



Economic analysis of tourism enterprise solvency and the possibility of bankruptcy: the case of the Thomas Cook Group

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Abstract

Whether firms are in the last phase of their life cycle can be seen through bankruptcy prediction models. The bankruptcy of companies concerns not only shareholders and creditors, but also an entire economy, affecting all stakeholders directly or indirectly. It is important for all segments of companies to anticipate possible bankruptcies as early as possible. In this context, a number of studies have been carried out and models for the prevention of bankruptcy of companies have been developed. A number of models have been developed not only for the prevention of corporate bankruptcy but also for revealing why post-bankruptcy companies have gone bankrupt. In the paper under consideration, the results of the study of the bankruptcy probability are presented as the key component of business solvency through the example of the recently bankrupted travel company "Thomas Cook Group". We considered Altman and DuPont models as the main measures. The major issue of the study is the specificity of these models, their unique laws for different countries, markets and industries. Based on the results compared, the best model for forecasting bankruptcy and return on equity calculating will be selected. As a result of the study and analysis, the researchers tried to investigate why the firm went bankrupt. The most appropriate models were selected and the equity table of the company was analyzed. The fact that the firm was operating in the international dimension and went bankrupt clearly had an undisputed effect in many countries in which it operated.

Keywords: bankruptcy, Altman model, DuPont model, tourism.

Introduction

The risk prediction of bankruptcy is vital for both companies and shareholders. The results of the bankruptcy analysis affect the strategy determination for companies in a particular sector of the economy. The results also affect investor preferences and investment flows. The most difficult thing is to determine the model specification for a particular industry or company. There are recommendations for choosing formulas for calculating the possibility of bankruptcy but the results of this study for the British travel company demonstrate different results. Thus, the purpose of this study is to select the best specification for the Altman and DuPont models in terms of the bankrupt company "Thomas Cook Group". The bankruptcy of "Thomas Cook Group" became a sensation, and the matters for the default of which we analyze in this study, using various modifications of the Altman and DuPont models is the basis of interrogation.



Analysis of the financial environment is an inescapable part of financial management and economic relations with partners, financial and credit institutions. Bankruptcy diagnostics is a financial analysis system that is used to determine the company's crisis development, which poses a risk of bankruptcy. In the company's financial standing analysis system, a group of monitoring objects is selected that form a possible "crisis zone" recognizing oncoming insolvency. The group of objects in the crisis zone includes such indicators: liquidity of assets, capital structure, the urgency of financial liabilities, the formation of net investment (commercial) cash flow and financial cash flow. First of all we need to specify the crisis zone objectives for "Thomas Cook Group" company.

Literature review

The first researches in bankruptcy came up in the 1930s of the 20th century. These models were based on a financial ratios comparison between bankrupt and insolvent companies. Today, there is a host of models that are used to test the risk of bankruptcy. Each model has its own financial parameters. As analyzed variables, the information can be gained on different financial statements sections. Beaver's study (1966), which applied one-dimensional discriminant analysis based on various financial ratios linked in a single final predictor that serves as a classification criterion, is considered a defining moment in the theory of calculating the possibility of bankruptcy.

The specification of the E. Altman American model can be applied to check the possibility of bankruptcy. The Altman model (based on W. Beaver's assumptions) makes allowance for the possibility of bankruptcy possibility p_z for a period of up to 5 years (with an accuracy of 78-80%) for long-term risks, and for a short-term forecast for a period of up to 2 years with an accuracy approximately 90-91%. Altman was the first who used multidimensional discriminant analysis (MDA) to build models for predicting bankruptcy. This model was one of the first but adapted to the American economy. Thus, the model is more suitable for predicting the possibility of short-term bankruptcy. This model can be applied to manufacturing and non-manufacturing companies whose shares are not listed on the stock exchange. For non-manufacturing enterprises and emerging markets, including Russia, the Altman's model has the form.

The logit - models of Ju-Ha (Tehonga, 2000), the modified Altman-Sabato model (2007) and Haidarshina (2009) and Yu.Zhdanov can also be used for verification (Afanasyeva, 2012). There are also expert-rating models such as J. Lego three-factor model (1987), Taffler and Tisho four-factor model (1987), Lis model (1974), Fedotova bifactor model, Irkutsk State Economic Academy (ISEA) four-factor model, Sayfulina and. Kadykova model, KSTU rating model for industrial enterprises (which allows you to determine the creditworthiness class). The remarkable thing is that all these models have a subjective matter, which follows from the assumption that they are limited by the specifics of the environment for which they are built. It means that each model must be adapted to the external environment of Russian reality.

