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Research Article Viktorija Skvarciany*, Laura Germanaitė Financial Risk Assessment: Case of "Lietuvos Geležinkeliai", AB

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Abstract: This research paper focuses on the analysis of the financial risk of *Lietuvos geležinkeliai*, AB (eng. Lithuanian Railways), which activities are passenger and freight transportation by rail. In order to assess the financial risk of the leading company areas of financial risk were identified and are as follows: liquidity risk, credit risk and market risk. However, due to limited access to statistics only financial report of the organisation were analysed and, hence, just liquidity and credit risk were investigated. Consequently, the limitation of the current research is that only two categories of financial risk were distinguished from the literature. The results showed that the biggest problem of the company is too small short-term assets and the profitability indicators, which were strongly influenced by net profit (loss).

Keywords: financial risk, liquidity risk, credit risk, Lithuanian Railways, case study **JEL Classification:** G32

1 Introduction

All profit-making organisations experience different types of risks. One of such threats is a financial risk. Hence, it is necessary to analyse the risk in order to manage it correctly. Actually, within the right management, the financial risk could be lowered which, according to Blatt and Gulbin (2018), could increase the liquidity of an organisation. Because of that, the analysis is the method that helps to choose the write management direction.

The purpose of the current research is to analyse the financial risk of one of the largest Lithuanian companies – *Lietuvos geležinkeliai*, AB (eng. Lithuanian Railways) and assess the overall for its financial risk. The primary activity of the company is passenger and freight transportation by rail; consequently, financial risk is the one which the company experience in everyday activity while dealing with people (passengers) and business companies. Hence, the aim of the study is to analyse the financial risk of *Lietuvos geležinkeliai*. Moreover, there is a lack of studies dealing with the assessing companies whose owner is the Republic of Lithuania. It is crucial to research the risks of such companies as it is a big part of the country's economic activities that have an impact on the overall country's financial well-being.

In the current paper, the key indicators of financial risk are distinguished. The indicators are identified in order to analyse the financial risk of large organisations such as *Lietuvos geležinkeliai* and could be used for organisations' financial risk assessment not only in Lithuania but also in other European countries.

The paper is divided into three main parts. The first part is dedicated to the literature review, where the financial risk of a company is defined, and the necessity of its evaluation is discussed. In the second,

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methodological part, the key indicators of the financial risk are distinguished from the literature, and the formulas for the calculations are provided. The third part is Empirical Findings, where the analysis of the key indicators of financial risk is performed.

2 Literature Review

Financial risk is said to be a probability of loss; it can worsen the ability to provide sufficient returns, finance debt, can lead to bankruptcy (Bartram, Brown, & Waller, 2015). According to Skoglund and Chen (2015), financial risk is the probability that an enterprise will suffer financial losses due to market, credit or liquidity risk. Financial risks could be defined as uncertainties related to any form of financing, including credit risk, business risk, investment risk, and operational risk (Kou, Peng, & Wang, 2014). Mangla, Kumar, and Barua (2015) define financial risk as any problem that is linked to funding sourcing. According to Moles (2016), there are several ways in which financial risk can be described. Financial risk is closely related to both the amount of money and the amount of time. The longer the time, the higher the financial risk and the higher the financial risk damage. Financial risks to the organisation are most clearly reflected in its accounting records. A more general type of financial risk is understood as the risk of financial loss that results from changes in the macroeconomic indicators and the competitive environment of the organisation.

It can be argued that these concepts are alike since most theories claim that financial risk is a possibility of experiencing financial losses. Two ideas state that financial risk may arise from credit, liquidity or market risk. In other concepts, it is generally defined that financial risk is the probability of the organisation's financial results deviating negatively when it was planned otherwise. It is also indicated that there is a relationship between the amount of financial risk, time and the sum of money, and the macroeconomic and competitive environment may influence the financial risk.

According to the Ministry of Finance of the Republic of Lithuania (2017), the financial risk consists of market, credit and liquidity risk. These risks occur when organisations manage their financial resources and carry out other financial operations that ensure their business activities. Financial risk creates the possibility of suffering losses; it can be broken down into three categories: credit risk, liquidity risk and market risk. Credit risk may arise due to inadequate financial management in the company, as well as partners, suppliers and customers. Liquidity risk relates to the financing process, market liquidity and managed cash flows. Market risk may arise from available equity (stock price fluctuations) and debt securities, exchange rates, commodity prices, and interest rate fluctuations. According to Solomon and Muntean (2012), four main categories of financial risk can affect the company's performance:

- 1. Market risk. This risk includes three subdivisions: exchange rate risk, interest rate risk, price risk.
- 2. Credit risk. This is a type of risk when one part of a financial agreement will not comply with obligations and will cause financial harm.
- 3. Liquidity risk. Liquidity risk may prevent the timely fulfilment of commitments. Liquidity risk may arise from the inability to sell the financial asset quickly at a value close to its fair value.
- 4. Interest rate risk in cash flows. A risk that future cash flows may fluctuate due to changes in market interest rates.

