

THEORETICAL PROPOSAL FOR EXPANSION OF ROE WITH NEW SUB-RATIOS

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ABSTRACT

ROE is the ratio of profitability which can be separated into three ratios in Du Pont model. The question is - can it be even more comprehensive with more than three Du Pont ratios; that is can it also include liquidity, market share, break-even point, plan vs. actual, structure of assets and liabilities, structure of fixed costs, etc.? If these can be included in calculation, the financial, management accounting and strategic analysis could be more integrated into one more rounded system. Financial ratio analysis would also integrate into one ratio the usually different areas of analysis, like structure of assets, structure of liabilities, liquidity, turnover, financial leverage, etc. Strategic management and management accounting ratios, developed in the literature and used in business practice, are represented. The article in front of you presents a theoretical proposal through deduction method of how mentioned measures can potentially be included in ROE, resulting in potential benefits in planning and controlling. Integrated different areas of financial ratio analysis, management accounting and strategic analysis each represented with its ratios in profitability measure ratio, provides potentially better view of conditions, profit multipliers and risk the profitability is achieved by. Integration inside profitability measure gives a special qualitative advantage, having in mind that achieved profit is the main goal for owners of the company's equity.

Keywords:

ROE; Market share; Assets; Liabilities; Breakeven point

1. INTRODUCTION

"A primary advantage of ratios is that they can be used to compare the risk and return relationships..." (White, Sondhi, Fried, 2003: 111). If the return on equity and a number of risks involved could be presented in one ratio, the ratio analysis would be improved.

The calculation of ROE ratio is well-known subject in the management accounting manuals. Even more, it is a general knowledge connected with economics student's basic education. It is partial ratio in sense that it can be used only as a profitability measure. However, Du Pont model makes it possible for ROE ratio to be broken into net profit margin, turnover ratio of assets and financial leverage.

Undisputable, all three included measures in ROE are highly useful. Each would show relevant details of the company's profitability. Still, scientific mind could raise a question - is there something more in it? Can the calculation be extended in order to interconnect the liquidity, break-even point, market share at which the profit was generated or even business's key expenses? All these values are anyway interconnected in achieving profitability.

With the aim of including the new variables into ROE calculation, the literature review is firstly presented. It is followed by proposal of a method for including new relevant management variables into the system. Afterwards are presented challenges the management faces and for each challenge one new variable is included into ROE calculation. This is followed by proposed new way to calculate ROE with these new variables included. The end of the article presents potential advantages and challenges the new system of ROE calculation faces.

2. LITERATURE REVIEW

One general statement can be easily claimed - management accounting and ratio analysis go together. Analysis of the past is certainly in the ratio analysis focus. However, it is also the starting point for defining how management expects that relations of main positions in the financial statements should look like in the future.

Any management accounting manual is stating different areas of ratio analysis. These can be separated into activity analysis, liquidity analysis, profitability analysis, long-term debt and solvency analysis (White, Sondhi, Fried, 2003: 111, 120-139). The split can be on liquidity ratios, asset management ratios, debt management ratios, profitability ratios, with addition of market value ratios like price to earnings, book value per share or market to book ratio (Brigham, Houston, 1998: 86-87). The ratios can also be grouped into ratios of structure, ratios of profitability and ratios of management - like turnover ratios (Ranković, 1995: 134-146). The list could go further with stating different classifications. The main point is that these ratios are classified into specific areas, which still remain without an attempt to be integrated into

one ratio number. That is, there is no theoretical explanation how these different areas of analysis can be integrated as a part of one ratio number. Since the profit is the ultimate financial goal of any business, it would be probably the most beneficial if different areas of ratio analysis could be integrated inside one of profitability ratios.