Another wide-spread mathematical and statistical method used for predicting bankruptcy is logit regression. The logit model was firstly applied by Olson (1980). Olson used regression to produce a bankruptcy forecast model base on nine variables, such as business size, liquidity, profitability and productivity. Similar to MDA logit regression was also used in models developed in the Visegrad Group countries (Hungary, Poland, Slovakia, and the Czech Republic). In addition to the above models, probit-analysis, neural networks, main components analysis, decision trees and others are also used. After the terror attacks in 2016, reservation cancellations boost by 50%. Thus, nowadays Turkey needs foreign currency to cover the emerging external deficit.

Another improved C-model based on the Altman and Olson's model was compiled with the use of variables specific to Japan to verify whether institutional structure variables affected the possibility of bankruptcy. Many large audit companies and others, used criteria systems for analytical evaluations. The home-produced version of the integrated point for business solvency



assessing was proposed by Kovalev. This option takes into account a complex indicator in which the values of the weight coefficients express the degree of significance of each coefficient.

The Altman Z model, built between 2010-2015, of the twelve companies that Y. Mercan and A. Oğuz dealt with in their studies, was created. We should observe that the Z score is over 2.60 and is in the safe area. In addition, three out of twelve companies that were examined in detail were all active in the safe area and three companies were in the gray / uncertain area.

Tania, Hamid, et al. (2016) observed the financial failures of non-bank financial institutions in Bangladesh using the Altman Z model in their study. Using the data of 15 non-bank financial institutions between 2011 and 2015, they observed the probability of financial failure. As a result of the study, they observed that the firms were at troubled levels. Suraiya Mahbuba, (2015), measured the financial failures of the companies in Bangladesh using the Altman Z model. The data of the companies between 2010-2014 were used in the study and analysis was made according to the Altman Z model. As a result of the study, he observed that two firms were financially healthy and three firms were in financial trouble.

Canbaş et al. (2005) proposed in their studies an integrated early warning system consisting of discriminant analysis, logistic regression, probit and basic components analysis in the prediction of financial failure. In the study in which data of Turkish banks were used, it was found that the predicted ability of the developed system yielded better results than each analysis method.

Kyung-Shik Shin, Yong-Joo Lee (2002) tried to better estimate the failure of firms for artificial neural networks and logistic regression models in their studies for USA banks. As a result, the failure estimated in both methods.

Yakut and Elmas in their study, ascertained that successful and unsuccessful businesses were determined and a sample, prediction set and control set were created to establish statistical models. Afterwards, it was determined which method gave better results by estimating the financial failures between the years 2005-2008 of 140 industrial enterprises that were traded in the ISE by using the control group and data set, with data mining and discriminant analysis models.

Muzır and Çağlar (2009) tested and compared their prediction performance for the first year before failure. The O-Score model designed by Ohlson is more successful than other existing models with an accurate classification rate of 81.6%.

Ko, Yu-Chien, et al. (2017) investigated using the Altman Z model. In the working environment, they observed that the card productivity of financially distressed companies in Taiwan is in decline.

Vuran (2009) applied Discriminant and Logistic Regression Analyzes in 1997-2007 period in order to estimate the financial failure of a total of 122 publicly traded and publicly traded companies and compared the predictive powers of the models. It was observed that there was no statistically significant difference between the methods used in the study in terms of predictive power and variable selection.

Ohlson (1980) used logistic regression analysis to estimate possible bankruptcy. He developed three different models by combining one year before bankruptcy, two years before bankruptcy and one and two years before bankruptcy. Models are 96.12%, respectively. They successfully predicted 95.55% and 92.84% respectively.

Odom and Sharda (1990) used artificial neural networks to predict financial failure. In the study conducted, classification accuracy was achieved with artificial neural networks in the range of 77.78% - 81.48% for enterprises that went bankrupt, and 78.57% - 85.71% for non-bankrupt enterprises.



Honey, Gnyana, et al. (2015), in their study, observed the financial distress of 5 firms producing ready-made consumer goods in India using the Altman Z model according to 2011-2015 data. As a result of the study, it was concluded that the companies observed in the near future have low probability of financial distress. Anwar (2015), conducted a study in which the Altman Z model examined the pre-bankruptcy performances of companies that went bankrupt between 200 and 2005. The study observed that firms with the possibility of bankruptcy apply for bankruptcy according to the Z model.

Financial analysis perspective

Financial sustainability is one of the key indicators that determine the company's financial condition. Within this framework, managing the company's financial stability is an important management task to ensure independence from external conditions (external financial stability) and financial policy reasonableness (internal financial stability) to maintain entirety in the process of structural changes. Financial sustainability determines success and competitive ability.

The term insolvency is defined as: "the debtor's inability to fully settle the creditors' claims of pecuniary obligations and (or) fulfill the obligation to pay mandatory payments." Insolvency is the company's inability to discharge a debt or an obligation "... more than three months from the date of the execution." The concept of bankruptcy is also divided into several main types: real bankruptcy; temporary (conditional) bankruptcy; intentional (intentional) bankruptcy and fictitious bankruptcy. The reasons for bankruptcy can be specified as follows (Reen, 1990: 393-394): reduced profitability, capital transfer to non-operational status, access of imported goods to the domestic market, difficulty in market control, insufficient capitalization, inadequate financial control and others.

