

The deficiencies in the construction of methods of complex evaluation of enterprises

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Abstract

Experts as well as uninitiated public often call for more simple methods of company evaluation, respectively the assessment of the financial health of the company. Currently, there are many methods that enable to identify the financial situation of the company. It is primarily the assembling of the financial ratios of Schmalenbach's society (Synek, 2009, 2010), the assembling of so called new indicators that attempt to evaluate the company financial health within the one simple value (added economic value, added market value and others), and assembling of methods of the complex evaluation of an enterprise based on ratio indicators. Financial Analysis by Schmalenbach's society is built on exact inputs (unfortunately features of the past), but interpretation of the results is very complicated and based on the recommendations and experiences of the evaluator. In relation to the interpretation of results, this financial analysis of financial ratios can be assessed as a benchmarking model. The second group of indicators has a very simple informative value - the result is given as one number, which can be apprised totally objectively by evaluator. The input data are derived from the degree of the risk in most such methods, and therefore distorted by the subjective perspective of the evaluator or of expert view of agencies. The last group (Altman's index, IN indexes, and others) are built on the mutual relation of ratios indicators and of development of business environment at the time of creation of each method. There is currently no method or system of methods that would give a totally reliable and easily interpretable result. The paper will focus the third group of indicators and will analyse the deficiencies that predispose the selected methods to fail in today's business environment.

Keywords: bankruptcy model, credibility model, assessment, financial health

Introduction

The methods of complex evaluation of enterprises can be defined as methods which assess the overall economic situation of the company.

There are basically two groups of methods used in practice. The benchmarking methods are very widespread group. One of them is the method of Harry Pollak, called by the author "the assessment of viability of the company".

Harry Pollak (2003, 2005) assesses those aspects of the company:

- Market research focused on the progress;
- Products of the appropriate market;
- Satisfied customers;
- Satisfaction of financial participants;
- The relationship to the environment;
- Capital base;
- Convenient location of company;
- Staff;
- Financial result;
- Reliable suppliers.

Harry Pollak evaluates each indicator on the scale. Each criterion has its own range, which is subsidized by the points according to awarded weight. For example, the criterion "market research focused on the progress" can be assessed up to 13 points. In contrary, "reliable suppliers" can bring at the most 7 points.

The author emphasizes non-financial indicators, which have a direct impact on the financial health of the organization. But even Harry Pollak (2003) himself admits that rather than an objective and generally applicable method, it is his subjective point of view on the evaluation of companies (although based on his personal experience in the management of several companies).

But this paper will primarily evaluate bankruptcy, credibility and bankruptcy-credibility models. According to Synek (2010), the most commonly used bankruptcy, creditworthiness and bankruptcy creditworthiness models (hereinafter referred as methods of complex company evaluation) are:

- bankruptcy models:
 - Altman's analysis (version for companies whose shares are traded on the stock exchange, a version for companies whose shares aren't publicly traded and a modified version for the Czech environment);
 - indexes IN (IN05, IN01, IN99);
 - Tafler's index;

- credibility models:
 - The index of creditworthiness;
- bankruptcy credibility models:
 - Grünwald's index;
 - Kralicek's test (original and modified in 1999).

All these methods of complex company evaluation are designed on the basis of financial ratios. Those are mainly the indicators of liquidity, profitability and solvency. Specific weight is assigned to each individual indicator to demonstrate, respectively highlight the influence of one or others indicators on company success.

Specifically, for example Altman's index (the version for companies whose shares are traded on the stock exchange) is calculated using the following formula:

$$Z = 3.3 \cdot \frac{\text{Profit}}{\text{Assets}} + 1.0 \cdot \frac{\text{Revenues}}{\text{Assets}} + 0.6 \cdot \frac{\text{Equity}}{\text{Total Liabilities}} + \\ + 1.4 \cdot \frac{\text{Earnings After Taxes}}{\text{Assets}} + 1.2 \cdot \frac{\text{Net Working Capital}}{\text{Assets}}$$

Source: Synek (2009), Maňasová (2007), own interpretation

The first ratio reflects the profitability. Specifically it is an indicator of return on assets (Return on Assets – ROA). The indicator assesses how the assets are valorised in the company. The second indicator is an indicator of activity. It is the turnover of assets, so it is an indicator, which assesses the ability to generate company sales.

