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BENCHMARK VALUES FOR LIQUIDITY RATIOS IN SLOVAK AGRICULTURE

Marián Tóth, Zuzana Čierna, Peter Serenčéš
Slovak University of Agriculture in Nitra

Abstract. The primary goal of the paper is to state the financial benchmark values for liquidity ratios in Slovak agriculture. Authors measured liquidity with current ratio, quick ratio and cash ratio which are the traditional way of liquidity measurement. Using descriptive statistics authors describe the liquidity performance of more than 1,100 enterprises in each period in 2004–2011. Based on the results authors can conclude that the common recommended values for liquidity ratios cannot be used for agriculture. The overall liquidity in agriculture is much lower and therefore the results presented in this article can be used as a benchmark for individual enterprises comparison.

Key words: liquidity ratios, benchmarking, agriculture, Slovakia

INTRODUCTION

To understand better financial statements and consequently to make rational economic decisions, the users of financial statements must have analytical tools in order to undertake financial statement analysis. The type of analysis always varies according to the specific interests of the party involved. The basic tools to measure the company performance are financial ratios. They are divided in four main groups: liquidity ratios, activity (efficiency) ratios, long-term financial stability and profitability ratios.

The calculation of the ratios is based on financial statements, which vary among the countries, because of local accounting law. This article is focused on liquidity ratios which provide answers to question how liquid is the company. They compare short-term obligations with short-term (or current) resources available to meet these obligations. The liquidity ratios are in the literature often described generally [Brigham and Houston 2003, Vlachynský et al. 2006, Baran et al. 2008, Van Horne and Wachowicz 2009]. In some cases authors provide the full link to the Slovak balance sheet with specifying the

Corresponding authors: Department of Finance, Faculty of Economics and Management, Slovak University of Agriculture in Nitra, Tr. A. Hlinku 2, 949 76 Nitra, Slovak Republic, e-mail: marian.toth@uniag.sk, zuzana.cierna@uniag.sk, peter.serences@uniag.sk

lines of the statement [Kotulič et al. 2007]. The information provided in the article about the liquidity situation in Slovak agriculture is based on the balance sheets of individual cooperatives, limited liability companies and joint stock companies in Slovakia. These values indicate the benchmark of the liquidity in Slovak agriculture [Pogranová et al. 2011]. Such values exist in many of the countries [Swenson 2001] and therefore they are useful for the management of farms in Slovakia and they also can be used to compare the situation in Slovakia with other countries. In the literature we can identify three basic liquidity ratios: current ratio, quick ratio and cash ratio.

They differ only in the nominator of the ratio. The denominator is equal. Liquidity ratios provide answers to following questions: How liquid is the company? Can it easily lay its hands on cash, if needed?

Current ratio (Working capital ratio)

$$\frac{\text{current assets}}{\text{current liabilities}}$$

Current ratio is the primary liquidity ratio, which is calculated by dividing total current assets by total current liabilities. It can be interpreted as how many times are current liabilities of a company covered by its current assets. For a creditor, particularly a short-term creditor such as a supplier, the higher the current ratio, the better. To the firm, a high current ratio indicates liquidity, but it also may indicate an inefficient use of cash and other short--term assets. Absent some extraordinary circumstances, we would expect to see a current ratio of at least 1, because a current ratio of less than 1 would mean that net working capital (current assets less current liabilities) is negative. This would be unusual in a healthy firm, at least for most types of businesses [Ross et al. 2002]. Traditionally, a current ratio of 2 : 1 or higher was regarded as appropriate for most businesses to maintain creditworthiness. However, more recently a figure of 1.5 : 1 is regarded as normal. When assessing company's current ratio value, it is still worth considering factors such as seasonal nature of the business, availability of further finance, long-term liabilities or nature of the inventory.

Quick ratio (Acid test)

$$\frac{\text{current assets} - \text{inventory}}{\text{current liabilities}}$$

Quick ratio or Acid test is more conservative measure of liquidity, showing a firm's ability to meet current liabilities with its most liquid (quick) assets. This means that inventories are excluded from the calculation as they are typically considered as the least liquid of a firm's current assets. Normal levels for the quick ratio range from 1 : 1 to 0.7 : 1.

Cash ratio

$$\frac{\text{cash} + \text{short-term securities}}{\text{current liabilities}}$$

Cash ratio shows what proportion of company's current liabilities can be repaid by the most liquid assets, if it becomes due.