The level of current insolvency risk is diagnosed using the system of solvency and liquidity indicators. The level of impending insolvency is diagnosed using a system of financial stability indicators, primarily the degree of equity. The ability to neutralize the risk of bankruptcy based on the internal potential of the company is diagnosed using a system of indicators of profitability and total assets turnover. Based on the diagnosis of bankruptcy, the scale of the company's crisis is determined, the factors that define the financial development of the crisis are considered, and the financial policy of crisis management is developed.

Economic significance of financial analysis

There are two main predicting bankruptcy approaches. The first is quantitative and based on financial data and includes the operation of certain coefficients. The second is qualitative and based on data for insolvent companies and compares them with the corresponding data of the company under investigation. The algorithm for constructing all models is the same: a sample of insolvent and bankrupt companies is formed; financial indicators for both groups are calculated; a regression equation is estimated. One of the simplest models for predicting the possibility of bankruptcy is the bifactor model. It is based on two key rates (for example, the current liquidity ratio and the debt ratio).

It is possible to use the company's price as a mechanism for forecasting bankruptcy. At the hidden stage of bankruptcy this indicator begins to fall imperceptibly. There are also Fox's, Fulmer's and Springate's models. The methods are based on expert commentary often with points. Everything is taken into account: the company's reputation, the leader's personality, and competitive ability.

Before making a decision on the debtor's bankruptcy the company settles a control process that is applied to the debtor to ensure the safeguarding of assets, financial condition analysis, preparation of a creditors' claims list and holding the first creditors meeting. Therefore, one of the main tasks of the monitoring process is to analyze the financial situation of the company and



conclude that it is possible (impossible) to restore solvency in order to decide the future fate of the debtor.

The company's financial condition is assessed based on key indicators.

The current ratio is a financial ratio equal to the proportion of current assets to short-term liabilities. The current ratio shows the organization's ability to repay current (short-term) liabilities using only current assets. The higher the coefficient the better the company's solvency.

Absolute liquidity ratio which shows the part of the short-term liabilities can be repaid immediately, and it is calculated as the ratio of the most liquid current assets to the current obligations of the debtor in the enterprise, has a significantly different indicator from the standard. Therefore, only a small part of the obligations can be repaid in the near future.

The capital ratio characterizes the presence of an enterprise's own working capital which is necessary for its business solvency. It is calculated as the ratio of own working capital (the difference between capital and the value of non-current assets) to the total value of current assets.

The current assets to equity ratio shows how much working capital is in circulation trans. This ratio is calculated as the ratio of own working capital to own sources of financing.

The equity to total assets ratio shows the share of the company's assets that are delivered by virtue of the owner's capital and is calculated as the ratio of equity to the total balance.

This is only part of the indicators for assessing the financial condition. If the creditors' meeting decides to restore the debtor's solvency based on the analysis, a procedure for financial recovery or external management is introduced. If during monitoring it becomes impossible to restore solvency or due to anti-crisis procedures it is not possible to achieve the desired parameters, the final procedure called the bankruptcy procedure should then be introduced.

Travel Company "Thomas Cook Group"

The tourism sector is one of the largest and most rapidly increasing globally. The results of the analysis showed that the problems encountered in 2015-2016 increased the risk of bankruptcy of Turkish travel companies using the Altman valuation model [7]. The countries that attract the most tourists are generally France, the United States and Spain, respectively. Turkey, holding the № 6 spot in the world ranking in 2013, has gradually taken this position in consequence of initiatives that have been taken since the 1980s. The largest increase in the ranking of the top 10 countries was pointed in Mexico with 20.5%. The recession in demand for tourism in Muslim countries occurred due to the increased terror threat since 2014, in particular for Turkey after the fall of Russian military aircraft due to border violations. Revenues from Turkish tourism decreased by 8.3% in 2014-2015; in 2016, the market prices of companies did not change significantly compared to the previous year despite the increased risk of bankruptcy.

One of the world's oldest tour operators "Thomas Cook Group" was unprepared for changes in the industry, remaining inflexible in the new high-tech world, among online aggregators, ambitious low-cost airlines and more flexible competitors. Tourism seemed to be one of the most stable sectors of the economy. Today it is different: the decision to travel is made almost instantly, and prices change literally every minute just as shares do on the global stock exchanges. The most difficult times for English tourism came with the UK's exit from the EU. After leaving the EU on the eve of the summer season many Britons simply did not know what would happen next with the country, and postponed their trips. In 2016, the demand for UK trips fell by 10-15% that disrupted the plans of all international operators in this market. Another key point was the revolution in Turkey that year, when the summer of 2018 turned out to be abnormally hot, and most of the British and Scandinavians decided to leave the country for a holiday in the countryside.

