FINANCIAL INDICATORS IN MANAGERIAL DECISION-MAKING

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Abstract: *Working capital is crucial to determine the short-term financial position of a given company. Significant changes in working capital provide important information to the stakeholders. Working capital analysis is one of the methods of credit rating and it can also help to better understand the business cycle of a given company. One of the key elements of working capital management is liquidity management, that is, to maintain a company's ability to pay continuously, because in the short-term, it ensures the company to stay afloat, and justifies its progress on the long-term. Decision makers are in need of such indicators and interrelations that can help precisely assessing the real situation and recognise problems of funding in time. Achieving this goal is a very complex task because the use of several indicators and perspectives are necessary to measure liquidity. For this, companies have to develop management and organizational structures that provide an adequate framework to measure and follow up liquidity. To facilitate this, the study draws attention to interrelations that anticipate the actual liquidity position of a company more precisely. Generally, liquidity indicators are being used to measure a company's ability to pay, but those do not sufficiently take into account for how long different components are tied up during the operation. Adjusted liquidity indicators can be calculated to solve these problems as these include the time an asset is in the operating cycle in the case of current assets and short-term liabilities. At the same time, these days the continuous monitoring and analysis of operational data has become essential, too. The database which has been created as a result of the annual financial statement reporting obligation that was introduced by the Act C in 2000 can be used to analyse company data on a yearly basis. However, in case we would like to examine the changes of these indicators continuously during the financial year, we need (monthly or quarterly) data and the introduction of a proper accounting information system for the managers to continuously receive those processed data that are essential for decision making, and to receive information about the performance of their department. This study's aim is to show the difference between the consequences of company liquidity results using only year-end data and when liquidity indicators are being adjusted on a monthly basis.*

Keywords: liquidity, working capital, liquidity management, adjusted liquidity, risk, bankruptcy situation

JEL classification: G30; G32

1. Introduction

As the result of the economic crisis that evolved from the international financial crisis, there are numerous companies in worse conditions than they were before. Some of them bankrupted, some of them are still fighting for survival. In several aspects of life it is very important to clearly and precisely evaluate corporate performance and income positions including credit institution debtor ratings before lending processes, and to measure company performance in the case of subsidy requests (Orbán, 2006). This has a consequence of reduced lending activity from external sources and lenders. Potential investors like venture capital firms (Nagy, 2004) have become a lot more wary. They analyse loan applicants more carefully. Therefore, companies have to become more aware of their own present and future financial situation, financing capabilities, to submit appropriate loan applications to the financial institutions. Mcmenamin (2005) defines the financial aims of a company, such as being profitable, pursuing liquidity and sustaining a proper capital structure. The importance of a proper capital structure was emphasised by Herczeg (2009), too.

As a result of the uncertainties emerged and came to the fore in the economy, risk measurement and risk management have an ever greater role in corporate governance. According to a change management study of Bácsné (2011), this is how top managers of profit oriented companies' think of everyday practice. There is a strong and increasing demand for solutions that can forecast default risks in advance. There are different – simple and more complex – methods that can be used by decision-makers to assess risks and to be aware of the direction of changes. So far, numerous financial indicators have been developed and there are different prediction models, too. (Chorafas, 2002).

Traditional financial indicators cannot be emphasized enough to be used very cautiously. We should keep in mind that their signals can show the opposite of the actual situation. We also need to know that an accurate forecast can only be done by combining different indicators, and by developing complex forecasting models.

2. Working Capital Management

Companies have to deal with indicators and company features much more thoroughly than they did before to be aware of their position, to know their financing facilities using their internal sources to better utilize their own resources available. Ensuring internal sources at an appropriate level and continuous funding of company operations are topics closely linked to working capital management. Another reason of its importance these days – in conjunction with the previous one – is that, nowadays companies work with ever longer payment periods, which means significantly longer-term trade credits than before. Companies should be able to finance those longer timeframes.

Working capital is crucial to determine a company's short-term financial status. Significant changes in working capital provide important information to the stakeholders. It is especially true for net working capital. Working capital analysis is one of the methods of credit rating and it can also help to understand the normal business cycle of a given company.

Tarnóczi and Fenyves (2011) defined the terms of working capital and net working capital because in domestic (and seldom in international) literature there are various interpretations of these definitions. It is important to differentiate working capital (gross working capital) and net working capital, because it makes easier to use them as measurement tools, and last, but not least the 'net' expression can be better understood. *Working capital (it is also called as gross working capital) is the cash of the company that are invested in cash, accounts receivables, inventories and other current assets.* Conventionally, working capital means a company's investment in current assets, which are expected to be converted to cash in less than a year.