MATERIAL AND METHODS

Data were obtained from internal database of RADELA agency, which collects data for The Research Institute of Agricultural and Food Economics for the period 2004–2011. Authors analyzed data from the balance sheets of agricultural enterprises, in each period data were from more than 1,100 enterprises. These entities cover 80% of agricultural land in Slovakia and therefore analyzing this sample offers the possibility to describe the overall situation in Slovakia. Ratio analysis involves besides "internal comparisons" also "external comparisons", where a company's ratios are compared with those of other firms in the same industry, that is, to industry average figures. However, managers of companies often tend to go one step further and they compare their ratios also with those of a smaller set of leading companies – the top firms in their industry. This technique is called benchmarking, and the top companies are called benchmark companies. Using of benchmarking method is very advantageous, as it makes it easy for company's management to see exactly where the company stands relative to its strongest competition. To set the benchmark values authors use the descriptive statistics median, upper and lower quartile and upper and lower decile. These measures describe the performance of the 100% of enterprises by dividing them into 6 groups. Upper quartile – the performance of the 25% best companies – is often used by the managers as the benchmark value.

RESULTS AND DISCUSSION

All liquidity ratios in Slovak agriculture are affected by the subsidies. They are paid to the producer at the end of the year. Direct payments per hectare have influence on the liquidity, because the financial statement in Slovakia are as of the end of business year which end on the 31st of December. Previous research shows, that the average values per

Table 1. The structure of current assets and current liabilities in Slovak agriculture in 2004–2011

Specification	2004	2005	2006	2007	2008	2009	2010	2011
Current assets	100	100	100	100	100	100	100	100
Inventories	0.562	0.526	0.513	0.486	0.514	0.482	0.492	0.505
Long-term receivables	0.015	0.017	0.013	0.013	0.021	0.020	0.017	0.013
Short-term receivables	0.314	0.328	0.350	0.373	0.357	0.378	0.366	0.365
Cash + short-term securities	0.109	0.129	0.124	0.128	0.107	0.123	0.126	0.116
Prepayments	0.026	0.025	0.022	0.014	0.014	0.011	0.011	0.013
Current liabilities	100	100	100	100	100	100	100	100
Short-term liabilities	0.652	0.595	0.575	0.595	0.558	0.603	0.610	0.604
Current bank loans	0.109	0.149	0.157	0.187	0.201	0.223	0.216	0.239
Short-term financial assistance	0.087	0.076	0.057	0.053	0.053	0.056	0.058	0.059
Accruals	0.152	0.181	0.212	0.165	0.188	0.118	0.116	0.098

Source: Own calculation.

year are much lower than the situation at the end of the year (observed period 2005–2009, cash ratio average value per year 0.71, average December value 1.28). But as the subsidies are paid to all entities is the whole agricultural industry affected and therefore the calculated values can be used for the comparison of individual corporations. In the first step authors analyzed the components of liquidity ratios. Table 1 shows the proportion of current assets and current liabilities in the analyzed set of enterprises.

It can be concluded, than more than a half of current assets of agricultural enterprises in 2011 were inventories (50.5%) and 36,5% short-term receivables. Out of current liabilities in 2011 the highest amount was linked to short-term liabilities (60.4%), current bank loans (23.9%) and accruals.

Over the observed period the highest increase was recorded in current bank loans.

Current ratio in Slovak agriculture

The ratio describes the relation between current assets and current liabilities. The values for agricultural enterprises are in the Table 2 and chart shown in Figure 1.

In 2011 for current ratio the situation in Slovak agriculture was as follows:

- 10% of the best enterprises regarding the current ratio had the ratio between current assets and current liabilities 5.53 and higher (upper decile),
- 25% of the best enterprises regarding the current ratio had the ratio between current assets and current liabilities 2.72 and higher (upper quartille),
- the average current ratio was 2.46,
- 50% of the enterprises had current ratio in the range from 0 to 1.30 and 50% of enterprises 1.30 and higher (median),
- 25% of the enterprises with the weakest current ratio had the ratio between 0 to 0.78 (lower quartile),
- 10% of the enterprises with the weakest current ratio had the ratio between 0 to 0.63 (lower decile).

Based on the recommended values for current ratio in the literature (2 resp. 1.5) it can be concluded, that more than 50% of the observed enterprises in Slovak agriculture do not have the recommended liquidity. This is due to the specifics of the industry – agriculture.

Table 2. Statistics for current ratio in Slovak agriculture in 2004–2011

Specification	2004	2005	2006	2007	2008	2009	2010	2011
Upper decile	4.63	4.30	5.00	5.00	4.50	5.07	5.26	5.53
Upper quartile	2.70	2.41	2.60	2.52	2.33	2.23	2.47	2.72
Average	2.32	2.19	2.51	2.37	2.38	2.35	2.45	2.46
Median	1.44	1.29	1.35	1.29	1.23	1.18	1.26	1.30
Lower quartile	0.87	0.80	0.82	0.81	0.82	0.75	0.73	0.78
Lower decile	0.53	0.47	0.49	0.50	0.51	0.45	0.44	0.63

Source: Own calculation.