In the period from 2017 to 2018 "Thomas Cook Group" company decided to increase its share in local markets by purchasing the control of a network of travel agencies in the UK from partners



and increasing its 100% share in Russia's "ntourist". All this cost the operator hundreds of millions of pounds and created a high debt burden. Since 2011 "Thomas Cook Group" has only worked to pay off debts.

"Thomas Cook Group" is a leading European travel company. Most recently, the company went into bankruptcy. Before the trial the media wrote about the organization's financial problems. For the development of the company different scenarios of excessive debt reduction were provided, including amongst others, the partial sale of assets. However, recapitalization was chosen as the main scenario. This is better for clients and partners, as well as for debt holders and large shareholders but undesirable for minority shareholders. There will be many more negative messages on the way to closing the deals. According to BBC, "Thomas Cook Group" asked the UK government to provide financial assistance by means of additional 200 million pounds to meet the requirements of several credit banks, including Lloyds and RBS. Bankers insist that "Thomas Cook Group" should create additional reserve funds in such a volume as to function normally during the winter season of 2019-2020. After the bankruptcy of the corporate parent "daughters" began to declare themselves as bankrupt entities.

The company had virtually no hotels of its own (mostly rental properties managed by a tour operator), no transport companies and no guides. They usually outsourced all their colleagues. But the fleet consisted of more than 100 aircraft. "Thomas Cook Group" was significantly affected by the fact that the competition of low-cost airlines such as inter alia EasyJet and Ryanair which already offered not only low prices but also tour operator services became very tough in the aviation market.

Methodology and matter

There are many Altman's model modifications. The original model functions well in several countries such as Poland, Finland and China. Let total assets be equal (non – current assets + current assets) and denoted as A; liabilities are equal (short-term + long-term liabilities) let them be denoted by O. Then the Altman model (1986) has the record [10], [11]:

$$Z_1=3,25+6,56\times S_1 +3,26\times S_2 +6,72\times S_3 +1,05\times S_4 , \quad (1)$$

where $S_1 = \text{current capital}/A = \text{working capital}/A$;

$$S_2 = \text{retained income}/A;$$

$$S_3 = \text{operating surplus}/A = \text{EBIT}/A;$$

$$S_4 = \frac{\text{owned capital} - \text{book value of capital}}{\text{book cost of joint liability}}.$$

This type of accounting model can be used by all stakeholders, especially international dynamic banks or other financial institutions not only for forecasting failures or disasters, but also for other management purposes such as reserving and calculating economic capital. We considered model (1) to be the main model for calculation since it is perfectly suitable for foreign non-manufacturing companies. Using additional variables in the model usually increases the accuracy of the classification of the original model. For emerging markets Altman adds the constant term +3.25 to the formula, so we can compare values with or without the constant ($Z_{-1_UK \text{ market}}$). The Altman scale takes three ranges of values: up to 1.1 as the high possibility of bankruptcy of the enterprise, $Z \geq 2.6$ as the low possibility of bankruptcy. If $Z \in$ values (1.23; 2.9) there is the zone of uncertainty. The model features allow calculating the possibility of bankruptcy not using financial coefficients but using a system of integral scores. Integral scores are more economically significant than individual coefficients.

The revised Altman model after 2014 should be presented in the following form (2).

$$Z_2=0,035-0,495\times S_1 -0,862\times S_2 +1,721\times S_3 -0,017\times S_4 , \quad (2)$$



Researchers [7] identify the following formula for the original Altman model (3), but this model was later revised.

$$Z_0 = 0,012 \times S_1 + 0,014 \times S_2 + 0,033 \times S_3 + 0,006 \times S_4 + 0,999 \times S_5, \quad (3)$$

S_5 = profit on sales / A.

The Altman-Sabato model has its own form (4) [3]. It is an improved version of the Altman model. This model has high accuracy but does not take into account the specifics of particular industries.

$$p_z = \frac{1}{(1 + e^{-4,28 - 0,18 \times S_3 + 0,01 \times N_1 - 0,08 \times N_2 - 0,02 \times N_3 - 0,19 \times N_4})}, \quad (4)$$

где p_z – possibility of bankruptcy according to Altman-Sabato model,

$$N_1 = \frac{\text{short-term liabilities}}{\text{asset}};$$

$$N_2 = \text{net profit} / A;$$

$$N_3 = \text{monetary funds} / A;$$

$$N_4 = \text{EBIT} / \text{receivable interests}.$$

Enterprises with a rate of bankruptcy possibility more than 50% can be considered to be potentially bankrupt. However, there is a weak forecasting ability for models from other countries, since it was originally created for the USA market [8].

