FINANCIAL PERFORMANCE OF A FARMING BUSINESS, FROM THE PERSPECTIVE OF DUPONT ANALYSIS

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Abstract. The study aims to investigate the quantitative and qualitative increase factors of the profitability of an agricultural holding. The Du Pont system involves a factor analysis of the rate of return by decomposing the rates of return on the influencing factors. In the present research work, it was demonstrated that the difference between the financial return on equity (ROE) and return on total assets (ROA) reflects the effect of the financial leverage on the profitability of the company. The advantage of this method is the simultaneous analysis of more rates, offering an overview of the company's performances that allow the identification of potential issues that need to be solved**.** In the case study we present the indicators and the calculation of ROE by the Du Pont analysis on a time horizon of 3 years and observe the influences of indicators in the model on profitability.

Keywords: *Farming business, Financial analysis, Profitability,*

INTRODUCTION

Profitability is the essential condition to ensure business success. The economic entity is measured by positive results after comparing the financial impact with the financial efforts involved. Measuring the profitability of an economic entity has considered judgment to reflect as closely as the efficiency with which the company uses its assets and manage its opportunities. The Du Pont model dissects ROE into easily computed ratios that can be examined for potential strategies for improvement. It should be a tool that all business owners, managers, and consultants have at their disposal when evaluating a firm and making recommendations for improvement.(Liesz et al., 2008) Return on assets (ROA) decomposition (DuPont analysis) allows financial statement users to examine where this IT-enabled competitive advantage shows up in accounting performance measures, whether in profitability, efficiency or both. (Dehning et al., 2002). Baker (1973) considers that direction of causation between leverage and profitability may run in both directions, profitability may affect leverage and leverage may affect profitability. Herciu et al (2010) have studied the ROE components from Du Pont analysis and also the profitability level for the 20 most profitable companies in the world. The authors concluded that the classification according to a size should be combined with a series of financial indicators that could express the relationship between the effects and the company's efforts. Key factors affecting asset-to-equity ratio component of the Du Pont model are farm size,farm typology, contracting, and specialization drive asset-to-equity ratio (Detre, Mishra, 2012).

MATERIAL AND METHOD

Currently, goat farming is on an upward trend due to the valuable biological and economic particularities for which this species has become widely spread all over the globe.

The case study has been conducted at the "El Greco" farm located in the Culciu , Satu Mare County, whose main business is being developed under NACE Rev. 2 Code 0145.

Label: “Raising of sheep and goats” and its secondary business is covered by NACE Rev. 2 Code 1051. Label: “Operation of dairies and cheese making”. Performance measurements offer the essential feedback to improve decision making within organisations at all levels: strategic, operational and individual. In order to perform in such a dynamic and complex environment, the management process at the level of economic entities should be supported by reliable and efficient instruments. The information sources required to assess the profitability corresponding to the 2014-2016 period and belonging to the assessed company are: the balance sheet and its appendices, profit and loss accounts, intermediate balance accounts, accounting records, statistics reports etc. The research is based on the Du Pont analysis model applied to a company by using data from the balance sheet and the income statement. The Du Pont system involves a factor analysis of the rate of return by decomposing the rates of return on the influencing factors (Burja et al., 2014). The Du Pont system explains the ROA and ROE as a synthesis of the interaction between three groups of factors: accumulation of sales margin, assets rotation through sales and debt leverage (Burja et al., 2014).

$$ROA = \frac{EBIT * (1-\tau)}{Sales} * \frac{Sales}{TotalAssets} \quad (1)$$

EBIT = earnings before interests and taxes, τ = the profit tax ratio

$$ROE = \frac{Net\,\mathrm{Pr}\,ofit}{Sales}\,x\,\frac{Sales}{TotalAssets}\,x\,\frac{TotalAssets}{Equity} \quad (2)$$

$$ROE = \frac{EBIT}{Sales}\,x\,\frac{Sales}{TotalAssets}\,x\,\frac{NetOperating\,\mathrm{Pr}\,ofit}{EBIT - \mathrm{int}\,erests}\,x\,\frac{EBIT - Interest}{EBIT}\,x\,\frac{TotalAssets}{Equity}$$

(3)

Results And Discussions

The analysis based upon the centralized finance and accounting documents – balance and profit and loss accounts of the company concluded for the 2014-2016 period has led us to the following financial findings:

