FINANCIAL HEALTH OF POST-TRANSFORMATION COMPANIES

Olga Heralová*[1]

[1]*CVUT, Faculty of Civil Engineering, Department od Construction Management and Economics, Thákurova 7/2076, Praha 6, 166 29, olga.heralova@cvut.cz, (tel: 777 921 102)*

Abstract

The intention of this paper is to verify the impact of transformation on financial health of the transforming business corporations. Transformation of business corporation can help with increase effectivity of the production, to increase financial performance of the companies, to reduce costs, to realize risk diversification or organization structure simplification. This paper is focused on transformation called spin-off by merger project. Financial health of the companies is possible to verify with usage of Financial Analysis and Summary Indexes. For verification in this paper were selected two bankruptcy indexes Altman´s index Z-score and IN05. In the paper is presented financial health verification of transformed companies carried out on transformed companies immediately after transformation and over the next few years.

Keywords

bankruptcy indexes; financial health; transformation

JEL Classification

G33 Bankruptcy; Liquidation
G34 Mergers; Acquisitions; Restructuring; Corporate Governance

DOI: https://doi.org/10.14311/bit.2023.02.02

Editorial information: journal Business & IT, ISSN 2570-7434, CreativeCommons license published by CTU in Prague, 2023, http://bit.fsv.cvut.cz/

Introduction details

The intention of this paper is to verify impact of transformation on financial health of the transforming business corporations.

Transformation of business corporation are one of the possibilities, how to increase effectivity of production, separate risk part of the company or prepare part of the company for significant investment or for sale. One of the main criteria for business corporation transformation is to increase financial performance of the companies. Other reasons for transformation could be to reduce costs, risk diversification or organization structure simplification.

Transformation is the process that is regulated mainly by the Act no. 125/2008 Sb., Act on transformations of business corporations and cooperatives. Based on this act it is possible to realize several kinds of transformations, for example merges or splitting off. Both have subvariants.

One of the favorite kinds of transformation of business corporations is spin-off by merger project, combination of splitting off and merge. This kind of transformation consists of 3 steps:

- establishing new company
- splitting off part of the original company's assets
- merge of the splitting off part of the company's assets with newly established company.

This transformation resulting into 2 companies, the original without separated part and new one filled by separated part. This kind of transformation is used for example for splitting off part of the company assets. This article is focused on spin-off real estate property and as counterweight part of equity and loans. Big advantage of this transformation is fact, that original company does not disappear, what is very important for business stability. As was mentioned, the process of transformation is regulated by the law, because creditors' rights must be protected. Another big benefit of this transformation is, that it is not necessary to evaluate spin-off property for contribution property into assets of new company, what safe time and costs of the transaction.

Financial health of the companies is possible to verify with usage of Financial Analysis and Summary Indexes. For verification in this paper were selected two bankruptcy indexes Altman´s index Z-score and IN05.

The intention of this paper is to verify financial health of both companies after transformation. The verification was realized yet before the transaction and was realized only on original company [3]. Intention of this paper is to check financial health of both companies after transformation and with the time gap.

Methodology details

Methodology used for research:

- Bankruptcy indexes: Z-score, IN-05
- Table processor MS Excel, mainly table and graphic processing
- Data and Statutory reports from accounting database of selected companies

Summary Indexes

For financial health evaluation is useful to apply the model that characterize the financial condition of the company by the only one number. This one number is called *summary index*.

Bankruptcy indexes are used to detect whether there is a risk of bankruptcy of the company in future. Problematic companies mostly have specific symptoms within some time prior to bankruptcy. Specific symptoms could be for example troubles with liquidity, net working capital or return on equity. In this paper are used 2 indexes Z-score from Altman model and IN – 05. Bankruptcy indexes include several indicators, each with a different weight. Weight of indicators are given by the models. Both models define interface, between a company headed for bankruptcy and company creating value.