Rate of return is one of the main indexes of effectiveness for an existing company. Here, the ROA (return on assets) and ROE (return on equity) indicators are important characteristics in the DuPont model. From the point of view of the DuPont model, change of ROA and ROE indicators show that the increase rate of profit increase on the growth rate of assets; these indicators depend on the turnover of assets and return on sales.

The readjustment in the DuPont model made by V. V. Kovalev.[1],[2],[5] converts the original model to the following form (5),

$$ROE = k_{tr} \times \left(\frac{EBIT}{A} - \frac{In}{A} \right) \times \frac{1}{k_{EC}}, \quad (5)$$

where $EBT = EBIT - In$ (before-tax profit), In – amount of interest accrued per debt capital use, k_{EC} – equity ratio, k_{tr} – the ratio after tax revenue deduction.

The three-component DuPont model in the classic form looks like this (6).

$$ROE = ROA \times \text{total assets turnover} \times \text{leverage ratio} \quad (6)$$

The five-component DuPont model was converted to the form (7).

$$ROE = \frac{NI}{EBT} \times \frac{EBT}{EBIT} \times \frac{EBIT}{TR} \times \frac{TR}{\bar{A}} \times \frac{\bar{A}}{\bar{K}}, \quad (7)$$

где NI – net income, $EBIT$ – earnings before interest and taxes, TR – total revenues, \bar{A} – average assets, \bar{K} – average shareholders' equity.

In some literature the following modification of the DuPont model is used for calculations (8-9) [5].

$$ROE = ROS \times \text{total assets turnover} \times \text{leverage ratio}, \quad (8)$$

where ROS – return on sales.

$$ROE = t \times r \times ROS \times \text{total assets turnover} \times \text{leverage ratio}, \quad (9)$$

t - tax burden ratio,

r - percent burden ratio.

Formula (9) is to determine the profitability of sales based on net profit which allows comparing disparate values such as net profit and turnover, in Russia this indicator is used incorrectly.

Analysis of financial solvency and possibility of bankruptcy of the company "Thomas Cook Group" (analyze the last 5 years according to the Altman and DuPont's model)

Let's assume that the considered modifications of the Altman's model originally created for the US market can be used for British company "Thomas Cook Group". Let's construct the dynamics of Z values according to formulas (1-3) for the period from 2014 to 2018 (Fig.1).

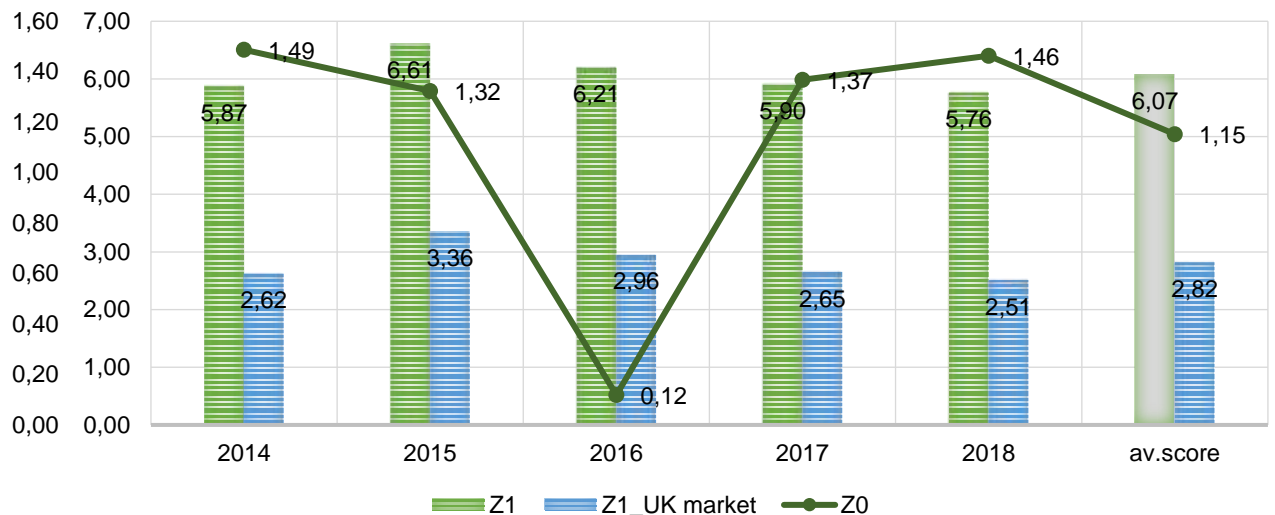


Figure 1. Dynamics of Z values of "Thomas Cook Group", 2014-2018

The calculated values of Z_1 with consideration to the constant according to the formula (1), show values on average equal to 6, which falls into the safe zone and indicates a low possibility of bankruptcy. However, the needed formula without a constant on average shows the value $Z_1=2.8$, which falls into the zone of uncertainty. This indicates structural changes in the company that have been actively taking place since 2015. We can also note that Z value has been also rapidly decreasing after 2015.

