



GANT DEVELOPMENT SA – THE EFFECTIVENESS OF BANKRUPTCY PREDICTION MODELS IN CASE OF SUDDEN BANKRUPTCY. CASE STUDY

ULYANA DZYUMA-ZAREMBA¹

Abstract

Company bankruptcies are an inseparable element of market economy. We may observe the tendency to view bankruptcy as a problem of weak and usually small entities facing problems when trying to meet the challenge posed by strong competition. Big companies, however, also fall, and their bankruptcy cannot be predicted by even the most experienced analysts. The aim of the article is to examine the effectiveness of the bankruptcy prediction models in case of sudden bankruptcies, on the example of Gant Development S.A. The author attempts to classify the real estate developer's bankruptcy as "staged" bankruptcy by performing an analysis of company activities in the period of 2010-2013. The study was conducted using Polish models of linear discriminant analysis, widely popular in the Polish literature as well as the models which reflect the branch specificity of the examined entity.

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¹ Ulyana Dzyuma-Zaremba, Chair of Finance, UITM in Rzeszow, udzyuma@wsiz.rzeszow.pl.

INTRODUCTION

The research conducted so far on verifying the Polish models of early warning against bankruptcy shows that most discriminant models are useful, though they cannot guarantee 100% accuracy. When selecting enterprises in order to construct a model, its authors more and more frequently consider the size of the entity and the industry specificity, neglecting the type of bankruptcy. Can the type of bankruptcy affect the effectiveness of bankruptcy prediction models? If we adopt the criteria of the effects brought by bankruptcy for stakeholders, we may differentiate between justified bankruptcy, consisting in eliminating insolvent entities from the market and being a natural phenomenon, and staged bankruptcy, also known as simulated, directed, false, intentional or unjustified bankruptcy. It consists in bringing an enterprise to a fall after transferring financial means and assets out of it. In order to identify the type of bankruptcy, one must carefully analyze its causes, which calls for a holistic approach (Tokarski, 2012).

The most common causes of bankruptcy can be classified into two groups. One of them contains micro-economic causes, inherent for an enterprise. The other – macro-economic causes – is composed of factors shaping the environment in which an enterprise operates. The research conducted in Poland indicated that it is usually quality factors that are at the source of bankruptcy, associated with broadly understood enterprise management (Appenzeller, 1998). There are many internal and external factors, but can each bankruptcy be attributed to some of them? There are situations, where bankruptcies are planned, with a narrow group of “stakeholders” praying on them. In such situations the interests of creditors may be violated. According to E. Mączyńska „we can observe the specific syndrome of “a bankruptcy hyena”. Nasty commentators would say that bankruptcy is the most attractive form of terminating the business, but this definitely does not refer to creditors” [pte.pl]. Only a negligible part of bankruptcy assets is allocated to satisfy the needs of creditors. The remuneration of an official receiver exceeds significantly the amounts of receivables paid. The research conducted in this area puts the blame on the Polish bankruptcy and restructuring law which, in its present form, does not safeguard the interests of creditors; it does not perform its function of wiping the market from insolvent entities;

it does not guarantee transparency of bankruptcy procedures; it does not prevent staged bankruptcies and it does not help detect them (Mączyńska, 2012). In 2004 – 2010 there were over 28 thousand applications for declaration of bankruptcy, of which 6 thousand were rejected due to insufficient assets to cover the costs of the proceedings alone. What it really means is that these applications were submitted too late. On the other hand, only 5 people were convicted for not declaring bankruptcy in proper time (Morawska, 2015). Judges dealing with bankruptcies claim that more than a half of all court proceedings regard staged bankruptcies, some of them even believed this number to be in the region of 90% of all submitted applications (Mączyńska, Herman, 2010). A. Herman claims that “in Poland we observe underdevelopment of the institutional infrastructure for bankruptcy. This is manifested in insufficiency and incredibly low effectiveness of courts, prohibitive costs of proceedings and the lack of system of research on bankruptcies. One may also add here incompetence of supervisory boards and systemic weaknesses of audit” (Mączyńska, Herman, 2010).

Transferring capital from a company and causing its bankruptcy often goes hand in hand with “cooking” financial accounts. It is aimed at presenting the economic situation of an entity to lead the recipient to create a different (less positive) picture of a company than the actual state. Falsifying often concerns large stock-exchange companies which need capital and may be done in the interest of the board or the owners, or both groups at the same time. The reason behind such activities is often to get rich, as the board members remunerations often depend on growing share prices. Financial statements are often falsified just before revealing there is a crisis in a company, consisting in losing liquidity, solvency or profitability. It is vital for companies hungry for capital to present positive results since any losses might scare possible investors away and the issuance of shares might be a flop (Wąsowski, 2005). Simulated bankruptcies would not be such a serious issue if it were not for the fact that they happen to the detriment of creditors, the State and the whole society, which is detrimental to the whole economy of the country.