Bankruptcy indexes are used in this paper due to fact that the core of this article is to verify that the spin-off the real estate property from the company does not negatively influence the financial condition of the original company and how healthy is newly established company. Verification is carried out several years after the transformation. Splitting affects significant part of the Balance Sheet of the original company, real estate property from assets and as counterweight part of equity and loans.

Altman´s analysis

Altman´s analysis is one of the possibilities how to test the financial condition of the company with help of summary index. Z-score is the name of the summary index, and it is concluded from 5 indicators from the field of profitability, liquidity and capital structure. Each from 5 indicators received weight based on empiric research [4].

By using Altman´s model, it was gradually improved. One of the improvements is the differentiation between companies traded on stock exchange and not traded. Variant applicable for company not traded on the stock exchange is used in this paper.

Version of this model from 1983 is applicable for Czech environment.

Z-score formula is below [2]:

$$Z = 0{,}717 * \mathrm{X1} + 0{,}847 * \mathrm{X2} + 3{,}107 * \mathrm{X3} + 0{,}420 * \mathrm{X4} + 0{,}998 * \mathrm{X5} \quad (1)$$

Where: X1 = Net working capital / total assets (NWC/TA)

X2 = Retained Earnings from Previous Years/ total assets (RE/TA)

X3 = EBIT / total assets (EBIT/TA)

X4 = Booking value of shares / liabilities (S/L)

X5 = Sales / total assets (S/TA)

The Z-score value ranges in the interval between -4 and +8.

Criteria for evaluation are:

$Z > 2{,}9$ financially strong company

$1{,}23 < Z < 2{,}89$ some financial difficulties, unclear next trend

$Z < 1{,}2$ bankrupt candidates

Altman ´s model was widely used in the Czech economy, but the model was criticized for not adjustment for Czech conditions. It was the reason why Mr. and Mrs. Neumaier have started to develop model suitable for The Czech Republic. They used database of Ministry of Trade for model testing, and they gradually developed models: IN95, IN99 a IN01 (numbers correspond to year when model was presented) [5].

Index IN05

Given that the case study presented later in this text are construction company and facility management company, both from the Czech environment, financial health of the companies is verified by index IN05, that was created for the Czech environment and, in addition to investor´s point of view, it also includes the owner´s point of view.

Advantageous of IN05 (user point of view):

- Easy for calculation
- Transparent algorithms of calculation
- Usage of financial data publicly available from business register
- Suitable for both tradable and no tradable on open market companies
- Gives clear results.

However, it must be considered, that index IN05:

- Was created and tested on middle sized and big industrial companies.
- Works with annual data of business performance, so it is an expression of company´s performance in an annual time horizon.
- It is a rough indicative characteristic, which help to estimate the overall performance of the company, but it does not address how the performance was achieved.

Index IN05 – formula for calculation

$$\mathrm{IN05} = 0{,}13 \times \mathrm{A/CK} + 0{,}04 \times \mathrm{EBIT/IC} + 3{,}97 \times \mathrm{EBIT/A} + 0{,}21 \times \mathrm{TR/A} + 0{,}09 \times \mathrm{OA/KRZ} \quad (2)$$

Where:

A	= Assets
CK	= Liabilities
EBIT	= Earnings before interest and taxes
IC	= interest costs of liabilities
TR	= Sales
OA	= Current assets
KRZ	= Short-termed liabilities

IN05 results interpretation [5]*:*

IN05 < 0,9	company does not create the value and heading for bankruptcy (with probability of 86%)
IN05 > 1,6	company creates the value (with probability of 67%)
0,9 < IN05 < 1,6	grey zone

If the company has low level of debts (or any debts), it is recommended to replace the ratio EBIT/IC by number 9 to get proper result.

Summary Indexes interpretation

Each company is specific and at the same time macroeconomic situation is variable (indexes interpretation will not be the same during the recession and during the significant economic growth), therefore the assessment needs to be made in wider context.

Results details

The object of the research are two companies. The first one is a medium-sized construction company after the process of spin-off the real estate property and everything related to this. The second one is the newly established company dealing with facility management of its own real estate property.

