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MERGER SPIN-OFF PROJECT AND ITS EFFECT ON FINANCIAL HEALTH OF POST-TRANSFORMATION COMPANIES

OLGA HERALOVÁ

Abstract:

The purpose of this article is to examine the impact of business transformation on the financial health of companies undergoing transformation, using bankruptcy indices. Business transformation could be the way to support risk diversification, improve production efficiency, financial performance or implement changes in organizational structure due to changed internal or external conditions. The verification of the financial health of the companies involved should be carried out and documented in order to ensure that no one has been harmed in connection with the transaction, due to the criminal liability of the legal representatives. This is usually done in advance. The advantage of this article is to point out that the verification by means of bank indicators is also suitable to be carried out after the transaction, immediately after and with a time lag, and could be part of the internal control process. A specific type of transformation, the spin-off by merger project, is the focus of this paper. This paper examines the financial health of companies operating in the Czech Republic using Altman's Z-score and IN05 bankruptcy indices. The main contribution of the article is the verification of the applicability of bankruptcy indicators for assessing the impact of the spin-off by merger project on the financial health of companies after transformation for the needs of documenting the actions of statutory directors and other decision makers with the due diligence of a proper manager.

Keywords:

Bankruptcy indexes; Merger spin-off project; Transformation

JEL Classification: G30, G33, G34

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1 Introduction

The business transformation of companies is usually one of the ways how to adapt changes in external or internal conditions. Changed conditions could cause necessity to increase production efficiency, to separate risk part of the company or to prepare part of the company for significant investment or for sale. One of the main criteria for the transformation and portfolio management of business corporations is to increase the financial performance of the companies as value of assets may change significantly under external shocks (Cermakova et al., 2022) as well as these shocks and policy implications may induce income instability (Hromada et al., 2023). Other reasons for transformation may be to reduce costs, diversify regionally specified risks (in detail described by the analysis of Jasova et al, 2016) or change the organizational structure.

The transformation must be prepared and carried out in such a way that it fulfills the current needs of company and at the same time does not endanger anyone's rights. Therefore, it is appropriate to examine the impact of the transformation on the financial health of companies. The verification of the financial health of the companies involved should be carried out and documented in order to ensure that no one has been harmed in connection with the transaction as was mentioned yet, due to the criminal liability of the legal representatives and all involved decision makers.

The purpose of this paper is to examine the impact of business transformation on the financial health of transforming business corporations in the Czech Republic.

Transformation is a process that is mainly regulated by Act No. 125/2008 Coll., the Act on Transformation of Business Corporations and Cooperatives. On the basis of this law, it is possible to carry out several types of transformations, such as mergers or demergers.

Both have sub-variants. One of the popular types of transformation of business corporations is the merger spin-off project, a combination of de-merger and merger. This type of transformation consists of 3 steps:

- Establishment of a new company.
- Spin-off of part of the assets of the original company.
- Merger of part of the assets of the demerged company with the newly created company.

This transformation results in 2 companies, the original one without the demerged part and the new one with the demerged part. This type of transformation is used, for example, to split off a part of the company's assets. This article is focused on spin-off of real estate and as a counter-weight part of equity and loans. A great advantage of this transformation is the fact that the original company does not disappear, which is very important for the stability and continuity of the company. As already mentioned, the process of transformation is regulated by law, as the rights of creditors must be protected. Another great advantage of this type of transformation is that it is not necessary to value the property of the spin-off company in order to incorporate it into the assets of the new company, which significantly saves time and money.

The financial health of companies can be verified using financial analysis and summary indices.

The main intention of the article is to verify the applicability of bankruptcy indicators for assessing the impact of the spin-off by merger project on the financial health of companies after transformation for the needs of documenting the actions of statutory directors and other decision makers with the due diligence of a proper manager as a part of company internal processes. The verification presented in this paper is provided after the transaction.

The verification of financial health was realized before the transaction and was realized only on the original company (Heralova, 2015). To document the verification in advance is critical for statutory body, due to its criminal liability.

2 Literature review

The literature review was focused on the search for a suitable model for assessing the financial health verification of companies, applicable to transformed companies and even for managerial needs. The research showed the appropriateness of using bankruptcy models.

The current literature distinguishes between several traditional bankruptcy models, such as those of financial distress of the firm, such as Altman's (1968), Beerman's (1976), Ohlson's (1980), Taffler's (1982) or Zmijewski's (1984) bankruptcy models. However, despite the significant increase in empirical studies in this area, most authors merely extend Altman's Z-score from the 1960s (Kapounek, Hanousek, Bílý, 2022).