In order to fully analyse the financial risk of an organisation, all the categories ought to be analysed. However, due to the lack of statistical information, the current study has limitations and only two categories of financial risk are analysed. They are as follows: liquidity risk and credit risk.

3 Methodology

The assessment of a financial risk of an organization is a part of risk management process during which the impact of financial risk on the organisation is established (Kumar, Jindal, & Velaga, 2018; Valaskova, Kliestik, & Kovacova, 2018). In order to perform the financial risk assessment specific financial indicators

ought to be evaluated (Solomon & Muntean, 2012). As it was mentioned before, liquidity risk and credit risk are being analysed in the current research. Liquidity risk assessment could lead to the financial stability of a company (Kim, 2018). Hence, it is necessary to analyse the key indicators of liquidity (see Table 1).

Table 1. Key indicators of liquidity (short-term solvency) (Source: compiled by authors, based on Bartkauskaitė,Stankevičienė, and Miečinskienė, 2016; Blach, 2010; Dedova, Malakhov, and Pilnik, 2017; NASDAQ, 2010; Silva and Loebel,2016)

| Indicator | Formula | Interpretation | Recommended Value |
|---|--|---|--|
| Current liquidity (general short-term solvency) ratio | Short-term assets Short-term liabilities | The indicator shows to what extent short-term assets cover short-term liabilities. | The value of this indicator should be 1.2 - 2 (times). |
| Critical liquidity (rapid short-term solvency) ratio | <u>Short-term assets-Stocks</u> Short-term liabilities | This indicator is a more rigorous assessment of the organization's liquidity since it is assumed that stocks are illiquid. It shows every one euro of short-term liabilities, availa- ble assets that can be quickly sold. | The value of this indicator should be ~ 1. Less than 0.5 value is considered unsatisfactory. |
| Absolute liquidity (short-term solvency) indicator | <u>Money and money equivalents</u> Short-term liabilities | The indicator shows how much of the short-term liabilities a company can quickly cover in cash. | There are no very strict norms for this indicator. In certain cases, it has been established that the indicator should not be less than 0.2. A high value of the indicator can mean poor financial and cash flow management. |
| Short-term indeb- tedness ratio | <u>Short-term liabilities</u> Total Assets | The indicator shows which part of the organization's total assets are financed by short-term debts. | Estimated well if the indicator is 0.2-0.4. The higher the debt component of long-term debt, the lower the risk. |
| Net working capital | Short-term assets- Short-term liabilities | The indicator shows the difference between short-term assets and short-term liabilities. | An excessively high indicator means the inefficient use of resources and low solvency pro- blems. Negative size of working capital is not tolerable in the company's activities. |
| The ratio of net working capital total assets | <u>Networking capital</u> Total Assets | The indicator shows the size of the net investment in liquid assets less short-term liabilities as compared to the company's total investment in total assets. | A higher indicator indicates a higher level of the company's liquidity. |

After analysing the company's liquidity risk, it would be further expedient to provide an analysis of the second financial risk group - credit risk. This is useful since, in the assessment of each financial risk group, a more precise summary of the overall financial risk can be provided.

| Table 2. Key indicators for credit risk assessment (Source: compiled by authors, based on Mileris, 2012; NASDAQ, 2010; |
|--|
| Peškauskaitė and Jurevičienė, 2017) |

