer Components	0.89	0.57	0.37	0.36	0.45	1.93	1.29	0.5	0.69	1.2	AA	A	B	CCC	BB
40	Bauer Gear Motor Slovakia	0.36	0.4	0.52	0.55	0.52	0.97	1.1	1.32	1.32	1.31	B	BB	BB	BB	BB
41	Air Liquide Welding Central Europe	**0.16**	**0.28**	0.34	0.49	0.46	**0.48**	**0.74**	**0.75**	1.1	**0.85**	CC	CCC	CCC	BB	B

42	Schneider Electric Slovakia	0.73	0.58	0.64	0.78	0.79	1.48	**0.76**	0.9	1.8	1.92	AA	C	C	AAA	AAA
43	Honeywell	0.79	0.93	0.81	0.81	0.61	1.66	1.79	1.63	1.54	1.23	AAA	AAA	AAA	AAA	AAA
44	Nuritech SK	1.12	1.12	1.02	0.95	0.95	2.48	2.43	2.29	1.84	2.02	AAA	AAA	AA	A	A
45	EVPÚ	0.46	0.51	0.46	0.54	0.6	0.97	0.99	0.91	1.1	1.12	BB	BB	BBB	BBB	BBB
46	Hydac Electronic	1.51	1.26	1.99	2.2	2.27	2.57	2.22	2.97	3.15	3.33	AA	A	AA	AA	AAA
47	Tesla Stropkov	1	1.05	1.14	0.87	0.74	1.7	1.71	1.87	1.59	1.39	A	AA	AA	A	BBB
48	Sensus Slovensko		0.89	0.93	0.83	0.67		2.33	2.38	2.01	1.49		AAA	AAA	AAA	AA
49	Danfoss	0.9	1.13	1.38	1.68	1.64	1.63	1.86	1.76	1.83	1.72	AAA	AAA	AAA	AAA	AAA
50	Klauke Slovakia	0.67	1.82	0.77	0.85	0.95	1.59	1.21	1.71	1.82	1.98	A	A	A	AA	AA
51	BEZ Transformátory	0.35	**0.24**	**0.2**	**0.23**	**0.19**	**0.65**	**0.51**	**0.35**	**0.38**	**0.35**	CCC	CCC	C	CC	C
52	Linak Slovakia		0.98	0.76	0.63	0.61		2.59	1.93	1.64	1.59		AAA	AA	A	A
53	Tatramat – ohrievače vody	0.57	0.42	0.46	0.8	1.09	1.24	**0.66**	**0.74**	1.37	1.67	BBB	B	B	BBB	BBB
54	Vacuumschmelze	0.93	0.66	0.86	0.7	0.6	1.38	1.15	1.44	1.26	1.08	AA	A	AA	A	A
55	Datamars Slovakia	1.39	0.39	0.55	**0.28**	0.49	**-16.72**	**0.25**	**0.47**	**0.64**	1.25	C	CCC	AAA	CCC	B
56	ICS Industrial Cables Slovakia	0.28	0.29	0.46	0.52	0.49	0.7	0.7	1.11	1.28	1.14	CCC	CCC	BB	BBB	BB
57	Calearo Slovakia		0.58	0.59	0.9	0.7		1.35	1.33	2.29	1.31		BBB	BBB	A	BBB
58	BBF elektro		0.35	0.31	0.44	0.65		**0.74**	**0.62**	1.03	1.66		BB	B	BBB	AAA
59	Elba	1.99	1.8	2.11	2.82	1.04	3.42	2.86	3.5	4.33	1.5	AAA	AAA	AAA	AAA	AA
60	AU Optronics		**0.12**	**0.16**	**0.16**	**0.16**		**-0.43**	**-0.47**	**-0.44**	**-0.36**		CC	CCC	CC	CC
61	Hengstler	0.93	0.78	1	1.08	1.06	1.98	1.57	1.96	2	2.06	A	A	AA	AA	AA
62	PPA Inžiniering	1.08	0.7	0.77	0.7	0.66	2.66	1.34	1.8	1.53	1.39	AAA	BBB	AAA	AAA	BBB
63	SEZ Krompachy, a.s., Krompachy	**0.28**	**0.24**	**0.23**	**0.21**	**0.02**	**0.56**	**0.46**	**0.45**	**0.45**	**0.02**	B	B	B	B	CC