An important indicator related to working capital management is *net working capital which can be defined as the difference of current assets and current liabilities of the company*, i.e. the part of current assets that is not covered by current liabilities. Net working capital can be considered as netting gross working capital (Figure 1.). From a different point of view, *net working capital means the part of current assets that are financed from long-term financial assets or shareholders' equity, i.e. financed from long-term sources.*

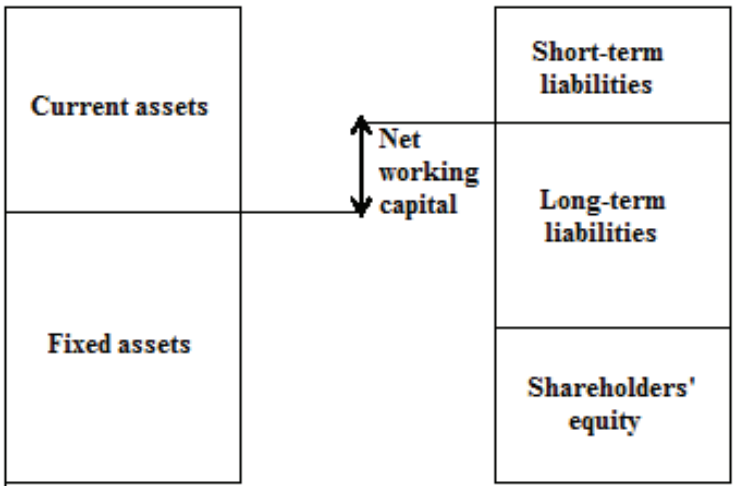

Figure 1: Net working capital
Source: self-structured

If we interpret working capital and net working capital as described above, then *working capital management* includes financing and managing current assets and controlling short-term liabilities of the company. One of the key elements of working capital management is liquidity management, that is, to maintain a company's ability to pay continuously because in the short-term, it ensures the company to stay afloat and in the long-term it justifies its progress. Elimination of liquidity can cause a company ceases to exist (Chorafas, 2002). Accordingly, one of the most important corporate financial risks, the non-payment or default risk is related to liquidity management. Basically, the main tasks of liquidity management are to minimize risks, or we might as well say the development of an optimal financial structure.

3. Liquidity Management

The effective liquidity management – beyond securing their survival – helps companies to reach higher profitability by reducing their input needs. Furthermore, it grants strategic advantages in the economically difficult time periods. According to Havran (2011), applying consistent liquidity management can provide opportunities for a company to react market changes faster and cheaper, or more profitably. In general, traditional liquidity indicators are used to measure the company's ability to pay. (Table 1.)

Table 1.: Traditional liquidity indicators

Current ratio	Quick ratio	Cash asset ratio
$\frac{Current\ assets}{Short-term\ liabilities}$	$\frac{Current\ assets\ -\ inventories}{Short-term\ liabilities}$	$\frac{Cash\ +\ Securities}{Short-term\ liabilities}$

Source: self-structured

If we look into the formula of the current ratio, an obvious correlation can be found with net working capital. The current ratio is also called working capital ratio. As a result of this correlation, if the company meets the required level of current ratio, the net working capital will be positive. We can also conclude that current ratio should not be less than 1 to have a positive net working capital ratio. Depending on the industry and company, this ratio can vary in a wide range. In case of manufacturing companies, a higher ratio is better, while a lower ratio is acceptable for service companies, as they usually have more easily calculable and predictable cash flow, lower inventories and fewer liabilities (Soenen-Tarnóczi, 1995).

Current ratio was formerly called as a 2:1 ratio indicator, but these days its value between 1.3-1.7 is acceptable – depending on the sector. A too high value is not good either, as it can decrease profitability (Himber et al., 2006). If the lower boundary of this ratio is concerned, one can conclude that at least 30 % of current assets have to be financed by long-term sources. This is the evidence that net working capital can be used as a liquidity indicator, i.e. inadequate net working capital shows insolvency risk of a company.

With positive net working capital we can assume that the company will be able to comply with its obligations during the fiscal year, it is solvent. This is not necessarily always true, because net working capital – just like current ratio – is not the most accurate indicator to determine liquidity, because only cash and short-term investments (securities) are truly liquid assets. Those assets are considered truly liquid that can be converted into cash easily and without significant loss, while a liability is liquid when it has to be repaid in a short time (Soenen-Tarnóczi, 1995). High net working capital can be a result of highly invested accounts receivable (as a result of customers' delayed payments or non-payments) and/or because of increased inventories. Logical, that due diligence is needed during interpretation of liquidity indicators. Changes in net working capital ratio can be a result not only of changes in current assets and short-term liabilities, but shareholders' equity, long-term liabilities and fixed assets also affect. Therefore, it is worth considering and calculating with all three ratios, because this is the only way to avoid bad decisions and to be aware of the company's solvency risk.