The calculations for ROA and ROS for the DuPont model are shown in Fig. 2. It is worth noting the differences in calculations for ROS, ROS'. For the ROS indicator, the ratio $ROS = \text{Net profit}/\text{sales volume}$ was used. To calculate the ROA, the ratio was used: $(\text{Net profit} + \text{interest Expense}) \times (1 - \text{Tax rate}) / A \times 100\%$.

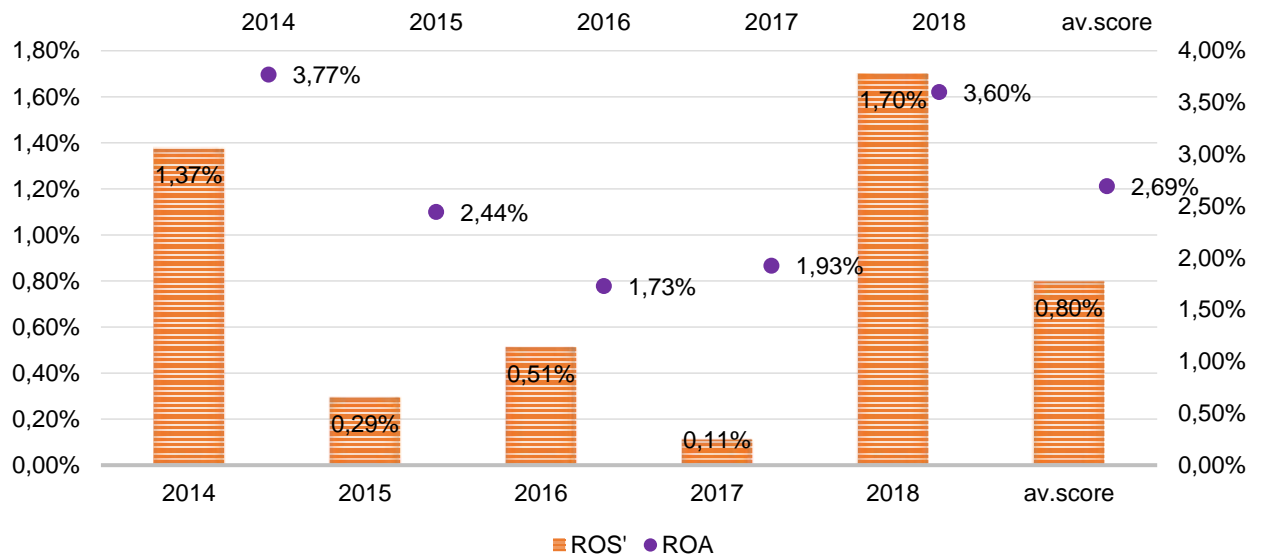


Figure 2. ROS dynamics, ROS of "Thomas Cook Group", 2014-2018

Profitability of sales shows how much profit is accounted for per unit of sales and is an important indicator for comparing companies in the same industry. ROS increased significantly in 2018 relatively to the minimum value for the period in 2017; in 2018, the figure was 1.7%. However, values in the range of up to 5% indicate low profitability relative to the market. In most cases, a low return on sales indicates an incorrect pricing policy and an unfavorable competitive position. Large companies with a wide range of products usually have a lower return on sales than small companies. The indicator increased due to the growth of net profit, and sales volume reached the maximum for the period. ROA declined in 2014-2016, but there was an increase in 2017-2018; in 2018, ROA was 3.6%. This indicates that the financial position of the company's assets has increased compared to the level of 2015. Profitability is average compared to the UK average.

Return on equity shows the efficiency of using equity, that is, what the owners have contributed to the company. Consider the ROE values calculated using the formulas (7), (8). The five-component model (7) is very widespread for service sector research. The three-component model is taken for comparison with the results of the model (7).

