



A Consensus on Commonly used Financial Ratios

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Abstract: The practice of using financial ratios in order to enhance the end result of financial analysis has gained much ground and attention in Romania, especially in the context of the country's recent accounting reform. While the added benefit of financial ratio usage for the decision making accounting information user is indubitably valid, a certain degree of confusion is observed when dealing with the issue – in both fields of academia and practice. Our research indicates that this is not an isolated case for Romania, as a diverse range of literature from around the world employs different names and formulas for the same ratio. The purpose of this paper is to compile a conceptual list of 20 ratios that are most commonly used across academic literature, as a basis for future research on the topic of ratio analysis comparability between countries using different reporting systems. Furthermore, a limited benefit for the domestic professional and academic world would be brought in the form of a benchmark, where students and accounting information users could use the present notions as a starting point towards a higher degree of understanding the mechanics of ratio analysis.

Keywords: financial analysis, financial ratios, comparability, accounting information users, limitations

1 Introduction

Accounting information users have a various number of reasons for taking interest in a given company's data output. Managers, for example, not only look into accounting information in order to determine flaws in the company's day to day operations, but also view financial statements as a reflection of their personal success or failure in running the company. At the same time, investors examine accounting information in order to obtain reassurance towards the safety of their investment and to gain insight towards their investment's capacity to generate future cash flows. Creditors, also benefit from examining accounting information, as it indicates the borrower's capacity to repay outstanding debt and interest. To this end, accounting information has the potential of answering a large variety of

needs. Accounting information in itself, however, represents nothing but a bulk of data that, in the absence of proper interpretation techniques, brings little benefit to its user. Therefore, accounting information – especially financial information, is commonly subject to financial analysis. In a very broad sense, financial analysis represents the set of examination and interpretation techniques of financial statements (Taylor, p. 62). In addition to the widely used vertical and horizontal analysis of the financial statements, ratio analysis is a key financial analysis technique not only towards evaluating the performance and financial condition of an entity (Deran et al, p 946), but also a useful tool for internal control and planning (Khalad et al, p. 620).

While the recent evolution of financial ratios indicates a large potential in aiding the decision making process, excessive or improper use may be equally detrimental. Firstly, the present paper highlights the fact that, in addition to the inherent limitations of ratio analysis, the process of accounting convergence brings further disadvantages on the practice that previously were not applicable. Secondly, the absence of an official institution regulating financial ratios leads to a general lack of consensus when using financial ratios in practice. The large number of ratios in use, often times labeled or computed according to each professionals' personal preference or academics' various understanding on the matter, combined with the new restraints brought upon the method by the harmonization debate, influences the information users' interpretation of results; which in turn may lead to bad economic choices. Finally, once the problem has been exposed, the paper offers a comprehensive list of commonly accepted financial ratios – in their various forms, in an attempt to educate accounting information users that are not proficient on detailed aspects of financial terms.

2 New restraints and lack of agreement upon using financial ratios

The concept of financial ratios dates back to the XIXth century United States, and its initial use is limited to determining bankruptcy. The evolution of corporate business at the time required, however, a regulated form of balance sheet and income statement. Together with this trend, especially commercial banks, demanded an improvement in the manner accounting data is interpreted. Therefore, by the 1890s the current ratio was developed, being the only ratio available for years to come (Mankin et al, p. 197). Together with further events that resulted in an increase in the need for higher accounting information quality, the number of financial ratios have increased and their wide spread use have gained popularity outside the circle of banking industry users. By the mid to late XXth century, users realized that the study of the relationship between linked elements of various financial statements can yield valuable information regarding

an entity's financial condition and earning capacity (Andrijasevic, p. 118). Today, a large variety of financial ratios are employed by both professionals in conducting financial analysis, and professors in the academic environment; having as information source all of the four mandatory financial statements – i.e. balance sheet, income statement, statement of cash flow, and statement of retained earnings; revealing thus aspects related to a given company's liquidity, solvency, activity, profitability and operations.