The reasons of spin-off by merge project were 2:

- Considering financially demanding investment into real estate. On the bases on negotiation with financing partners, it was requested, to move real estate property into independent company.
- The second reason was the need of construction company optimization. Till the transformation the business unit dealing with real estate was part of the construction company and was very poorly managed. The business unit repeatedly ended in loss and there was no systematic maintenance and development of real estate property. Property fell into disrepair. The Splitting the real estate assets from the company started the process of organization optimization of construction company.

After consideration with assistants of lawyers and tax advisors were approved to realize the spin-off by merge project. Finally, was decided, that from the construction company will be spitted all real estate property due to fact, that company does not need these assets for his core business. Intention was to gain thanks to transformation 2 sisters' company, one fully focused on construction business and the second fully focused on facility management of own real estates.

With effect of 1.1.2014 was realised transformation, spin-off by merge project.

The Splitting off the real estate assets from the company started the process of organization optimization of construction company. Together with the real estate assets were transferred all property related processes, contracts, employees. Below are listed which was the subject of split.

Split from the assets in amount of 124, 037 million*:*

- Plants, Buildings, Equipment – net value

Split from the equity and liabilities in amount of 124,037 million:

- Retained earnings from the previous years.
- Other long termed liabilities
- Deferred tax liabilities related to transferred fixed assets.
- Deposits received, related to lease contracts.

As was mentioned above, the verification was realized yet before the transaction and was realized only on original company [3]. Intention of this paper is to check financial health of both companies after transformation and with the time gap.

Data from the audited financial statements of the companies for the years 2014-2022 were used to assess the financial health of companies.

Construction company evaluation

From the Table 1 and Table 2 is visible, that the construction company mostly were in the gray zone during the monitored period based on Z-score calculation. The same was detected before transformation [3]. But the year after the transformation the company increased Z-score by 39% (from 1,58 to 2,19). Based on analyses it looks like that this improvement is related to:

- Decrease in amount of assets not used for the core business. Decrease of fixed assets not used for main business was realized by spin-off by merge project. So, it looks like, that the transformation helps to improve final Z-score of the company.
- Company significantly decreases level of receivables and achieved higher EBIT and sales.

The construction company faced troubles due to one problematic contract in the period from 2019 till 2021. This trouble cause impossibility to participate in public contracts. From the data is visible that in this period sales significantly decreased, and EBIT was negative. It looks like that company was not able to reduce costs so quickly as sales decreased. But there is no evidence, that this financial trouble has some connection with spin-off by merge project. But from the data related to year 2022 is visible that company reached Z-score in amount of 3,19, what means that company is on the safe side and creates value. As is mentioned in previous test, Z-score higher than 2,9 means that company creates value.

From the Table 3 and Table 4 is visible, that index IN05 gives similar result as Z-score. One year after transformation construction company improved its Z-core and then faced troubles, but troubles were not caused by spin-off by merge project. From the Figure 1 is visible that both indexes have in interval from 2014 to 2022 similar trend. Firstly, index is improving, then follows for company problematic period and in 2022 company is back on the track in very good financial condition.

Based on bankruptcy indexes is possible to state, that was not proved that transformation had negative impact on financial health of the company.

Table 1: Z-score calculation, construction company, 2014-2017

			Altman´s				
	Altman´s index per year		*index*	31.12.17	31.12.16	31.12.15	31.12.14
X1	NWC/TA		0,717	0,47	0,49	0,45	0,34
X2	RE/TA		0,847	0,03	0,00	0,00	0,00
X3	EBIT/TA		3,107	0,02	0,02	0,05	0,04
X4	Equity/Liabilities		0,42	0,29	0,28	0,30	0,23
X5	S/TA		0,998	1,09	1,01	1,59	1,11
Z	*Altman´s index, comp. not traded*			*1,63*	*1,53*	*2,19*	*1,58*