One of the stricter tests to determine a company's liquidity is the so called quick ratio, which measures short-term liabilities to the difference of current assets and inventories. This is a more accurate ratio as it ignores those current assets that are less liquid, namely the inventories. It only considers those current assets that can be converted into cash more easily. Lower liquidity of inventories means in some cases it is harder to sell them in a short period of time on the desired price (financially realize). Moreover, the book value of inventories does not always coincide with market prices even if they turn relatively fast, and it does not consider quality differences, either (Soenen-Tarnóczi, 1995).

Cash asset ratio is the most important to calculate a company's liquidity position. Normally this indicator does not have a minimal threshold level, but I think – considering the method it is calculated – the 0.25-0.3 level is acceptable. It means the company could pay 25-30 % of its short-term liabilities immediately.

Traditional liquidity measurement indicators should be also noted not being accurate in all cases. It comes from the basic characteristics of financial statements. They do not always show a true picture regarding the liquidity of a company, overestimation and underestimation can also occur. Liquidity indicators would be important to follow precisely but this would require companies to close accounting records monthly or quarterly.

Traditional liquidity indicators do not always accurate in measuring a company's ability to pay as those do not take into account how long different components are tied for the operation of the company. However, the time it is tied or it is working can substantially affect how quickly a company can fulfill its payment obligations and it also alters the liquidity indicator values, too. To solve this problem, the components of current assets

and short-term liabilities should be adjusted first, and these numbers should be used during liquidity calculations. The balance sheet items used during liquidity calculations should be adjusted by the time those are in the operating cycle, what conventional liquidity indicators ignore. A corrective factor has to be calculated for each item to be adjusted. By multiplying the item with the corrective factor we get the adjusted value:

$$Corrective\ factor = 1 - \frac{1}{Rotation\ speed\ of\ an\ asset\ or\ source}$$

In case of current assets only inventories and accounts receivables are adjusted. In short-term liabilities, promissory note liabilities and current portion of long-term debt should not be adjusted. After the corrective adjustment, we can calculate the values of the adjusted current assets and adjusted short-term liabilities which can be used to calculate the adjusted liquidity indicators:

$$Adjusted\ general\ liquidity\ ratio = \frac{Adjusted\ current\ assets}{Adjusted\ short - term\ liabilities}$$

This ratio can be improved by increasing the rotation speed of inventories and accounts receivables and decreasing the rotation speed of short-term liabilities, i.e. by improving the asset- and resource management of a company. This indicator can have a higher or lower value than the general liquidity ratio has. However, if a company manages its current assets and short-term liabilities efficiently, then the value of the adjusted general liquidity ratio will be higher than the general liquidity ratio. (Gangadhar, 2003).

4. Results and Evaluation

By the use of different liquidity indicators we try to anticipate whether companies can meet their short-term liabilities using their available current assets. Liquidity ratios have a great benefit of being relatively accurate regarding their components because on the short-term, there are more realistic data available in the accounting system than for analysing long-term assets and sources. However, we have to keep in mind that liquid asset prices change fast, that's why these indicators can become outdated in a short period of time. Therefore, when we implement liquidity tests, a continuous monitoring is necessary. In case of certain fields of activity, the degree of liquidity can differ seasonally.

Nowadays, it is very important for the management to receive new information the fastest possible, because this is the only way to act quickly. The earlier an effect can be seen – whether it is negative or positive –, the sooner it can be managed or taken advantage of. This is the exact reason why the continuous observation of the company's operations and data analysing is essential for companies. One of the sources of data to be used for the analysis could be the annual report for those companies that are legally bound to prepare it. Annual reports of the companies are required by the Act C of 2000 which has been amended several times since its implementation. However, to keep track of the changes in these indicators during the year, (monthly and/or quarterly) data is needed. For the managers to receive the necessary and essential information for decision-making, the adaptation of an adequate accounting information system is required, moreover, to get feedback about the performance of their department.

For the calculation, we have analysed data of a manufacturing company in the period of 2011-2013. We have used both monthly and annual data that allowed us to compare monthly and yearly results. The general and adjusted liquidity ratios of the company are shown on Figures 2-4.