64	Sylex	0.65	0.65	0.49	0.46	0.6	1.4	1.42	1.02	1.03	1.43	A	A	A	A	AA
65	SLK Elektro	0.57	0.6	0.64	0.59	0.89	**0.83**	1.75	1.89	1.84	2.49	CC	AA	AAA	AA	AAA
66	ZTS-Kabel	0.86	**-0.27**	0.86	1.92	1.07	1.85	**-0.07**	1.76	3.45	1.73	AAA	C	AAA	AAA	AAA
67	Elkond HHK	0.44	0.44	0.55	0.64	0.63	1.17	1.19	1.41	1.52	1.53	BBB	BBB	A	AA	A
68	ETI ELB	0.55	0.4	0.55	0.57	0.57	1.21	0.6	0.26	0.43	0.44	BB	C	BBB	CCC	C
69	Alison Slovakia	0.81	0.51	0.35	0.56	1.13	2.14	0.97	0.45	1.08	2.91	A	B	C	AAA	AAA
70	NES Nová Dubnica	0.56	0.78	0.87	0.61	0.91	1.23	1.58	1.95	1.19	2.01	A	AA	AAA	BBB	AAA
71	Elettromil Slovakia	1.53	1.27	1.86	1.98	3.79	1.9	1.55	2.5	2.78	3.96	AAA	AAA	AAA	AAA	AAA
72	Thorma Výroba		0.62	0.54	-0.24	0.34		1.25	1.02	0.07	1.14		A	BB	C	BB
73	Hansol Technics Europe	0.93	1.24	0.91	0.94	0.56	1.99	3.18	1.87	2.26	0.9	AAA	AAA	AAA	AAA	AAA
74	SEC		1.2	1.28	1.69	1.16		1.84	1.75	2.05	1.47		A	AA	AAA	AA
75	Elmax Žilina	0.57	1.66	0.58	0.6	0.63	1.12	**-3.72**	1.43	1.49	1.45	BB	BBB	BBB	BBB	BBB
76	VUKI	**0.16**	0.44	**0.1**	0.39	0.38	**0.28**	**0.79**	**0.23**	**0.7**	**0.73**	B	BB	B	BB	B
77	SVI Slovakia (Seidel Slovakia)	0.94	0.95	0.87	0.96	0.55	2.46	2.46	2.24	2.47	1.4	AAA	AAA	AAA	AAA	A
78	ProCS	0.61	0.51	0.65	0.48	0.51	1.42	1.13	1.58	0.83	0.92	AAA	AA	AAA	BB	BB
79	Scame – SK	0.31	0.35	0.35	0.39	0.34	**0.32**	**0.39**	**0.39**	**0.52**	**0.41**	CCC	CCC	B	B	B
80	JJ Electronic	4.48	1.67	7.34	7.6	10.97	8.2	4.42	11.7	12.36	16.98	AAA	AAA	AAA	AAA	AAA
81	Neways Slovakia	**0.13**	0.64	0.32	0.66	0.57	**0.43**	1.37	**0.74**	1.37	1.2	BB	BBB	BB	BBB	BBB
82	2J	1.58	1.05	1.46	1.23	1.15	3.24	2.55	2.87	2.4	2.44	AAA	AAA	AAA	AAA	AAA
83	Semecs	0.35	0.4	0.49	0.53	**0.22**	**0.76**	0.92	1.13	1.21	**0.55**	BBB	BBB	BBB	BBB	BB
84	MicroStep-MIS	1.77	0.97	1.64	0.82	0.64	3.64	2.06	2.98	2.06	1.58	AAA	AAA	AAA	AAA	AAA
85	Cable Connect Žilina	0.55	0.49	0.45	0.46	0.52	1.53	1.48	1.35	1.41	1.72	AAA	BBB	B	BB	BBB
86	SAT Systémy automatizačnej techniky	0.58	0.76	0.65	0.78	0.64	1.43	1.96	1.61	2.05	1.6	AAA	AAA	AAA	AAA	AAA
87	SEZ DK	0.49	0.42	0.42	0.52	0.56	0.97	0.91	**0.85**	1.06	1.14	BBB	BBB	BB	BBB	A
88	Elcom	0.61	0.65	1.07	1.68	0.87	**0.2**	1.23	1.94	2.22	1.05	BB	A	AAA	AAA	BBB
89	Ross		0.74	0.57	0.52	0.56		2.08	1.54	1.38	1.5		AAA	A	BBB	BBB