Table 2: Z-score calculation, construction company, 2018-2022

	Altman´s index per year		31.12.22	31.12.21	31.12.20	31.12.19	31.12.18
X1	NWC/TA		0,48	0,42	0,43	0,49	0,52
X2	RE/TA		-0,23	-0,23	-0,05	0,04	0,03
X3	EBIT/TA		0,09	-0,05	-0,16	-0,06	0,02
X4	Equity/Liabilities		0,81	0,73	0,81	0,28	0,31
X5	S/TA		2,42	0,94	1,20	1,44	1,38
Z	*Altman´s index, comp. not traded*		*3,19*	*1,18*	*1,32*	*1,75*	*1,96*

Table 3: IN05 calculation, construction company, 2014-2017

IN index		*Index IN05*	31.12.17	31.12.16	31.12.15	31.12.14
A/CK		0,13	1,29	1,29	1,32	1,23
EBIT/IC		0,04	2,10	1,52	3,14	3,26
EBIT/A		3,97	0,02	0,02	0,05	0,04
TR/A		0,21	1,0869	1,0101	1,5850	1,1143
CA/KRZ		0,09	2,29	2,37	2,15	1,65
Index IN05			*0,768*	*0,718*	*1,034*	*0,836*

Table 4: IN05 calculation, construction company, 2018-2022

IN index		31.12.22	31.12.21	31.12.20	31.12.19	31.12.18
A/CK		1,84	1,79	1,83	1,30	1,31
EBIT/IC		4,44	-5,54	-10,68	-4,53	1,59
EBIT/A		0,09	-0,05	-0,16	-0,06	0,02
TR/A		2,4184	0,9382	1,1995	1,4371	1,3793
CA/KRZ		2,60	2,31	2,38	2,68	2,62
Index IN05		*1,529*	*0,210*	*-0,342*	*0,283*	*0,830*

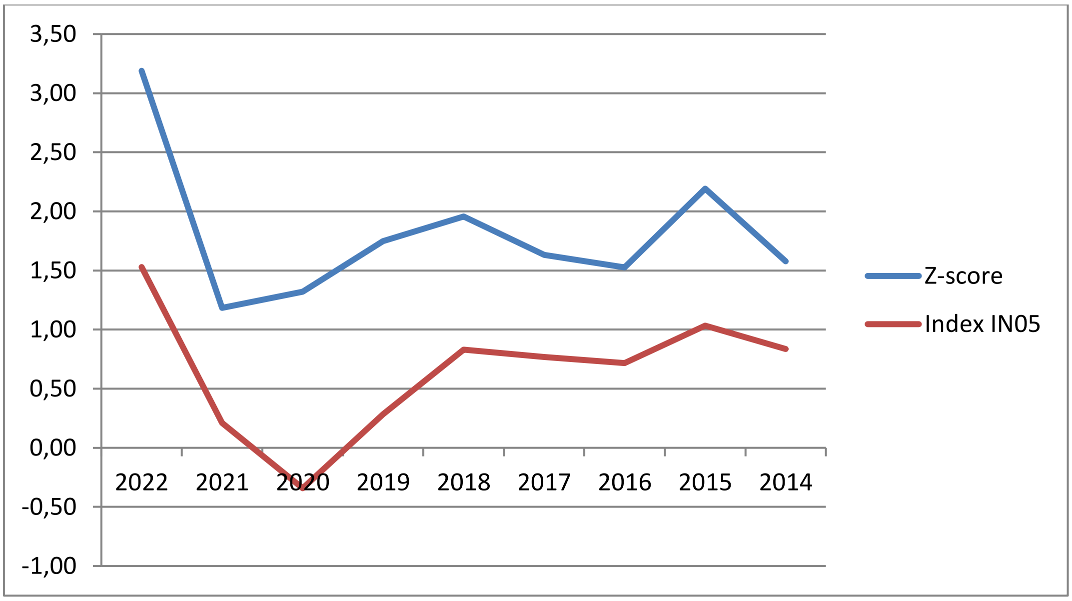

Figure 1 – summary indexes (Z-score, IN05), construction company

Facility management company evaluation

From the Table 5 and Table 6 is visible, that the Z-score of newly established facility management company is throughout the entire monitored period in the gray zone, but the index is still improving from the amount of 1,59 in 2014 till 2,15 in 2022. So, there is visible positive trend since the beginning of the company's existence. From the individual components of the summary index is clear, that company has healthy level of working capital, moderate ineptness and sales and profit are gradually increasing. This facility management company operates real estate assets of high value, which has influence on ratios related to fixed assets.