According to *Baron's Dictionary of Finance and Investment Terms*, ratio analysis is a method used in aiding the decision making process, based on the relationship between figures presented in financial statements to the end of determining value and evaluating risk. This goal is mainly achieved by comparing current results with historical ratio results within a given company, as well as by comparing results to the performance of other similar companies across the industry (Ibarra, p. 92). The current context of globalization and international business practices, imposes a new set of short comings upon the method, in addition to the already known ones. Therefore, from a normative stand point, company to company comparability of results is relevant only when the company that is being subject to ratio analysis employs the same financial reporting standards as the company to whom it is being compared. Once this requirement is met, the topic of intra company comparability is further being limited by a number of accounting policy choices. For example, it is commonly agreed that IFRS allows a great deal of flexibility in the management's accounting choices, choices which in turn will shape the reported figures that describe the financial performance and position of the company. While two companies using IFRS may record the same transactions, management's judgments and estimates pertaining to matters such as property, plant and equipment, bad debt expenses, leases, inventory costing, or provisions may add subjectivity when comparing the results of a company to the other (Portz et al, p. 410 – 412).

Furthermore, the instance of comparing ratio results to historical and/or to budgeted figures, is a common and integrated practice in the professional trade of financial analysis, in addition to the above mentioned practice of comparing figures to benchmarks such as industry standards or competing companies. (Taylor, p. 65). Evaluating this second practice that defines the ratio analysis methodology in the context of financial reporting harmonization efforts, proves to yield unreliable results when a certain company chooses to shift from an existing national financial reporting system to IFRS. In this particular case certain limitations or permissions under the previous system, especially related to asset valuation and write-ups, may not be compatible with the new system, therefore certain transitional adjustments will inevitably chance the form of future accounting information; making comparison with historical data a rather daunting task. While the real economic standing and value of the company remains unchanged, the aftermath of IFRS convergence will have a lasting effect on reported accounting information (Heino et al, p. 8).

While the above limiting arguments are somewhat recent inherent issues, there is a less tackled problem related to financial ratio analysis that finds its source in the used terminology and manner in which, both analysts and academics choose to approach the currently discussed method. Unlimited flexibility in applying financial ratios has led to a great deal of confusion, as various academic textbooks across the business field of study and investment institutions, lack consistency in ratio names and mathematical formulas (Mankin et al, p. 196). This argument can be easily tested by choosing an arbitrary publicly traded company, and by consulting a number of popular investment website. Thus, it can be observed that for a number of same ratios different reputable websites yield different values. Furthermore, from an upper education stand point, this issue is not only limited to the teaching area where students meet a different presentation of ratios depending on classes attended for their business major requirements, but also extends to the research field – where academics at an international level use financial ratios as defined by local legislation (where applicable) and national consensus.

3 The impossibility of proposing a singular status quo

Given the complexity of the issue at hand, fueled by the rapid changes induced by the newly emerging international reporting standards, there is no singular solution that can enhance the comprehensive aspect of ratio analysis in order to simplify the decision making process for non proficient accounting information users. The current climate in the accounting world has brought further limitations to ratio analysis. The effects of these limitations, however, can be minimized by higher levels of awareness on behalf of decision makers, especially when dealing with accounting data subject to IFRS convergence. The negative effects of the lack of consistency upon using formulas and definitions for financial ratios, on the other hand, is a more delicate problem as cross cultural barriers may limit the joint effort of academics towards using a common globalized language when teaching future accounting information users and decision makers the advantages and disadvantages of ratio analysis in the present context.

