

The assessment of the financial performance based upon ratios. A comparative analysis

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Abstract. This study presents a comparative analysis model of the financial performance for two large companies operating in the field of production and trading of car parts. The model has as a starting point the assessment of the dynamics of liquidity, sales and profitability ratios (for a period of ten years). Based upon the preliminary results, the compound annual growth ratios were calculated and the trends (for the following seven years) were determined. All of these have made it possible to identify the performance profiles for the two companies. The study reveals that the financial performance was made more vulnerable by the insufficient cash availability (the cash reserves are not adequate for the current debt, assets and sales volume) and by the low levels of the recorded profit ratios (measured by the net profit margin, ROE and the return on shares). Although the cash and profit analysis reveals a cascade increase, the sales performance and return on equity ratios remain burdened by too high operating costs. To improve liquidity and profitability have been identified measures to meet the objective of ensuring the business sustainability.

1. Introduction

In a highly competitive business environment, managers need to monitor the performance and critical success factors of the companies they lead. The investors, the business partners, but also the competitors are directly interested in the financial performance of a company. Therefore, the performance analysis is pursued both inside and outside the business. This was the reason why the assessment of performance gained considerable attention in the research plan [1].

The objective of the research was to provide a comparative analysis model of the financial performance. To achieve this goal we structured the paper as follows: the first part presents the most important milestones of the research on performance assessment; the second part presents the methodology of research; in the third part the information describing the performance is presented and interpreted; then, the foreseeable performance profile has been identified and several measures have been highlighted, which can help to strengthen the financial performance; in the last part are presented the conclusions, limits and futures directions of the research.

2. Review of literature

During the last two decades, measuring the corporate performance has been the focus of attention not only in the academic field but also in the business field [2]. Since 1995, the performance assessment has been defined as a process of quantifying the efficiency and effectiveness of actions based upon a set of indicators [3]. More than 10 years later, Moullin [4] extends the scope of performance assessment and

moved it to the area of organizational quality assessment and determination of the value for customers and other stakeholders

Subsequently, as performance was accepted as a barometer which presented “the current business situation and trends in its development, helping the company to decide where to go” [5], the performance assessment has incorporated into its sphere of interest and has identified the future business development trends. We subscribe to the opinion according to which “the company performance is the measurement of what had been achieved by a company which shows good conditions for certain periods of time” [6]. The ultimate goal of the performance assessment is to know the current state and to make predictions about business efficiency and effectiveness.

The theoretical and empirical research in the management area has facilitated the development of performance assessment methods. The first methods were based upon the prioritization of the financial-accounting information (such as ratio analysis, Du Pont analysis). Afterwards, the research focused upon methods based on [7]: accounting data; quality management; causal relations; assessment of business processes; system balancing. The latest concerns have led to the development of multi-criteria performance assessment methods.

The literature draws attention to the fact that the financial ratios are not absolute criteria; the financial ratios “are no substitute for a crystal ball. They are just a convenient way to summarize large quantities of financial data and to compare firms’ performance” [8]. The significant financial ratios are utilized to reveal changes in the company financial position and performance and to illustrate the trends and nature of the changes.

3. Methodology

The assessment of the financial performance of the two companies was carried out using the information for the period 2008-2017, a period characterized by intense turmoil (crises, labour migration and political instability). Secondary sources of information (annual financial statements and audit reports) were accessed to build the database. In order to obtain significant conclusions (on the management efficiency, strengths and weaknesses of companies, the future evolution index, etc.), the trends for the analysed reports were determined (for a 7-year forecast horizon). Two performance profiles were drawn: one at the end of the 10 years analysed and one at the end of the 7-year forecast. Drawing on the identified situations for the two moments, measures have been identified to improve financial performance and ensure business sustainability.

The analysis model we proposed was simple in order to make it operational, not only by big listed companies (which perform computerized financial forecasts), but also by small and medium-sized enterprises. This was also the reason why the data processing was done using the analysis toolkit provided by Excel.

