Impact of IFRS Reporting on Prediction of Development of Financial Conditions of Czech Firms

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Abstract

According to the international agreements since the year 2005 all the companies operating on the EU capital markets have to prepare their financial statements in accordance with the IFRS. Financial statements according the IAS/IFRS give different set of data in comparison with statements based on the Financial Statements according to national Accounting Standards. The assessment of the firms´ future destiny can therefore be affected by different accounting procedures. The selected indicators of Altman Z-score model summarize the most sensitive areas of the firm´s financial condition and its efficiency. We claim, that these indicators reveal the most important the impact of IFRS reporting in special structure and affect the final value and prediction of firm´s future. The aim of this paper is a thorough analysis of the changes in prediction of the firm´s future caused the different principles of reporting. Through the analysis of indicators´ changes on sample of 30 Czech firms we assess the main reason of these changes. The results of our study confirmed the existence of the impact of different accounting procedures. It has been confirmed that the changes of Z-score were statistically significant in our set of firms. The changes of partial indicators were confirmed as statistically significant the indicator of retained earnings to total assets and turnover of assets. Items entering the calculation of financial indicators were also confirmed as significantly different. These were in particular: the net working capital, total assets, accumulated earnings, EBIT and liabilities.

Keywords: international financial reporting standards, financial condition, assessment of the financial situation, ratios, Z-score, Czech accounting standards

JEL Classification: M40, M41

1. Introduction

The purpose of the International Financial Reporting Standards (IFRS) is to increase comparability of reporting on financial position and financial effectiveness of different companies, operating under different national conditions. Their roots, however, lie in the Anglo-Saxon accounting system, grown up from the different social environment, economy development and history in close connection and under the condition of common law. This is the main reason of the differences not only in the specified procedures, but also in the process of the application of these procedures in practice. Common conclusions of the studies analysing these differences is that the impact of IFRS implementation across the countries is very much influenced by the previous history, of cultural specifics and local characteristics of economy, that are formed not only by the specific legal environment and tax regulation but also by the custom, common thinking of the accountant profession as well as managers, regulators etc. [Albu and Albu, 2010).]

In the Czech Republic there is a strong regulation of accounting with the specific feature reflecting its different economic as well legal environment and historical tradition.

The reporting statements are prepared with regard to information needs of capital providers and state authorities. In comparison of the Anglo-Saxon model of accountancy there is a reason for many differences.

According to the international agreements since the year 2005 all the companies operating on the EU capital markets have to prepare the financial statements in accordance with the IFRS. In the same time, however, for the purpose of calculation of their tax liability they are required to prepare the financial statement according the national accounting standards. This means they have to prepare the second set of accounting the statements. Besides these companies there are many other firms that have to pay attention to the problem of the comparability of their financial statements. The reason is the cooperation with the foreign companies, which are using IAS/IFRS, necessity to understand to compare the financial information, to provide reliable and comparable information.

Transition to IFRS is a reason of many differences in various aspects and levels of corporate reporting and in the data included in financial statements [Brügemann et al., (2010), Albu and Albu, (2010)]. Reporting of assets, equity and liabilities according to IFRS in comparison to the Czech accounting standard affect almost the all items of the financial statements in varying degrees and in different direction. The financial statements according to IAS/IFRS thus give substantially different set of data that create the different picture of the financial situation and financial efficiency of the firm. It affects the assessment of the firms and decision making not only of the investors, but also of the managers, capital providers, regional authorities etc.

The period since 2005 gives the research community a special opportunity to verify whether the established goals of the set of standards were achieved and whether they brought the intended results. This situation also allows us to analyse what factors are affecting the results, or what are the reasons or the issues of further concern. The research of the effects of IFRS adoption has many streams and has focused on many aspects of the process [Baker and Barbu, 2007]. This paper aims to contribute to this stream of research analyzing the condition in the Czech firms.

2. Definition of Our Research Problem

The Altman´s model Z-score is a model used for firms' bankruptcy prediction. It includes financial sub-indicators testing various aspects of the financial condition and efficiency of the firms, those which are the most sensitive to financial problems in the future. All of the sub-indicators included in the model are based on the data reporting in the financial statements. This article deals with the comparison of the two predictions based on the model Z-score outgoing from the two set of financial statements, one prepared according to the IFRS and the second one according to the Czech accounting standards. As showed the results of research till now [Kubickova (2011), Kubickova and Jindřichovská (2012)]), the individual financial indicators and the assessment of the financial condition of the firms have changed and have changed to the worse level.

In the model Z-score are included the financial indicators most important for the prediction of the possible future failure. It can be supposed, that in these indicators concentrate the impact of the differently reported items of the financial statements. We would like to identify what IFRS procedures affect the changes in the model value and which of them affect them in the greatest extent.