Altman himself noted on the fiftieth anniversary of the introduction of his model that his Z-score remains the standard by which most other bankruptcy or default prediction models are measured, and is clearly the most widely used by financial market practitioners and academics for a variety of purposes (Altman 2018).

Z-score is very popular across the world and business sector, nonprofit companies included, what is evident from the list of references, (Cindik; Armutlulu, 2021), (Ghazalat, Alhallaq, 2024), (Hada, 2010), (Istok; Musa, Slampiakova, 2020), and others.

Mr. and Mrs.Neumaier developed a model suitable for the Czech Republic. They used the Ministry of Trade database for model testing and based on year of model presentation the indexes were named, IN95, IN99, IN01 and IN01 (Neumaier, Neumaierová, 2002).

Another authors (Kovárník; Hamplová, 2016), designed to test the hypothesis that the application of different models to the same companies yields comparable results. Specifically, this article compares the results obtained by applying the Altman Z-score, the IN model and the bankruptcy index introduced by Karas and Reznakova in 2013. Most of the analyzed companies have comparable results for different models.

Based on above mentioned two bankruptcy indexes were selected for financial health verification in this paper, mostly widespread Altman's index Z-score and IN05 specially developer for the Czech environment.

Based on research was found, that it is beneficial to carry out verification over a longer period, specifically Kapounek, Hanousek and Bílý presented in their paper from 2022 higher robustness of using Altman's Z-score for two- and three-year prediction horizons. It supports the intention to provide verification presented in this paper for two years immediately after the transaction and for another two years with the time leg.

The suitability of using bankruptcy models for managerial needs, managerial decision making including, is noted by the author of the Z-score (Altman 2018).

3 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

3.1 Summary Indexes

A useful way of assessing a company's financial health is through the use of a model that characterizes the company's financial health in terms of a single number. This one number is called the summary index.

Bankruptcy indices are standardly used to determine whether the company is at risk of bankruptcy in the future. In this paper is presented that bankruptcy indices could be used also retrospectively, to prove the positives or negative influence of transaction on the financial health of in transformation involved companies. Troubled companies usually show specific symptoms, for example, liquidity, net working capital or return on equity.

In this paper 2 indices are used: Z-score from the Altman model and IN 05. As was mentioned in literature review part of this article, the Altman Z-score is still the standard, despite of the fact that it comes from 1967 and as was mentioned yet is very often used across the world, business sector, for investors, banks and also for company internal purposes (Altman, 2018).

The bankruptcy indices include several indicators, each with a different weight. The weight of the indicators is given by the models. Both models define the interface between a company heading for bankruptcy and a value-creating company.

Bankruptcy indexes are used in this paper because the core of this article is to verify that the spin-off of the real estate property from the company does not negatively affect the financial health of the original company and how healthy the newly created company is. The review takes place immediately and several years after the conversion. The demerger affects a significant part of the balance sheet of the original company, real estate from assets and as a counterweight part of equity and loans.

3.2 Altman´s analysis

Altman's analysis is one way of testing a company's financial health using a summary index. Z-score is the name of the summary index and it is made up of 5 indicators from the area of profitability, liquidity and capital structure. Each of the 5 indicators was given a weight based on empirical research (Bergevin, 2002).

Using Altman's model, it has been gradually improved. One of the improvements is the differentiation between listed and unlisted companies. In this paper, the variant applicable to unlisted companies is used.

The 1983 version of this model is applicable to the Czech environment.

Z-score formula is below signed as Equation (1) (Synek 2007):

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

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

Locally Altman's model was criticized for not being adapted to Czech conditions, although it was widely used in the Czech economy. That was the reason why Mr. and Mrs.Neumaier started to develop a model suitable for the Czech Republic. They gradually developed models using the Ministry of Trade database for model testing: IN95, IN99, IN01 and IN01, the numbers correspond to the year when the model was presented. (NEUMAIER, I. – NEUMAIEROVÁ, I., 2002)

3.3 Index IN05

As the case study later in this text involves a construction company and a facility management company from the Czech environment, their financial health is evaluated not only by Z score but also with using the IN05 index. This index was specifically created for the Czech environment and takes into account both the investor's and owner's perspectives. Therefore, its applicability to other types of companies may be limited.