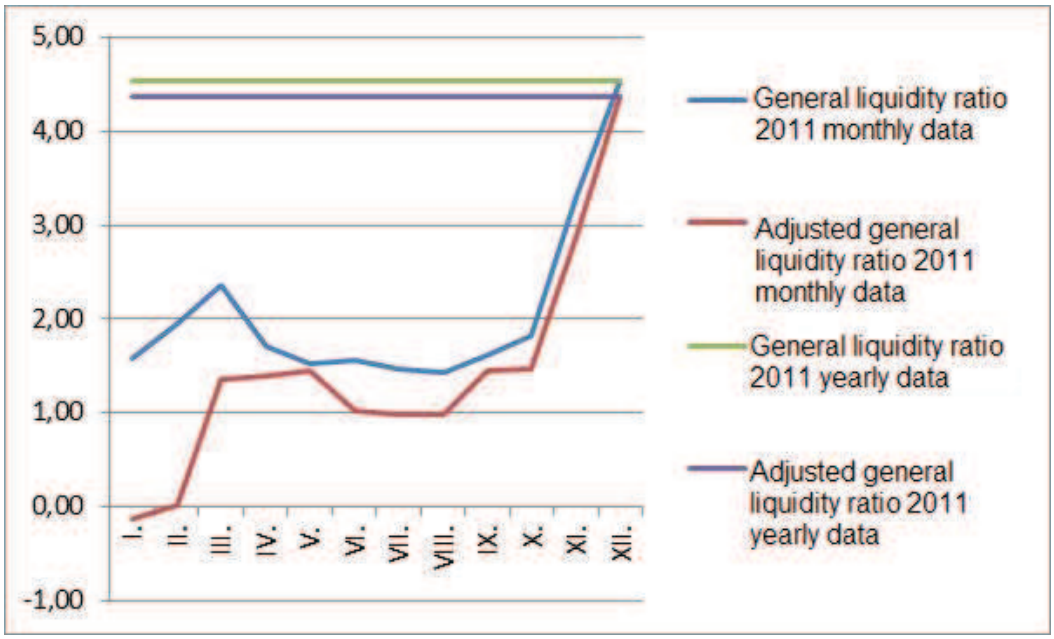

Figure 2: The general and the adjusted liquidity ratio in 2011.
Source: self-structured

Data shows the company does not have liquidity problems in general. When analysing the monthly data, bigger and smaller fluctuations can be seen. This is the result of seasonal sales periods and different payment conditions for different partners. In 2011 and 2012 the adjusted liquidity ratio was mostly lower than the general liquidity ratio.

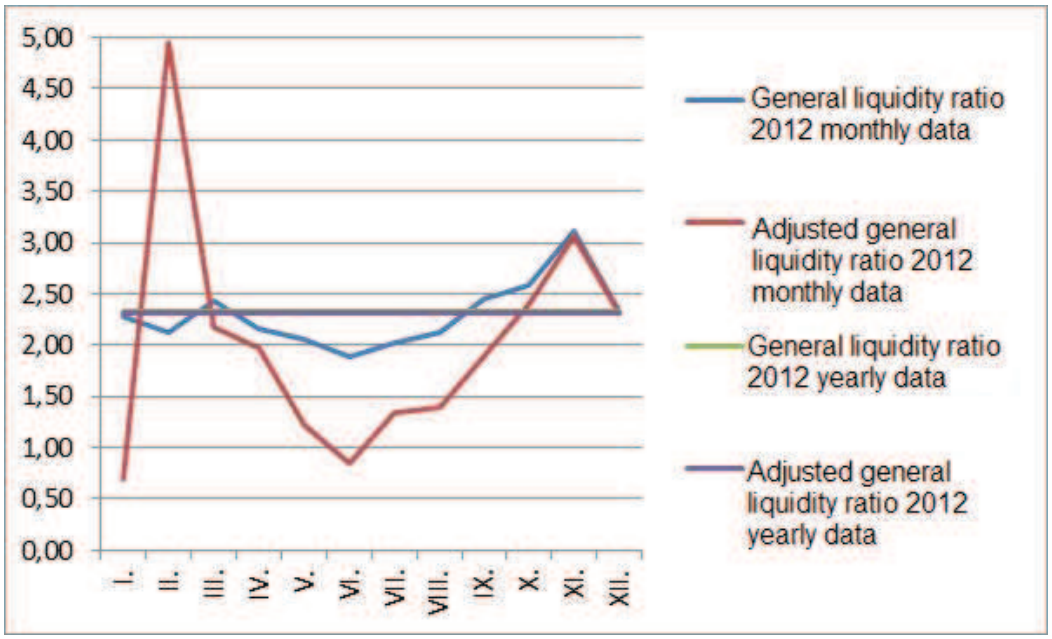

Figure 3: The general and the adjusted liquidity ratio in 2012.
Source: self-structured

We can also see the monthly general liquidity ratio to be volatile in 2013, but in this case the adjusted liquidity ratio was higher in several cases (Figure 4).