Ratio analysis has been used for different purposes, besides the analysis of financial statements. It is used for understanding at macro level for broad industry classes to find a correspondence between the accounting numbers and basic industry attributes, instead on the level of individual firm (Gupta, Huefner, 1972: 77, 79). Altman tried to combine several measures of ratio analysis into Z-score in the past. The aim was to forecast the future of analyzed company, more precisely - the possibility of failure (Žarkić - Joksimović, 2008: 189-190). His idea was used for predicting small business failure as well. One of the findings was that ratio analysis can make relevant prediction in this case, but that three consecutive financial statements should be used for the prediction in the case of small business. In the case of Altman Z-score, only one year financial statement could be used for this prediction (Edmister, 1972: 1491). The efficiencies of the industries or individual companies in the industries, even the national industry efficiency was measured with ratio analysis as bases. It was used extensively in the banking industry, for understanding performances of main airlines in Taiwan, for 38 global airlines, for evaluating the performance of Greek ports or Chinese ports. The last analysis provides a rounded judgement on port efficiency by consideration of multiple financial ratios and simultaneously using an innovative adopted version of Data Envelopment Analysis in order to combine them into single measure of efficiency. (Humberto Ablandeo - Rosas et al., 2010: 349-351). Ratio analysis is even used as bases in an attempt for measuring the Quality of Employees (Anantadjaya, 2011: 55-67).

Ratio analysis is widely used for managing the business as well. The budgets are usually made taking into consideration planned relation between different parts of financial assets or revenues and expenses. Management transforms the strategic and operational planes into values registered in projected financial statements during the budgeting. Ratio analysis can be used after completion of planned statements for projected "blood picture" of the company. In this manner, it also enters the area of strategic and operational management. Strategic management is implicitly connected with ratio analysis, especially the financial strategy as a part of overall company's strategy. R. Grant states the potential sources of cost advantage inside the defined strategic solution like economies of scale or capacity utilization (Grant, 1992: 153). Having in mind that important and planned strategic decisions are connected with economies of scale or capacity usage, but also with liquidity, structure of assets, structure of liabilities, it would be interesting to have all these strategic decisions integrated into ratio number connected with profitability as ultimate goal. Strategic management accounting was developed with the purpose of providing strategic information for management. It can be segregated into three different area of analysis - products, customers and competition (Ward, 1993: 59-166). Market share as performance indicator can

be relevant here, since it is connected with all previously mentioned – products, customers and competitors. Empirical studies show significantly positive relationship between market share and performance (Lee, 2013: 480). Having this in mind, ratio analysis can be improved for management decisions if market share can be included more directly into ratio analysis. R. Wilson had already introduced market share into management accounting for competitors (Wilson, 1999: 60-65). Connection of market share and ratio analysis, especially connection with achieved profitability, could bring important information to strategic management. Rating agencies declare market share as important information, but its formal and direct inclusion into financial ratio system is not common. Direct inclusion of market share in financial ratio analysis is still open area of research. Strategic management accounting was partly created with the purpose of solving these issues. Still, there is an opinion that strategic management accounting is a long way to go for researching of established field, which would connect strategy, accounting and marketing (Juras, 2014: 82)

Based on findings in literature, it seems that ROE calculation as defined in Du Pont model can be further developed. If other areas of financial analysis, except the net profit margin, turnover of assets and financial leverage, can be included (like structure of assets, liabilities, etc.) as well as strategic management relevant measures (like breakeven, actual against planned, etc.), the ratio analysis can bring higher quality information. Especially, if all these areas can be directly connected with profitability. The extension of Du Pont model in this direction was not found in the literature. However, the breaking of ratios in similar manner as in Du Pont model could be found for measuring the performances of marketing (Wilson, 1999: 100-101) or for EVA calculation (Pohlen, Coleman, 2005: 48).

The subject of the paper is to establish theoretical solution for bringing other relevant ratios into the ROE calculation. The paper is an attempt to reach a more comprehensive measure of profitability with ratios, which make firmer connection to other areas of ratio analysis, strategic management information and external strategic marketing results.

3. THE METHOD FOR INCLUSION OF NEW SUB-RATIOS IN ROE

The method of ratio analysis is well established and widely used in the daily practice. If you want to understand a business, the ratio analysis will show its "blood picture". It will be possible to get you familiar with the strong and weak sides of an organization. However, the deeper analysis will possibly be needed to find out the causes of current weaknesses and strengths.

In the wide range of ratio numbers, ROE - return on the equity is one of more important. It will show the net profit generated per one monetary unit invested in company's equity.

It can be further divided into three separate ratios as advised by Du Pont model. The first one is net profit margin as the ratio between the net profit and sales. It shows the earning power achieved by enterprise per monetary unit of sales. The second ratio is asset turnover, calculated by dividing the sales and assets. It shows how many times sales were higher than total assets or, to put it differently, how many times in average total asset was used in one year. Finally, the last ratio is calculated by dividing the assets with equity. It shows the financial leverage used by the company. As any leverage, it will be useful when the things are good, but can have destructive result when the things are on the downside.