| Indicator | Formula | Interpretation | Recommended Value |
|--|--|---|--|
| Debt and equity ratio | <u>Total liabilities</u> Equity capital | The indicator shows how much debt falls on one equity capital euro | The higher the debt capital compared to equity, the greater the financial risk. The higher the indicator, the more complicated the company's situation. If the indicator is less than or equal to 0.3, it is assessed very well, if the indicator is not higher than 0.7, it is assessed well. If the indica- tor is greater than 1, it means that liabilities are greater than equity capital. |
| Asset turnover | <u>Sales revenue</u> Total Assets | The indicator shows how much sales fall on one total assets euro. | If the asset turnover is > 2 (manufacturing compa- nies) and > 5 (trading companies), then the asset turnover is assessed very well, if the asset turno- ver is equal to 1 (manufacturing companies) and 3 (trading companies), then the asset turnover is assessed satisfactorily. |
| Indebtedness ratio (total debt ratio) | <u>Total liabilities</u> Total assets | The indicator shows how much of the borrowed funds are used to build the total assets of the organization. | This indicator is important for creditors, the higher this indicator, the lower the level of security. It is recommended that this indicator is between 0.4 and 0.7. |
| Return on assets | <u>Net profit</u> ×1 Total Assets | The indicator shows how much of net profit falls on one assets euro. Reveals what part of the asset returns as a profit. | It is argued that if the profitability of assets is about 20%, then it is a good indicator, if about 15% - then it is a good indicator, if < 8%, then the profitability of the asset is satisfactory. It is necessary to compare the organizations opera- ting in the same branches among themselves. |
| The ratio of equity capital to total assets | Equity capital Total Assets | The indicator shows the part of total assets constituting of equity capital. | If the ratio is 1: 2, the ratio of equity to total assets is considered to be normal. Approximately half of the financial resources may be lent. |
| Return on equity capital | <u>Net profit</u> ×100 Equity capital | The indicator shows how much profit falls on each monetary unit of the owner that the owner has invested in the company and shows the company's operating efficiency. | If > 20% - it is a good indicator, if <10% then unsatisfactory. For foreign investors in Lithua- nia- 25-30%. The companies of the same branch should be compared. <i>Lietuvos geležinkeliai</i> annual target profitability of equity capital is 5.5 %. |
| Net profit margin | <u>Net profit</u> ×100 Sales revenue | The indicator shows how much the net euro is earned by one euro of sales revenue. | When net profitability is > 25% - it is assessed very good, when > 10% - good, when < 10% - satisfactory, when < 5% - unsatisfactory, and when negative - bad. |
| The ratio of Retained Earning to total assets | <u>Retained Earnings</u> Total Assets | The indicator shows what part of the asset consists of retained earnings. | The higher the indicator, the more retained ear- nings compared to the company's total assets. |
| The ratio of net working capital to income | Networking capital Sales revenue | The indicator shows the part of sales revenue consti- tuting of working capital. | The higher the indicator, the more working capital compared to the company's income. |

| Indicator | Formula | Interpretation | Recommended Value |
|--|---|---|--|
| Gross profit margin | <u>Gross profit</u> ×100 Sales revenue | The indicator shows how much gross profit falls on one sale euro. | An appropriate value is considered when the gross profitability is 10 – 35 % |
| The ratio of short-term to total assets | <u>Short-term assets</u> Total Assets | The indicator shows the part of total assets constituting of short-term assets. | The higher the indicator, the larger part of total assets consists of short-term assets. |
| The ratio of cash to total assets | <u>Cash</u> Total Assets | The indicator shows the part of total assets made up of cash. | The higher the indicator, the larger part of total assets consists of cash. |

4 Empirical Findings

As already mentioned in the methodological part when assessing one of the main financial risk groups of *Lietuvos geležinkeliai* liquidity risk, the following six financial indicators of the company are calculated:

- current ratio,
- quick ratio,
- cash ratio,
- current debt to total assets,
- the ration of networking capital to total assets,
- net working capital.

The above-mentioned indicators provide information about the company's financial liquidity. These indicators are calculated on the basis of the formulas 1 to 6 described in the methodological section. The figure below shows all liquidity risk indicators of *Lietuvos geležinkeliai* in 2007-2017, except for the net working capital indicator (see Fig. 1).

| 1,2 1 0,8 0,6 0,4 0,2 | `````````````````````````````````````` | · · · · · | < | | - · ` . | ` ` | · · | , | · . | · · . · | ~ · · |
|---|--|--------------|-------|-------|-------------|--------|-------|-------|---------|---------|-------|
| 0 -0,2 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
| - · - Current Ratio | 1,113 | 0,667 | 0,665 | 0,859 | 0,96 | 0,78 | 0,701 | 0,902 | 1,064 | 0,904 | 1,035 |
| Quick Ratio | 0,741 | 0,449 | 0,422 | 0,479 | 0,559 | 0,418 | 0,421 | 0,559 | 0,561 | 0,495 | 0,645 |
| Cash ratio | 0,232 | 0,081 | 0,04 | 0,157 | 0,24 | 0,148 | 0,188 | 0,265 | 0,093 | 0,114 | 0,131 |
| ······ Current Debt to Assets | 0,09 | 0,13 | 0,11 | 0,08 | 0,08 | 0,08 | 0,09 | 0,07 | 0,04 | 0,05 | 0,05 |
| - The ratio of networking capital to assets | 0,01 | -0,04 | -0,04 | -0,01 | -0,003 | -0,02 | -0,03 | -0,01 | 0,003 | -0,005 | 0,002 |

Fig. 1. Dynamics of liquidity risk indicators (except net working capital) of *Lietuvos geležinkeliai* for 2007-2017 (Source: compiled by author, based on the annual reports of *Lietuvos geležinkeliai* for the years 2007-2018)

According to Fig. 1, it can be stated that the current liquidity (general short-term solvency) ratio of *Lietuvos geležinkeliai* in 2007-2017 was too small and did not meet the required limits (1.2-2 times). The lowest value of this indicator was recorded in 2009 – 0.665 times, and in 2007 the highest was 1.113 times. Such values of current liquidity (general short-term solvency) show that the company has less short-term assets than short-

term liabilities. The company should increase its short-term assets in order to improve the current liquidity (general short-term solvency) indicator.