This is more so valid for the case of Romania, where the application of financial ratios is in an infat stage. From a legal stand point, the use of a rudimentary financial ratio analysis was explicitly required under ordinance 3055 of 2009, section 9: “Content of explanatory notes to yearly financial statements”. This requirement is no longer applicable under the subsequent ordinance number 1802 of 2014, which does not mention nor offer a model for financial ratios to be presented in the notes to the financial statements or under the executive report. While large international corporations in Romania continue to use financial ratios for internal use, we view this to be a major setback in the Romanian legislation, as accounting information users that deal with small and medium enterprises lack the

necessary tools toward interpreting financial information to its full extent. In other words, where the legislation fails to offer a common platform of ratio analysis for all Romanian accounting information users, the academic world cannot always agree on what the content of that platform should be. Often times different terms are used to label the same concepts, or identical terms describe concepts using incompliant mathematical algorithms. To this end, we propose the following table of the top most commonly used financial ratios, which together with the above explanations, attempts to offer a formal platform for improving the decision making process.

No	Ratio Name	Financial information aspect enhanced	Mathematical Formula	Consensus on usage as % found in used sample	Other names found
1.	Current Ratio	Ability to meet short term debt	$\frac{\text{current assets}}{\text{current liabilities}}$	100%	
2.	Quick Ratio	Ability to meet immediate short term debt	$\frac{\text{cash} + \text{short term investments} + \text{current receivables}}{\text{current liabilities}}$	100%	Acit Test Ratio
3.	Inventory Turnover Ratio	Inventory management efficiency	$\frac{\text{cost of goods sold}}{\text{net inventory}}$	100%	
4.	Days Sales in inventory	Liquidity of Inventory	$\frac{\text{ending inventory}}{\text{cost of goods sold}} \times 365$	100%	Inventory Turn-over Ratio
5.	Return on Assets	Profitability of total assets	$\frac{\text{net income}}{\text{average total assets}}$	100%	
6.	Accounts Receivable turnover ratio	Efficiency in collecting outstanding receivables	$\frac{\text{net sales}}{\text{average accounts receivable}}$	85.7%	
7.	Days sales uncollected	Inventory liquidity	$\frac{\text{accounts receivable}}{\text{net sales}} \times 365$	85.7%	Avarage collection period OR Days Sales

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8.	Profit margin ratio	Income per unit of currency	$\frac{\text{net income}}{\text{net sales}}$	85.7%	Return on Sales OR Return on Profit Mark
9.	Return on Equity	Ivestment profitability	$\frac{\text{net income} - \text{preferred dividends}}{\text{average stock } \square \text{older s' euqity}}$	85.7%	Return on earned capital
10.	Times Interest Earned	Capacity of meeting interest paymnet	$\frac{\text{EBIT}}{\text{interest earned}}$	71.4%	Interest Coverege
11.	Total Asset Turover	Capacity of assets in assisting sales	$\frac{\text{net sales}}{\text{average total assets}}$	71.4%	Asset Turnover Ratio
12.	Debt Ratio	Financing and credig leverage	$\frac{\text{total liabilities}}{\text{total assets}}$	54.1%	
13.	Debt to Equity Ratio	Debt to equity relationship	$\frac{\text{total liabilities}}{\text{total equity}}$	54.1%	Total debt to equity
14.	Earnings per Share	Income for each unit of share	$\frac{\text{net income} - \text{preferred dividends}}{\text{weig } \square \text{ted average common s } \square \text{ares outstanding}}$	54.1%	Basic profit/shar e
15.	PE Ratio	Relationship between market valure and unit of share	$\frac{\text{market price per common s } \square \text{are}}{\text{earnings per s } \square \text{are}}$	54.1%	
16.	Cash Ratio	Relationship between liquid assets and current liabilities	$\frac{\text{cas } \square + \text{marketable common s } \square \text{ares}}{\text{current liabilities}}$	42.9%	

17.	Interest Burden	Capacity of meeting interest payment	$\frac{EBIT - interest\ expenses}{EBIT}$	28.6%	
18.	Divident Yield	Cash return for each unit of share	$\frac{annual\ cas\ \div\ dividends\ paid\ per\ s\ \div\ are}{market\ price\ per\ s\ \div\ are}$	28.6%	Divident Payout
19.	Equity Ratio	Proportion of owner financing	$\frac{total\ equity}{total\ assets}$	14.3%	
20.	Cash Turnover Ratio	Capacity to replenish cash ballance	$\frac{net\ sales}{net\ cash}$	14.3%	

