Financial Health Prediction of Company's Business Partners Based on Selected Quantitative and Qualitative Indicators

Tomas Kliestik, Anna Siekelova, and Maria Misankova

***Abstract*—Recent surveys show the need for the implementation of receivables management in business practice. The key role of receivables management is the effective management of company's claims to ensure payment properly and on time. This process can be divided into three parts, namely prevention, monitoring and debt recovery. The selection of business partners plays a key role in the first phase of receivables management. This article is focused on predicting the financial health of business partners based on selected quantitative and qualitative indicators. Company's business partners were divided into four groups based on the achievements of selected indicators. Finally, we set some recommendations for each group.**

***Index Terms*—Bad debts, prediction of financial health, receivables management, trade credit.**

I. Introduction

The European economies are now putting the years of financial turmoil and debt crisis behind them and several macro-economic indicators are pointing towards a brighter future. Nevertheless, many European companies view late payments as a serious threat to their overall ability to invest in growth and thus employ more staff. Nowadays providing trade credit is a common business practice. Process of providing trade credit starts with the selection of business partner whom will be given the opportunity to pay for the goods and services with a lag. It is a very important part of this process. The cash-flow is the lifeblood of the company, which constantly flows through the business allowing all other functions to work as they should. Consequences of late payments are a variety. The most common consequences in 2016 were liquidity squeeze, prohibiting growth of the company and threat to survival. According to European Payment Index small companies are more dependent on fast payments, less protected against bad payment, and not as geared to raise investments, compared to larger companies. [1] Figure 1 and figure 2 show the most frequent reasons for payment delays and defaults in B2B and B2C segment.

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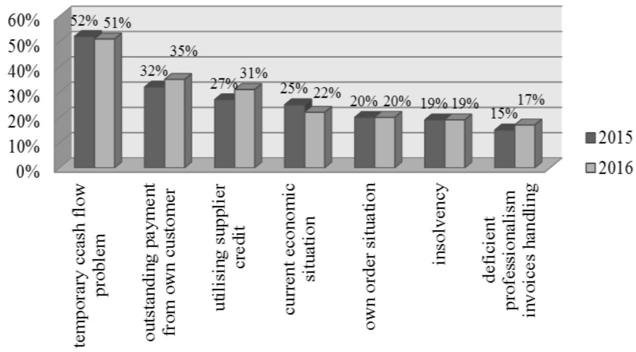

Fig. 1. Top seven reasons for bad payment practices in B2B segment according to European payment practices 2016.

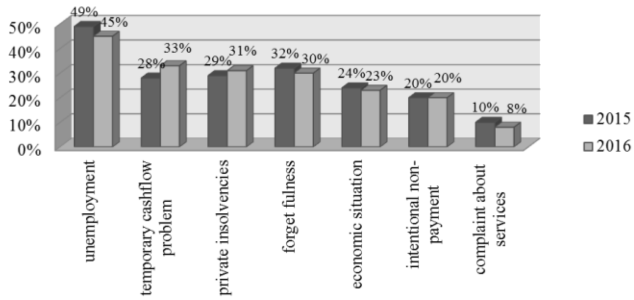

Fig. 2. Top seven reasons for bad payment practices in B2C segment according to European payment practices 2016.

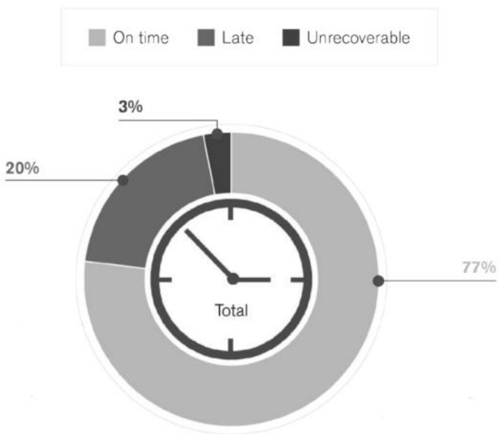

Fig. 3. Distribution of payments according to European payment practices 2016.