The critical liquidity (rapid short-term solvency) ratio of *Lietuvos geležinkeliai* only in 2009 and 2012-2013 did not meet the recommendations, but in the aforementioned year, it did not deviate much from the recommended value (0.5 times). The highest value of this indicator was recorded in 2007 – 0.741 times, and the lowest in 2012 – 0.418 times.

The absolute liquidity (short-term solvency) in cash indicator of *Lietuvos geležinkeliai* in 2008-2009 and 2015-2018 did not meet the recommended value (at least 0.2 times), which means that in these years the company's cash was an insufficient part of the available short-term assets. The lowest value of this indicator was recorded in 2009 – 0.081 times, and the highest in 2014 – 0.265 times.

In the period of 2007-2017, the short-term indebtedness ratio of *Lietuvos geležinkeliai* corresponded to the recommended values (0.2-0.4 times), the highest short-term indebtedness ratio was in 2008 - 0.13 times, and the lowest in 2015 - 0.04 times, which shows lower risk, because the higher part of debts consists of long-term debts, the lower the risk.

The ratio of net working capital to total assets in the period of 2007-2017 only in 2007, 2015 and June 2017 was positive, which determined the values of net working capital, which were positive namely in these years. In all other years, the ratio of net working capital to total assets of the company did not meet the requirements, the negative indicator indicates the solvency problems of the company, as the short-term indebtedness ratio does not exceed the recommended value, and therefore the company should increase its short-term assets.

After examining five company liquidity indicators, changes in net working capital of the company in the period of 2007-2017 are presented (see Fig. 2).

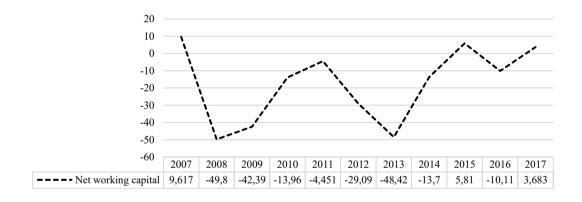


Fig. 2. Dynamics of net working capital of *Lietuvos geležinkeliai* for 2007-2017 (Source: compiled by author, based on the annual reports of *Lietuvos geležinkeliai* for the years 2007-2018)

According to Fig. 2, it is clear that the net working capital of *Lietuvos geležinkeliai* only in 2007, 2015 and in 2017 was positive and consistent with the recommended value (it was positive), the largest working capital was in 2007, 9.617 million Euros, and the lowest in 2008, -49.796 million Euros. Based on these data, it can be argued that the company's short-term liabilities far exceed the company's short-term assets. The company should increase its short-term assets in order to improve this indicator.

In assessing the credit risk of *Lietuvos geležinkeliai* 15 indicators are calculated: current liquidity ratio, debt and equity ratio, asset turnover, the ratio of net working capital to total assets, indebtedness ratio, return on assets, the ratio of equity capital to total assets, return on equity capital, critical liquidity ratio, net profit margin, the ratio of retained earnings to total assets, the ratio of net working capital to income, gross profit margin, the ratio of short-term to total assets, the ratio of cash to total assets. Since in assessing the liquidity risk, the current liquidity ratio, the critical liquidity ratio and the ratio of net working capital to total assets were calculated and described, these indicators are not commented in the assessment of

the credit risk, all other indicators are calculated on the basis of the formulas 7-18, commented on the basis of recommendations (see Table 2), the company's financial indicators required for calculations (see Appendix) are used from the annual reports of *Lietuvos geležinkeliai* for 2007-2017. The following are the profitability indicators of *Lietuvos geležinkeliai*, which help to assess the credit risk (see Fig. 3).

Based on Fig. 3, it can be argued that the gross profit margin of *Lietuvos geležinkeliai* always met the recommended value (10-35 %). The highest gross profit was recorded in 2007, 21.5 %, and the lowest in 2009, 11.9 %. The highest net profit margin in the period of 2007-2017 was in 2007, 9.5 %, and the lowest in June 2017, - 2,1%, but it should be taken into account that the data of 2017 is only for a half a year, the lowest annual net profit margin recorded was -0.4 %. It is also seen that the company's net profit margin has been steadily decreasing since 2011, since 2014 it did not meet the recommended value (when the indicator is less than 5%, not satisfactory), and from negative since 2016, which is badly assessed. This result was driven by declining sales revenue and net profit, which has been negative since 2016. Profitability of own capital during the analysed period complied with recommendations in the analysed period only in 2007 (5.5%). did not meet the recommendations in the following years, since 2016, the profitability of equity capital has been negative, it was caused by net loss. The highest return on equity capital was recorded in 2007, -6.4 %, the lowest – in June 2017, -0.4, but it should be taken into account that the data of 2017 is only for a half a year, the lowest annual return on equity capital was recorded in 2016, -0.2. The largest return on assets of the company was in 2007, 4.1 %, and the lowest in June 2017, 0.21, but it should be taken into account that the data of 2017 is only for a half a year, the lowest annual return on assets was in 2016, -0.1. It is also seen that the return on assets since 2016 is negative, caused by the net loss. To sum up, it can be argued that only the gross profit margin met the recommended values throughout the analysed period. It is also possible to say that the negative changes in profitability indicators were strongly influenced by net profit, which has been negative since 2016. The economic downturn in Lithuania and neighbouring countries, in particular, the decrease in freight volumes (especially in Kaliningrad direction), was the main negative impact on its activities. What is more, the negative net profit was due to lower sales revenue, their decrease was influenced by a decrease in cargo transportation volumes, structural changes in cargo transportation, decreasing volumes of additional services related to freight transport activities, as well as negative results were affected by a fine for restricting competition by using the market situation.