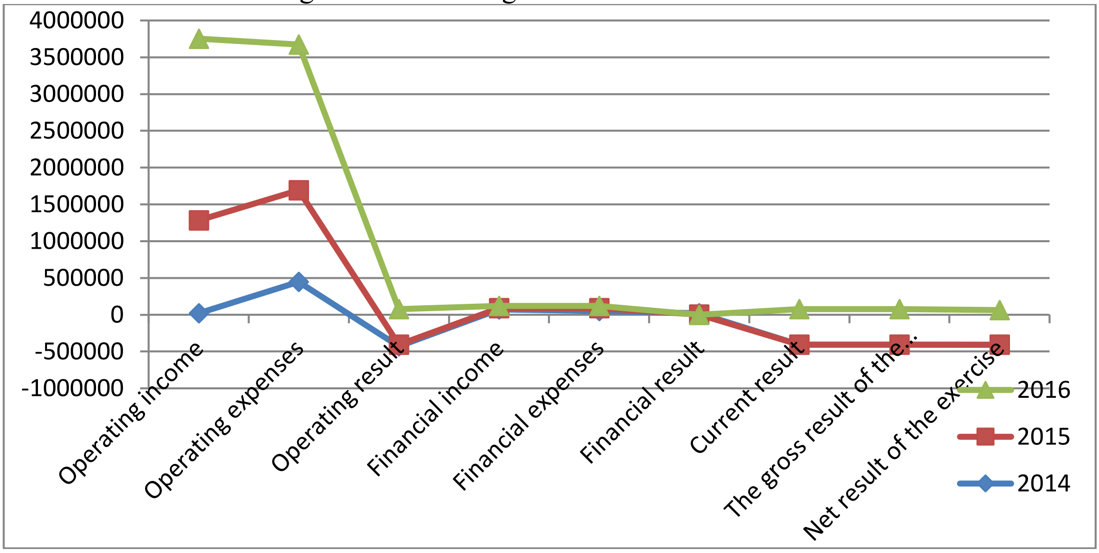

Figure 1 - Evolution of items in the profit and loss account for the period 2014-2016

Table 1.

Economic profitability ratio

Indicators	2014	2015	2016
Gross operating surplus (lei)	-116587	59.791	72.451
Gross fixed assets(lei)	870.252	1.401.800	1.502.134
Investments invested (lei)	-169.133	4.495.349	4.294.120
Gross economic profitability ratio	68.9%	13.36%	1.68%
EBE/ Gross fixed assets	133.9%	42.65%	48.2%

Source: Own processing based on company financial documents

The profitability ratio has been ascending, following a faster evolution of operations as compared to the total assets, that is, a growing efficiency in using the assets. This asset use efficiency increase is due to the gradual decrease of costs corresponding to assets under operation (depreciation, consumption from third parties), at the same time with higher operating income. According to the calculation made, it can be noted that an increased value-added tax rate has led to a 2.1% increase of gross profitability ratio and a decrease of the gross fixed-asset turnover ratio has led to a 25.47% decrease of the analysed ratio. The coefficient of variation has recorded a major decrease during the analysed period, and has therefore led to the diminishing of the profitability ratio by 42.12%.

Table 2.

Financial profitability ratio

Indicators	2014	2015	2016
Net result of the exercise (lei)	-408.544	407	950.988
Equity (lei)	916.777	916.369	916.450
Financial profitability ratio (%)	-44.56	44.40	103.7
absolute deviation			
- fixed base	-	-44.12	59.14
- based chain	-	-44.12	103.26
Relative deviation (%)			
-- fixed base	-	-99.01	13.27
- based chain	-	-99.01	23.46

Source: Own processing based on company financial documents

The profitability ratio has displayed an oscillating evolution during the assessed time period, decreasing and growing, respectively, along the three analysed years. The profitability ratio increase is due to an increased indebtedness. It can be noted that during the first year, the profitability ratio has a negative value due to the fact that within this year there is no indebtedness. During the next years, in 2015 and 2016 we can notice how the profitability ratio has increased due to a higher indebtedness.

The factor analysis of the return on equity has resulted in:

➢ Underlining the influence of the net profitability ratio and the capital turnover:

A 59.3 % return on equity increase in 2016 as compared to 2015 has been influenced by the two factors as follows.

- Influence of the net profitability ratio by 24.52%
- Influence of the equity turnover ratio by 67.25%

As you can notice, a growth in both the net profitability ratio and the equity turnover ratio have led to the increase of profitability ratio by 24.52 % and 67.25%, respectively.

➢ The second economic analysis model show the influence of the net profitability ratio, the invested equity turnover ratio and how much the capital invested into equity weighs.

It can be noted from the calculations made that the profitability ratio has been significantly influenced by: the increase of the net profitability ratio by 45.20 %, the acceleration of the equity turnover ratio speed by 21.23% and the increase of the equity amount by 45.87%.

The factorial analysis of the economic profitability indicated that the return on equity (ROE) is affected by the influence of three important factors: the operational efficiency measured by the rate of return, the assets use efficiency measured by the rotation of total assets and the financial leverage expressed by the equity multiplier of the company. Deficiencies in the operational area or in the efficiency of using the assets will diminish the return on assets (ROA) indicator, and this trend will result in reducing ROE. From the analysis of ROE it may be concluded that this rate can be improved by increasing the degree of indebtedness of the company. However, an increase in indebtedness would result in an increase in interest costs, and thus lead to a reduction in the rate of return that will result in a reduction of ROE. The decomposition of ROE represents a convenient approach to systematically analyse the company's financial position, the results obtained by calculating the indicators confirming the choice of the applied model for this study case. Profit margins and the rotation speed are positive signals for increase the economic performance. A good performance could be obtained following two directions: strengthening the leading position on the market by products and services diversification according to the demand or increasing managerial performance by exploiting assets to obtain more quality products and services.

CONCLUSION

In the present research work, it was demonstrated that the difference between ROE and ROA reflects the effect of the financial leverage on the company profitability. The increase of financial performance can be done by activating the preponderance of one of the three economic and financial levers or by an efficient combination of the three levers. The advantage of this method consists in the simultaneous analysis of more rates, offering an overview of the company's performances that allow the identification of potential issues that needs to be solved. In conclusion, the El Greco farm should take into account the market requirements and operating mechanisms, the constraints of the constantly changing economic environment and find solutions to adapt to them.

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