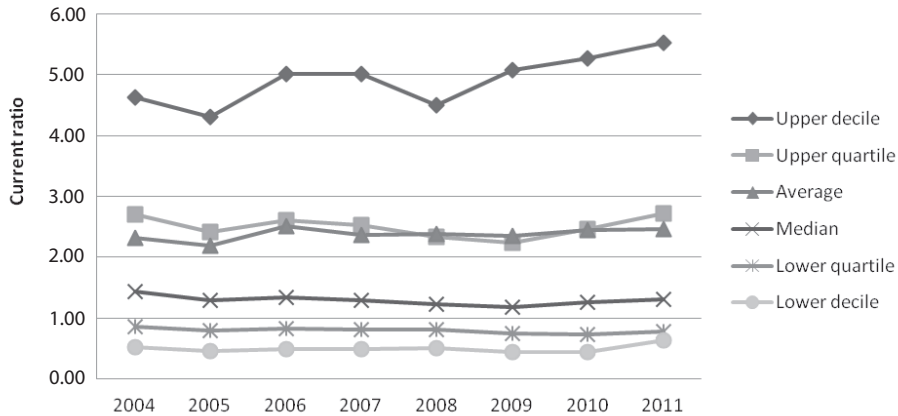

Fig. 1. Current ratio development

Source: Own calculation, Table 2.

Quick ratio (Acid test) in Slovak agriculture

Quick ratio in comparison with current ratio focuses on the more liquid components of current assets. It does not take into account Inventories. The calculated results of the quick ratio are in the Table 3.

In 2011 for quick ratio authors concluded the following:

- 10% of the best enterprises regarding the quick ratio reached values 3.47 and higher,
- 25% of the best enterprises regarding the quick ratio had results 1.34 and higher,
- the average quick ratio was 1.33,
- 50% of the enterprises had quick ratio in the range from 0 to 0.6 and 50% of enterprises 0.6 and higher,
- 25% of the enterprises with the weakest quick ratio had results between 0 to 0.29,
- 10% of the enterprises with the weakest quick ratio had the ratio between 0 to 0.19.

Table 3. Statistics for quick ratio in Slovak agriculture

Specification	2004	2005	2006	2007	2008	2009	2010	2011
Upper decile	2.31	2.35	2.89	2.98	2.51	3.13	3.16	3.47
Upper quartile	1.23	1.23	1.37	1.35	1.13	1.19	1.30	1.34
Average	1.13	1.21	1.42	1.38	1.33	1.36	1.43	1.33
Median	0.64	0.65	0.67	0.68	0.58	0.60	0.57	0.60
Lower quartile	0.32	0.35	0.35	0.37	0.30	0.28	0.28	0.29
Lower decile	0.18	0.17	0.18	0.20	0.16	0.14	0.14	0.19

Source: Own calculation.

Recommended values for quick ratio range from 1 to 1.5. This recommended values were recorded only in case of 31.4% of observed enterprises. Figure 2 shows the trend of increasing differences in quick ratio between individual enterprises.

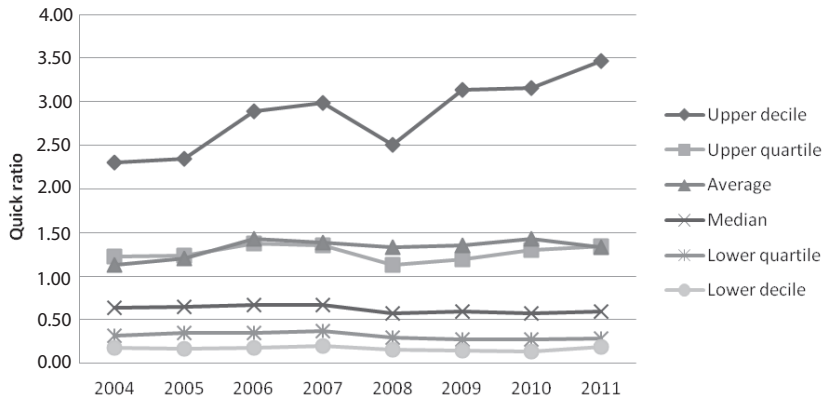

Fig. 2. Quick ratio development

Source: Own calculation, Table 3.

Cash ratio in Slovak agriculture

Cash ratio is the strict out of all liquidity ratios. It takes into account only the most liquid form of current assets – cash and short-term securities. Table 4 shows the cash ratio development in Slovak agriculture.