Payment discipline in Slovakia decreased in 2016. While in 2015, 74% of payments were made on time, now it is 73%. According to the survey if companies last year assumed a

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stronger improvement in payment discipline, in 2016 there was slight pessimism – in Western Europe even more than in Eastern Europe. [2]

Many invoices are paid by later time or not at all. Following Fig. 3 shows the distribution of payments according to European Payment Practices 2016.

In Western Europe, the proportion of invoices paid on time in 2016 was 80%, while in Eastern Europe it was six percentage points lower. [2]

Between Eastern Europe and Western Europe, we can see the differences. Following Fig. 4, 5 show it.

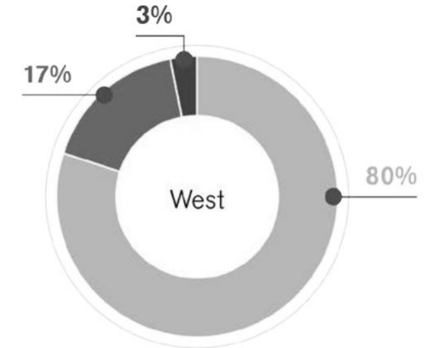

Fig. 4. Distribution of payments in western Europe according to European payment practices 2016.

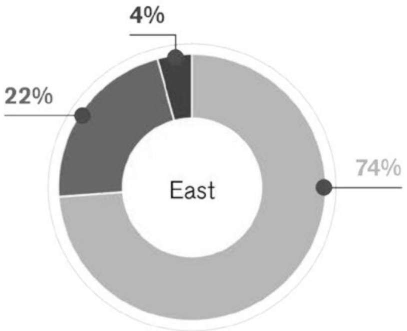

Fig. 5. Distribution of payments in eastern Europe according to European payment practices 2016.

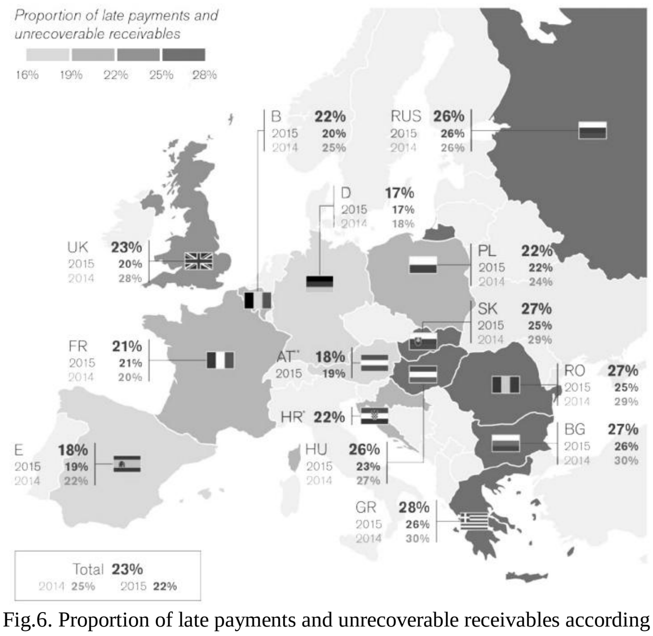

Fig.6. Proportion of late payments and unrecoverable receivables according to European payment practices 2016.

Fig. 6 shows proportion of late payments and unrecoverable receivables in selected countries.

Between Eastern Europe and Western Europe, we can also see the differences.

In Eastern Europe, only Polish and Russian companies reported the same on-time payments by their customers. In the other countries, the proportion of late payments and unrecoverable receivables increased slightly.

In the West, payment discipline in the UK and Belgium was poorer than in the previous year. Germany remains the leader with the fewest late payments and unrecoverable receivables.

II. The Choice of Indicators for Predicting the Financial Health of Company's Business Partners

As part of predicting the financial health of customers, we focus not only on quantitative but also on qualitative indicators. In selecting parameters, we focused primarily on those that have the greatest ability to influence the payment by the customer at the time of payment.