| 25 20 15 10 | ` ` | | ``.~` | | | • • • | | | • • • • • | | >. |
|--------------------------|------------|------|--------------------|------|---------|-------|----------------|------|-----------|------|-------------|
| 5 0 | | | نز. و و . ب | | ··· | | ······ ·· = | | | ·· | ~ .: |
| -5 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
| - · - Return on Assets | 4,1 | 2,7 | 0,3 | 1,5 | 3 | 2,4 | 1,6 | 1 | 0,1 | -0,1 | -2,1 |
| Return on equity | 6,4 | 4,9 | 0,6 | 2,5 | 5,4 | 4,8 | 2,8 | 2 | 0,3 | -0,2 | -0,4 |
| •••••• Net profit margin | 9,5 | 6,9 | 1,1 | 4,8 | 9,1 | 7,5 | 6,2 | 4,4 | 0,6 | -0,4 | -2,1 |
| Gross profit margin | 21,5 | 17,9 | 11,9 | 16,4 | 20,2 | 17,4 | 16,5 | 16,6 | 15,4 | 15,1 | 12,3 |

Fig. 3. Dynamics of profitability indicators of *Lietuvos geležinkeliai* for 2007-2017 (Source: compiled by author, based on the annual reports of *Lietuvos geležinkeliai* for the years 2007-2018)

The following are the indicators of the capital structure of *Lietuvos geležinkeliai* (see Fig. 4).

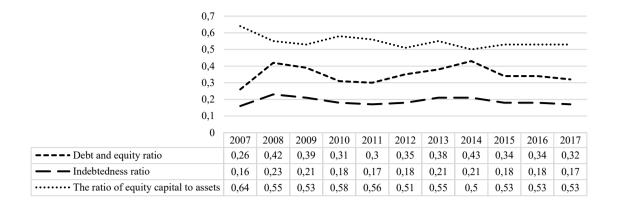


Fig. 4. Dynamics of capital structure indicators of *Lietuvos geležinkeliai* for 2007-2017 (Source: compiled by author, based on the annual reports of *Lietuvos geležinkeliai* for the years 2007-2017)

According to Figure 4, it can be stated that the ratio of equity capital to total assets of *Lietuvos geležinkeliai* in the period of 2007-2017 slightly exceeded the recommended rate (0.5 times) in 2007, 2010, 2011 and 2013, which means that in the aforementioned years, slightly more than half of the financial sources were lend, this means a higher risk. The debt and equity ratio is consistent with the recommendations (if the indicator is not more than 0.7 times, well assessed), this means that the liabilities of the company do not exceed the equity capital, which means less financial risk. The largest debt and equity ratio were in 2014,0.43 times, and the lowest in 2007, 0.26. The company's debt ratio over the analysed period was in line with the recommended values (not more than 0.7), which is very good, because this indicator is extremely important for creditors, the higher the indicator, the lower the level of security. The highest indebtedness ratio was recorded in 2008, 0.23 times, and the lowest in 2007, 0.16 times. In summary, the capital structure indicators of the analysed company usually met the recommended values, and if there were any discrepancies, they were minimal, which means that the company effectively manages its capital, is more reliable for creditors.

Other financial indicators of Lietuvos geležinkeliai are presented below (see Fig. 5).