90	CRT – Electronic	0.41	0.38	0.35	0.37	0.41	**0.66**	**0.47**	**0.65**	**0.74**	0.89	B	CCC	CCC	CCC	B
91	A2B		0.59	0.78	0.74	0.83		1.01	2.1	1.89	2.2		B	AAA	AAA	AAA
92	Avex electronics	0.4	**0.11**	**0.04**	**-0.27**	**-0.09**	**0.59**	**-0.16**	**-0.09**	**-0.56**	**-0.08**	B	A	CC	CC	CCC
93	GE Energy Slovakia	0.95	1.02	0.82	0.96	1	1.88	2.1	1.86	1.69	1.53		AA	AAA	AA	A
94	Regada	0.36	0.36	0.41	0.34	**0.29**	0.94	0.84	0.95	**0.8**	**0.72**	BBB	BB	BB	B	B
95	Elektro – Haramia	0.77	0.55	0.83	0.96	1.16	1.59	0.85	2.21	2.57	2.72	A	B	AAA	AAA	AAA
96	Hasma	1.2	0.85	0.97	0.93	0.78	2.75	2.01	2.07	2.01	1.76	AAA	AAA	AAA	AA	A
97	Telegrafia	0.28	0.4	0.38	0.62	0.69	**0.6**	1.02	0.86	1.54	1.47	CCC	BBB	BBB	AA	BBB

98	Leadec		0.95	0.96	1.14	0.45		2.43	2.42	2.84	1.01		AAA	AAA	AAA	AAA
99	TTS Martin		0.69	0.41	0.46	0.47		1.46	1.08	1.09	1.14	A	BB	B		
100	HMH	6.39	5.87	4.25	9.26	6.21	8.95	7.48	7.05	11.74	6.62	AAA	AAA	AAA	AAA	AAA
101	Elnec	6.32	6.67	2.92	3.1	6.08	7.39	7.18	3.81	4.04	7.03	AAA	AAA	AAA	AAA	AAA
102	Emtest	0.35	**-0.02**	0.33	0.41	0.48	**0.49**	**-2.08**	**0.63**	**0.8**	**0.63**	CCC	C	CCC	CCC	CCC
103	Delipro	0.99	0.98	2.03	0.71	0.64	2.65	2.59	4.33	1.44	1	AAA	AAA	AAA	AA	BB
104	Orgeco	0.41	0.46	0.36	0.34	0.47	0.98	1.15	0.94	**0.85**	1.12	BB	BB	BB	B	BB
105	Elektrokarbon	0.43	**0.15**	**0.07**	**-0.03**	**0.29**	**0.81**	**0.33**	**-0.17**	**0.17**	**0.77**	B	CC	C	C	B
106	MicroStep – HDO	0.82	1.34	0.75	0.55	1.05	1.83	3.52	1.89	1.43	2.28	AAA	AAA	AAA	AAA	AAA
107	MK Illumination production		1.27	0.77	0.74	0.57		3.1	1.77	1.68	1.39		AAA	A	A	A
108	Regotrans - Rittmeyer	0.43	0.47	0.58	0.58	0.57	**0.6**	1.11	1	1	1.08	C	AAA	AAA	A	A
109	Alcor – Signs	1.82	0.76	0.84	1	0.92	2.84	1.97	2.23	2.5	2.27	AAA	AAA	AAA	AAA	AAA
110	Elteco	0.39	0.41	**0.28**	**0.16**	**0.12**	1.13	1.07	**0.83**	**0.1**	**-0.31**	BBB	BBB	CCC	C	C
111	Wire technologies	0.97	0.83	0.56	0.64	1.19	2.16	1.89	1.43	1.57	2.42	AA	A	BBB	BBB	AAA
112	VEM Slovakia	**-0.07**	**0.29**	0.35	**0.27**	0.38	**-0.18**	**0.53**	**0.73**	**0.53**	**0.78**	CC	B	BB	B	BB
113	Eldur Slovakia	0.35	0.34	**0.29**	**0.24**	**0.29**	**0.29**	**0.27**	**0.02**	**-0.33**	**-0.09**	BB	B	CCC	CC	CC
114	Am		0.39	0.43	0.36	0.34		**0.73**	0.89	**0.73**	**0.69**		B	B	B	CCC
115	Altron SK		1.16	0.91	0.96	0.93		2.49	1.95	2.34	2.22		AAA	AAA	AAA	AA