4. Data analysis and interpretation

The current ratio. The evolution of the ratio between the current assets and current liabilities for the period 2008-2017 has been analysed. The generic reference range for this indicator is [1-2]; if the indicator takes subunit values, the company does not have enough liquid assets to cover current liabilities. In practice, it is recognized that a current liquidity of less than 0.8 is a negative signal (especially for companies that are financed through operating credits). If the indicator exceeds the maximum limit of the specified range, the company has excess liquidity (for which it does not identify higher return alternatives). In this case also, the practice has revealed that sectors characterized by a higher asset rotation also need higher current liquidity to operate in good conditions.

From the perspective of current liquidity, the two analysed companies show relatively different situations (table 1). With the exception of 2008 (when the current liquidity was sub-unitary), company “A” recorded a good current liquidity (even if it presented a slight decrease during the last 3 years); the average of the indicator was 1.53. Company “B” had a supra-unitary and growing current ratio over the analysed period (indicator averaging 1.51). For company “A”, the compound annual growth rate of the current assets is significantly higher than current liabilities ($10.33\% > 2.98\%$). In the case of the

company “B”, the compound annual growth rates are approximately equal (8.39% and 8.36% respectively). Therefore, there are significant differences in the annual growth rate of the current ratio (A: 7.13 > B: 0.03%).

Table 1. Current ratio, quick ratio, and cash ratio

Com- panies	Current ratio		Quick ratio		Cash ratio	
	Indicators (millions RON)	CAGR%	Indicators (millions RON)	CAGR%	Indicators (millions RON)	CAGR%
A	Current Assets	10.33%	Liquid Assets	10.29%	Cash	18.79%
	Current Liabilities	2.98%	Current Liabilities	2.98%	Current Liabilities	2.98%
	Current Ratio	7.13%	Quick Ratio	7.10%	Cash Ratio	15.35%
	Average = 1.53	-	Average = 0.93	-	Average = 0.04	-
B	current Assets	8.39%	Liquid Assets	13.18%	Cash	57.13%
	Current Liabilities	8.36%	Current Liabilities	8.36%	Current Liabilities	8.36%
	Current Ratio	0.03%	Quick Ratio	4.45%	Cash Ratio	45.01%
	Average = 1.51	-	Average = 0.84	-	Average = 0.23	-

Source: Own processing based on Annual Financial Statements (2008-2017)

The quick ratio. The ratio between liquid assets and current liabilities expresses the extent to which the company has sufficient liquid assets (receivables and cash availability) to discharge its short-term liabilities. The reference values for this indicator are [0.65-1]. In practice, lower values for this ratio are admitted only if the stocks have a large share in the total current assets.

The first table presents the liquidity situation without the influence of stocks (out of the total current assets the stocks have been eliminated). The first years of the analysis period are marked by the lack of liquid assets; this period is followed by a few years in which the *quick ratio* exceeds the maximum limit of the reference range. The explanation can be given by a too high volume of available funds or by a too high a volume of receivables; the clarification of this aspect will be achieved by analysing the cash ratio.

The differences between the two companies become more obvious when analysing the compound annual growth rate (GAGR). The gap between CAGR_liquid assets and CAGR_liquid liabilities is favourable and positive for both companies; although both are experiencing the *quick ratio* decline over the last four years of analysis (company “A” presents a better situation).

The cash ratio. The ratio between cash and current liabilities shows the ability of an enterprise to pay its short-term debt based upon the most liquid assets (cash). The reference values for this indicator are [0.35-0.65]. The data shows the most serious problem of the analysed companies: the lack of cash stocks. Although the compound annual growth rates of the cash was much higher than the compound annual growth rate of short-term debt, company “A” recorded a cash deficit throughout the analysed period.

The years that followed the onset of the crisis (2008–2012) were unfavourable (in terms of cash stock) for company “B” also. It has managed to recover, but for a short time (2013-2016). In this case, the analysis of compound annual growth rates reveals a large gap between cash availability and current liabilities; this aspect (normally favourable) should be interpreted with caution when the annual series start with extremely low values. The nominal increase of 46 times the stock availability (from 0.004 to 0.184 million RON) and a 45.01% compound annual growth rate has allowed only the temporary improvement of the cash ratio.