Indicator: equity/total liabilities is an indicator called Equity ratio. It assesses the relation between equity and debt. It belongs to a group of debt ratios and evaluate the degree of business certainty, so it is the ability of the company to secure its liability.

Another indicator is also from the group of the profitability ratios. The proportion of this group of ratios is therefore increased on one hand. On the other hand, it gives some degree of importance to the potential distortion caused by the income tax rate on income and the amount of interest in the region in which the company develops its activity. The fifth indicator assesses the proportion of net working capital in the volume of assets. The indicator highlights the share of capital, which is participating in the monetary cycle of the company, capital that generates value for the company.

All methods of complex evaluation of the company were created through multiple discriminant analysis, which could be the reasons why the absolutely accurate method has not yet been created. All of the above mentioned methods are characterized by defects (or more precisely, errors):

- Expected bipolar dependent variables;
- A methodology of selection of the data set of tested companies;
- The assumption of stationary and data instability;
- Selection of independent variables;
- Use of annual financial statements of accounts;
- Time dimension.

Due to fact that the deficiencies are so significant, this paper will examine the most important thing – the use of annual financial statements from the annual balance sheet.

Applied data from the financial statements

The financial statements include the balance sheet, income statement, statement of cash flows and appendix to the financial statements. The structure of the statements is more or less identical in the surrounding states. Shortcomings or errors in the construction of complex evaluation methods of enterprises in the European region are therefore more or less the same:

- Obligation to publish annual accounts in different countries depends on various criteria laid down by law (especially in relation to company size): in the Czech Republic are the financial statements published only by companies that are obliged to do so by law (companies subject to audit obligation). The situation is somewhat better in France. There is an obligation to publish all of the data on large enterprises, approximately on 50 % of medium size enterprises and on 10 % of small businesses. This way the evaluators gain valuable data that can be understood as relevant, in certain context.
- Incorrect assumption that the annual accounts give a true and fair view of the company's financial situation;
- Unreliable data concerning companies that are near bankruptcy;
- Missing values;
- Lack of internal control system;
- Business failure prediction models based on the financial statements may be affected by extreme values;
- Incorrect assumption that all relevant indicators of financial health of the enterprise are presented in the financial statements (non-financial and qualitative indicators);

- Inconsistency of indicators (every one of them indicates a different attribute of the company's financial health);
- Failure of the added values indicators and the incremental indicators;
- Use of only one accounting statement (financial statements become independent observation);
- The arbitrary selection of variables.

The incorrect assumption that the annual accounts give a true and fair view of the company's financial situation has its basis in additional regulation of accounting.

Accounting is based on several principles to ensure its contribution for financial management of the company and financial records of economic activities of the company. One of the principles on which the accounting is built, is fair view of reality. The Ministry of Finance provides the accounting of some items with regulations and methodologies. The other follows the rules of internal regulations of the accounting unit. These include for example the classification of low value fixed assets among the tangible or intangible assets or the accounting of consumption.

In case that the company has such a large volume of assets, it is clear that the value of assets written-off in consumption will affect some indicators of ratio analysis and results of comprehensive evaluation of the enterprise. In the context of "manoeuvring" within the financial laws and regulations, foreign literature talks about so-called "creative accounting".

In some ways the enterprise adjusts its financial results in order to serve its objectives. Companies often increase their profits in order to increase their credibility. On the other hand they can reduce the profit to give false information to competitors. The term "creative accounting" defines exactly the possible limits of accounting units which are laid down by legislation.

There is a specific group of companies with distorted information, which are near bankruptcy. In this case the psychological moment dominates, which convinces the management that the company is not going to get bankrupt. It just needs a little help. In order to get the time to save the company the management changes the financial records. Such a situation has occurred a few times.

Specifically Přibíková (2008) in her work describes and evaluates a company whose liabilities were -125 % of total assets. In short term period, the firm violated the law. But within two year horizon, the company managed to generate profits and pay off most of its obligations (even all in the long-term).