Within the quantitative indicators we have focused particularly on:

- Profit margin;
- Overall indebtedness of assets;
- Current ratio;
- Average maturity of liabilities.

Within the qualitative indicators we have focused particularly on:

- Previous experience with that customers;
- Risk index of country which the business subject comes from;
- Time existence of the undertaking;
- Fulfillment of obligations to the state, financial institutions or information about ongoing litigation.

A. Profit Margin

Profit is one of the most important financial results, which reflects the success and efficiency of the business but it is not the only one. In terms of financing sources profit is the most important component of internal funds and self-financing. The absolute amount of profit cannot be the only indicator for evaluating the company, assessing its overall development or benchmarking.

The profit margin is a financial indicator of profitability. It is calculated as the ratio between net profit (profit after tax) and the sum of all company's sales (sales of goods and sales of own products and services). It is a percentage of earnings per 1 € of sales. [3] The effort of the company is the achievement of the highest value of this indicator. Profit margin is most affected by the price of goods or services, quantity of sold goods and services and the amount of the company's costs.

The average profit margin of Slovak companies in 2013 was 3.03%. The average value of the profit margin may also differ depending on the region or industry. In 2013, Trencin Region reached the highest profit margin. This result is mainly influenced by two large companies whose profit is about 0.22 billion euros. In terms of sectors, the highest profit margin was achieved in the telecommunications, finance and IT. On the contrary, a negative profit margin was achieved in the agricultural sector, education, advertising, construction, tourism, real estate etc. [4]

Given the above, we set the scoring in this category as following Table I shows.

TABLE I: THE SCORING IN CATEGORY: PROFIT MARGIN

The amount of profit margin	Score
A negative profit margin	-5
0 – 0,5	0
0,5 – 1,5	5
More than 1,5	10

B. Overall Indebtedness of Assets

Overall indebtedness of assets reflects the percentage of total assets that are covered by foreign funds; the rest of assets is covered by own funds. The recommended value of this ratio can vary. According to the authors the recommended value of overall indebtedness of assets is about 50%. Value of this indicator in certain circumstances may also be accepted in the interval 70 – 80%. Recommended value largely depends on the company's ability to pay borrowed capital. [5]

The average value of this indicator in Slovakia in 2013 reached 68.58%. The lowest value of overall indebtedness was reached in Banska Bystrica Region. On the contrary, the highest value was reached in Nitra Region. In terms of sectors, the lowest value of this indicator was reached in services, telecommunications, energy and mining, while the highest value was reached in finance, advertising and real estate. [4]

Given the above, we set the scoring in this category as following Table II shows.

TABLE II: THE SCORING IN CATEGORY: OVERALL INDEBTEDNESS OF ASSETS

The amount of overall indebtedness of assets	Score
Higher than 90%	-5
70% – 90%	0
55% – 70%	5
Less than 55%	10

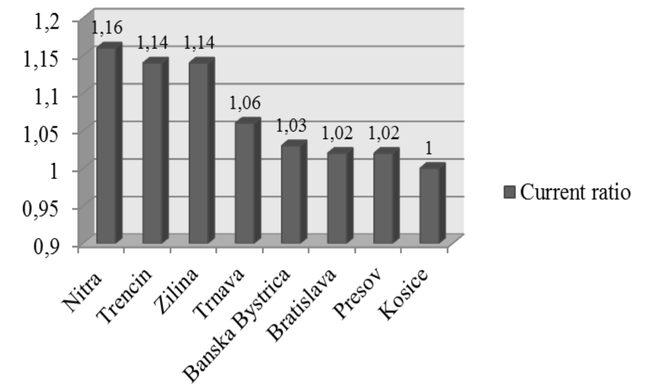

Fig. 7. Current ratio in Slovakia according to FinStat, Ltd in 2013.