From the Table 7 and Table 8 is visible that for the facility management company is more suitable index IN05, which reflects Czech economic environment of middle-sized companies. But the trend is similar as with Z-scope, company's financial health continues to improve. The value of IN05 begins in gray zone and last two years from monitored interval reach or exceed the amount of 1,6, which means that company creates value.

The ever-improving values of both summary indicators are evident from the Figure 2.

Based on summary indexes calculation is possible to state, that thanks to transformation was created financially healthy company from a loss unit.

Table 5: Z-score calculation, facility management company, 2014-2017

			Altman´s				
	Altman´s index per year		*index*	31.12.17	31.12.16	31.12.15	31.12.14
X1	NWC/TA		0,717	0,03	0,13	0,14	0,10
X2	RE/TA		0,847	0,52	0,52	0,53	0,53
X3	EBIT/TA		3,107	0,03	0,07	0,06	0,04
X4	Equity/Liabilities		0,42	1,23	1,40	1,47	1,36
X5	S/TA		0,998	0,46	0,45	0,44	0,40
Z	*Altman´s index, comp. not traded*			*1,54*	*1,78*	*1,78*	*1,59*

Table 6: Z-score calculation, facility management company, 2018-2022

	Altman´s index per year		31.12.22	31.12.21	31.12.20	31.12.19	31.12.18
X1	NWC/TA		0,24	0,18	0,11	0,02	0,02
X2	RE/TA		0,56	0,55	0,53	0,52	0,51
X3	EBIT/TA		0,09	0,08	0,08	0,06	0,08
X4	Equity/Liabilities		1,82	1,69	1,52	1,35	1,39
X5	S/TA		0,48	0,40	0,42	0,60	0,47
Z	*Altman´s index, comp. not traded*		*2,15*	*1,95*	*1,82*	*1,80*	*1,73*

Table 7: IN05 calculation, facility management company, 2014-2017

IN index		*Index*	31.12.17	31.12.16	31.12.15	31.12.14
		IN05				
A/CK		0,13	2,24	2,43	2,53	2,42
EBIT/IC		0,04	4,71	4,91	4,13	2,54
EBIT/A		3,97	0,03	0,07	0,06	0,04
TR/A		0,21	0,4634	0,4518	0,4368	0,3952
CA/KRZ		0,09	1,26	2,37	2,79	2,41
Index IN05			*0,816*	*1,084*	*1,073*	*0,860*

Table 8: IN05 calculation, facility management company, 2018-2022

IN index		31.12.22	31.12.21	31.12.20	31.12.19	31.12.18
A/CK		2,86	2,73	2,52	2,35	2,39
EBIT/IC		15,79	13,23	11,84	8,59	11,25
EBIT/A		0,09	0,08	0,08	0,06	0,08
TR/A		0,4816	0,3979	0,4176	0,5106	0,4696
CA/KRZ		3,47	3,09	2,13	1,20	1,18
Index IN05		*1,760*	*1,559*	*1,383*	*1,095*	*1,264*