For company “A”, the shortage of cash stocks is a problem that could not be fixed in 10 years (the data indicates only an improvement in the cash deficit). For company “B” the more intense concerns in this respect are obvious.

The cash to sale ratio. This ratio, which compares the cash balance at the end of the year with the revenues earned on sales indicates the effectiveness of current funding policies; a very low value signals not only the insufficiency of the cash stock but also the absence of buffer funds meant to ensure liquidity in case of late receipts. The data in Table 1 shows that the cash shortages affect not only the cash ratio but also the solvency (understood as the ability to deal with payments due).

Although the volume of sales was consistent and increased over the analysed period, the cash stocks of the two companies remained moderate. This is due to the fact that sales revenues are immediately directed to the payment of current liabilities (invoices, salaries, credit rates). From the very low cash-to-sales ratio, we can understand that the liquidity problem is associated with another problem, the business's profitability (the sustained sales growth is shaken by high operational costs, which makes the cash generated by sales to be immediately distributed for the payment of bills, wages, taxes, etc.). Compared to company „A”, the data presented for company „B” reveals a wider concern to fix this problem.

The profit margin ratio. The ratio of net profit to total sales (known as *profit margin*) shows the efficiency with which a company uses (material, human, financial, informational and time) resources to execute and sell products in way profitably. In 2008, company “A” recorded 0.2 RON net profit for every 100 RON sales (which was very low); in 2017, for each 100 RON sales revenue, the company recorded 5.4 RON net profit. The situation has improved, but the profit margin remains at a sensitive level. Company “B” presents a more precarious position (table 2). The analysis from the perspective of the compound annual growth rate indicates a net profit growth (54.36% and 49.79%) faster than the sales growth (8.58% and 12.94% respectively). Even in this scenario, the situation of the two companies does not improve enough.

Table 2. Profit margin ratio, return on equity, and profit per share

Com- panies	Profit margin ratio		Return on equity (ROE)		Profit per share	
	Indicators (millions RON)	CAGR%	Indicators (millions RON)	CAGR%	Indicators (millions)	CAGR%
A	Net Profit	54.36%	Net profit (NP)	54.35%	Net profit (RON)	54.35%
	Total Sales	8.58%	Own Equity (OE)	4.43%	No. of shares	0.00%
	Net profit/total sales	42.17%	ROE = NP/OE	47.81%	Profit per share	54.36%
	Average = 0.04	-	Average = 0.07	-	Average = 0.10	-
B	Net Profit	49.79%	Net profit (NP)	49.79%	Net profit (RON)	49.79%
	Total Sales	12.94%	Own Equity (OE)	10.44%	No. of shares	4.65%
	Net profit/total sales	32.63%	ROE = NP/OE	35.63%	Profit per share	43.13%
	Average = 0.03	-	Average = 0.04	-	Average = 0.09	-

Source: Own processing based on Annual Financial Statements (2008-2017)

ROE (return on equity). Profitability shows the size of company financial performance during one period [9]. At the same time, the return on capital is an autonomous and complete criterion of economic efficiency. The ROE provides information on the business profitability and equity rotation. To assess the dynamics, the ROE can be compared to the average interest rate on the banking market (against which it should be higher). During the first two years of the analysed period, the ratios of return were extremely low (0.2%). Although annual compound growth rates of net profits are consistent (54.35% and 49.79% respectively), towards the end of the period the return on equity remains low (9.4% for company “A” and 5.8% for company “B”). Starting in 2015, company “A” manages to record a return on equity higher than the interest lending rate (on loans), but the gap is not enough to motivate to take the risk of a business (as opposed to assuming the risks of a credit relationship). The maximum gap was registered in 2016, when ROE was 14.2% and interest rate was 6.6%. For company “B”, in the period 2008-2015, the return on equity remains lower than the interest rate on the banking market. In the period 2016-2017, it increased insignificantly above the interest rate (at the end of the period, return on equity was 5.8%, and interest rate was 5.5%).