C. Current Ratio

This indicator expresses the extent to which the total current assets cover current foreign sources. The value of the indicator should range from 1.5 to 2.5. [5] Its explanatory power also depends on the structure of current assets, liquidity of individual types of current assets and type of industry. [6]

The average value of this indicator in Slovakia in 2013 was 1.05. The average value of current ratio may also differ depending on the region or industry. It is illustrated in the following Fig. 7.

The lowest value of current ratio was reached in Kosice Region. On the contrary, the highest value was reached in Nitra Region. In terms of sectors, the lowest value of this indicator was reached in education, tourism, energy and mining, while the highest value was reached in waste treatment, hazard, electronic industry [4].

Given the above, we set the scoring in this category as following Table III shows.

TABLE III: THE SCORING IN CATEGORY: CURRENT RATIO

Current ratio	Score
Less than 0,5	-5
0,5 – 0,8	0
0,8 – 1,5	5
More than 1,5	10

D. Average Maturity of Liabilities

In the calculation of the indicator, we focused only on trade payables. In setting the scoring we used the average maturity of invoices from a survey conducted by Intrum Justitia in 2016. Fig. 8 shows it.

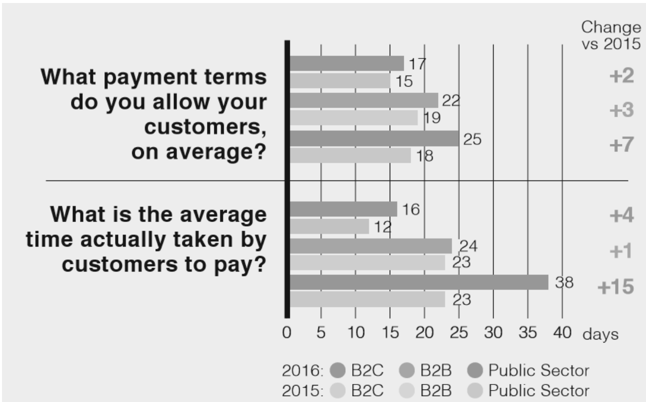

Fig. 8. Average payment terms according to European payment Index 2016.

Given the above, we set the scoring in this category as following Table IV shows.

TABLE IV: THE SCORING IN CATEGORY: AVERAGE MATURITY OF LIABILITIES

Average maturity of liabilities	Score
More than 30	-5
20 – 30	0
15 – 20	5
Less than 15	10

In addition to quantitative indicators, we mentioned above as well as qualitative indicators that we used in the examination of a business partner in providing trade credit.

Score in each category we set as follow.

A. Previous Experience with that Customers

There are four situations:

- In case if it is a new business partner with whom other business partners of the company do not have a good experience, or if the company traded with this business

partners a few times but the experience is a negative, we assigned minus five points to this business partner;
- In case if it is a new business partner with whom other business partners of the company have good experience, or if the company traded with this business partners a few times but the experience is neutral, we assigned zero points to this business partner;
- If company traded with this business partner several times and experience is a positive, we assigned five points to this business partner;
- If it is long-term business partner with whom the company has positive experience, we assigned ten points to this business partner.

B. Risk Index of Country Which the Business Subject Comes From

There are four situations:
- High risk, we assigned minus five points to this business partner;
- Some risk, we assigned zero points to this business partner;
- Low risk, we assigned five points to this business partner;
- Very low risk, we assigned ten points to this business partner.

Determination of country risk index is based on European Payment Index 2016. Following Fig. 9 shows risk index of countries.