The first question, investigated in this research, is

1. Are the changes in the value of Z-score statistically significant?

The second question focused on the structure of the model and its changes, is

2. What changes of indicators included in the model are statistically significant?

An the third question is

3. What different procedures can be indicated as affecting the changes?

1.3. Previous Research and its Results

The disclosure of the changes in the financial analyses' indicators and models caused by the other accounting procedures was one of the aims of the research done as a part of a project financed by the Grant Agency of the Czech Republic "IAS/IFRS Usage in Small and Medium Enterprises and its Influence on Performance Measurement", coordinated by Faculty of Management and Economics at Tomas Bata University in Zlín (Czech Republic).

The results of the research obtained so far confirmed that the reporting under IFRS causes the changes in the value of financial indicators and changes in the conclusions concerning the financial situation and efficiency. The changes were both positive and negative direction. Also the value of the Altman´s Z-score under IFRS was changed, 20 per cent of the firms assessment went down in a great scope, the value of the model reduced in the extent of 10 per cent. These partial results have been published in the paper at the conference proceedings and in professional journals [Kubickova (2011), Kubíčková, Jindřichovská (2012), Müllerová et al.,2010, Kubíčková, 2012].

The research carried out in other EU countries concentrated mainly on the individual indicators, such as return on equity, liquidity, earning per share etc., in the national firms usually listed on capital markets. From the performed studies we can mentioned study Lantto and Sahlström, (2009), Fülbier, Silva and Pferdehirt (2009), Tsalavoutas and Evans (2010), Beke (2011), Csebfalvi (2012), Cordazzo (2009), Klimczak (2011), Silva, do Couto and Cordeiro (2009), Callao, Jarne and Laínez (2007), Hellman (2011) and Agca and Actas (2007). The results of all these studies confirmed the changes of analysed indicators in both positive and negative direction. Many papers concentrate on the changes under the IFRS adoption on particular set of specific items (e.g. net profit, equity, etc.) [McAnally et al., 2010, Brügemann et al., 2010, Hung & Subramaniam, 2007]. The changes in the value of bankruptcy model and prediction have not been analysed in these studies.

The changes in the value of the model Z-score are the results of a scope of factors that are concentrated in the data of the financial statements according to IFRS entering the individual indicators.

The former research in the Czech Republic [Kubickova, 2011], was based on the analyses of sixteen firms and the changes in the model Z-score value were measured and assessed by the statistical characteristics (average, median, standard deviation). The conclusions showed that the value of the model under IFRS has changed and that the change was in negative direction. Now we extent the set of firm to number of thirty and we use a more precise method of assessment of the differences. We did not assess the change only in the final values of the model, but also changes in each sub-indicators and values which enter into these sub-indicators.

The aim of this stage of the research is to analyse and identify the main factors that affect the changes in the value of indicators..

2. Research Method

The impact of the individual factors based on reporting according to IFRS (recognition, classification, appreciation etc.) on the value of the Z-score can be different in its intensity and structure. And this influence is difficult to identify. But the core of the method is not only quantitative analysis. We used the quantitative analysis of the elements of the Z-score model and identified their changes with the aim to specify the areas, where the factors caused the changes. There are two related areas/items in the indicators and both items and their changes affect by the different set of IFRS procedures. Thus the results of the quantitative analyses are complemented by the qualitative interpretation and conclusions.

To achieve the goals we used the comparison of two sets of the financial indicators. One of them was based on the data of the financial statement prepared according to IFRS, whilst the other one was based on the data of the financial statement according to Czech Accounting Standards (CAS). The two sets of the financial statements are prepared in each company and for the same accounting period.

We have acquired a sample of financial statements from 30 corporations. Companies were distributed across many different industries, only banking and finance were excluded. The industry structure of our sample is described by the following data:

Tab. 1 - Industrial Structure of the Examined Sample Firms

Industry	Number
Production	15 companies
Services	8 companies
Transport and communications	7 companies

Source: own investigation

The set of financial statement according to IFRS was prepared principally (1) for the use on capital market (in case of 6 firms), (2) it was prepared mostly for the mother company (in case of 19 companies) and (3) for other reasons (in case of 5 firms).

The method of preparation of the financial statements was not followed in detail.