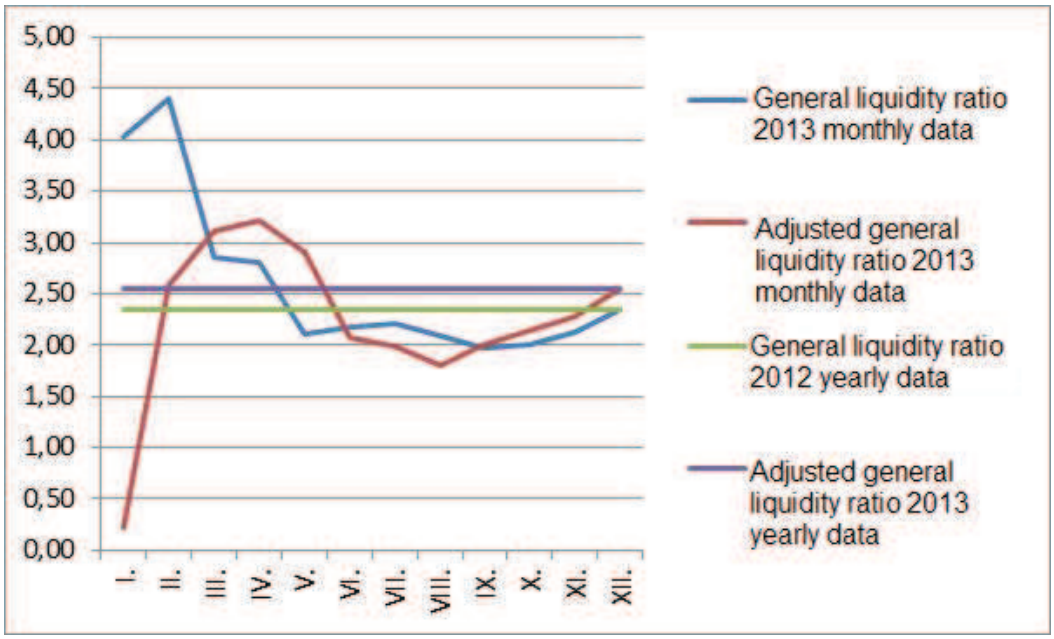

Figure 4: The general and the adjusted liquidity ratio in 2013.
Source: self-structured

After looking at Figure 2-4, we can draw the conclusion that monthly adjusted data shows a lot more accurate and realistic picture about the liquidity position of the company than the yearly data. The values of the year-end adjusted monthly data are much more accurate. The adjusted and the general liquidity ratios were different in the end of the studied years; in 2011 the general liquidity ratio was higher, while in 2012 the two ratios were nearly the same in the end of the year (yearly general liquidity ratio 2.33, adjusted general liquidity ratio 2.32). In 2013, the yearly general liquidity ratio was higher. Regarding the monthly data – excluding the early year and year-end results –, the values of the adjusted general liquidity ratio were lower than the general liquidity ratio's values.
The general liquidity ratio does not measure the flexibility of a company. A company is more liquid in the periods it has a lot of cash and marketable securities than in the periods it has big inventories. This is the reason why the general liquidity ratio is not a reliable indicator to show a company's ability to pay.
Buying stocks does not affect the general liquidity ratio but decreases quick ratio values. General liquidity ratio is worth mentioning to be dependent on several variables that affect liquidity on different ways. Quick ratios of the company can be seen on Figure 4-6.

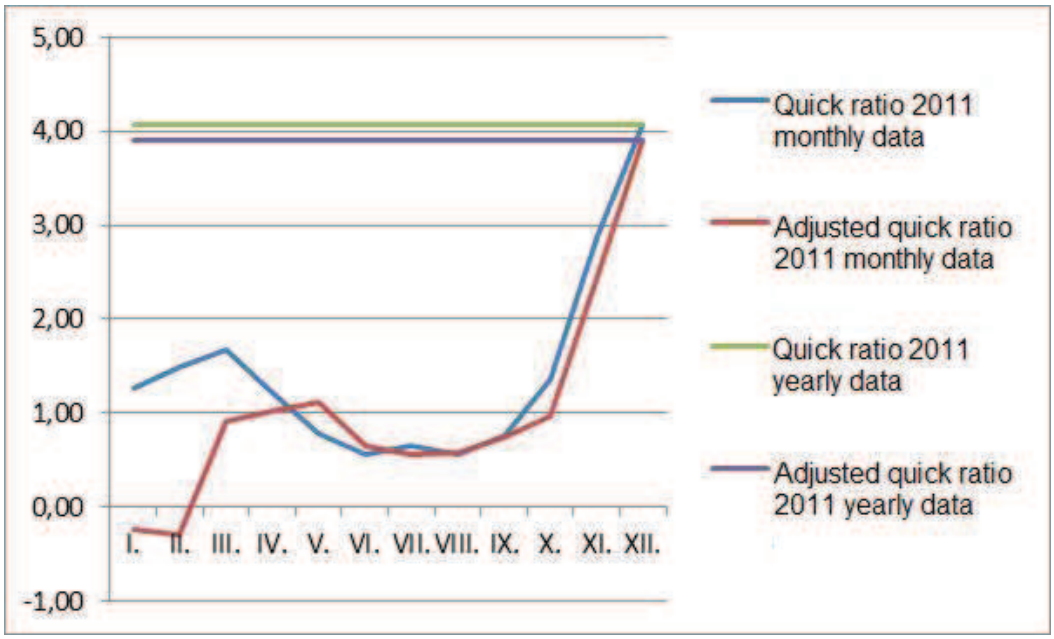

Figure 5: The general and the adjusted quick ratio in 2011.
Source: self-structured