Advantages of IN05 from a user's point of view include its ease of calculation, transparent algorithms, and usage of publicly available financial data from business registers. It is suitable for both tradable and non-tradable companies on open markets and provides clear results.

However, it is important to note that the IN05 index was created and tested on medium-sized and large industrial companies. The data analyzed pertains to the company's annual business performance, providing an overview of its performance over the course of a year. This characteristic is a rough estimate and does not provide insight into how the performance was achieved.

IN05 formula is below signed as Equation (2):

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

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 (NEUMAIER, I. – NEUMAIEROVÁ, I., 2002):

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.

3.4 Summary Indexes interpretation

Each company is unique, and the macroeconomic situation is subject to change what are the reasons why index interpretation may differ during a recession compared to significant economic growth. Therefore, assessments must be made within a broader context.

4 Result details

The research focuses on two companies, a medium-sized construction company that has undergone a spin-off of its real estate assets, and a newly established company that manages its own real estate. The spin-off was motivated by several reasons, mainly by three, transaction costs minimalization, the high cost of investing in real estate and the desire to streamline operations. As part of negotiations with financing partners, it was requested that the real estate property be moved into an independent company.

Another reason for this move was the need to optimize the construction company. Prior to the transformation, the business unit responsible for real estate was poorly managed and repeatedly incurred losses. There was no systematic maintenance or development of the real estate property, which consequently fell into disrepair. The separation of real estate assets from the company initiated the process of optimizing the construction company's organization.

After consulting with lawyers and tax advisors, it was approved to carry out the spin-off by merger project. It was ultimately decided that the construction company would divest all of its real estate assets, as they are not necessary for its core business. The intention was to create two separate companies, one focused solely on construction and the other on the facility management of its own real estate, resulting in potential gains from the transformation.

On 1st January 2014, a transformational spin-off by merger project was implemented.

The splitting off of real estate assets from the company initiated the process of organizational optimization of the construction company. All property related processes, contracts, and employees were transferred along with the real estate assets. The subject of the split is listed below.

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

- Plants, Buildings, Equipment – net value

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

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

As mentioned previously, the verification was conducted prior to the transaction and only on the original company (Heralová, 2015). The purpose of this paper is to evaluate the financial health of both companies after the transformation, 2 years immediately after and with time gap.

Data from the audited financial statements of the companies from 2014 to 2015 and from 2021 to 2022 were used to assess their financial health.

4.1 Construction company evaluation

Financial health of construction companies under economic shocks and the overall impact on market development has been analyzed by Kaderabkova, et al., 2023. Within this context, Table 1 below shows that the construction company was mostly in the gray zone during the monitored period based on Z-score calculation. This was also observed before the transformation (Heralová, 2015). However, the year after the transformation, the company's Z-score increased by 39% (from 1.58 to 2.19). The analysis suggests that this improvement is related to a decrease in the amount of assets not used for the core business. The decrease in fixed assets not used for the main business was achieved through a spin-off by merge project. It appears that this transformation has helped to improve the final Z-score of the company. The company has significantly reduced its level of receivables and achieved higher EBIT and sales.

The construction company experienced difficulties due to a problematic contract between 2019 and 2021, which resulted in their inability to participate in public contracts. During this period, sales significantly decreased, and EBIT was negative. It appears that the company was unable to reduce costs as quickly as sales decreased. However, there is no evidence to suggest that this financial trouble is connected to the spin-off by merge project. However, the data for the year 2022 shows that the company has achieved a Z-score of 3.19, indicating that it is financially stable and creating value. As previously stated, a Z-score higher than 2.9 indicates that a company is creating value.

Table 2 shows that the IN05 index produces similar results to the Z-score. Although the construction company improved its Z-score one year after the transformation, it later faced difficulties that were not caused by the spin-off or merger project. Figure 1 shows that both indexes follow a similar trend from 2014 to 2022. The index initially improves, followed by a problematic period for the company. However, by 2022, the company is back on track and in very good financial condition.

Based on the bankruptcy indexes calculated after business transformation, it cannot be proven that the transformation had a negative impact on the company's financial health.