The author will try to verify the Polish bankruptcy prediction models, taking into account the industry specificity of an examined entity and the type of bankruptcy, applying a detailed analysis of the activities of GK Gant Development S.A.

METHODOLOGY OF RESEARCH

The main goal of this paper is to verify the usefulness of discriminative models in bankruptcy prediction on the basis of a company listed on the Warsaw Stock Exchange (WSE) - Gant Development S.A. The discriminant analysis was supplemented with qualitative research, which allowed to identify the causes of Company bankruptcy. The author's task was to verify the following research questions:

1) Can we classify the case of Gant Development S.A as “staged” bankruptcy?

2) Did the selected models of early bankruptcy warning allow to detect signals of threatened operations one, two or three years before filing an application for bankruptcy?

3) Does taking into account industry specificity when constructing bankruptcy prediction models influence their usefulness? The article deals with the current issues observed in the Polish economy and related to enterprise bankruptcy.

The review of Polish literature demonstrated that there have never been any attempts at examining the effectiveness of discriminative models for “planned” bankruptcies. The first stage was an attempt at presenting the evidence that would allow us to classify the Company bankruptcy as directed one. The analysis used the information included in periodical reports of the company (annual and quarterly reports), opinions of an expert auditor, share prospectuses, entries in the National Court register (KRS), interviews published in branch portals, Company announcements and share quotations at WSE in the period of 2009-2014. The second stage was to apply the models of early bankruptcy detection in order to examine the financial state of the company to see how useful they are. For calculations the author used the data contained in the financial statements published by the Company.

The main research method was a single case study which allowed to combine several aspects of bankruptcy, namely Company financial results, bankruptcy causes and expert auditors' opinions, which are essential for verifying data included in financial statements. IN the author's opinion, a bankruptcy planned in order to gain material benefits may be difficult to identify with bankruptcy prediction models, since a carefully developed plan of

events and the so-called accounting creativity may significantly hinder early detection of signals of a deteriorating financial situation of an economic entity.

GANT DEVELOPMENT S.A. – FROM BOOM TO BUST

The company started its activities in 1992 by opening a bureau de change. Gant Development S.A. was first listed on the WSE as a company trading in foreign currencies and only in 2002 it decided to enter the construction development business. On 31st December 2014 the Capital Group GANT Development S.A. consisted of its dominant entity GANT Development S.A. in bankruptcy proceedings and 2 associated companies. The core activity of the Company is the holding activity. Company activities entail provision of developer, financial, construction and real estate rental services. Most companies belonging to the capital group are Polish companies, dealing with developer activities, established to implement a specific project. According to end of 2013 data, the group consisted of three foreign companies, one created to conduct developer activities in Prague, the other two Gant International S a.r.l. with registered office in Luxemburg and Gant Development Limited with registered office in Cyprus for managing the holdings. Both countries are the so-called ‘tax havens’, which helped the Company to reduce its tax obligations (Folfas, 2008). In 2009 Gant Development S.A. was the developers' market leader in the number of flats sold. After changing its profile and moving from currency exchange to construction activity, Gant was developing at a sky-rocketing speed. As the biggest chain of currency exchange points, valued by the Stock Exchange at PLN 3 million, while as a developer, it saw its value grow multifold. The company specialized in building popular two-room flats, the demand for which was least affected by the crisis (Jóźwik, 2010). 2011 was another period when investments of GANT Development S.A. Group enjoyed great interest of clients. This is reflected in being the Wrocław leader in the developer company category in the “Flat Brand of the Year” ranking”. GANT Development S.A. was also awarded with Excellent Service award for the best service to its clients at accommodation fairs in Gdańsk, while its Kraków investment „Na Olszy” won in the Façade of the Year 2010 contest. Gant Development S.A. was also given a prestigious award – it was ranked

26th biggest Central and Eastern Europe Developer Companies by Cij Journal. Analyzing the achievements of the company, one would find it difficult to foresee the worsening financial situation of the company and the bankruptcy threat. The crisis in the Company was not caused by the declining demand for flats, as in 2012 GK Gant Development S.A. sold 314 flats more than in the previous year.

In order to obtain capital for financing its current operations, in August 2012 Gant organized a public bond issue, at favorable interest rates. The PLN 22 million issuance was bought by large institutions and nearly two thousand individual investors (Kokoszkiwicz, 2014). Soon after the issuance, Gant board published a half-year report, where the Company situation did not look very good. Deloitte auditors, in their opinion on the financial statement, indicated that the Company was overinvested and had problems with maintaining solvency [GPWInfoStrefa].

In total, the Company owed around PLN 250 million to holders of bonds from various bond issuances. The share prices began to plummet and 2012 ended with a loss of PLN 453 million for Gant Development S.A. Soon after the publication of the consolidated report for

2012, the Company filed an application for bankruptcy with a possibility of making an arrangement in the Wrocław Court. Gant presented its creditors an offer of an arrangement, where it was supposed to reduce its obligations by 20%. Consecutive Court hearings brought only negative statements, concerning the unpaid and what is worse, unenforceable loans. The Antkowiak family sold out their shares and moved out of the Company. In 2013 the Company did not buy out bonds worth PLN 29 million, as a result of which creditors filed an application for bankruptcy proceedings, the share price dropped below PLN 1 for the first time in Company history.