The significance of monthly values in enterprise valuation is evidenced in these results, too. Looking at the monthly data we can also draw the conclusion that the values of the ratio are fluctuating in greater or lesser extent.
If we look at the company's timeline of 2011 and 2012 (between May and September) we can see there were periods when the quick ratio was temporarily below the lower boundary of the accepted range. The adjusted quick ratio had similarly low values in the beginning of the year as the adjusted liquidity ratio did.

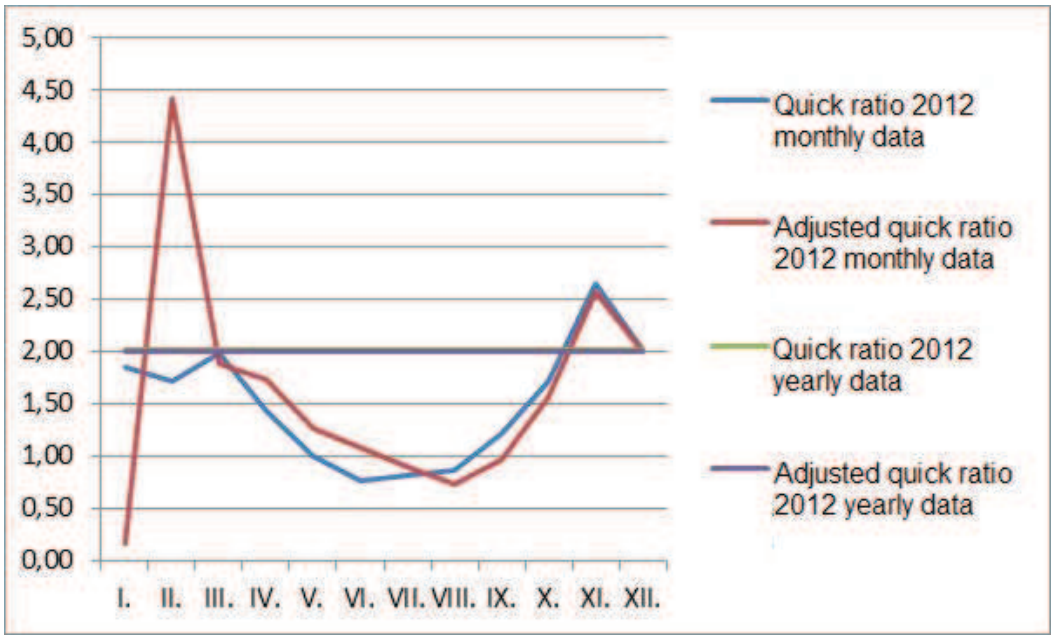

Figure 6: The general and adjusted quick ratio in 2012
Source: self-structured

The adjusted quick ratio values were very low in the beginning (January) of all the three years studied, just like the adjusted liquidity ratio values.