The Altman´s model Z-score is aimed to identify the possible serious financial problems of the company in the next two years. In this model are included indicators that react to possible future problems most sensitively. It was created in some variation, for the purpose of our research we used the formula stated for the companies that are not operating on the regulated capital markets:

$$\mathbf{Z_0 = 0{,}717*x_1 + 0{,}847*x_2 + 3{,}107*x_3 + 0{,}420*x_4 + 0{,}998*x_5}$$

Where x_1 = Net Working Capital / Total Assets
x_2= Retained Earnings / Total Assets
x_3 = EBIT / Total Assets
x_4 = Equity / Total Liabilities
x_5 = Sales / Total Assets

Interpretation of the value of Z-score is divided into three levels according to value Z-score:

a) Values higher than 2.7- the firm is in good condition, there is not a threat of bankruptcy in the next two years
b) Values between 2.7 – 1.2 - further development cannot be specified more precisely („grey zone“),
c) Values lower than 1.2 - the firm is threatened by the serious financial problems in the next two-three years

This formula was used as the base for the calculation of the Z-score value of the 30 firms. We calculated two values of Z-score for one firm, the first one based on the financial statements according to the Czech accounting standards (CAS) and the second one on the financial statements according to IFRS. In the same time we got the two set of value of each internal indicator. Each of these five indicators in the model were then analysed separately. We assess the significance of differences between the two sets of financial ratios and Z-score value. Due to small sample employed we use the t-test on mean differences and then the nonparametric Wilcoxon test.
T-test is a two sample location test of the null hypothesis that the means of two normally distributed samples are equal. This test is often referred to as "unpaired" or "independent samples" t-test and is typically applied when the statistical units underlying the two samples being compared are non-overlapping. It can be supposed in our case. We tested the null hypothesis that the difference between two measured on the same statistical set has a mean value of zero.

In the second stage we applied the Wilcoxon rank test. The Wilcoxon test was used for statistical hypothesis testing which make no assumptions about the probability distributions of the variables being assessed. It compares two measurements made on the same sample and tests the hypothesis of equality of distribution functions based on the verification of symmetric distribution of observed random variables. Our two sets of partial indicators value as well as the model values can be considered as the two measurements on one sample of firms. We tested the hypothesis, that the two sets of indicators value as well as the model value are different on the level 5% or 1 % of probability.

In partial indicators of the model are compared two or more items, each of which is influenced by another standards and different accounting procedures. The next table shows the different procedures that may affect the changes in indicators value (we mention only those with the greatest influence that can often be assumed).

Tab. 2 - What Procedures Impact the Value of Items Compared in the Indicators

	X_1 = NWC/A		**X_2 = RE/A**		**X_3 = EBIT/A**		**X_4 = Equity/L**		**X_5 = S/A**	
	NWC	**A**	**RE**	**A**	**EBIT**	**A**	**E**	**L**	**S**	**A**
Recognition of long term assets	x	x		x		x				x
Fixed assets valuation		x		x		x	x	x		x
Assets held for sale									x	
Financial lease		x		x	x	x		x		x
Impairment rules		x		x	x	x	x			x
Grants accounting					x			x		
Goodwill		x		x		x				x
Provisions								x		
Borrowing costs		x		x	x	x				x
Financial instruments	x	x		x	x	x		x		x

Source: Struhařová (2010), adjusted by authors

NWC=net working capital, A=total assets, RE=retained earnings, EBIT=earnings before interests and taxes, E=equity, L=Liabilities, S=sales

As can be seen the most influenced item is the Assets, which is a part of four indicators. The other items most influence item are EBIT and liabilities. We use this summary for the identification of what influenced the change of sub-indicators most.

3. Discusion of Results

3.1. The First Stage of Analysis

Results of the first phase of our analysis using the t-test are summarized in table 2.

The first indicator x_1 is the ratio between working capital and total assets. This indicator has increased in by 0,0035 on average, which represents 4 per cent of the original value as measured by CAS. The change in the standard deviation and variance is not important; there is a positive change in median of this indicator.

The second indicator x_2 is the ratio of undistributed earnings to total assets. Under the IFRS this ratio shows increase in the extent of 25 per cent of the average value. Its variability on the other side measured by standard deviation and variability has decreased – around 10 per cent. The number of observations that are up the average has increased and this lead to the increase in values of mean and median.

The third indicator x_3 is the ratio between the EBIT and total assets, which reflects productivity of total assets (ROA). Under the influence of IFRS there is a moderate increase of average of this ratio. However, there is a greater differentiation of values in the sample pool, the number of under average values decreases, which affects the positive value and increase of skewness and in moderate increase of median..

The fourth indicator x_4 describes the ratio of own sources on total assets (total financial sources) and expresses the level of indebtedness. The effect of IFRS reveals a moderate decrease of its average value (i.e. increase of indebtedness of companies in our sample). The standard deviation and variance decreased, which confirms decreased differentiation of reported values. High skewness and its increase refers to the increase of number of above average values, which is, however, lower than the increase of values under average. This leads to moderate decrease of median.

The fifth indicator x_5 expresses the ratio of Sales to total assets, i.e. assets turnover. Changes under the IFRS are predominantly negative. The average value of the indicator decreases and at the same time the variability decreases. The number of observations that are below average is higher. Nevertheless, the value of median increased, which expresses the increase in values of individual observations above average.