The original ratio and Du Pont calculation of the ratio are presented as follows (Brigham, Houston, 1998: 86-87):

$$\text{ROE} = \text{net profit/equity} \quad (1)$$

$$\text{ROE} = (\text{net profit/sales}) \times (\text{sales/assets}) \times (\text{assets/equity}) \quad (2)$$

Du Pont model is calculated based on three ratios and the simple mathematical rule. If any two ratios are multiplied, the denominator and the numerator of two following fractions inside ROE can cancel each other due to their values being the same.

This rule is implemented almost without saying. But, it can be a potential road to improved ratio. This mathematical fact can be used in order to include the new ratio numbers into the ROE calculation and will be the method for further development of ROE.

The new theoretical proposal for calculation of ROE is based on theoretically firmly established and empirically proved concepts of break-even point, market share, structure of expenses, financial leverage, structure of assets and expenses. Based on these concepts, it is possible to use deduction and construct proposal for new theoretical solution which can be implemented in ROE calculation.

4. POTENTIAL CHALLENGES AND BREAKTHROUGHTS IN ROE CALCULATION

It could be claimed that some elements could be defined as relevant due to the fact that their inclusion in ROE would lead to the higher quality of ratio analysis and ultimately to the higher quality information to management. If chosen interdependences between achieved market share, liquidity, structure of assets, structure of liabilities, level of fixed assets, level of planned sales from one side and profitability from other, could be presented in one ratio like ROE - the financial analysis would have a kind of `ultimate` ratio indicator.

The first challenge in further development of ROE can be connected with the need for the inclusion of strategic external variables into the management accounting and ratio analysis. K. Simmonds has stated that the final result of the company is based on the position established on the market relative to its competitors (Wilson,

2001: 3). K. Ward claimed that management accounting was closely included in almost all aspects of production and engineering, but that is less involved in marketing (Ward, 1993: 83). The accountants usually work with expenses, what is in the sharp contrast with marketer's interest in the competitive position. One possible way of measuring this position is relative market share achieved in the market. Relative market share is defined as a company's market share compared with leading competitor (Wilson, 1999: 61). Market share can be, certainly, considered as relevant strategic information as well. The profit is, at the end, the final result created due to achieved market share. The development of strategic management accounting was based on managements' need to include external variables into the management accounting, including ones like market share. This is due to the fact that calculations connected with just product and technology are not relevant for managers who operate in the modern world. This can lead to conclusion that direct inclusion of market share in absolute or relative terms into ratio analysis can be beneficial for the management.

PIMS program (Profit Impact on Market Strategies) has been done by Harvard for decades. It analyses the result of marketing strategies on financial result of the company. It is empirically proved that market share is one of the most influencing variables on profit (Milisavljević, Todorović, 1995: 342). Profit and market share are connected. If the market share is not gained on the level that makes the production profitable, it can be concluded that profitability will be negative. There is an optimum level of the market share, after which further pursuing the higher market share will decrease the profit. After some level, the marketing expense for achieving the higher market share will be under the impact of the decreasing returns law (Wilson, Gilligan, 2005: 700). All stated is the reason why the market share should be included into ROE.

The second challenge is inclusion of key expenses in the calculation. What can be considered as key expense? In every industry some expense has high share in structure of revenues or expenses. Due to this, it highly determines the overall profitability. Alternative way of defining key expense, as defined option in this paper, is that this expense does not have high share in expenses, but high impact on the overall sale and company's success. In other words, these expenses are connected with key success factors (Johnson, Scholes, Whittington, 2005: 96). For the purpose of this article, the expenses connected with activities for fulfilling the main or all of these factors can also be considered as key expense. Key activities or processes can be found in literature with its strategic cost management connection as well. They are connected with competitive advantage (Shank, Govindarajan, 1993: 70-72). and fulfilment of key success factors. The example of the key expense can be advertising. It has strong impact on generation of sales in many industries and is a key success factor in many industries. The advertising expenses, which also have high share in the structure of expenses in modern times, will usually strongly influence the price of final product

through psychological differentiation. It will influence achieved market share. The advertising or some other differentiation expense can have strong influence on sales – as the key expense. This is the reason why ratio of achieved profitability should include market share as well as key expense in its calculation. To emphasise, marketing (precisely advertising). will be used in this article as an example of the key expense.