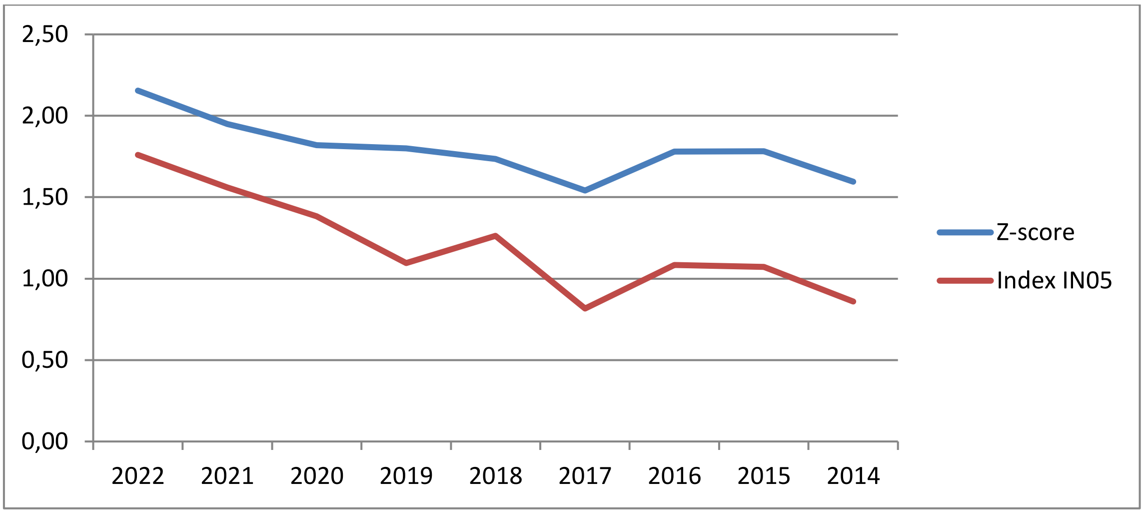

Figure 2 – summary indexes (Z-score, IN05), facility management company

Conclusion and discussion details

The intention of this paper was to verify impact of transformation on financial health of the transforming business corporations. With the help of bankruptcy indexes Z-score and IN05 were tested financial health of 2 companies within the period of years 2014-2022 after the transformation. Bankruptcy indexes calculations were applied on original construction company and on newly established facility management company. The reason of transformation was risk diversification due to planned massive investment in real estate property, reduction of unnecessary property of construction company and replacing a loss-making property management center with a well-functioning facility management company. Based on calculations is possible to state that the goals of transformation were successfully fulfilled. Both companies benefit from the transformation and financial health of construction company was not negatively affected by spin-off by merge project.

If the spin-off by merge project is properly prepared and realized it can bring benefits to all involved.

Main benefits of the project are in:

- *Legal protection of each project, company* (in case of enterprise failure, 2 independent core businesses are separated in independent legal entities)
- *Risk diversification* (each project in independent company, no mutual guarantee)
- *Enlargement of activity portfolio* (beyond construction business) by Facility management
- *Higher cost flexibility* - outsourcing, intention to switch majority items to variable costs.
- *Process revision and improvement*

References

[1] SCHOLLEOVÁ, H., *Ekonomické a finanční řízení pro neekonomy*, Praha, Grada, 2012, ISBN: 978-80-247-4004-1

[2] SYNEK, M., *Manažerská ekonomika*, Praha, Grada, 2007, ISBN: 978-80-247-1992-4

[3] HERALOVA, O., *Financial Health of Original Company Year After Splitting Real Estate Property from Construction Company*, Praha, ČVUT v Praze, 2015, ISBN: 978-80-01-05845-9

[4] BERGEVIN, P. , *Financial Statement Analysis*, New Jersey, Prentice Hall, 2002, ISBN: 0-13-032534-1

[5] NEUMAIER, I. – NEUMAIEROVÁ, I. (2002): *Výkonnost a tržní hodnota firmy,* Praha, Grada, 2002, ISBN 80-247-0125-1

[6] DEPAMPHILIS, D., M. *Mergers, acquisitions, and other restructuring activities: an integrated approach to process, tools, cases, and solution,* 6th ed. Amsterdam: Elsevier, 2012. ISBN 978-0-12- 385485-8.

[7] CHALUPA, I., REITERMAN D., a HOLÝ V., *Obchodní korporace : přeměny a obchodní rejstřík : základy soukromého práva*, Vydání první. V Praze: C.H. Beck, 2016, ISBN 978-80-740-0605-0.