The total value of the Z-score has decreased on average under the influence of all variables with the exception of the third one. [1)] Most values of statistical characteristics apart from their skewness show decreased values. The resulting average value of the Z-score has decreased by 9.13 per cent of the original value. The variability of values has decreased and the number of values below average has increased. The skewness of the sample has increased, which corresponds to the decrease of average and increase of values below average.

In summary can be concluded, that the impact of IFRS has led to the less variability of values and to decrease of the value of Z-score, i.e. to the worse assessment of financial condition and financial efficiency.

Tab 2: Statistical Characteristics and T-Test. Source: Own Calculation

		mean	standard deviation	skew	variation	median	t-test
x1	*CZ GAAP*	0,092241	0,176016	-0,1242143	0,0299489	-0,1242143	0,942208
	IFRS	0,095800	0,201744	0,9044261	0,0393439	0,0473862	
diff	*IFRS-CZ*	*+0,003559*	*+0,025728*	*+1,0286404*	*+0,0093950*	*+0,1726005*	
x2	*CZ GAAP*	0,159029	0,339897	-2,3404255	0,1116792	0,1671509	0,645592
	IFRS	0,197784	0,308665	-2,5042391	0,0920983	0,1996557	
diff	*IFRS-CZ*	*+0,038655*	*-0,031232*	*-0,1638136*	*-0,0155809*	*+0,0325048*	
x3	*CZ GAAP*	0,092135	0,102921	1,2377759	0,0102397	0,0528394	0,869507
	IFRS	0,096529	0,103349	1,4307622	0,0103250	0,0521094	
diff	*IFRS-CZ*	*+0,004394*	*+0,000428*	*+0,1929863*	*+0,0000853*	*-0,0007300*	
x4	*CZ GAAP*	1,971339	3,056652	2,6186670	9,0316826	1,0633349	0,883582
	IFRS	1,859527	2,827470	2,8681315	7,7281008	0,9917462	
diff	*IFRS-CZ*	*-0,111812*	*-0,229182*	*+0,2494645*	*-1,3037818*	*-0,0715887*	
x5	*CZ GAAP*	1,107776	0,936919	1,7146627	0,8485558	0,7967081	0,219538
	IFRS	0,866588	0,497247	0,0977259	0,2390126	0,8165009	
	IFRS-CZ	*-0,241188*	*-0,439672*	*-1,6169368*	*-0,6095432*	*+0,0197928*	
Z-score	*CZ GAAP*	3,422521	3,2622778	2,7196485	10,2877080	2,5768501	0,704801
	IFRS	3,110004	3,0937031	3,1025778	9,2519656	2,3331115	
diff	*IFRS-CZ*	*-0,312517*	*-0,1685747*	*+0,3829293*	*-1,0357424*	*-0,2437386*	
diff	*in % CZ*	*-9,13*					

CZ GAAP = Czech Accounting Standards (CAS)

Values in the last column are values of *t*-test. The critical value of *t*-test with 58 degrees of freedom is 2.01 (2.01=50 degrees of freedom). If the values in the Czech GAAP sample and IFRS sample were statistically different, the *t*-test would have to be greater than 2.01. This does not occur in any case of investigated indicators. The highest values were reached in case of the ratio x_1 (working capital/total assets), and relatively high values were reached in case of indicators x_3 (EBIT/Total assets) and x_4 (own funds/Total assets). Our test did not show that any indicator would be influenced by IFRS reporting in such a way that if would lead to statistically significant changes in our sample of firms.

3.2 The Second Stage of Analysis

In the second stage of analysis we examined the differences between the two sets of indicators value using the Wilcoxon test included the partial items in the ratio. The results are in table 3. The results concerning the verification of the hypothesis are in the last column.

In the case of indicators 1, 3 and 4 it was confirmed, that the differences between the CAS level and IFRS level of value are not statistically significant, both on the 5 per cent and 1 per cent of probability. In case of the indicators 2 and 5 the null hypotheses were not confirmed both on the one and the second level of probability. That means that the differences in the share of accumulated earnings on the total assets according to CAS and IFRS are statistically different. The same situation has arisen in the assets turnover – values calculated on CAS are statistically different from those calculated according to IFRS, both on the 5 percent and the 1 per cent level of significance. Statistically significant differences were then identified in the value of Z-score, but the significance was confirmed only at the 5 per cent level of probability.

Then we examined the significance of differences between the two values of partial items entering the indicators, i. e. net working capital, total assets, accumulated earnings, EBIT, equity, liabilities and sales. The results are in the last column of table 3.