Following the Court decision on 07th July 2014 Gant Development S.A. changed its bankruptcy mode from arrangement to liquidation. The proceedings were soon discontinued, since the Company did not have sufficient means to cover the liquidation costs, estimated at least at PLN 2.5 million. Soon after this decision, Gant Receiver, Andrzej Szczerbiński made a notification to the Prosecutor's Office in the matter of actions to the detriment of the company and its creditors. According to data published at StockWatch.pl (Paćkowski, 2014), the receiver notified of financial irregularities to the total amount of PLN 772 477 947.84. Judge Jarosław Horobiowski,



Figure 1. Gant Development S.A. share prices – from boom to bust

Source: own elaboration on the basis of Company information and bankier.pl listings.

Chairman of the Bankruptcy Division claimed that “assets might have been transferred from the company” (Kokoszkiwicz, 2014). In January 2015 the decision to discontinue the bankruptcy proceedings became valid. On 29th April 2015 the shares of Gant Development S.A. were excluded from trading at WSE.

In October 2015, the Annual Gant Development S.A. Shareholders Meeting was planned to be held. The content of the resolution drafts (Draft of Resolutions for the ASM 26.10.2015), which were to be discussed, was given to the public and concerned, among others:

- recalling and appointing Members of the Company’s Supervisory Board;
- accepting the single and consolidated report of the Board from Company activity and the financial report for the 2014 financial year;
- determining the way of covering up for the loss indicated in the financial report for 2014;
- discharge for some Members of the Board and Members of the Supervisory Board from the period from 01.01.2014 to 05.06.2014;
- issuing subscription warrants and ordinary bearer shares of S series;
- conditional increase of the Company share capital to allow S series subscription warrants holders to obtain Shares;
- changes to the Company Articles of Association.

Attention should be paid to Resolution No 35, according to which “General Meeting of GANT DEVELOPMENT SA Shareholders, on the basis of Article 393 section 2 in connection with Article 483 §1 of the Company Law Code decides to authorize the Company to file a claim in the Court for repairing the damage caused to the Company by the Member of the Board, Ireneusz Radaczyński, who unlawfully transferred the Company assets out of the Company, especially as a result of his legal actions taken on 06th and 07th July 2014” [Draft of resolutions for the General Meeting of Shareholders]. On the other hand, Ireneusz Radaczyński blames the Company founder, Karol Antkowiak, who, in his opinion brought about the Company bankruptcy by unsecured loans within the group worth many millions of PLN. I. Radaczyński filed a notification to the Public Prosecutor’s office on behalf of Budopol, which lost large amounts of money by taking bonds issued by KANTOR Sp z o.o. GANT S.K.A. The application also contained some information that the Currency exchange points were still operating under the name of Kantory Gant sp z o.o., but the

company was an independent entity, outside control of the dominant company. Its only shareholder was Quileron Management Limited, a Cyprus company, whose real owners are members of the Antkowiak family (Paćkowski, 2014). The general meeting of shareholders was cancelled, though, due to the fact that candidates for the Company Supervisory Board were not proposed [current report 19/2015].

For the time being there is no decision of the Court indicating that the bankruptcy of Gant Development SA was a result of actions taken by specific persons. The case is investigated by prosecutors and the above information was given to the public.

INTRODUCTORY ANALYSIS OF GK GANT DEVELOPMENT S.A.

The significant decline of Company results took place only as late as in the 4th quarter of 2012, and at the end of the year GK Gant Development S.A. had losses of PLN 453 million, which can be seen in Figure 2. In the Chairman of the Board letter, published together with the Company report for 2012, the Board explained those negative financial results, stating it was a difficult time for developers and also that ‘the phenomena usually accompanying the recession stage, such as systemic oversupply and price falls were strengthened at the end of 2012 by the consumers’ behavior, who wanted to take advantage of the ‘Family in their own Flat’ program, negative signals from the economy, pointing at the necessity of building the financial backup for hard times and limiting investment, uncertainty of the job market. However, the market was and still is affected in 2013 by irrational factors, based on a common belief that it will be even worse and cheaper in the future”. At the same time the Board prided in the number of sold flats, good client opinions and plans to start new investment and to develop a restructuring plan, which stipulated restructuring debt related to bonds issued by the company, assuming that bond maturity dates would be matched to the dates of receiving cash surpluses due to operational activity of the Group and limiting fixed costs by reducing employment. In spite of the Board assurances that the further activities of the Company are not threatened, we learn from the opinion of the chartered auditor that there is insufficient evidence that these plans and intentions would allow the Capital Group to continue its activities in the foreseeable future.