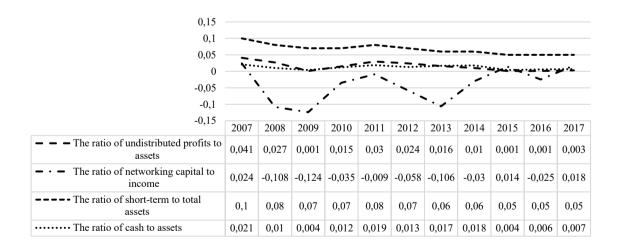
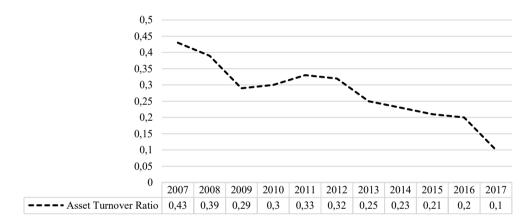


Fig. 5. Dynamics of other indicators of *Lietuvos geležinkeliai* for 2007-2017 (Source: compiled by author, based on the annual reports of *Lietuvos geležinkeliai* for the years 2007-2017)

Based on Fig. 5, it can be seen that the ratio of short-term to total assets of *Lietuvos geležinkeliai* in the period of 2007-2017 was extremely low, which means that the company's short-term assets, throughout the

years, except for 2007 (in 2007 it was 10%), accounted for less than 10% of total assets, which means that the company holds the largest part of its assets in fixed assets, which may mean the company's financial liquidity problem. The ratio of retained earnings to total assets during the analysed period was the highest in 2007, 0.04 times, and the lowest in June 2017, 0.03, however, it is necessary to assess the fact that the data of 2017 is only for a half a year, the lowest annual ratio of retained earnings to total assets was in 2016, -0.01. This indicator has been negative since 2016, due to the company's net loss. Also in the analysed period, the ration of retained earnings to total assets was below 0.1, which means that the retained earnings during the analysed period did not exceed 10 % of the total assets. The ratio of cash to total assets during the analysed period was below 0.1, which means that the cash represented no more than 10 % of the total assets. The highest value of the indicator was in 2007, 0.021 times, and the lowest in 2009 and 2015, 0.004 times. The ratio of net working capital to income during the analysed period almost always, except for 2007, 2015 and June 2017, was negative, the indicator was negative due to negative net working capital. To summarize, these indicators are more difficult to assess because they do not specify specific numerical values, but it can be argued that the negative ratio of net working capital to income and the ratio of short-term to total assets indicate a small value of the company's short-term assets, which means the problem of the company's financial liquidity. The ratio of cash to total assets indicates that a very small part of the assets in cash, which may mean the problem of the company's financial liquidity.



Below is the asset turnover of Lietuvos geležinkeliai (see Fig. 6).

Fig. 6. Dynamics of asset turnover of *Lietuvos geležinkeliai* for 2007-2017 (Source: compiled by author, based on the annual reports of *Lietuvos geležinkeliai* for the years 2007-2017)

According to Fig. 6, it can be seen that the asset turnover of *Lietuvos geležinkeliai* in the period 2007-2017 did not meet the recommendations; it did not even reach three, which is badly assessed. A low asset turnover indicator indicates insufficient sales revenue, so the company should increase its sales revenue in order to improve its asset turnover. The largest asset turnover was in 2007, 0.43 times, and the lowest was in 2017, 0.1 times, but it is necessary to assess the fact that the data of 2017 is only for a half a year, the lowest annual asset turnover was in 2016, 0.2 times.

5 Conclusions

Summarizing the liquidity risk assessment of *Lietuvos geležinkeliai*, it can be argued that the biggest problem of the company is too small short-term assets, which was shown by the current liquidity (general short-term solvency) ratio of the company, which the analysed period never met the recommended values; the networking capital indicator, which was positive only three times during the analysed period. The short-term indebtedness ratio showed that the company's short-term liabilities are not too high, so the company should increase the short-term assets in order to increase financial liquidity.

Summing up the company's credit risk, it can be argued that the company's biggest problem is the profitability indicators, which were strongly influenced by net profit (loss). It can also be argued that the problem of the company is the too small quantity of the short-term asset, as well as insufficient sales volumes. In order to look more attractive to creditors, the company should increase short-term assets, cash and sales revenue, which would have an impact on net profit growth, which also means improving profitability indicators. The results might contribute to the activities carried out by the Government of Lithuania in managing the performance of *Lietuvos gelež*inkeliai, AB and could show the directions of financial risk assessment which, in turn, provides the guidelines in planning the strategy for further risk management.

However, there is a limitation of the research. In the current study, only financial risk indicators are analysed. The limitations provide further research direction – evaluating of other risks of the activities of *Lietuvos geležinkeliai*, AB. The risks that could be analysed in the future are as follows: strategic risk, reputational risk, compliance risk, operational risk. Since all the risks are evaluated, the model of risk management could be designed.