Tab. 3: Results of Wilcoxon Test. Source: Own Calculation

	Wilcoxon-test				H_0
	Min		Critical value		Accept Y/N
	W+	W-	α = 0,05*	α = 0,01**	
x1	295	175	137,1	109	yes
NWC	122	343	137,1	109	no *)
TA	105	301	116	91	no *)
x2	361	45	116	91	no **) *)
acc.earnings	324	54	107	83	no **) *)
TA	105	301	116	91	no *)
x3	268	138	116	91	yes
EBIT	322	84	116	91	no **) *)
TA	105	301	116	91	no *)
x4	180	286	137,1	109	yes
Equity	300	135	126	100	yes
Liabilities	373	92	137,1	109	no **) *)
x5	97	368	137,1	109	no **) *)
Sales	88	188	73,4	54,8	yes
TA	105	301	116	91	no *)
Z-score	115	350	137,1	109	no *)

**) 5per cent level of probability, **) 1 per cent level of probability,*
„no" means that the hypothesis of equality of the two sets of data was not confirmed,
„yes" means that the hypothesis of equality of the two sets of was confirmed.

The differences were not confirmed as statistically significant only in case of equity and sales. In the case of working capital, total assets, accumulated earnings, EBIT and liabilities the differences were confirmed as statistically significant. Difference significant only at 5 per cent level were identified in the item of net working capital and total assets. Difference were significant both at 5 and 1 per cent level. The differences were identified in the item of accumulated earnings, EBIT and liabilities. The explanation of it can be seen in follow procedures:

- In the first and the third indicator the changes can be explain as a consequences of many different procedures in reporting of assets in comparison of CAS and IFRS that are in the item of total assets concentrated. But the changes were not so significant or may be offset by the changes of the second item.
- In the second indicator the changes can be explained by the not very clear concept of Retained (accumulated) earnings in the Czech environment,
- In the third indicator the changes can be explain by the various procedures that led to expression of EBIT, i.e. procedures concerning the costs and revenues, interests, evaluation etc.,
- In the fourth indicator there are the different procedures concerning the various levels of reporting of liabilities – included in the same time the different procedures of the leasing and financial instruments,
- The fifth indicator reflects the different procedures of reporting of assets (the changes in the item of sales were not confirmed as statistically significant).

4. Results and Conclusions

The results of our analysis confirmed, that the IFRS principles of reporting change the value of the Z-score and the prediction of the further development of the firms. Changes were found also in the individual indicators entering the model, but in varying degrees and not in all sub-indicators consistently. The most significant changes were found in the second and fifth indicator, i.e. the relation between accumulated earnings and total assets and relation between sales and total assets. In the first, the third and the fourth indicators were not found any significant changes. On the other hand there were found significant changes in the entering items in these indicators, i.e. changes in these items at the end compensated each other and the resulting value of indicator did not change in statistically significant manner.

The results of our analysis provide an answer to our research questions.

1. Are the changes in the value of Z-score statistically significant?

The changes in the value of Z-score were found to be statistically significant at the 5 per cent level of statistical significance. Application of IFRS for the preparation of financial statements changes the value Z-score model and thus influences the prediction of the possible failure in the future. On average the value of Z-score is by 10 per cent lower than according to Czech accounting standards.

2. What changes of indicators included in the model were statistically significant?

Statistically significant changes were found in the second and the fifth indicator, i. e. retained earnings to total assets and equity to total liabilities. On the contrary statistically significant changes were not identified in the first indicator (the ratio of net working capital to assets), in the third (ROA) and the fourth indicators (the ratio of equity to liabilities).

3. Which different procedures can be indicated as affecting the changes?

The main impact has been revealed in the different procedures of reporting of total assets. This item encompasses many procedures stated by many standards. The second most important influence were the different procedures in reporting of liabilities including the lease and financial instruments.

The limitation of these findings is especially in the small sample size of analyzed firms. In the analysis were not also considered such aspects as company size, the relevant industrial branch or capital structure and turnover of companies under examination, etc.

Furthermore our analysis confirmed that the compilation of the financial statements according to the IFRS brings changes to the assessment and prediction of financial situation of firms in comparison to the Czech accounting standards. Among the sub-indicators of the Altman´s model Z-score that were affected to the greatest extent belong the ratio of retained earnings and equity and the ratio of sales to total assets (assets turnover). The reason for this difference can be seen in different concept and ways of reporting of retained earnings. In the second case the reason of difference may be explained by the scope of the different reporting procedures that were reflected in both sales and assets.

In comparison to similar analysis of the changes in the Z-score model, which has been made on a smaller set of firms and with the use of a simpler method [Kubíčkova, 2011] the present analysis uses the statistical tests on slightly larger sample of firms and brings somewhat different results. The result of the present analysis can be considered more precise. But the overall results of both studies are similar.