Table 1. Z-score calculation, construction company, 2014-2015, 2021-2022

			Altman 's					
	Altman 's index per year		index	31.12.22	31.12.21		31.12.15	31.12.14
X1	NWC/TA		0,717	0,48	0,42		0,45	0,34
X2	RE/TA		0,847	-0,23	-0,23		0,00	0,00
X3	EBIT/TA		3,107	0,09	-0,05		0,05	0,04
X4	Equity/Liabilities		0,42	0,81	0,73		0,30	0,23
X5	S/TA		0,998	2,42	0,94		1,59	1,11
Z	Altman 's index, company not traded			3,19	1,18		2,19	1,58

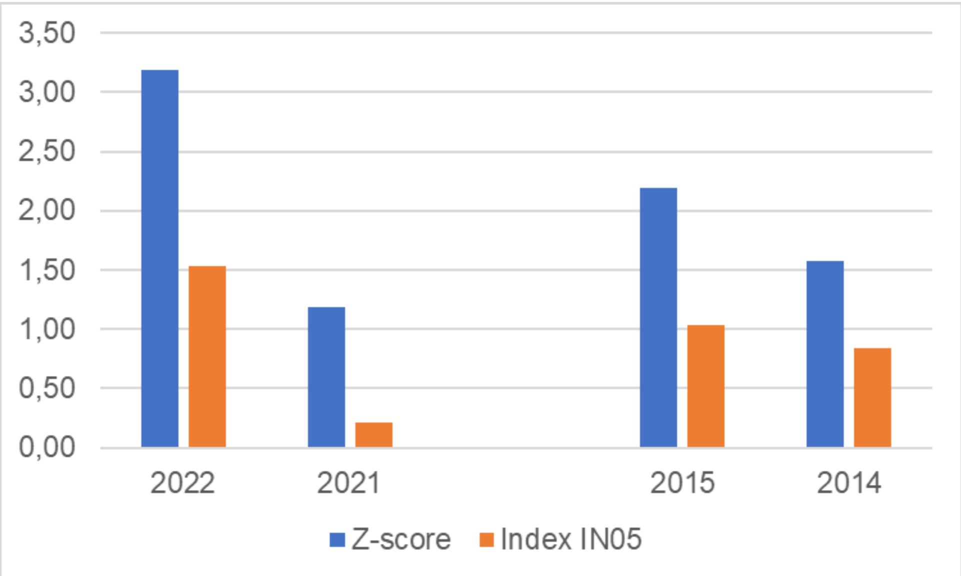
Source: Own calculation

Table 2. IN05 calculation, construction company, 2014-2015, 2021-2022

IN index		Index	31.12.22	31.12.21		31.12.15	31.12.14
		IN05					
A/CK		0,13	1,84	1,79		1,32	1,23
EBIT/IC		0,04	4,44	-5,54		3,14	3,26
EBIT/A		3,97	0,09	-0,05		0,05	0,04
TR/A		0,21	2,4184	0,9382		1,5850	1,1143
CA/KRZ		0,09	2,60	2,31		2,15	1,65
Index IN05			1,529	0,210		1,034	0,836

Source: Own calculation

Figure 1. Summary indexes (Z-score, IN05), construction company



Source: Own processing

4.2 Facility management company evaluation

Table 3 shows that the Z-score of the newly established facility management company remained in the gray zone throughout the monitored period. However, the index improved from 1.59 in 2014 to 2.15 in 2022, indicating a positive trend since the company's inception. It is evident from the individual components of the summary index that the company has a healthy level of working capital, moderate inefficiency, and increasing sales and profits. This facility management company operates high value real estate assets, which affects ratios related to fixed assets.

Table 4 show that index IN05 is more suitable for the facility management company, reflecting the Czech economic environment of middle-sized companies. The financial health of the company continues to improve, as seen in the trend similar to that of Z-scope. The value of IN05 starts in the gray zone, but over the last two years of the monitored interval, it has reached or exceeded 1.6, indicating that the company is creating value.

Figure 2 clearly shows the ever-improving values of both summary indicators.

Based on the calculation of these summary indexes, it can be stated that the transformation has resulted in the creation of a financially healthy company from a loss unit.

Table 3. Z-score calculation, facility management company, 2014-2015, 2021-2022

			Altman´s					
	Altman´s index per year		index	31.12.22	31.12.21		31.12.15	31.12.14
X1	NWC/TA		0,717	0,24	0,18		0,14	0,10
X2	RE/TA		0,847	0,56	0,55		0,53	0,53
X3	EBIT/TA		3,107	0,09	0,08		0,06	0,04
X4	Equity/Liabilities		0,42	1,82	1,69		1,47	1,36
X5	S/TA		0,998	0,48	0,40		0,44	0,40
Z	Altman´s index, comp. not traded			2,15	1,95		1,78	1,59