References

- Bartkauskaitė, I., Stankevičienė, J., & Miečinskienė, A. (2016). Įmonės finansinis likvidumas kaip priemonė įmonės vertei didinti [Company's financial liquidity as a tool to increase the value of the company]. In *Proceedings of the 19th Conference for Junior Researchers "Science Future of Lithuania"* (Vol. 8, pp. 192–199). VGTU Technika. https://doi.org/10.3846/mla.2015.923
- Bartram, S. M., Brown, G. W., & Waller, W. (2015). How Important Is Financial Risk? *Journal of Financial and Quantitative Analysis*, 50(04), 801–824. https://doi.org/10.1017/S0022109015000216
- Blach, J. (2010). Financial risk identification based on the balance sheet information. *Managing and Modelling of Financial Risks*, 8(9), 1–10.
- Blatt, J., & Gulbin, J. (2018). Achieving IFRS Off-Balance-Sheet Treatment in Trade Receivables Securitizations. *The Journal of Structured Finance*, 23(4), 30–35. https://doi.org/10.3905/jsf.2018.23.4.030
- Dedova, M. S., Malakhov, D. I., & Pilnik, N. P. (2017). Measurement of liquidity risk of credit institutions on the example of Russian banking system. St Petersburg University Journal of Economic Studies, 33(1), 78–103. https://doi. org/10.21638/11701/spbu05.2017.105
- Kim, J. (2018). Bank Competition and Financial Stability: Liquidity Risk Perspective. Contemporary Economic Policy, 36(2), 337–362. https://doi.org/10.1111/coep.12243
- Kou, G., Peng, Y., & Wang, G. (2014). Evaluation of clustering algorithms for financial risk analysis using MCDM methods. Information Sciences, 275, 1–12. https://doi.org/10.1016/j.ins.2014.02.137
- Kumar, L., Jindal, A., & Velaga, N. R. (2018). Financial risk assessment and modelling of PPP based Indian highway infrastructure projects. *Transport Policy*, *62*, 2–11. https://doi.org/10.1016/j.tranpol.2017.03.010
- Mangla, S. K., Kumar, P., & Barua, M. K. (2015). Risk analysis in green supply chain using fuzzy AHP approach: A case study. *Resources, Conservation and Recycling*, 104, 375–390. https://doi.org/10.1016/j.resconrec.2015.01.001
- Mileris, R. (2012). Įmonių finansinių įsipareigojimų neįvykdymo tikimybės vertinimas nustatant kredito reitingus [Assessing the likelihood of corporate financial default by setting credit ratings]. *Applied Economics: Systematic Research*, *6.2*(6.2), 127–142. https://doi.org/10.7220/AESR.1822.7996.2012.6.2.8
- Ministry of Finance of the Republic of Lithuania, . (2017). *Rekomendacinės finansinės rizikos valdymo gairės valstybės valdomoms įmonėms* [Guidance on financial risk management for state-owned enterprises].
- Moles, P. (2016). Financial Risk Management. Edinburgh: Heriot-Watt University.
- NASDAQ. (2010). Įmonių finansinės analizė. Rodiklių skaičiavimo metodika [Corporate financial analysis. Methodology for the calculation of indicators]. Retrieved from http://www.nasdaqbaltic.com/files/vilnius/leidiniai/Rodikliu_skaiciavimo_ metodika-final.pdf
- Peškauskaitė, D., & Jurevičienė, D. (2017). Companies Credit Risk Assessment Methods for Investment Decision Making. *Mokslas - Lietuvos Ateitis, 9*(2), 220–229. https://doi.org/10.3846/mla.2017.1014
- Silva, V. V., & Loebel, E. (2016). Desempenho Econômico-Financeiro de Operadoras de Planos de Saúde Suplementar [Economic-Financial Performance of Supplementary Health Plan Operators]. Revista de Gestão Em Sistemas de Saúde -RGSS, 5(2), 57–70.
- Skoglund, J., & Chen, W. (2015). Financial Risk Management: Applications in Market, Credit, Asset and Liability Management, and Firmwide Risk. New Jersey: John Wiley & Sons, Inc.
- Solomon, D. C., & Muntean, M. (2012). Assessment of Financial Risk in Firm's Profitability Analysis. *Economy Transdisciplinarity Cognition*, 15(2), 58–68.
- Valaskova, K., Kliestik, T., & Kovacova, M. (2018). Management of financial risks in Slovak enterprises using regression analysis. *Oeconomia Copernicana*, 9(1), 105–121. https://doi.org/10.24136/oc.2018.006