The importance of our results and conclusions cannot be overestimated due to small sample size. The analysis has confirmed the changes in the assessment of financial condition of firms the reason of which is different set of reporting rules stemming from reporting in accordance with the IFRS. Further research should be conducted to verify our hypotheses on an even larger data sample and to seek to identify more details about the specific factors and specific reporting procedures that influence the indicators. In the future research we suggest to take into consideration also nonfinancial measures and indicators like company size, industrial branch of firms´ activities, that influence structure of assets, the scope of sales, the size of debt, equity etc.

Notes

1) Relatively high value of the Z-score model when calculated according to both Czech and International financial reporting standards was caused by three firms included in the sample with high proportion of own funds. Indicator x_4 is then influenced by the resulting average of indicator x_4 and the total value of measured Z-score. To increase the explanatory power we have excluded the three firms from our sample and run the model again. The new results did not reveal any important changes in measured characteristics apart from the decrease in value of the model.

2) Statistical tables. [On-line 10.2.2013]. Available at http://cit.vfu.cz/statpotr/POTR/Teorie/tabulky.htm#ttest

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Appendix 1: Value of Z-Score and Partial Indicators in the Set of 30 Firms

	x1		x2		x3		x4		x5			
Firm	**0,717 x NWK/ CA (CZ)**	**0,717x NWK/CA (IFRS)**	**0,847 x Acc.ear-nings/CA (CZ)**	**0,847 x Acc.ear-nings/CA (IFRS)**	**3,107x EBIT/CA (CZ)**	**3,107x EBIT/CA (IFRS)**	**0,42x E/L (CZ)**	**0,4x E/L (IFRS)**	**0,998 x T/CA (CZ)**	**0,998 x T/CA (IFRS)**	**Z-score (CZ)**	**Z-score (IFRS)**
1.	0,0823	0,0766	0,4324	0,4324	0,1203	0,1203	3,1259	2,9250	0,5750	0,5781	4,3359	4,1323
2.	-0,2951	-0,3113	0,0180	0,0182	0,0483	0,0477	0,1441	0,1282	1,3340	1,3377	1,2493	1,2206
3.	0,0310	-0,0025	0,1678	0,2453	0,0764	0,0611	0,3538	0,4208	2,1332	1,7582	2,7622	2,4830
4.	0,1993	0,1868	-1,2671	-1,1240	0,0253	0,0316	5,3512	4,3724	0,0795	0,0742	4,3881	3,3542
5.	-0,0119	0,0121	0,2130	0,3184	0,0573	0,0579	1,5722	1,7567	0,5441	0,4625	2,3748	2,6076
6.	0,4421	0,4474	0,1968	0,2095	0,1718	0,2278	1,5654	2,0053	0,6092	0,5458	2,9853	3,4357
7.	-0,0127	-0,0639	0,4795	0,4322	0,2580	0,2213	1,1731	0,9793	0,8433	0,8529	2,7412	2,4218