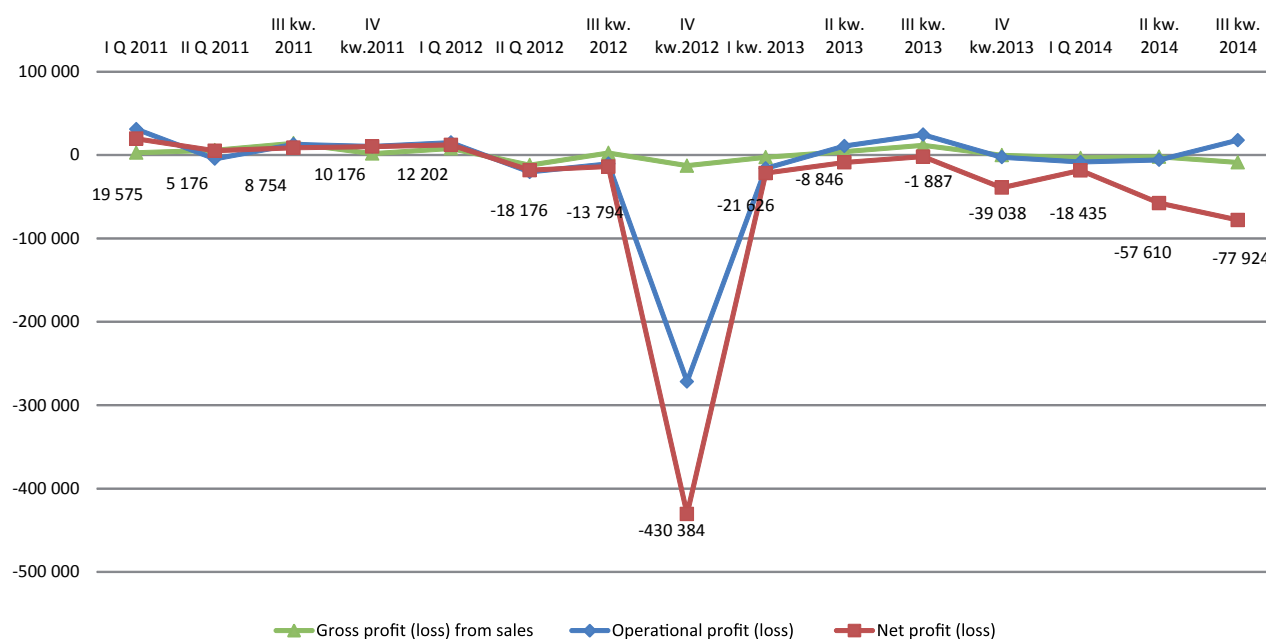


Figure 2. Consolidated financial results of GK Gant Development S.A. by quarters for the period of 2011-2014.

Source: own elaboration based on data included in the financial statements of the Company.

The value of GK Gant Development S.A. assets reached its peak in 2011 and then it was regularly decreasing. This is attributed to the sale of fixed assets in 2012 in order to maintain financial liquidity, when their value halved. The structure of current assets was dominated by inventories, with their share ranging from 81% to 91%. It is worth noticing that the value of loans, payables and financial assets grew respectively to PLN 47 471 thousand and PLN 50 184 thousand in the year preceding the deteriorating financial situation of the Company. The structure of GK Gant Development SA liabilities was dominated by borrowed capital. This was determined by the specificity of the construction industry, but it also increased the risk to the Company.

Thanks to using the financial leverage to such a large extent, the Company could economize on income tax. The value of own capital in 2011 was PLN 69 515 thousand, which was the highest share in the analyzed period. In 2012 the value of own capital compared to the previous year fell significantly, by 75%. In 2013 the structure of borrowed capital changed considerably by decreasing long-term liabilities at the cost of current liabilities, which was caused by the increased risk to Company activity and changes to dates of settling payments. The progressing decrease in own capital and growth of short-term liabilities heralded the financial problems the Company was facing.

In Gant Development S.A. the working capital has been falling steadily since 2010. In 2011 its value decreased by 30% compared to the previous year, In 2012 it lowered by further 42%, which can be treated as a signal of the upcoming financial problems in the Company. In 2013 its value halved, reaching a negative result at the level of –PLN 188 071 thousand. Analyzing the quarterly data we can notice that the situation was deteriorating from period to period, the value of Net Working Capital on 30th June 2014 was –PLN 227 399 thousand. The negative result was caused by the growth of short-term liabilities, as a result of submitting an application to the Court in October 2013 for declaring bankruptcy with the possibility of making an arrangement, which frightened the Company creditors.