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 June |
|--------------------------------|-------------|------------------------------------|---------------|---------------|---------------|-----------------------|---|-----------------------|---------------|------------------------------------|------------------------|
| | (EUR) | (EUR) | (EUR) | (EUR) | (EUR) | (EUR) | (EUR) | (EUR) | (EUR) | (EUR) | (EUR) |
| Short-term assets | 94,612,444 | 94,612,444 99,587,020 84,113,468 | 84,113,468 | | 106,518,564 | 102,854,985 | 85,178,664 106,518,564 102,854,985 113,504,964 126,179,633 | 126,179,633 | 96,685,422 | 94,841,406 | 94,841,406 107,962,759 |
| Total Assets | 946,302,907 | 1,179,235,924 | 1,197,768,297 | 1,303,604,924 | 1,406,220,714 | 1,557,953,253 | 946,302,907 1,179,235,924 1,197,768,297 1,303,604,924 1,406,220,714 1,557,953,253 1,797,211,638 2,017,314,500 2,065,124,605 2,075,009,813 2,062,232,171 | 2,017,314,500 | 2,065,124,605 | 2,075,009,813 | 2,062,232,171 |
| Stocks | 31,613,103 | 31,613,103 32,513,706 30,696,839 | | 37,694,232 | | 47,653,618 | 44,437,241 47,653,618 45,304,873 48,050,388 | 48,050,388 | | 45,667,535 42,840,768 | 40,748,943 |
| Money and money equivalents | 19,749,338 | 19,749,338 12,087,053 | 5,057,848 | 15,524,069 | | 26,608,129 19,554,908 | | 30,421,789 37,117,457 | | 8,480,246 11,936,381 | 13,615,526 |
| Short-term liabilities | | 84,995,803 149,383,413 126,499,210 | 126,499,210 | 99,134,811 | 110,969,334 | 131,944,606 | 99,134,811 110,969,334 131,944,606 161,927,475 139,882,109 | 139,882,109 | | 90,875,793 104,952,329 104,279,732 | 104,279,732 |

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Appendix 2. Data of *Lietuvos geležinkeliai*, AB for credit risk assessment

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 June |
|--------------------------------|-------------|---|-------------|---------------|---|---------------|---|-----------------------------|---------------|---|---------------|
| | (EUR) | (EUR) | (EUR) | (EUR) | (EUR) | (EUR) | (EUR) | (EUR) | (EUR) | (EUR) | (EUR) |
| Fixed assests | 851,690,462 | 851,690,462 1,079,648,904 1,113,654,83 | 30 | 1,218,426,261 | 1,218,426,261 1,299,702,150 1,455,098,268 1,683,706,673 | 1,455,098,268 | 1,683,706,673 | 1,891,134,867 1,968,439,183 | 1,968,439,183 | 1,978,921,756 1,952,797,258 | 1,952,797,258 |
| Current assets | 94,612,444 | 99,587,020 | 84,113,468 | 85,178,664 | 106,518,564 | 102,854,985 | 113,504,964 | 126,179,633 | 95,286,572 | 94,841,406 | 107,962,759 |
| Money and money equivalents | 19,749,338 | 12,087,053 | 5,057,848 | 15,524,069 | 26,608,129 | 19,554,908 | 30,421,789 | 37,117,457 | 8,480,246 | 11,936,381 | 13,615,526 |
| Total Assets | 946,302,907 | 946,302,907 1,179,235,924 1,197,768,297 | | | 1,303,604,924 1,406,220,714 | 1,557,953,253 | 1,557,953,253 1,797,211,638 2,017,314,500 2,065,124,605 | 2,017,314,500 | 2,065,124,605 | 2,075,009,813 2,062,232,171 | 2,062,232,171 |
| Short-term liabilities | 84,995,803 | 149,383,413 | 126,499,210 | 99,134,811 | 110,969,334 | 131,944,606 | 161,927,475 | 139,882,109 | 82,881,149 | 104,952,329 | 104,279,732 |
| Long-term liabilities | 70,182,468 | 120,365,506 | 123,194,434 | 134,196,836 | 128,161,807 | 146,469,946 | 220,086,525 | 291,552,829 | 291,064,061 | 262,715,891 | 245,853,452 |
| All liabilities | 155,178,272 | 269,748,919 | 249,693,644 | 233,331,648 | 239,131,141 | 278,414,552 | 382,014,000 | 431,434,938 | 373,945,210 | 367,668,220 | 350,133,184 |
| Equity | 602,880,136 | 649,297,289 | 636,124,650 | 757,251,022 | 785,276,104 | 787,453,211 | 994,080,857 | 1,012,045,197 | 1,098,605,778 | 994,080,857 1,012,045,197 1,098,605,778 1,096,551,751 1,092,004,354 | 1,092,004,354 |
| Sales profit | 407480204 | 461629503 | 342772073 | 395254127 | 469676495 | 500184815 | 457062328 | 461714714 | 428994062 | 406180063 | 204787532 |
| Sales cost price | 319734657 | 378982958 | 302102734 | 330489623 | 374761843 | 412936721 | 381498053 | 384872870 | 362804941 | 344728304 | 179571744 |
| Net profit | 38690500 | 31765286 | 3774680 | 18951765 | 42649748 | 37705437 | 28117736 | 20388944 | 2776251 | -1779566 | -4220344 |
| Gross profit | 87745547 | 82646545 | 40669340 | 64764504 | 94914652 | 87248095 | 75564275 | 76841844 | 66189121 | 61451759 | 25215788 |
| Retained earnings | 38690502 | 31765286 | 965675 | 18951765 | 42649748 | 37705437 | 28117736 | 20388944 | 1749354 | -1779566 | -6326963 |