8.	0,1182	0,0851	0,4802	0,4766	0,1862	0,1957	1,2795	1,0953	0,7501	0,7630	2,8141	2,6156
9.	0,1013	0,0804	0,4698	0,4625	0,2259	0,2144	1,2760	1,0877	0,8635	0,8821	2,9366	2,7270
10.	0,2523	0,1797	0,1183	0,1087	0,1158	0,1143	0,9202	0,8680	1,3101	1,2043	2,7166	2,4750
11.	0,0149	0,0103	0,0722	0,0957	0,0767	0,0813	0,6546	0,5879	0,2440	0,2334	1,0624	1,0086
12.	0,2142	0,1826	-0,0119	0,0542	0,0195	0,0054	0,3809	0,4925	1,3751	1,2704	1,9778	2,0051
13.	-0,0389	0,0912	0,0848	0,0648	0,0344	0,0384	0,1118	0,1067	1,8202	1,4483	2,0123	1,7495
14.	0,3576	0,3501	0,7295	0,7145	0,2633	0,2632	13,4550	13,1173	1,2343	1,2277	16,0397	15,6728
15.	0,0037	-0,0132	0,1788	0,2369	0,0320	0,0358	1,5065	1,0231	0,5644	0,6988	2,2854	1,9814
16.	-0,0314	-0,0029	0,0300	0,0277	0,0683	0,0493	0,1466	0,7462	0,1277	0,0641	0,3412	0,8844
17.	-0,2294	-0,1538	-0,1099	0,0838	-0,0227	0,0081	0,0367	0,1732	2,0502	1,1415	1,7249	1,2528
18.	-0,1887	-0,1158	-0,1091	0,1203	0,0179	0,0106	0,0583	0,1874	2,3602	1,1370	2,1386	1,3396
19.	0,1267	0,1190	0,1656	0,1536	0,0152	0,0164	8,7780	6,8353	0,4681	0,4450	9,5536	7,5693
20.	-0,0497	-0,0506	0,1877	0,1899	0,0278	0,0277	1,9458	1,8059	0,5534	0,5414	2,6651	2,5141
21.	0,0291	0,0182	0,1665	0,1752	0,0133	0,0249	1,0258	1,0015	0,5743	0,5548	1,8090	1,7746
22.	-0,0124	-0,0018	0,1693	0,1776	0,0216	0,0245	1,3968	1,2763	0,6319	0,5889	2,2071	2,0655
23.	0,1534	-0,0701	0,1609	0,2362	-0,0154	0,1024	0,1854	0,2046	4,3575	1,7712	4,8417	2,2444
24.	0,2344	0,0083	0,2504	0,3364	0,1278	0,0550	0,2788	0,3199	2,8453	1,4544	3,7367	2,1740
25.	-0,0344	-0,0429	0,3125	0,3061	-0,0165	-0,0156	1,1009	0,9820	0,2298	0,3892	1,5922	1,6188
26.	0,1353	0,6826	0,1582	0,2331	0,0388	0,0441	0,0967	0,1597	0,1046	0,0488	0,5336	1,1683
27.	0,2859	0,2187	0,0603	0,0611	0,0597	0,0691	1,9613	1,4277	0,9050	0,8280	3,2722	2,6045
28.	0,2328	0,1937	-0,0174	0,0791	0,0364	0,0441	0,3816	0,5072	1,5383	1,4052	2,1718	2,2293
29.	0,3548	0,3479	0,7028	0,7028	0,3303	0,3303	8,0499	8,0519	1,4799	1,4858	10,9177	10,9186
30.	0,3025	0,4120	0,2810	0,3047	0,3505	0,3889	0,8274	1,1411	0,7272	0,8050	2,4886	3,0517
t-test	**0,9422**		**0,6456**		**0,8695**		**0,8836**		**0,2195**		**0,7048**	
mean	0,0922	0,0958	0,1590	0,1978	0,0921	0,0965	1,9713	1,8595	1,1078	0,8666	3,4225	3,1100
st.dev	0,1760	0,2017	0,3399	0,3087	0,1029	0,1033	3,0567	2,8275	0,9369	0,4972	3,2623	3,0937
skew	-0,1242	0,9044	-2,3404	-2,5042	1,2378	1,4308	2,6187	2,8681	1,7147	0,0977	2,7196	3,1026
var.	0,0299	0,0393	0,1117	0,0921	0,0102	0,0103	9,0317	7,7281	0,8486	0,2390	10,2877	9,2520
median	-0,1242	0,0474	0,1672	0,1997	0,0528	0,0521	1,0633	0,9917	0,7967	0,8165	2,5769	2,3331