Analyzing the profit and loss account we can also observe that 2012 was a breakthrough year for the company. Company revenues in 2012 increased as a result of fixed assets sale. On the other hand, high operational costs accounted for the fact that the Company encountered a loss at the core activity level. The remaining operational costs grew dramatically, from PLN 4 981 thousand in 2011 to PLN 140 052 thousand in the following year. Here we can mention inventory value appreciation of PLN 74 224 thousand and write-off of Company value of PLN 55 187 thousand. Special attention should be paid to financial costs, which rocketed by

nearly 500% in 2012. The most significant item among financial costs, not related to the normal course of Group activities was the financial assets appreciation in the amount of PLN 146.6 million. This item includes write-offs updating the value of financial assets due to receivables the Group was entitled to receive from the following entities: Kantor Spółka z o.o. Gant s.k.a. and IPO28 Sp. z o.o. SPV SUPPORT2 s.k.a. (Consolidated financial report for 2012).

Analyzing the financial situation of the enterprise, it is worth looking at employment data. A growing number of employees would indicate that the Company is developing, while the declining figures might signal the deterioration in the company financial situation, as it minimizes costs in order to maintain liquidity. In 2009-2011 GK Gant Development S.A. employed over 250 people, the number of employees grew each year and the Company could be classified as a large enterprise. In 2012 the number of staff was reduced by 39%, which might be attributed to cost-cutting in order to fight crisis threatening insolvency. In 2013 the number of employees fell by further 36%, which confirmed the deteriorating Company situation.

A vital role in detecting irregularities in the financial data presented by the company was played by the independent chartered auditor, who examined the financial report. The opinion issued by him allows us to assess whether the report meets its primary goal – namely, whether it presents clearly, reliably and credibly the financial results and the asset situation of the entity. For the business, the most important information drawn from the chartered auditor is the assurance that the company operations are not threatened in the foreseeable future (Drozd, 2010). Most annual financial reports of the Company were examined by an auditor from Deloitte. In 2010-2011 the opinion given by the independent expert auditor was positive. The annual consolidated financial report for 2012 “shocked” many company stakeholders. Gant Development SA showed a loss of PLN 453 353 thousand. The chartered auditor did not express their opinion on the financial report, justifying this decision with the lack of sufficient information. From the auditor’s opinion (concerning the 2012 report) we learn that:

- it was made following an assumption that the activity would be continued, though at the end of 2012 the Company showed significant balance of liabilities and ended the year with huge loss;

- the report does not contain any corrections which would have been necessary, had the Group been unable to continue its activity;

- the chartered accountant did not obtain sufficient evidence that the Board plans – in view of the described situation – would ensure the company ‘existence’ in the foreseeable future;

- there was not sufficient evidence concerning the possibility of restructuring or early payment of debts, or plans concerning new sources of finance which would allow further operations of the company;

- an event worth paying attention was that financial assets contained loans, down-payments and bonds issued by Kantor Sp. z o.o. Gant s.k.a. and loans and granted down-payments by IPO 28 Sp. z o.o. SPV Support 2 s.k.a., both companies belonging to the IPOPEMA 28 FIZ portfolio. The loans were granted in the amount of PLN 13 070 thousand, and at the end of 2012 they were covered with the updating write-off in the amount of PLN 140 923 thousand. There was not sufficient explanation or information which would allow us to assess the correctness of the valuation;

- for the purpose of the report examination, the Board issued a written statement which was not signed by the Deputy Chairman of the Board, who resigned from his post in February 2013, and by the Board Member, who resigned in March 2013.

The consolidated report for 2013 was this time examined by an expert auditor from ECA capital group. It should be noted that it was made assuming the continuation of the activity. The continued activity rule states that the activity of an entity is not limited in time. Therefore it is assumed that the entity does not intend or is forced to wind down or to limit significantly the volume of its operations in the future (Zaleska, 2002a). The Board of the Dominating Entity pointed out that in January 2014 the District Court issued a decision on declaration of bankruptcy of GANT Development S.A. with a possibility of making an arrangement. Until the day of finishing the examination, the independent auditor had not obtained sufficient evidence that an arrangement could be implemented to save the Company. Due to the uncertainty concerning further course of the bankruptcy proceedings, the auditor expressed his doubts as to the ability of Gant Development S.A. to continue its activities, although, due to limited access to information, he did not pronounce a final opinion, either. It is worth

emphasizing that the Board of the Dominating Entity did not make any reserves for the finished and pending court proceedings in its financial report made on 31st December 2013. At this stage the risk of lack of monetary means to cover the costs of the bankruptcy proceedings appeared. Analyzing the annual financial report, we could see the crisis as early as after the publication of the consolidated report for 2012, and its early signs were

visible in the first half of the year.

The initial economic and financial analysis of GK Gant Development S.A. identifies threats to the operations and financial situation of the enterprise in 2012. Table 1 below presents the symptoms of the worsening financial situation of the company, coming from financial reports, and their identification in Gant Development S.A Company (Zaleska, 2002b).

Table 1. Symptoms of the worsening financial situation of GK Gant Development S.A.