Profit per share. This ratio (earning per share) reflects the effective return of a company's shares. The information in Table 2 shows that only one of the two companies maintained the same number of shares throughout the analysed period (this is the case of company “A”, which has an annual compound earning growth rate of 54,35%). In 2010 company “B” has achieved an increase in the share capital. This operation did not materialize in the consolidation of the cash flow but only in the incorporation of

the reserves (from re-evaluation) into the share capital. With a compound annual growth rate of 43.13%, the earning per share went from 0.004 to 0.145 RON per share. Given that the value of a share before the increase was 0.25 RON, and after the increase was 0.45 RON, the share return ratio (determined as the ratio between the profit per share and the nominal value of the share) decreased from 40% to 32%; this has occurred under the conditions the share capital has a 17.95% share in the total own equity.

At the beginning of the analysed period, company "A" recorded a return on 2% (profit per share/nominal value of share); at the end of the period it had a return ratio of 176%. This increase does not impress because the share capital (representing the shareholders' contributions) represented only 3.6% of the total equity (in 2017). By analysing the size of the profit on a share, we can notice that the performance balance is in favour of company "B" (although the data in table 3 indicates the opposite).

5. Findings and suggestions

Table 3 provides the information needed to build the financial performance profile from the perspective of *liquidity, cash and profitability positions*. Between 2008 and 2017, the current ratio and the quick ratio contributed to strengthening the financial performance. Instead, the trend line indicates values superior to those admitted; therefore, the attention of financial officers should focus upon monitoring the size of stocks and receivables. The measures may concern: a) the limitation of stocks only to those which ensure the continuity of production processes; b) adopting more restrictive policies related to customer payment facilities (their receiving at the time of the transaction). These measures will generate additional cash flows to improve the *cash ratio*. The financial managers should base appropriate cash flow management strategies, not just to ensure the compliance with financial rigor, but also to set up buffer stocks in order to minimize the liquidity risk. Although the data reveals that a company can survive without sufficient cash, we draw attention to the fact that the prospect of strengthening financial performance is badly affected. In order to avoid sub/super sizing of cash stocks, it is important to achieve and track receiving and payment budgets.

Table 3. Data for the "A" and "B" companies

Com- panies	Ratios	2008	2017	2008-2017		Predictions		
				CAGR	Remarks	Trend line	2024	Remarks
"A"	Current ratio	0.81	1.62	7.13%	Favourable	$y = 0.1013x + 0.9717$	2.69	Oversize
	Quick ratio	0.46	0.91	7.10%	Favourable	$y = 0.0523x + 0.6438$	1.53	Oversize
	Cash ratio	0.005	0.019	15.3%	Unfavourable	$y = 0.0030x + 0.0273$	0.08	Unfavourable
	Cash/ Total sales	0.002	0.004	9.4%	Unfavourable	$y = 0.0005x + 0.0070$	0.016	Unfavourable
	Net profit/Total sales	0.002	0.054	42.17%	Unfavourable	$y = 0.0077x + 0.0012$	0.129	Favourable
	ROE	0.002	0.094	47.81%	Acceptable	$y = 0.0127x - 0.0017$	0.215	Favourable
	Profit per share	0.002	0.176	54.36%	Irrelevant	$y = 0.0227x - 0.0199$	0.336	Favourable
"B"	Current ratio	1.69	1.70	0.03%	Favourable	$y = 0.0328x + 1.3305$	1.89	Favourable
	Quick ratio	0.65	0.59	4.45%	Favourable	$y = 0.0766x + 0.4206$	1.72	Oversize
	Cash ratio	0.004	0.184	45.01%	Unfavourable	$y = 0.0611x - 0.1077$	0.93	Oversize
	Cash/ Total sales	0.002	0.059	39.13%	Unfavourable	$y = 0.0211x - 0.0342$	0.324	Favourable
	Net profit/Total sales	0.002	0.037	32.63%	Unfavourable	$y = 0.0054x - 0.0015$	0.090	Favourable
	ROE	0.003	0.058	35.63%	Unfavourable	$y = 0.0083x - 0.0018$	0.139	Favourable
	Profit per share	0.008	0.145	43.13%	Unfavourable	$y = 0.0193x - 0.0201$	0.308	Favourable

Source: Own processing

In the emerging economies the crisis began with 2009. This scenario may explain the liquidity issues of the two companies which were analysed. The sudden shift from a normal state to a state of crisis has not provided companies with the time to take measures to strengthen liquidity (cash). During the crisis (2009-2011), the changes in financing habits (in the sense of diminishing the debt dependency) reduced the vulnerability towards financiers, but increased the risk of shortage of highly liquid assets (cash).