Table 1
Most commonly used financial ratios

In addition to the formulas above, we have found a number of ratios being calculated with a different mathematical rendering:

Ratio name	Alternative formula
Quick ratio	$\frac{cas\ \div\ +\ outstanding\ s\ \div\ ares\ +\ claims}{current\ liabilities}$ <p style="text-align: center;">OR</p> $\frac{current\ assets\ -\ inventory}{current\ liabilities}$ <p style="text-align: center;">(the later being cited in the Romanian legislation)</p>
Return on Equity	$\frac{net\ income\ -\ preffered\ dividends}{average\ stock\ \div\ olders'\ equity}$
Day sales uncollected (alt. days to collect receivables)	$\frac{365}{accounts\ receivable\ turnover}$

Table 2
Alatervative Mathematical Formulas

The above tables have been compiled using a rather small sample of 10 items, consisting of a diverse international background of academic textbooks and research papers, with source countries ranging from: the United States of America, the Philippines, Serbia, Croatia, Turkey, Macedonia and Romania. Other research, such as Mankin et al, employs a much larger sample, of textbooks only, revealing a total of 129 distinct ratios in use, and finding as many as four different quick ratio variations. Even so, the presented evidence further supports the above argument that a lack of consensus upon ratio name and computation method burdens the task of forming a just and fair opinion of a company's financial well being. It can be observed that from a total of twenty ratios, only five have a 100% consensus, while the later ratios having a consensus percentage below 30%. While table 1 does not claim to be exhaustive, it clearly indicates that the more complex the ratio the least consensus can be found among the sample participants – this statement being especially valid for equity valuation ratios. Another note that completes table 1 pertains to the lack of cash flow ratios found in the used sample, only 10% of found ratios having source information in the statement of cash flows. This does not indicate the lack of usefulness of cash flow ratios, but rather points out the general preference towards balance sheet and income statement based ratios. Our recommendation to financial information users is not to ignore these ratios, as there is a strong correlation between operating, financing and investment cash inflows and outflows and overall financial standing.

Finally, we point out one last aspect pertaining to tables 1 and 2, by emphasizing the fact that they do not portray a hierarchical listing ranging from the most useful rating usage to the least. The composition of table 1 is made out of 60% balance sheet and income statement ratios, 30% equity ratios and only 10% cash flow ratios. This, however, only reflects the common ground across the sample. In this sense, the sole advantage of the ratios proposed in table 1 is that they have recognition (in accord to their own consensus percentage) across the different accounting practices in the countries that make up the sample population. Having a larger degree of consensus for a particular ratio, does not enhance the conceptual advantages or disadvantages of that particular ratio. It is further revealed that most individual sampled materials undertake complex issues of financial ratio analysis in practice, employing a round number of ratios, out of which only a handful are also used in foreign practice as per our table. In conducting a financial ratio analysis, the practitioner will use ratios homogeneously so that in the context of the type of business conducted by the subject company, as many questions relating to liquidity, solvency, activity, profitability and operations will be answered. Exclusively using the ratios from table 1 is certainly not recommended, as these ratios may leave a number of questions unanswered. Using these ratios, however, in corroboration with other less known and equally useful ratios, may enhance the comparability factor of ratio analysis results across national borders. In the long run, we propose a set of complete commonly accepted ratios with the same label and formula, regardless of corporate or national culture. This task, however, may

be rather challenging in the absence of an international institution that can compile such a list with statutory authority.

4 Conclusions

We conclude that financial ratios are a very powerful tool in aiding the decision making process, but it is not without its shortcomings. Its inherent limitations, amplified in the current context of international convergence, are further affected by the lack of consensus across the professional and academic environment upon terminology usage and computation method. The aim of this paper is to offer a limited platform of education for students and financial information users that are not aware of the complexity of the issue. Lastly, the present paper leaves room for further research in the field of IFRS convergence impact on the present practice of financial ratio analysis.

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