In 2011 for cash ratio authors concluded the following:

- 10% of the best enterprises regarding the cash ratio reached values 1.562 and higher,
- 25% of the best enterprises regarding the cash ratio had results 0.468 and higher,
- the average cash ratio was 0.605,
- 50% of the enterprises had cash ratio in the range from 0 to 0.092 and 50% of enterprises 0.092 and higher,
- 25% of the enterprises with the weakest cash ratio had results between 0 to 0.016,
- 10% of the enterprises with the weakest cash ratio had the ratio between 0 to 0.003.

Table 4. Statistics for cash ratio in Slovak agriculture in 2004–2011

Specification	2004	2005	2006	2007	2008	2009	2010	2011
Upper decile	1.154	1.295	1.626	1.551	1.267	1.600	1.775	1.562
Upper quartile	0.476	0.521	0.491	0.499	0.393	0.402	0.406	0.468
Average	0.531	0.620	0.663	0.658	0.584	0.643	0.748	0.605
Median	0.169	0.181	0.137	0.147	0.094	0.094	0.096	0.092
Lower quartile	0.037	0.045	0.030	0.030	0.021	0.019	0.017	0.016
Lower decile	0.009	0.008	0.007	0.007	0.004	0.004	0.003	0.003

Source: Own calculation.

Cash ratio recommended values range from 0.2 to 0.6. Only 16.4% out of observed enterprises had values in this range. 61.6% of enterprises had cash ratio below 0.2. Figure 3 shows the trend of increasing differences in cash ratio between individual enterprises.

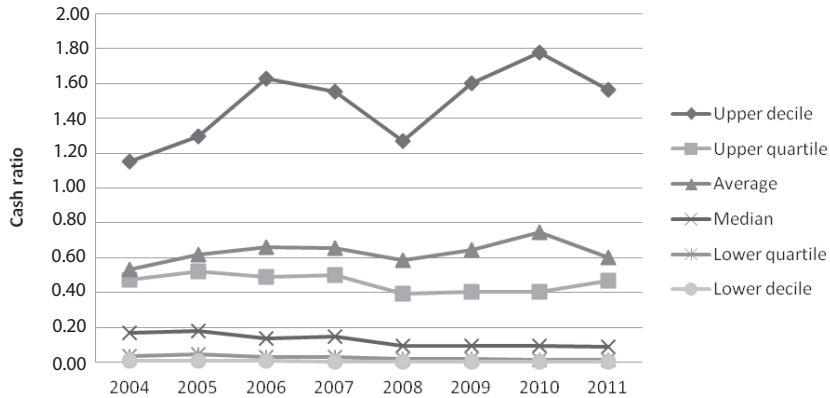

Fig. 3. Cash ratio development

Source: Own calculation, Table 4.

CONCLUSIONS

The results of the analysis presented in the article in form of descriptive statistics (decile, quartile, median and average) can be used for comparison of individual company with the competitors. Also creditors such as banks can compare the individual performance with the whole industry, because presented values cover 80% of the arable land in Slovakia.

The analysis of liquidity ratios in Slovak agriculture shows that generally recommended values for current ratio, quick ratio and cash ratio are in most cases not reached by individual enterprises. Agriculture as industry can be characterized as industry with low liquidity. In case of each ratio the generally recommended value was recorded only by 25% of the best companies regarding liquidity (upper quartile). Therefore the value of upper quartile can be used as a benchmark for liquidity ratios. Based on the development over the period 2004–2011 the changes in the industry show the increasing volatility in liquidity ratios. The best enterprises are improving the liquidity, but most of the companies remain unchanged. Further research is needed to divide the set of enterprises according to the legal form and type of production (animal or crop production) to find out the reason for differences in liquidity.

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WARTOŚCI WZORCOWE WSKAŹNIKÓW PŁYNNOŚCI W ROLNICTWIE SŁOWACKIM

Streszczenie. Podstawowym celem pracy jest określenie finansowych wartości odniesienia dla wskaźników płynności w rolnictwie Słowacji. Płynność określono z wykorzystaniem wskaźników płynności bieżącej, szybkiej i natychmiastowej, które są tradycyjnymi miernikami płynności. Wykorzystując metody statystyki opisowej, autorzy określili płynność w ponad 1100 przedsiębiorstwach w poszczególnych latach w okresie 2004–2011. Na podstawie wyników można stwierdzić, że powszechnie zalecane wartości dla wskaźników płynności nie mogą być stosowane w rolnictwie. Płynność w rolnictwie jest znacznie niższa i dlatego wyniki przedstawione w tym artykule mogą być stosowane jako punkt odniesienia dla porównania poszczególnych przedsiębiorstw.

Słowa kluczowe: wskaźniki płynności, benchmarking, rolnictwo, Słowacja

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