Although there were no acceptable levels in the 2007-2017 period, the last three indicators of the financial performance appreciation (*net profit per total sales, ROE, and profit per share*) have a

favourable trend line. In order to maintain this trend, the financial officers must achieve a balance between profitability and liquidity. The difficulty of this strategy is fuelled by the fact that the more liquid assets have a lower yield (and the less liquid assets have a higher return).

6. Conclusions

For managers and investors, the most accessible sources of obtaining data are the annual financial statements. However, these documents provide only a retrospective image of the financial position and operating results. Both managers and investors need forecasts that provide details of sales dynamics, management efficiency, business opportunities and threats, etc. In the support thereof, we proposed and exemplified a model of financial performance assessment, based, as a starting point, upon liquidity, sales and profitability ratios. The retrospective analysis of these ratios allowed us to identify a performance profile. At the end of the 7th-year forecast, the financial performance remains affected by the lack of cash stocks (for both companies). The efficient liquidity management is a prerequisite for increased profitability. Consequently, the managers must achieve a balance between profitability and liquidity.

During the three years after the onset of the crisis company „A” managed to raise the ratio of financial return. In the years that followed the profitability had a slightly upward trend. It can be inferred that its strategy has focused more upon profitability against the liquidity of the business. Throughout the analysed period, company “B” presented lower levels of profitability than company “A” (a part of the gap was taken over by the size differences between the two companies). In this case, the strategy aimed at controlling liquidity against profitability.

The limits and future lines of research. The study exploits only financial and accounting information and focuses only upon the financial performance research. The taking into account of the macroeconomic variables allowed only some logical deductions. For the research development, we are considering extending the analyses to other determinants of performance, especially of non-financial nature. The ultimate goal of the efforts is to perform a strategic performance measurement system.

References

- [1] Salem M A, Hasnan N and Osman N H 2012 Balanced Scorecard: weaknesses, strengths as its ability as a performance management system versus other performance management systems *Journal of Environment and Earth Science* vol 2(9) 1-10
- [2] Rajnoha R, Lesníková P and Korauš A 2016 From Financial Measures to Strategic Performance Measurement System and Corporate Sustainability: Empirical Evidence from Slovakia *Economics and Sociology* 9(4) 134-52
- [3] Neely A, Gregory M and Platts K 1995 Performance measurement system design: A literature review and research agenda *International Journal of Operations & Production Management* vol 15(4) 80-116
- [4] Moullin M 2007 Performance measurement definitions: Linking performance measurement and organisational excellence *International Journal of Health Care Quality Assurance* vol 20(3) 181-83
- [5] Peleckis K, Krutinis M, Slavinskaitė N 2013 Daugiakriterinis alkoholio pramonės įmonių pagrindinės veiklos efektyvumo vertinimas *Verslo ir teisės aktualijos* vol 8 1-16
- [6] Batchimeg B 2017 Financial Performance Determinants of Organizations: The Case of Mongolian Companies *Journal of Competitiveness* vol 9(3) 22-33
- [7] Narkunienė J and Ulbinaitė A 2018 Comparative analysis of company performance evaluation methods *The International Journal Entrepreneurship and sustainability* vol 6(1) 125-38
- [8] Brealey R A, Mayers S C and Allien F 2017 *Principles of corporate finance* (New York: McGraw-Hill Education)
- [9] Simatupang H J, Purwanti L and Mardiaty E 2019 Determinants of capital structures based on the Pecking Order Theory and Trade-off Theory *Jurnal Keuangan dan Perbankan* vol 23(1) 84-96