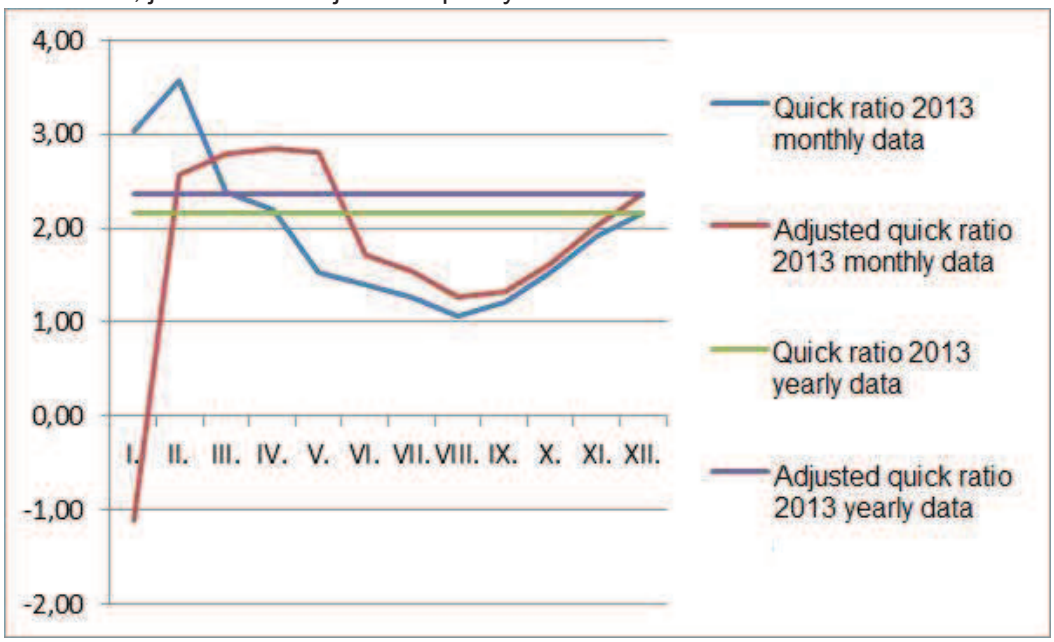

Figure 7: The general and adjusted quick ratio in 2013
Source: self-structured

The quick ratio ignores the most illiquid assets of a company, but the analysed one had significant amount of cash, which has caused differences between the values of the general liquidity ratio and quick ratio.
Figure 8-10 show the cash ratio of the company.

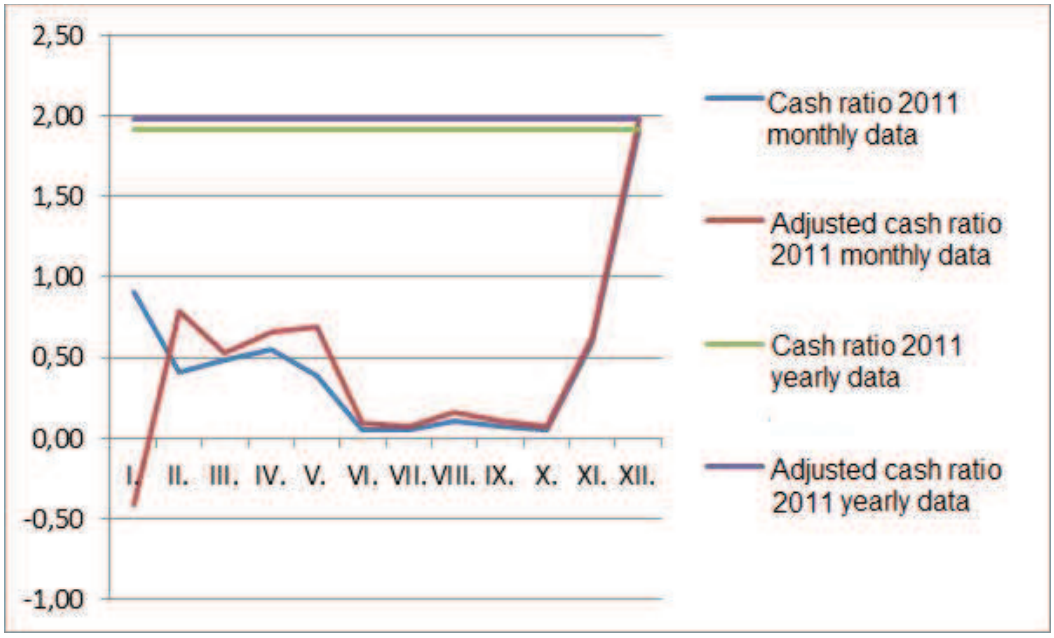

Figure 8: The general and adjusted cash ratio in 2011
Source: self-structured

In the case of this company, this ratio could be calculated by dividing cash assets by short-term liabilities, as the analysed company did not have marketable securities in any particular year.