Often the data are missing in the financial statements. The publishing duty is in the Czech Republic given by the size of the enterprise. Only the companies with a certain volume of turnover are obliged to publish their financial statements. If, however, those companies don't publish their annual reports, the courts of registers are not troubled by such a wrongdoer. In this way it can happen that there are missing data for the entire year or only partial value.

The results are distorted and do not reflect reality. In the absence of partial results, the evaluator has no way of knowing that the results are incorrect.

The lack of an internal control system is the second deficiency, which is often mentioned in literature. The internal control system for Czech companies isn't substantially prescribed. There are only instruments of external control – through external audits, inspections by the tax office and so on. The internal control system is prescribed only to state and public institutions. This area is primarily governed by the Financial Control Act No. 320/2001 Coll., as amended. However, many results of complex evaluation methods fail to filter out the errors in the financial statements. Therefore, every little detail has a significant impact on the outcome, especially when the result and its interpretation are associated with the comparison of the interval of values. So the distinction between a successful company and gray zone and between gray zone and a bankrupt organization is very small.

Another deficiency of the methods of complex evaluation of enterprises is that they are influenced by extreme values. Multiple discriminant analysis can't set aside extreme values. At the time when such values occur, there is a distortion in interpretation of the results of an applied method of complex evaluation of the company in a particular case (if extreme values are not identical with the average extreme values of the sample from which the method was created).

Some authors (Lussier, 1995; Sheppard, 1994; Slowinski & Zopouldinis, 1995; Lehmann, 2003; Daubie & Meskens, 2002; Becchetti & Sierra, 2003) wrote that non-accounting and quality indicators must be taken into account when designing comprehensive evaluation methods of a company.

Non-financial and qualitative indicators can play an important role, especially in predicting failure of small businesses. It can be expected that information from the annual reports of these firms are less reliable. Examples of non-accounting indicators and qualitative indicators (Lussier, 1995):

- Acquisition and retaining quality employees;
- Experiences of management;
- Education of the owner;
- Education of the manager;
- Age of owner;
- Age of manager;
- Motivation of the owner;
- Social skills and leadership qualities;
- The quality of management information systems that enable timely information on financial and operational risks;
- Number of partners or associates;

- The existence of a possible long-term business strategy of the company;
- Production efficiency;
- Dependence on one (or only a few) customers and suppliers;
- Subcontractors situation;
- The level of exports;
- The existence of strong competitors in the same locality;
- Relationships with banks;
- Strategic variables such as level of diversification, branch profitability, branch growth, market share and the number of joint ventures, in which the company participates.

Moreover, the nature (composition and structure) of the Board – for example, whether the general director is a chairman of the board, the interconnection with the director and the proportion of people from inside and outside may explain why companies fail (Sheppard, 1994).

Other possible indicators can be found in the study of Lussier (1994), who compiled the model of the failure predictions with quantitative and qualitative managerial factors to predict the failure of young companies. In addition, Ooghe & Joos (1990) reports, that the relations between economically linked companies may be another important factor to explain the failure in business. In particular, the group structure can prevent the failure of the company, even if the financial indicators show the company as a weak one, or conversely may be the main cause of failure of the group, which otherwise looks very healthy. That is why Ooghe et al. (1993) included the variable of group relations in their long-term bankruptcy prediction model. It is also clear that a good financial situation at a given time is affected by the risk of failure of the previous period (Cybinski, 2001, 2000) failure prediction models should also include information about the risk of failure in the past. In addition, information about the value of shares may add important information about the financial situation of the company and may be an indicator of impending bankruptcy.

Inconsistency of indicators means that the evaluator measures and compares the informative value of the indicators, which characterize different attributes of its financial health. Those are, as mentioned above, the liquidity, debt, profitability, and other ratios. In case of examined methods of complex evaluation of the company one extreme value can affect the evaluation of the entire company respectively it can withhold the interpretation of the results of one sub-value to a negative or positive evaluation of other partial results. So if the company will report, in case of Altman index, an extremely good return on assets, the business will be evaluated well, even if the values of debt ratios and liquidity ratios will be bad.