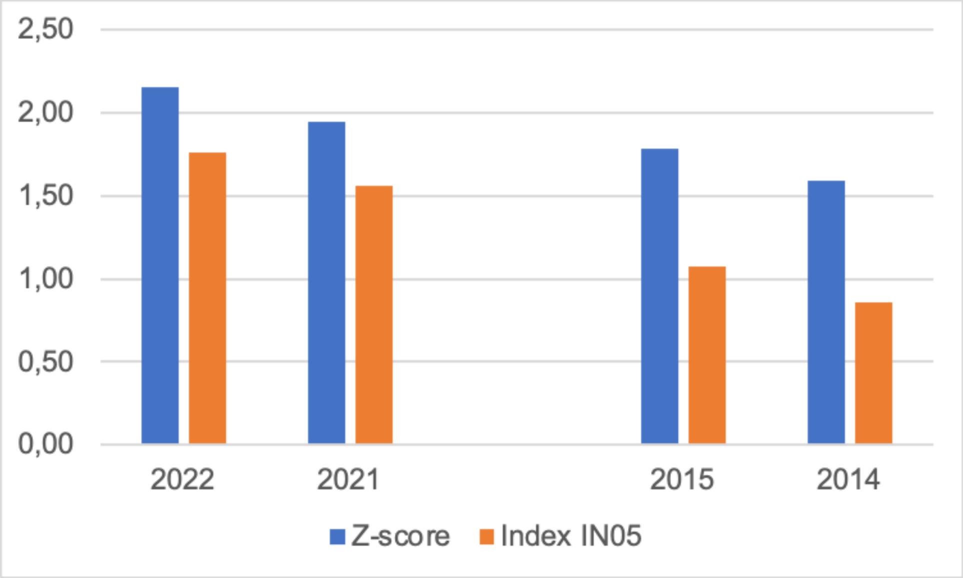
Source: Own calculation

Table 4. IN05 calculation, facility management company, 2014-2015, 2021-2022

IN index		Index	31.12.22	31.12.21		31.12.15	31.12.14
		IN05					
A/CK		0,13	2,86	2,73		2,53	2,42
EBIT/IC		0,04	15,79	13,23		4,13	2,54
EBIT/A		3,97	0,09	0,08		0,06	0,04
TR/A		0,21	0,4816	0,3979		0,4368	0,3952
CA/KRZ		0,09	3,47	3,09		2,79	2,41
Index IN05			1,760	1,559		1,073	0,860

Source: Own calculation

Figure 2. Summary indexes (Z-score, IN05), facility management company



Source: Own processing

5 Conclusion and discussion details

The main intention of the article was to verify the applicability of bankruptcy indicators for assessing the impact of the spin-off by merger project on the financial health of companies after transformation for the needs of documenting the actions of statutory directors and other decision makers with the due diligence of a proper manager as a part of company internal processes. The verification presented in this paper was provided immediately after the transaction and with the time leg. Two companies were tested using bankruptcy indexes Z-score and IN05 within two periods of 2014-2015 and 2021-2022, both after the transformation. The bankruptcy indexes were calculated for the original construction company and the newly established facility management company. The transformation was carried out to diversify risks due to a planned massive investment in real estate, reduce unnecessary property of the construction company, and replace a loss-making property management center with a well-functioning facility management company. The goals of the transformation were successfully achieved, as evidenced by the calculations. Both companies can benefit from the transformation, and the financial health of the construction company was not negatively affected by the spin-off merge project.

If the transformation project is properly prepared and executed, it can bring benefits to all involved.

The main benefits of the project include:

- Legal protection and risk diversification for each project and company. In the event of enterprise failure, the two independent core businesses are separated into independent legal entities.
- The company plans to expand its activity portfolio beyond the construction business by incorporating facility management.
- To achieve higher cost flexibility, the company intends to outsource and switch the majority of its items to variable costs.

• The construction company revise and improve its processes to ensure efficiency and effectiveness.

Several years after the business transformation, a construction company faced economic difficulties due to a specific government contract, as evidenced by financial statements and deteriorating summary indicators. The construction company had prepared documentation showing that the deterioration of the company's financial situation is not causally linked to the problematic contract. Verification by means of bankruptcy indicators is part of this documentation. Based on the case study of real companies, it is possible to recommend the use of bankruptcy indicators for assessing the impact of the spin-off by merger project on the financial health of companies after transformation for the needs of documenting the actions of statutory directors and other decision makers with the due diligence of a proper manager as part of the company's internal processes.

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