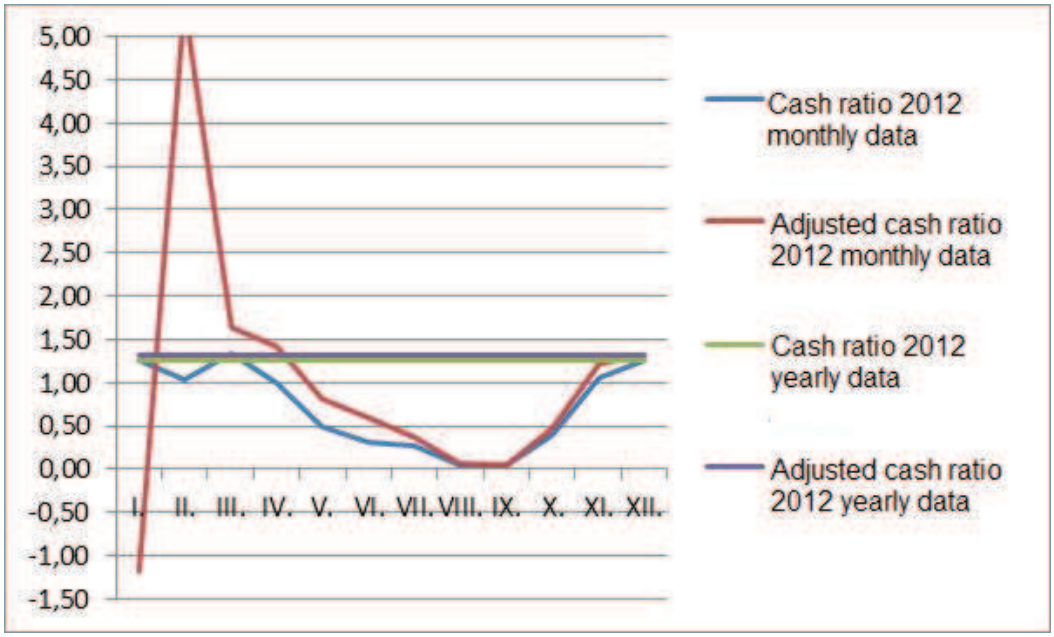

Figure 9: The general and adjusted cash ratio in 2012
Source: self-structured

In case of monthly cash ratios there is a similar tendency as the previous two ratios had, but in certain periods of 2011 and 2012 (namely in August and September), the values of the indicators were repeatedly close to zero, which indicates very bad liquidity situation. Conversely, in 2013, the cash ratio's lowest value was 0.43 points in September, which is positive.

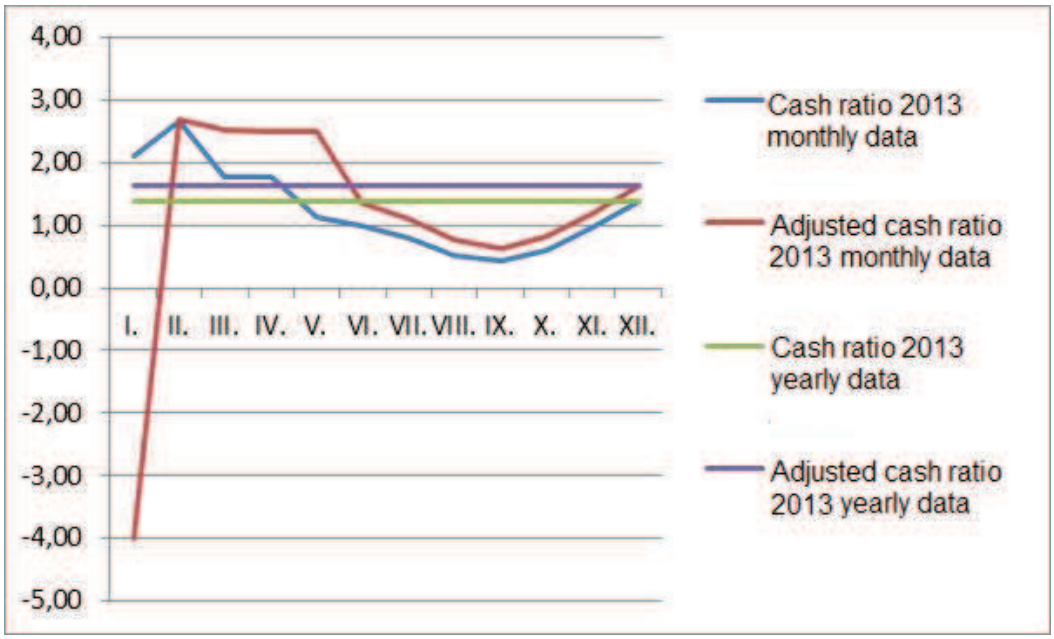

Figure 10: The general and adjusted cash ratio in 2011
Source: self-structured

The adjusted cash ratio was negative in January. The adjusted liquidity ratios can be negative only when the turnover rate of the adjustable items (inventories, receivables, short-term liabilities) has a value under 1. In the case of cash ratios, the adjusted ratios were higher in all the studied three years, except for the months of January.

5. Conclusions

It is important to continuously monitor liquidity ratios that help determine a company's financial position, but for this, monthly or quarterly closing of the books is required. This is not only important because of the monitoring, but also the timely decision making. For the management, nowadays it is not enough to focus on the decision but the time factor is getting more and more important. Another factor is the follow-up of the decisions' results in case of successful companies. Monthly closings could help to make these observations, and operating results can be analysed in detail, too. Companies, their creditors and internal stakeholders should be aware of the liquidity and solvency situation of a given company, which can be measured by different liquidity ratios. However, traditional liquidity ratios do not sufficiently take into account how long their components are tied for the operation of the company, which significantly affects their values. Adjusted liquidity ratios can be used to solve this problem.

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