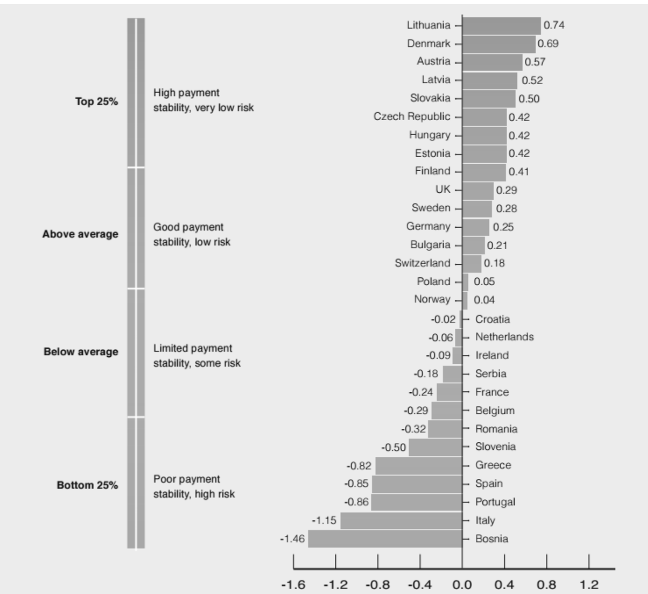

Fig. 9. Risk index according to European payment index 2016.

C. Time Existence of the Undertaking

There are four situations:
- If the business partner is active on the market for less than one year, we assigned minus five points to this business partner;
- If the business partner is active on the market less than five but more than one year, we assigned zero points to this business partner;
- If the business partner is active on the market less than ten but more than five year, we assigned five points to this business partner;
- If the business partner is active on the market for more than ten year, we assigned minus ten points to this business partner.

D. Fulfillment of Obligations to the State, Financial Institutions or Information about Ongoing Litigation

There are four situations:
- In case if it is a business partner who has been in a list of debtors for a long time and it is also the subject of litigation, we assigned minus five points to this business partner;
- In case if it is a business partner who has been in a list of debtors for a short time and it is not the subject of litigation, we assigned zero points to this business partner;
- In case if it is a business partner who is not in a list of debtors and it is not the subject of litigation, we assigned five points to this business partner;
- In case if it is a business partner who has never been in a list of debtors and it has never been the subject of litigation, we assigned ten points to this business partner.

The scoring of company's clients shows Table V.

TABLE V: THE SCORING OF COMPANY'S CLIENTS

The scoring
80 – 60
60 – 40
40 – 20
Less than 20

Based on the scoring it was possible to include clients of the selected company to the groups as following Table VI shows.

TABLE VI: SELECTION OF COMPANY'S CLIENTS BASED ON THE SCORE

The scoring	Number of client
80 – 60	5
60 – 40	2
40 – 20	3
Less than 20	1

III. CONCLUSION

Most of the business partner whom the selected company provides trade credit is in the first group that means these business partners reach the best score. In all cases, these business partners are long-term business partners of the company and the company has many years of positive experience with them. Company is willing to provide trade credit in the highest amount to these customers. Such customers usually use the appropriate set conditions for early payment of invoices.

The second group contains two business partners. One of them has good results in quantitative indicators, but company has never traded with this business partner and also the business partner is active on the market for less than one year. The second of the two customers also operates in the market short time, its overall indebtedness of assets is higher and profit margins lower compared to the previous company's business partner. In both cases these are a relatively young business partners. In the event that the company will continue to do business with them it is necessary to monitor their market developments in the future. As this development can be positive, it can also rapidly deteriorate. We recommend choosing the appropriate way of ensuring offering trade credit.

In the third group there are three customers that achieve only average results in quantitative indicators. Selected company has no experience with them or this experience is neutral. Again, it is necessary to monitor the development of these customers, and be careful not only about the amount of provided trade credit, but also about the appropriate way of ensuring offering trade credit. Because these are Slovak customers we recommend received as an advance part of the payments. For the latter group of customers we recommend to reject the possibility of providing trade credit, given the low number of points and therefore there is a high probability that the invoice will not be paid properly and on time. [7]

According Brealey and Myers company's decision to provide trade credit should be based on proper consideration. Effective credit decision should be based not only on quantitative aspects of the strict credit policy, as well as the efforts of companies to maximize their profits. To every customer should be treated individually and there is a need to focus primarily on group of risk customers but also monitor development of all business partners. [8]

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