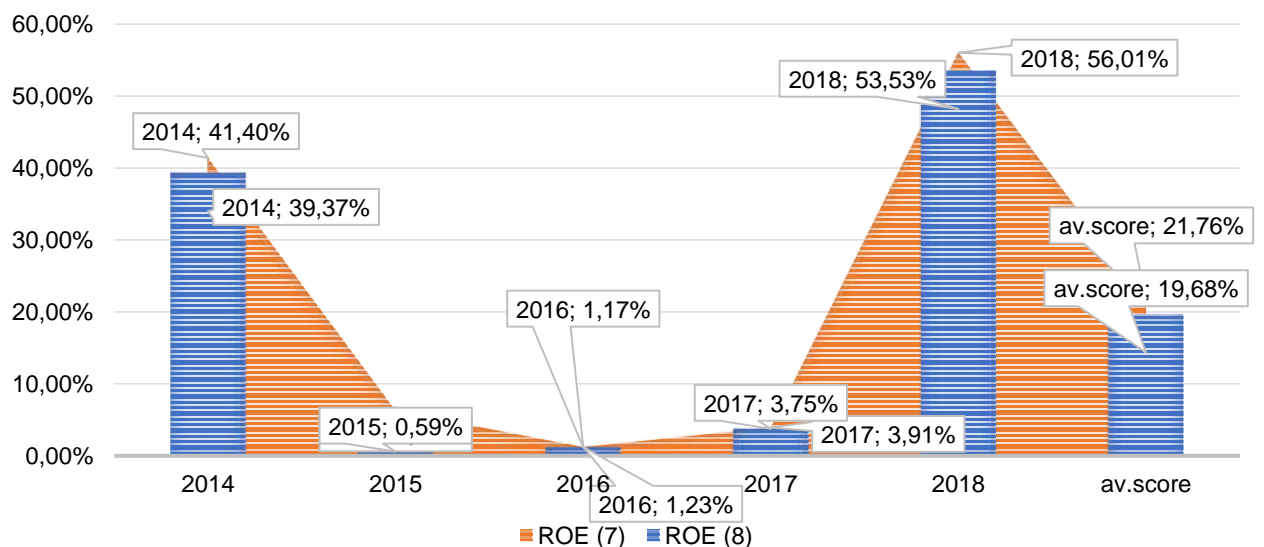


Figure 3. ROE dynamics of "Thomas Cook Group", 2014-2018



The ROE dynamics calculated by the two methods are the same. In 2015 ROE sharply decreased significantly, but in the period 2015-2018 it rose to the level of 54-56% in 2018. According to the average statistics the return on capital is approximately 10-12% (in the US and the UK), so the calculated rate is very high for our company. The amount of financial leverage is also high (the average value for the period is 17.5%).

Discussion

With a debt of 1.6 billion pounds, "Thomas Cook Group" was ill-fated. The most realistic results seem to be according to the formula (3) corresponding to the original Altman's model. The average value of Z_0 for the period is 1.15, which puts the financial situation very close to the bankruptcy zone. According to the revised model (2), the Z_2 values were negative which corresponds to an average of -0.12. This also indicates a high risk of bankruptcy. As for the Altman-Sabato logit model (4), the average possibility of an organization's bankruptcy over the period is 0.99 which means high possibility of bankruptcy. However, the researchers note that the model does not work well for markets other than the US. Thus, the original model (3) due to the large number of factors included, and the revised model (2), due to more correct coefficients, are more realistic for predicting the current financial position of a company that went bankrupt.

According to the DuPont formula the company's profitability was growing. The higher the return on equity the better. However, as can be seen from the DuPont formula, a high indicator value may be the result of excessive leverage. Most of the debt and a small part of the capital affect the financial stability of the organization. This reflects the basic law of business: the greater the income the greater the risk. In case of making allowance for this ratio of indicators, it can be assumed that the recovery rate is too low, so that if a default occurs the company will not be able to pay all of its liabilities through its assets. Sustainability is extremely low which also affected the credit rating.

The best solution for "Thomas Cook Group" would be the changing of its business model but the tour operator was not ready for such changes and lost in the competitive struggle.

Conclusions and recommendations

Our empirical results provide an idea of whether different predictor variables show different predictive power when changing the market structure and forecast horizon. The original Altman's model proved to be the most realistic of those considered for forecasting the current financial position of "Thomas Cook Group". If the company could reduce its own loans, which was only possible due to specific advantages that it did not have, many financial indicators could have improved. Another option is to reduce accounts payable by limiting the terms of payments under contracts.

In most cases, a low return on sales indicates an incorrect pricing policy and an unfavorable competitive position. To increase the profitability of sales, "Thomas Cook Group" could use the following actions: to reduce the cost of production without reducing the quality (in consequence of various progressive management methods. In the period from 2015 to 2018 ROE increased to 54-56%. However, the increase in return on equity is a consequence of the company's high leverage. The method of assessing the capital structure through leverage shows a compromise in the choice between risk and return. Knowledge how leverage affects the level of return on equity and the level of financial risk allows to purposefully manage both the cost and the capital structure of the organization.

References

Afanasyeva, A. N. (2012). Analysis of the efficiency of using own and borrowed capital. Expanded model "DuPont". *Management of economic systems: electronic scientific journal*, 8(44).