Appendix 2 – Value of the Items Entering the Partial Indicators of Z-Score in the Set of 30 Firms

	NWK (CZ)	NWK (IFRS)	Total Assets (CZ)	Total Assets (IFRS)	Accum. Earnings (CZ)	Accum. Earnings (IFRS)	EBIT (CZ)	EBIT (IFRS)	Equity (CZ)	Equity (IFRS)	Liabilities (CZ)	Liabilities (IFRS)	Sales (CZ)	Sales (IFRS)
1.	462 863	430 497	4 030 992	4 030 992	2 057 913	2 057 913	483 531	483 531	3 557 407	3 523 582	477 997	505 957	2 336 620	2 335 180
2.	-1 561 228	-1 642 136	3 782 827	3 793 511	80 734	81 316	183 391	180 593	969 018	884 528	2 824 493	2 898 299	5 070 504	5 070 504
3.	3 106	-309	88 206	71 837	14 229	25 549	5 491	5 387	32 844	44 147	38 993	44 059	153 550	155 396
4.	66 667	66 905	256 859	239 820	-358 774	-340 854	6 059	8 113	222 367	234 348	17 453	22 511	19 098	19 098
5.	-13 791	16 506	977 380	830 672	208 848	367 400	47 627	56 625	655 551	788 793	175 121	188 587	452 900	452 901
6.	224 284	224 398	359 614	363 759	-84 533	88 931	62 494	81 914	286 807	297 337	76 952	62 277	222 050	196 662
7.	-547	-2 753	30 881	30 829	17 452	15 759	7 953	6 835	21 898	21612	7 840	9 269	26 051	26 391
8.	6 003	4 339	36 570	36 400	20 635	20 577	6 776	7 155	26 500	26 434	8 699	10 136	27 358	27 958
9.	4 750	3 748	33 431	33 626	18652	18 254	7 597	7 168	24 521	24 118	8 071	9 313	29 094	29 548
10.	484 663	375 656	1 498 591	1 377 563	192 332	192 332	159 493	171 319	945 859	973 801	431 704	471 221	1 808 411	1 808 411
11.	158 071	105 273	7 353 041	7 606 058	647 915	830 578	583 718	598 152	4 633 396	4 289 003	2 972 662	3 064 038	1 859 586	1 719 430
12.	86 663	79 981	313 970	290 072	-4 075	20081	5 651	1 683	137 953	169 458	152 119	144 512	399 672	399 672
13.	-240 268	541 366	4 254 007	4 425 534	443 205	325 691	152 175	167 771	930 232	812 154	3 495 302	3 441 853	8 071 699	6 173 507
14.	102 205	101 249	207 346	204 953	176 533	174 913	53 969	54 578	198 749	200 913	6 204	6 433	253 477	255 062
15.	9 081	-25 601	1 389 086	1 770 684	373 771	388 486	56 721	49 756	1 384 596	984 796	386 021	404 290	1 001 371	972 704
16.	-2 105 409	-380 640	93 763 510	48 015 931	1 703 332	3 070 182	3 279 702	618 342	12 409 473	964 771	35 559 968	33 752 311	6 143 822	6 025 309
17.	-3 736 023	-4 373 355	20 384 057	11 679 439	-1 515 608	2 017 712	-265 473	164 774	938 646	5 950 933	10 740 793	14 433 124	23 993 101	23 315 848
18.	-2 674 688	-3 419 562	21 179 136	10 161 647	-1 309 008	3 009 146	181 925	225 480	1 238 093	6 535 215	8 923 554	14 643 921	24 031 977	24 128 524
19.	612 603	574 263	3 458 737	3 467 662	678 135	627 347	52 703	56 654	3 309 322	3 258 514	158 340	200 223	1 626 380	1 542 180
20.	-303 854	-316 588	4 482 757	4 385 254	971 895	1 004 793	121 967	123 963	3 605 795	3 635 960	778 302	845 640	2 431 813	2 431 813
21.	208 699	134 232	5 288 384	5 137 264	1 010 067	1 093 781	68 164	131 490	3 643 967	3 724 984	1 492 010	1 562 149	2 956 021	2 939 985
22.	-80 021	-12 162	4 850 114	4 631 066	925 628	1 017 157	99 800	118 914	3 559 528	3 648 324	1 070 329	1 200 581	2 932 068	2 861 727
23.	14 542	-16 046	164 184	67 987	12 912	45 787	-1 050	16 811	20 912	53 787	47 361	110 397	296 846	291 391
24.	22 189	1 532	132 870	67 860	20 065	52 770	8 670	7 303	27129	57 278	40 867	75 191	193 467	193 636
25.	-2 705 940	-3 737 487	52 504 473	56 349 647	20 788 514	3 586 886	-930 741	-973 682	40 788 514	3 779 771	15 561 133	18 724 702	12 974 638	24 373 945
26.	24 157	135 000	141 803	127 980	23 908	39 025	4 965	6 260	23 945	39 061	104 035	102 742	13 409	6 928
27.	407 365	340 649	1 116 690	1 021 675	72749	80541	61 035	74 111	838 024	859 618	179 456	252 877	926 422	926 422
28.	95 963	87 424	323 535	295 532	-6078	30208	10 763	14 261	140 694	176 980	154 838	146 555	455 532	455 532
29.	82 009	803 94	165 708	165 708	137491	137491	54 735	54 735	157 491	157 491	8 217	8 215	245 722	246 696
30.	7 078	8 715	15 165	16 775	5565	5455	5 879	5 897	11 127	11 085	5 648	4 080	12 223	12 233
mean	-344 627	-353 817	7 477 687	5 255 842	903 851,9	1 290 594	152 523	217 530	2 551 652	4 567 296	2 647 884	3 025 910	3 225 623	3 511 333
st.dev.	1 067 494	1 248 092	20 330 277	13 144 935	3 819 530	4 118 083	636 178	864 869	7 612 770	13 157 790	7 201 515	7 547 003	6 351 593	7 146 817
skew	-2,07568	-2,48059	3,197964	3,14497	5,101239	5,012611	4,206064	4,767752	4,581823	3,498112	3,6425422	2,852707	2,560086	2,415389
var.	1,06E+12	1,51E+12	4,66E+14	1,88E+14	1,46E+13	1,69E+13	3,91E+11	7,23E+11	5,95E+13	1,83E+14	5,318E+13	6E+13	4,1E+13	5,2E+13
median	11 811,5	12 610,5	323 535	563 102	72 749	137 491	53 336	55 680	471 179	788 793	156 589	188 587	454 216	45 4216