Another deficiency, which significantly reduces the value of complex evaluation methods are the omission of indicators of added value and accrual indicators. The added value and accrual indicators enable the evaluators to monitor trends. Every annual financial statement is considered a separate solution. Static values of statements can only describe the moment but not assess the potential of company and development in time. However, if also the economic value added was considered, then obtained results would be relevant. The economic value added contains even a comparison on certain level of risk. In the model of Kislingerová (2007), the risk is reflected in both the opportunity cost of capital and the cost of foreign capital. In case of the methodology of calculation of economic value added by the Neumaier's spouses (2005), the risk is almost entirely reflected in the opportunity cost of equity.

One of the most fundamental deficiencies of complex evaluation methods of the company is using only one balance sheet. There is no method seeking a relation between the financial statements of two consecutive years. In principle they are comparing the financial statements of two consecutive years as a result which has no direct relation in between. But already from the basic principles of accounting can be deduced that there is an obvious relation between annual statements of two consecutive years. The bonds in between financial statements clearly outlines the link.

Logically, other errors or omissions in the construction of complex evaluation methods are an arbitrary choice of variables. Authors tested a large group of financial ratios and selected those with an underlying causality. But none of them assign what degree of dependence is determining for inclusion of the indicator in the calculation.

Conclusion

Just from the accounting standpoint or from the perspective of financial statements a lot of errors associated with methods of complex evaluation of the company may be identified. Some of the erroneous assumptions of calculation and compilation of methods of complex evaluation of enterprises devalue the informative value of the result. In terms of collecting data and their merging into a unit – the method, the methods of complex evaluation of the company may appear pointless or even completely misguided. However, a lot of company evaluators use the bankruptcy, credibility and bankruptcy-credibility models to complete a comprehensive picture of a rated company. Mostly gained results don't appear completely heterogeneous but rather help to specify the results obtained, for example from financial analysis. Until we can get more reliable methods, we have to deal with methods of complex evaluation of the company, bankruptcy, credibility and bankruptcy-credibility models.

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Nedostatky v tvorbě metod komplexního hodnocení podniků

Stále častěji volají experti i laikové po jednodušších metodách hodnocení podniku, resp. hodnocení finančního zdraví podniku. V současné době se používá řada metod, které umožňují identifikovat finanční situaci podniku. Jde především o soustavu poměrových ukazatelů dle Schmalenbachovy společnosti (Synek 2009, 2010), soustavu tzv. nových ukazatelů, které se snaží pojmotit situaci podniku v rámci jedné hodnoty (ekonomická přidaná hodnota, tržní přidaná hodnota a další), a sadu metod komplexního hodnocení podniku založených na poměrových ukazatelích. Finanční analýza dle Schmalenbachovy společnosti je postavena na přesných vstupech (bohužel však charakteristik minulosti), ale interpretace výsledků bývá velmi komplikovaná a postavená na doporučených a zkušenostech hodnotitele. Ve vztahu k interpretaci výsledků můžeme i tuto finanční analýzu poměrových ukazatelů vyhodnotit jako benchmarkingový model. Druhá skupina ukazatelů má velmi prostou vypovídací hodnotu – výsledek je dán jedním číslem, které může hodnotitel uchopit celkem objektivně. Vstupní údaje jsou odvozeny ve většině metod od míry rizika, a tudíž zkresleny subjektivním pohledem hodnotitele nebo expertním pohledem agen- tur. Poslední skupina ukazatelů (Altmanovy indexy, indexy IN a další) jsou

postaveny na vzájemném vztahu poměrových ukazatelů a vývoje podnikového prostředí v době vzniku jednotlivých metod.

V současné době neexistuje metoda ani soustava metod, která by dávala naprosto spolehlivý a jednoduše interpretovatelný výsledek.

Příspěvek bude hodnotit třetí skupinu ukazatelů a bude se zabývat nedostatky, které předurčují vybrané metody k neúspěchu v současném podnikovém prostředí.

Klíčová slova: bankrotní model, bonitní model, hodnocení, finanční zdraví

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