Efficiency of the key expense in generating market share can be considered as important for overall profitability and should potentially be included in ROE.

The key expenses could be fixed in nature. Research and development activities expense for creation of new products is an example. It helps to generate the market share, but it is fixed expense. Investment in efficient production machinery will generate high fixed expense. These are key expenses in many industries.

The third challenge is to include the break-even point in ROE calculation, as the strategic management information. The level of achieved profit is, usually, closely connected to achieved breakeven. It could be claimed that one of the weakest points of ratio analysis is not calculating the breakeven point of the enterprise. The analyst could try to split the expenses from Profit and Loss Statement into fixed and variable parts to make the calculation. Currently, there is only financial leverage included into the formula for ROE. However, operational leverage is also important.

The fourth challenge is indirectly connected with break-even point. Is the planned safety margin reached with the planned level of sales or not? Contribution can be close to fixed expenses` level, leading to company being easily unprofitable in the following years. This would also mean that company should decrease the level of fixed expense in the future, if possible.

The fifth challenge is the structure of costs. It influences the profit level and risk connected with analyzed company. The fixed expenses are important for the level of achieved profit. The chosen location, equipment, etc., have strong influence on the level of fixed expense. Allocated resources create capacity for activities which are done on operational level inside the company or its individual departments, like depreciation, salaries, etc. Fixed expenses to volume level are result of this created capacity (Kaplan, Anderson, 2007: 8). The most usual example is the level of created capacity for production. Are fixed expenses high when compared with the level of achieved contribution from year to year? How much does the key expense contribute to the fixed expenses?

If the key expense is variable, what is the structure of cost when comparing key variable expense with total variable expenses? What is the relation of variable and fixed costs?

The sixth challenge is tracking the planned against realized sales. Achieving the planned values can be important information for any analyst. It will show the quality of management planning as well as the quality of implementation. These are important dimensions which should be included into the ROE calculation as information, if possible. Comparing the plan against actual is one of the basic controlling techniques.

The seventh challenge is definition of asset structure inside ROE. What is the share of the current asset in total asset? The profit is achieved with that share and this structure is traditionally considered as important part of the ratio analysis. If it can be included in calculation, ROE will become more the overall ratio number.

The eight challenge is definition of the liabilities structure. What is the share of the current liabilities in the total liabilities? The profit is, also, achieved with that share - which is traditionally considered as important part of ratio analysis. If it can be included in calculation, ROE will become closer to the status of overall ratio number.

The ninth challenge is tracking the level of current asset/current liabilities as horizontal balance in the balance sheet. The profit is, also, achieved under conditions of this liquidity balance. If the liquidity can be included in ROE, the link between profitability and liquidity can be better showed in the ratio analysis.

All previously mentioned challenges are connected with the profit generation. They are usual challenges management have while trying to run the business profitably. Due to this, it can be beneficial if the profitability ratio can be defined in the manner which makes it possible for previous challenges to be solved inside ROE.

5. THE PROPOSAL FOR MODIFIED ROE FORMULA

In an attempt to modify the ROE formula with the aim of meeting previous challenges, the following proposal for its calculation is presented in the form of two equations:

$$\text{ROE} = (\text{net profit/market share}) \times (\text{market share/key expense - advertising as example}) \times (\text{key expense - advertising as example /fixed expenses}) \times (\text{fixed expenses/contribution}) \times (\text{contribution/contribution per planned sales}) \times (\text{contribution per planned sales/planned sales}) \times (\text{planned sales/sales}) \times (\text{sales/assets}) \times (\text{assets/current assets}) \times (\text{current assets/current liabilities}) \times (\text{current liabilities/assets}) \times (\text{assets/equity}) \quad (3)$$

$$\text{ROE} = (\text{net profit/market share}) \times (\text{market share/key expense - advertising as example}) \times (\text{key expense - advertising as example /variable expenses}) \times (\text{variable expenses/fixed expenses}) \times (\text{fixed expenses/contribution}) \times (\text{contribution/contribution per planned sales}) \times (\text{contribution per planned sales/planned sales}) \times (\text{planned sales/sales}) \times (\text{sales/assets}) \times (\text{assets/current assets}) \times (\text{current assets/current liabilities}) \times (\text{current liabilities/assets}) \times (\text{assets/equity}) \quad (3a)$$

Previous large formulas can look complex. Due to this, it is important to explain the various parts of the ratio one per one.