Symptoms	Situation in Gant Development S.A.
Appearance of a loss	II quarter of 2012. Loss at the level of PLN 18 176 thousand
Decreasing profit	Profit fluctuation in the period of 2010-2011 was large, but comparing I quarter of 2012 to I quarter of 2011, profits fell by 38%.
Decline in sales revenues	In I quarter of 2012 the company had sales revenues 147% higher than in the last quarter of 2011 and 848% higher than in the first quarter of 2011. They were accompanied, though, by very high costs of sales.
Increased demand for external sources of finance	10-27 August 2012, public offer of Gant Development S.A. bonds. Very attractive offer: 11% annually, interest payable quarterly, nominal value from PLN 1000.
Growing liabilities	Short-term liabilities tripled in 2011, in 2012 the Company had problems settling them.
Selling off asset components	In 2012 the Company sold out fixed assets in order to regain liquidity.

Source: own elaboration on the basis of data from Company financial reports.

The worsening financial situation of Gant Development S.A. was caused by excessive debts of the Company, lack of possibilities of gaining back the money from loans granted to companies belonging to the Group, which damaged the liquidity of the Group. Connections between the companies were not transparent, but the board assured investors that it was an intended activity, aimed only at tax savings.

THE DISCRIMINANT ANALYSIS IN BANKRUPTCY RISK PREDICTION

The aim of this part of the article is to assess whether early bankruptcy warning models were effective one, two and three years before filing an application for bankruptcy and in the year when the application for bankruptcy with a possibility of an arrangement was submitted. In order to conduct the analysis of Bankruptcy risk, we selected Polish statistical models of linear discrimination.

The choice of particular discriminant functions was made based on their popularity in specialist literature,

effectiveness of bankruptcy prediction confirmed by many researchers, variety of indicators and taking into account the industry specificity. Altogether 9 models were selected, their detailed description can be found in Table 2.

Due to imprecise presentation of the assumptions in M. Kasjaniuk's model for construction industry enterprises, in which no concrete method of calculating the "net working capital deficit" indicator was provided, and, as claimed by J. Kitowski, doubts as to whether "equity capital debt ratio" is a relation of debt to capital (long-term liabilities to equity capital) or a ratio of liabilities structure (relation of liabilities to equity capital)", this model was omitted. In case of all selected discriminating models the cut of point was 0, and the function was a stimulus, which means that the higher the value of Z-Score, the better the financial situation of an entity. Models whose value was negative allowed us to predict the company bankruptcy, therefore they were considered to be effective.

Table 2. Description of selected discriminant models.

Nr	Model name	Z-score
1.	Model E. Mączyńska & M. Zawadzki (Model G)	$Z_{M-Z} = 9,498W_1 + 3,566W_2 - 2,903W_3 + 0,452W_4 - 1,498$ where: W_1 – EBIT / total assets W_2 – equity / total assets W_3 – (net profit + A&D) / total liabilities W_4 – current assets / short-term liabilities Cut off point 0.
2	Model D. Appenzeller & K. Starzec	$Z_{AS} = 0,7732059 - 0,0856425X_1 + 0,0007747X_2 + 0,9220985X_3 + 0,6535995X_4 - 0,594687X_5$ X_1 – net sales revenues / total assets, X_2 – (short-term liabilities / COGS) x 360, X_3 – net profit / total assets X_4 – gross profit / net sales revenues X_5 – total liabilities / total assets Cut off point 0.
3	Model „poznański” M. Hamrol, B. Czajka, M. Piechocki	$Z = 3,562X_1 + 1,588X_2 + 4,288X_3 + 6,719X_4 - 2,368$ X_1 – wynik finansowy netto / total assets X_2 – (current assets - inventory) / short-term liabilities X_3 – fixed capital / total assets X_4 – profit on sales / net sales revenues Cut off point 0.
4	Model J. Gajdki & D. Stosa For companies listed on WSE	$Z_{GS} = 2,0552X_1 + 1,7260X_2 - 0,0005X_3 + 0,1155X_4$ X_1 – net profit / total assets X_2 – gross profit / net revenues from sales X_3 – short-term liabilities / COGS X_4 – total assets / total liabilities $Z_{GS} < -0,49$ “distress” zone; $-0,49 \leq Z_{GS} \leq 0,49$ “grey” zone.
5	Model A. Pogorzelskiego	$Z_p = 0,2711 + 0,893X_1 - 0,0975X_2 - 0,08412X_3 - 0,8974X_4$ X_1 – EBIT / total assets X_2 – debt / total assets X_3 – (debt – cash) / net sales revenues X_4 – EBITDA / short-term liabilities Cut off point 0.
6	Model A. Hołdy For construction companies	$Z_H = 1,466 - 3,101X_1 - 0,015X_2 + 2,629X_3$ X_1 – net cash from investing activities / total assets X_2 – average receivables *360 / net sales revenues X_3 – (net profit + previous year’s profit) / short-term liabilities Cut off point 0.
7	Model R. Jagiełło for SMEs operating in service industry	$Z_{R1} = 2,122X_1 + 5,738X_2 + 0,07X_3 + 0,323X_4 - 2,24461$ X_1 – (current assets – short-term liabilities) / total assets X_2 – gross profit on sales / COGS X_3 – net sales revenues / short-term receivables X_4 – equity / short-term liabilities Cut off point 0.