116	Neonex	**0.25**	**0.2**	0.32	0.33	0.35	**0.34**	**-0.18**	**0.63**	**0.7**	0.92	CCC	C	CCC	CCC	B
117	Vinuta	0.47	0.52	0.45	0.4	0.44	**0.76**	0.95	**0.74**	**0.64**	**0.72**	CCC	BB	B	CCC	CCC
118	Hanton – svetelné reklamy	0.32	0.33	0.34	**0.28**	0.41	**0.85**	0.92	0.91	**0.72**	1.09	BBB	BB	BBB	B	BB
119	Montáže Čakovice Bratislava	1.17	1.01	0.84	0.54	1.13	2.85	2.47	1.99	1.04	2.45	AAA	AAA	AAA	A	AAA
120	Manomer SK	1.07	0.59	0.65	0.41	**-0.04**	1.06	**0.29**	**0.73**	**0.61**	**-0.25**	A	BBB	BB	BBB	BB
121	3 D – Dianiška		0.48	0.5	0.46	0.31		1.04	1.12	1.02	**0.62**		A	BBB	BBB	B
122	Robotic SK	1.43	0.77	0.66	1.31	1.47	4.12	2.13	1.56	4.02	3.97	AAA	AAA	AA	AAA	AAA
123	ZVT- Print	**0.17**	**0.24**	0.31	0.36	**0.29**	**0.56**	**0.69**	**0.8**	**0.76**	**0.73**	B	BB	BB	B	B
124	EVPÚ PRO	1.2	0.8	0.74	1.99	1	1.99	1.13	**0.66**	2.99	1.24	AA	A	AA	AAA	AA
125	Prematlak		0.56	0.31	0.4	**-0.17**		1.55	**0.6**	0.98	**-0.25**		BBB	CCC	B	C
126	RMC	0.34	0.45	0.55	0.58	0.57	0.89	1.16	1.48	1.45	1.56	B	BB	BBB	BBB	BBB
127	Aladin Lux	0.58	0.51	0.78	**-0.58**	0.41	1.2	1.47	1.93	**-0.41**	1.25	BB	AAA	AAA	C	BBB
128	Inoma comp	0.56	0.67	0.79	0.67	**0.23**	1.13	1.49	1.57	1.57	**0.16**	BBB	AAA	AA	AAA	C
129	Elvin	**0.1**	**-0.61**	0.44	0.55	**0.08**	**-0.56**	**-1.44**	**0.25**	**0.47**	**0.06**	BBB	BB	BBB	A	BBB
130	Křižík GBI	0.37	0.44	0.31	-0.36	-0.09	**0.71**	0.88	**0.64**	**-2.46**	**-1.95**	B	BB	B	C	C
131	Kiwa	**-0.23**	0.41	**-0.23**	**0.09**	**0.21**	**-0.86**	1.08	**-0.73**	**-0.29**	**-0.05**	C	CCC	C	C	C
132	Inoteska	0.67	**-0.18**	**0.18**	0.9	2.8	0.98	**-0.85**	**-0.48**	**0.64**	4.1	BBB	C	BB	BBB	AAA
133	ZVT – Previs	0.35	0.51	0.54	0.62	**0.13**	0.92	1.22	1.34	1.43	**-0.73**	CCC	BBB	AA	BBB	C
134	Elektrosvit Vrakúň	0.48	0.81	**-0.12**	0.64	0.4	**0.54**	1.09	**-0.29**	**0.68**	**0.38**		AAA	A	AA	BB
135	JMT SK	0.65	0.45	0.41	0.4	**-0.99**	**0.85**	**-0.39**	**-0.43**	**-4.54**	**-1.37**	AA	CCC	AAA	C	CCC
136	Progyr	0.95	1.05	0.96	1.21	0.64	2.15	2.39	2.09	2.3	1.24		AAA	AAA	AAA	AA
137	OVP Orava	**-0.41**	**-0.43**	**-1.58**	**-1.47**	**-0.88**	**-1.3**	**-1.35**	**-3.56**	**-3.25**	**-2.19**	B	CCC	C	C	C
138	Panasonic AVC Networks Slovakia	1.09	1.26	1.69	10.81	**-19**	2.41	2.21	2.48	9.6	**-26.58**		AAA	AAA	AAA	