Net profit/market share - this can look like a strange measure. Combining the market share and profit analysis can look like comparing apples and peaches. How-

ever, PIMS showed how much these are interconnected. R. Wilson has used both measures with the aim of defining competitive accounting techniques (Wilson, Giligan, 2005: 570-572). This part of ROE proposal makes it possible to compare the companies in the industry in the terms of profit achieved from gained market share. It would show the level of net profit in monetary unit achieved per 1% of market share or relative market share, depending which performance indicator is used.

Market share/key expense (advertising) - follows the logic of key capabilities and key success factors from strategic management. Behind these capabilities and factors are strategic processes and strategic activities. Expense connected with these activities and processes is the key expense measure for gaining the market share. Advertising is used here as the leading example. Efficiency of these expenses is important in many industries. When it is possible to see how much of market share is gained per amount given for advertising (as the example of key expense), this can be later compared with the competition as well as with the company's past. Instead of advertising, the total marketing expenses can be used. This ratio is expressed in the terms of market share per thousands or millions of dollars, Euros, etc. In other industries, this can be another differentiation expense like public relations or the cheap raw material, low labour expense - if the competitive advantage is based on the low expenses. In some industries R&D expense can be relevant, etc. This ratio shows percentage of achieved market share created per monetary unit of the key expense.

The first two ratios are showing the market and profit result gained from it with inclusion of the key expense. This could be considered as net profit and connected market result part of ROE.

Key expense (advertising)/fixed expenses - Shows the importance of key expense in the total fixed expenses of the company. Advertising is, usually, discretionary and fixed expense. Once the management has decided to advertise, it will be fixed expense by its nature. From one year to another it will not vary with the volume. The ratio shows the share of key expense in fixed expenses, or how many monetary units of key expense exists per one monetary unit of fixed expenses.

Increase of the fixed expenses is common due to automation, due to increase in distribution capacity, etc. All these can be the key expense in some industries. The variable expenses of labour, direct raw material will be rarely the most important in the cost structure of the modern enterprise. Even in those cases, the importance of the fixed expenses will be high due to its influence on operational leverage. If the key expense is variable, than it will be strategically relevant to see what is its level compared with the total variable expenses. In this manner, the more relevant structure of expenses will be showed - since expenses are showed per strategic importance and variation to volume, simultaneously. If the key expense is variable in nature, the ratio of variable to total fixed expenses will show the expenses structure from the different dimension.

To achieve this, the formula (3a) is shaped for the use when the key expense is variable and as modification of formula (3) considering the case with the key expense being fixed per volume. This new formula shows the share of the key expense, as a variable expense, in the total variable expenses. This ratio is then followed in (3a) with variable to fixed expenses ratio, which shows the expense structure of the company per division of expenses on variable and fixed. More precisely, the ratio would show how many monetary units of total variable expenses exist per one monetary unit of total fixed expense.

Fixed expenses/contribution - as ratio is similar to the formula for the break-even point. Contribution is the difference between sales and variable expenses. With properly defined fixed and variable expenses, it is possible to have this value in ratio. The value below 1 would show that achieved contribution is higher than the fixed expenses and that company operates over its operational leverage. For example, its value of 0.5 would mean that fixed expenses are just 50% of achieved contribution. The value over one would show that break-even point has not been reached yet and how many times it is necessary to increase the current contribution in order to reach the operational leverage.

Breakeven is usually shaped as relation of fixed expenses to contribution margin per unit or to contribution margin ratio (Atkinson, Kaplan, Matsumura, Young, 2007: 40-41). The usual aim is to calculate breakeven in number of product units or the breakeven sales level for products of the company. Here, this is not the target. Above ratio calculates absolute level of contribution only for the entire company or strategic business units (not for individual products, customers, brands, etc.), and makes possible to directly compare the contribution and total fixed expenses as a break-even measure. The previous two or three ratios are connected with key expense share, variable to fixed expense structure and break-even.

Contribution/contribution per planned sales - is usually connected with the planned sales level over the break-even point. This ratio will show the level of achieved contribution in monetary units compared with one monetary unit of planned contribution.