- Altman, E. I. (2002). *Bankruptcy, credit risk, and high yield junk bonds*, Wiley-Blackwell, 2002.
- Altman, E. I. et al. (2017). Financial distress prediction in an international context: A review and empirical analysis of Altman's Z-score model // *Journal of International Financial Management & Accounting*, 28(2), 131-171.
- Altman M. (2019). Example of calculation [Electronic resource].-2013. Available online at <http://www.afdanalyse.ru>.
- Bengü Vuran, (n.d.). Prediction of Business Failure: A Comparison of Discriminant and Logistic Regression Analyses, *İstanbul Üniversitesi İşletme Fakültesi Dergisi*, Arşiv, Cilt 38, Sayı 1.
- Bondarenko M. D. (2014). Features of using the DuPont model in analyzing the process of forming the profitability of banks. *Statistics and Economics*, 4.
- Emre Yakut, Bekir Elmas, İşletmelerin Finansal Başarısızlığının Veri Madenciliği Ve Diskriminant Analizi Modelleri İle Tahmin Edilmesi, *Afyon Kocatepe Üniversitesi İktisadi Ve İdari Bilimler Fakültesi Dergisi*, Cilt 15, Sayı 1
- Erol Muzir & Nazan Caglar. (2009). The Accuracy Of Financial Distress Prediction Models In Turkey: A Comparative Investigation With Simple Model Proposals, *Anadolu University Journal of Social Sciences*, 9(2).
- Farah S. (2018). *Financial Health and Strategic Management In The UK Construction Industry: Altman's Z-Score Prediction Of Bankruptcy: thesis.* – The University of Manchester, 2018.
- Gnyana Ranjan Bal. (2015). Prediction Of Financial Distress Using Altman Z– Score: A Study Of Select Fmcg Companies, *Indian Journal Of Applied Research*, 2015 issue.
- Hamid, T., Akter, F. & Rab, N.B. (2016). *International Journal of Business and Management*; 11(12), Published by Canadian Center of Science and Education.
- Hidersine G. A. (2009). An Integrated assessment model of risk of bankruptcy. *Finance*, 2, 67-69.
- James A. Ohlson, *Financial Ratios and the Probabilistic Prediction of Bankruptcy*, *Journal of Accounting Research*, 18(1), Spring, 1980, Chicago.
- Karaca S. & Özen E. (2017). Financial failure estimation of companies in BIST tourism index by Altman Model and its effect on market prices. *BRAND. Broad Research in Accounting, Negotiation, and Distribution*, 8(2), 11-23.
- Khismatullina A.M. (2019). Economic analysis of the financial stability of PJSC "Nizhnekamskneftekhim" and the probability of bankruptcy of the enterprise. *Vector of economy*, 6, 84-84.
- Ko, Yu-Chien, et al. (2017). An evidential analysis of Altman Z-Score for financial predictions: Case study on solar energy companies, October 2016, *Applied Soft Computing*
- Krueger, T. M. & Brou, F. B. (2016). Continental and national differences in the financial ratios of investment banking companies: an application of the Altman Z Model. *Journal of Accounting and Finance*, 16(3).
- Kyung-Shik Shin & Yong-Joo Lee. (2002). A Genetic Algorithm Application In Bankruptcy Prediction Modeling, *Expert Systems with Applications*, 23(3), 1 October 2002



Misankova M., Zvarikova K., Kliestikova J. (2017). Bankruptcy practice in countries of Visegrad Four. *Economics and culture*, 14(1), 108-118.

Odom, M.D. & Sharda, R. (1990). A Neural Network Model for Bankruptcy Prediction, Conference: Neural Networks, International Joint Conference, Stillwater, Oklahoma.

Rygin, V. E. (2013). Theoretical analysis of the concepts of "insolvency" and "bankruptcy" of the enterprise / V. Yu. Zhdanov, V. E. Rygin. *Regionology*, 4, 164-171.

Savchenko A. A. (2016). Comparative analysis of three modifications of the DuPont model / / Traditional and innovative science: history, current state, prospects: Collection of articles of the *International scientific and practical conference*. V.-2016, 84-89.

Siwi C. C., Massie J. D. D. & Tumewu F. (2018). AN ANALYSIS OF BANKRUPTCY PREDICTION IN MANUFACTURING FIRM BY USING BANKRUPTCY MODELS (CASE STUDY IN CHEMICAL SUB SECTOR LISTED IN INDONESIA STOCK EXCHANGE 2013-2017) , *Jurnal EMBA: Jurnal Riset Ekonomi, Manajemen, Bisnis dan Akuntansi*, 6(4).

Tian S. & Yu Y. (2017). Financial ratios and bankruptcy predictions: An international evidence. *International Review of Economics & Finance*, 51, 510-526.

Trott, K. S., Shamsutdinov, A. F., Shamsutdinov, T. F. & Khamidullin, F. F. (2016). Assessment of the probability of financial bankruptcy of organizations. *Economic analysis: theory and practice*, 10(457)

Yasin Mercan, Ahmet Oğuz Akgunes, (2017). 12-13 Mayıs 2017 Edime, Uluslararası Ekonomi Araştırmaları ve Finansal Piyasalar Kongresi, Baskı 1, s.350

Zhdanov V. Yu. (2011). Mechanism for diagnosing the risk of bankruptcy of an industrial enterprise, Actual issues of Economics and management: materials of the *International Journal. Science. Conf.(Moscow, April, 2011)*, 2, 95-97.