9	Model M. Kasjaniuk for companies located in lubelskie voivodeship	Model for construction industry enterprises $Z_k = -0,034X_1 - 0,016X_2 - 0,449X_3 - 1,760X_4 - 4,478X_5 + 2,078X_6 + 3,817$ X_1 – tangible fixed assets / total assets X_2 – short-term receivables / total assets X_3 – working capital deficit X_4 – debt to equity ratio X_5 – fixed asset turnover X_6 – return on assets Model for real estate enterprises $Z_{k2} = 0,02600X_1 - 0,028X_2 + 0,117X_3 + 0,282X_4 + 3,556X_5$ X_1 – tangible assets to total assets ratio X_2 – receivables to total assets ratio X_3 – current ratio X_4 – total asset turnover X_5 – return on assets Cut off point 0.
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Source: Own elaboration basedon: E. Mączyńska, 2014: *Bankructwa przedsiębiorstw – wybrane aspekty ekonomiczne i prawne*, SGH, Warszawa; M. Tymoszuć, 2013: *Skuteczność modeli prognozowania upadłości przedsiębiorstw a upływ czasu*, [w:] red. E. Mączyńska, A. Adamska, *Upadłości, bankructwa u naprawa przedsiębiorstw*, SGH, Warszawa; P. Antonowicz, 2007: *Metody oceny i kondycja ekonomiczno-finansowa przedsiębiorstw*, ODiDK, Gdańsk; J. Kitowski „Metody oceny kondycji finansowej przedsiębiorstw budowlanych, *Nauki o Finansach* nr 4 (17) 213; R. Jagiełło, *Analiza dyskryminacyjna i regresja logistyczna w procesie oceny zdolności kredytowej przedsiębiorstw*, *Materiały i Studia NBP, Zeszyt 286*, Warszawa 2013; M. Kasjaniuk, *Zastosowanie analizy dyskryminacyjnej do modelowania i prognozowania kondycji przedsiębiorstw*, *Barometr Regionalny*, Nr 6 2006.

It should be remembered that the discriminant models used in the research were constructed at a specific time and assumed specific economic conditions, therefore their usefulness might differ. M. Tymoszuć confirms in her research that the use of popular discriminant models which have not been updated for years for predicting bankruptcy risk might not be very effective, since their prediction ability has deteriorated over the years (Tymoszuć, 2013).

Most of the selected discriminating functions were constructed on a sample of multi-business companies, and, as J. Kitowski claims, assigning the value of universality and unchangeable diagnostic credibility to discriminant methods raises methodological objections (Kitowski, 2013b), though he point out that in Polish literature of the subject, there are some sporadic discriminative methods of assessing the financial situation of a construction company (Kitowski, 2013a). In 2012, M. Zielińska-Sitkiewicz made an attempt at applying the multi-dimensional discriminating analysis method to assess the financial situation of 17 large

developer companies, and Gant Development S.A. was among them. The author used the following popular multi-business discriminating models: Gajdka and Stos (1996), Hołda (1996), Mączyńska (1994), Sojak and Stawicki (1998), Gajdka and Stos (2003) and Mączyńska and Zawadzki (2006), and she examined the situation of companies in 2006-2011. The results of the conducted research were not unambiguous (Zielińska-Sitkiewicz, 2012). In the author's opinion, the results of some models were unreliable, since they did not take into account the industry specificity. For example, the model of Gajdka and Stos from 1996 qualified all the examined entities in 2008-2011 as bankrupt. This was caused by the model construction, where as many as three out of five ratios used referred to the value of assets, which are large in developer companies, due to two items in the balance sheet: inventories and investment real estate.

The results of the analysis of bankruptcy risk to Gant Development S.A. in 2010-2013, using the selected discriminating models are presented in Table 3.

Table 3. The results of the discriminating analysis of GK Gant Development S.A.

		2010		2011		2012		2013	
1	Model E. Mączyńska i M. Zawadzki	1,323	safe	1,166	safe	-3,925	distress	-0,474	distress
2	Model D. Appenzeller i K. Starzec	0,979	safe	0,964	safe	-0,521	distress	0,836	safe
3	Model "poznański"	1,838	safe	1,380	safe	-1,863	distress	-0,866	distress
4	Model J. Gajdki i D. Stosa	0,396	safe	0,442	safe	-2,699	distress	-0,891	distress
5	Model A. Hołdy	1,146	safe	1,134	safe	-3,538	distress	-0,573	distress
6	Model R. Jagiełło	0,005	safe	-0,376	distress	-0,728	distress	-1,628	distress
7	Model M. Pogorzelskiego	-3,728	distress	-2,401	distress	-1,046	distress	-3,017	distress
8	Model M. Kasjaniuk (2)	1,022	safe	0,524	safe	-1,232	distress	-0,136	distress

Source: own calculations based on data obtained from financial statements of the Company.