Contribution per planned sales/planned sales - is the strategic planning ratio. It operates with the two important planning values. If later planned contribution and sales are compared with the achieved, the potential issues can be defined as well as further areas of exploration for an analyst. It shows the monetary units of planned contribution per one monetary unit of planned sales.

Planned sales/sales - is a classic plan/achievement ratio. It is also one of the most basic in controlling. This ratio would show if the sales were higher or lower than management originally planned. It shows the percentage of planned sales in achieved sales. If the value of this ratio would be 0.5, this would mean that planned sales are 50% of achieved sales. In other words, it will show that achieved sale is twice the planned level.

The previous three ratios are plan to achievement ratios in the structure of the proposed ROE calculation.

Sales/assets - is well established turnover ratio already present in Du Pont's model. This ratio would show the turnover of total assets.

Assets/current assets - shows the structure of assets in the less usual manner. More orthodox manner would be to show the share of current assets into the assets. This ratio would actually show how much the non-current assets are over the value of current assets. Value of 2 for this ratio would mean that total asset is twice as high as current assets or that non-current assets are the same as current assets. Ratio of 3 would mean that non-current assets are twice as high as current assets. This could be considered as important strategic structural ratio since any business calculates with the level of current and non-current assets to achieve as high profit as possible.

This ratio shows the structure of assets.

Current assets/current liabilities - is well known liquidity ratio. Although the liquidity is more operational term, it can show if there are long-term prerequisites for maintaining the liquidity.

This ratio shows the liquidity.

Current liabilities/assets - is the classical structure of liabilities ratio. It would show how much the current liabilities are having share in total assets. In this manner, it would also implicitly give the share of the long-term assets in total liabilities.

This ratio shows the structure of liabilities.

Assets/equity - is also the classical ratio, which shows financial leverage. However, this ratio is under pressure of theoretical dilemma about validity of the Trade-off or the Pecking order theory. There are different papers which investigate the validity of these theories. Some authors state that one theory is prevailing (Pirtea, Nicolescu, Botoc, 2014: 60). However, there are claims that each theory has its weight considering specific context. Group of authors who investigated small and medium-sized enterprises-SMEs located in the interior region of Portugal conclude that Trade-off and Pecking order theory are not mutually exclusive, since most profitable and oldest SMEs resort less to debt while SMEs with greater size resort more to debt (Serrasqueiro, Caetano, 2015: 1, 7). Similarly some other papers develop a simple model of debt choice which includes situations in which the Trade-off theory is operative as well as situations in which it is not operative with determining factors (Abel, 2015: 33). Further, some authors conclude that the Pecking order is an excellent first-order description of corporate financing behaviour for mature companies. However, they express doubt that it would do so well for a sample of growing companies investing heavily in intangible assets (Shyam-Sunder, Myers, 1999: 242). Having these findings in mind, one could even claim that these two opposing theories are actually complementary. Opposite theories can be simply relevant for different conditions of different companies. Whichever the theory is relevant for specific enterprise and its conditions, its financing would be connected with a management choice of assets

being financed by the equity or debt. Having this in mind, this ratio will be important for the management as a condition under which the profitability is achieved.

Having all previously written, one can state the formula (3) and (3a) with emphasising the each ratio connection with specific area of analyses as follows:

$$\begin{array}{c}
 \begin{array}{c} \text{marketing part} \end{array} \quad \begin{array}{c} \text{structure of expense and} \\ \text{break-even} \end{array} \quad \begin{array}{c} \text{plan to achievement} \end{array} \\
 \text{ROE} = \frac{\text{net profit}}{\text{market share}} \times \frac{\text{market share}}{\text{advertising expense}} \times \frac{\text{advertising expense}}{\text{fixed expense}} \times \frac{\text{fixed expense}}{\text{contribution}} \times \frac{\text{contribution}}{\text{contribution per planned sales}} \times \frac{\text{contribution per planned sales}}{\text{planned sales}} \times \frac{\text{planned sales}}{\text{sales}} \times 100
 \end{array}$$

$$\begin{array}{c}
 \text{turnover} \quad \text{structure of assets} \quad \text{liquidity} \quad \text{structure of liabilities} \quad \text{financial leverage} \\
 \text{ROE} = \frac{\text{sales}}{\text{assets}} \times \frac{\text{assets}}{\text{current assets}} \times \frac{\text{current assets}}{\text{current liabilities}} \times \frac{\text{current liabilities}}{\text{assets}} \times \frac{\text{assets}}{\text{equity}} \times 100 \quad (4)
 \end{array}$$

To be more precise, the formula (3a) would contain one more structure of expense ratio, which would present relation of the variable to fix expenses.