All the models qualified the Company to the bankrupt group in 2012, that is a year before filing an application for bankruptcy. It should be noted, though, that the initial financial analysis of Gant Development S.A. pointed at the threat of losing liquidity by the Company due to huge losses incurred by the entity in the analyzed period. We should praise R. Jagiełło's model for small and medium-sized companies from the service sector, which predicted bankruptcy risk when nobody expected it, therefore the value of such forecast was high. In R. Jagiełło's model the highest discriminating power was attributed to the gross margin ratio in the profitability ratios group. Of slightly lower importance were – net working capital to assets ratio in the group of liquidity ratios and the relation of short –term liabilities to share capital in the debt ratios group (Jagiełło, 2013). On the other hand, M. Pogorzelski's model classified the company as bankrupt in each year of the analysis, also when its financial situation was good. A similar situation was observed in the research by E. Grzegorzewska and H. Runowski, who examined the effectiveness of discriminant models in assessing the financial situation of agricultural enterprises. The equation developed by Pogorzelski classified all enterprises as "bankrupt". In the author's opinion, this model has extremely strict criteria and even entities with very good financial situation are treated by it as threatened with bankruptcy

(Grzegorzewska, 2008). In 2013, when the company filed an application for the arrangement bankruptcy, most models classified it correctly as threatened with bankruptcy. The reason why the model of D. Appenzeller and K. Starzec classified it as a sound company might be found in not taking into account the industry specificity and financial relations concerning specifically the area of company debt (Wojnar, 2014).

Summing up, we may venture to say that discriminant models constitute a good supplement to the financial analysis. However, not all of them give similar results. This is attributed to the fact that each model contains a different number of financial indicators concerning various areas of company activities. Neglecting to take into account industry specificity might account for the fact that heavily indebted companies, in spite of maintaining liquidity, might be treated as potentially bankrupt. The case of GK Gant Development S.A. was special as its bankruptcy was not expected. The lack of repayment of loans by purpose-created companies greatly risked the developer's liquidity. A question arises whether models which signaled the developer's bankruptcy in early years were effective or whether, due to the specific conditions in which the Company operated, they did not give reliable results. This question might be answered if we analyzed a larger group of enterprises which could be classified as "staged" bankruptcies.

CONCLUSION

The holistic analysis of Gant Development S.A. allows us to analyze the causes of the developer's bankruptcy and to justify the need for further research into predicting enterprise bankruptcy. The following conclusions can be drawn from the conducted research:

- The bankruptcy of large companies brings much greater losses than the bankruptcy of small enterprises, therefore it is essential for stakeholders to detect the signals of the worsening financial situation and bankruptcy risk in case of stock exchange listed companies. A “staged” bankruptcy is a specific form of bankruptcy, aimed mostly as transferring assets from the company in the period of its boom. Simulated bankruptcies would not be such a vital issue if stakeholders, the State and the whole society did not suffer because of them, which is detrimental to the whole national economy. Frequently, it is the unclear connections between the Dominating Entity and Group companies that are responsible for the situation, as well as abusing imperfect provisions of law, including free interpretation of the Accounting Act by using the so-called “creative accounting”.

- The presented facts from the Company history allowed us to prove that its bankruptcy was a result of improper management. All the information gathered so far indicates that the bankruptcy of Gant Development S.A. can be classified as “staged” bankruptcy, conducted in order to gain benefits by a certain group of people. The author's opinion will be confirmed or rejected when the Public Prosecutor finishes the investigation, aimed, *inter alia*, at examining whether any Board Members acted to the detriment of the Company.

- The bankruptcy prediction models proved their high effectiveness a year before filing an application for bankruptcy. Most models, however, did not predict the signals of the threat to continuation of operations two or three years before the bankruptcy. Only R. Jagiełło's model for small and medium-sized companies in the service sector proved effective two years before the bankruptcy. It is vital to take into consideration the industry specificity of the examined entity. The ratio analysis itself shows that each industry is different, normative values of financial ratios differ depending on the operations of a particular entity. The author believes that it is advisable to use those models which are based on the most updated data and which take into account the industry specificity of the analyzed company. It could be also a coincidence. A positive result could be a coincidence, the effectiveness of the model should be confirmed by examining a larger number of companies with similar characteristics.

- The conducted analysis confirmed the need for further research in the field of predicting bankruptcy faced by enterprises, divided into sectors and taking into account the most common causes of bankruptcy. Numerous faults of the discriminating analysis listed by many scientists, such as not taking into account other factors than financial data in the model construction, make this task so daunting. The author of the article plans to make an attempt at analyzing a larger group of enterprises in which the “staged” bankruptcy was confirmed or suspected.

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