6. CONCLUSIONS, LIMITATIONS AND SUGGESSTIONS FOR FURTHER RESEARCH

The new proposed theoretical expansion of ROE with new sub-ratios is based on relevant findings in literature from the area of marketing, strategic management, management accounting and finance. From the area of strategic management, the PIMS program findings are used considering the connection between profit and market share as well as the key success factors and expenses connected with them. Marketing is represented with market share as a performance measure. Management accounting and finance are included with structure of expenses or assets/liabilities, with inclusion of liquidity or leverages as well as with expenses connected with achieving competitive advantage.

Proposed theoretical solution for calculating the ROE ratio will potentially show implications for change of different company`s policies to management, since it shows results of the various policies connected with economy of scale, liquidity, structure of assets, marketing result, strategic cost structure. If ROE is calculated as presented, the new information and interdependences connected with the profit (break-even, structure of expenses, efficiency of management through plan/achievement...) can be potentially better presented and interconnected in the ratio analysis. Individual ratios that now become the part of ROE in proposed type of calculation, are strategic and management ratios as well. It would potentially bring the calculation to the level that presents strategic management information and would potentially indicate the need for changes in some of the company`s policies. The in-

formation about marketing efficiency measured by advertising expense to achieved market share, effectiveness of marketing through achieved net profit per market share, build up of fixed expenses, break-even, margin of safety, planned to achieved, horizontal and vertical balance sheet structure, financial leverage are all included as performance indicators, which indicate the validity of different company's policies.

There are five potential basic theoretical benefits when ROE is calculated as presented.

Firstly, the ratio analysis was separated into different parts - profitability, efficiency, liquidity, structural ratios, etc. For some areas of the ratio analysis the connection is established and they can now be directly traced inside one profitability ratio.

Secondly, strategic management decisions can be revealed inside ratio analysis. Key expenses, like advertising or marketing expenses, are revealed with its influence on the level of fixed or variable expenses. Planned vs. actual analysis is included in showing the achievement of plans in analyzed company.

Thirdly, marketing achievement has entered the ratio analysis.

Fourthly, it can potentially be a good tool for forensic accounting, (Mitrić, Stanković, Lakićević, 2012). due to the fact that reasons for failure can potentially be better understood in profitability context.

Fifth, some multiplication effects can be more exposed inside ROE ratio system - what potentially improves corporate governance. Usually ROE system shows how one partial ratio result is multiplied with other partial ratios, all leading to the overall profitability. After exposure of new ratios in ROE, newly established interdependencies of this type inside profitability can be potentially better monitored with its individual multiplication effect on achieved profitability. This means that it is now possible to mathematically project how will *ceteris paribus* change in net profit generated per market share, achieved contribution to planned contribution or change in key expense efficiency, as multiplication type of ratios, influence the profitability level.

The last leads to additional potential practical benefit of the new ROE system. Management can track how change in one policy or variable, newly established inside the new system, will influence the future profitability in the relatively simple manner.

Other ratios, like liquidity, break even or structure of expenses, structure of assets, mostly presents the conditions or risks under which the profitability is achieved. Increase in this type of ratios will not mean increase in profitability per se - because this connection is not logical. That is, multiplication effect is not logical for some ratios in the extended ROE system. These ratios have illustrative purpose. However, these ratios in proposed system are necessary and represent risks connected with profitability or conditions under which the profitability is achieved. This time they are presented to the management inside single ratio system.

The largest potential advantage for management of the new ROE calculation

system is that it in a relatively simple manner shows twelve variables connected with profitability instead of just three. This makes a more rounded picture how the profitability is achieved to management, with controlling being able to better understand additional interconnections inside profitability and conditions under which it is achieved. Further, clearer picture of potential improvements in partial ratios can be explored for its feasibility - either on multiplication side or on risk/conditions side, in order to direct potential improvements in company governance.

Limitations of the proposed method for ROE calculation are connected with generally static nature of the ratio analysis and usual need for any new theoretical concept to be empirically tested in the future through future research/consulting projects.

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