THE USV ANNALS OF ECONOMICS AND PUBLIC ADMINISTRATION | VOLUME 13, ISSUE 1(17), 2013

COMPARISON OF PROFITABILITY FOR PHARMACEUTICAL ROMANIAN LISTED COMPANIES USING DUPONT IDENTITY

Ph.D. Student **Ioana Cristina COLBU**
"Ştefan cel Mare" University of Suceava, Romania, Faculty of Economics and Public Administration
ioanac@seap.usv.ro

Abstract:

The financial statements of a company are analysed trough a series of indicators. However, the calculation and interpretation of simple indicators have disadvantages such as un-exhaustive characterisation of a single activity inside the company. DuPont Identity determines the return on equity with the help of 3 formulas. This is extremely useful if more detailed analysis of the company's performance is required, such as determining the strengths and the weaknesses so that the management should be able to improve exactly the part that needs improvement.

The purpose of this article is to compare the annual financial individual statements over a period of 4 years for 5 pharmaceutical listed companies through the DuPont method and to verify the hypothesis that a high rate of profitability on employed capital translated into higher tradable value of the company's shares.

The experimental part of the paper has shown that between the return on equity and the average price of the company's share are no direct connections.

Key words: financial indicators, DuPont Identity, return on equity, tradable shares, profitability

JEL classification: C02, C12, C81, D24, D53, E44

INTRODUCTION

In Romania, pharmaceutical market was estimated in 2009 to 1.9 billion euro, and it's in a continuous rising.[1]

According to the work paper *Pharmaceutical industry in Romania*: *main trends and impact on society and* economy developed by the Institute of Economic Forecasting, it can be seen that although local producers of drugs are not very numerous, they have expanded their production capacity, while the big players in the pharmaceutical industry in Romania entered the market by acquiring local manufacturers or opening branches. The total number of producers of drugs on the market in Romania is significant (184), but the top 10 players control almost 60% of this market.[2]

The hierarchy of the top 10 corporations is as follows: Sanofi (including Zentiva and Sanofi-Pasteur) remains on podium, with sales of 965.3 million, followed by Hoffmann La Roche, with 909.6 million, and Novartis to 752.6 million lei. The top 10 players is completed by GlaxoSmithKline (658.6 million), Pfizer (including Wyeth) (636.2 million), Servier (613.4 million), Merck & Co. (503.7 million lei), AstraZeneca (494.7 million), Ranbaxy (433.7 million) and Abbott (390.5 million).[3]

For this article, we chose from the Romanian pharmaceutical sector two types of companies: manufacturers of drugs, from which we selected companies Antibiotice, Biofarm SA and Zentiva SA (Sicomed), and traders of drugs within pharmaceutical companies that have opted for Ropharma fix SA and SA.

THE PURPOSE OF THE STUDY

The purpose of this article is to compare the financial statements of the 5 pharmaceutical companies listed on the Romanian Stock Exchange, statements prepared under the Romanian accounting regulations (RAS) for a period of 4 years, from 2008 until 2011. The financial statements for the ended year 2012 are either not published or audited, so we consider them irrelevant for the analysis.

The hypothesis from where we left was that the company with the highest average return on equity indicator (ROE) obtained in the studied period, has the highest price of share tradable on the Bucharest Stock Exchange.

RESEARCH METHODOLOGY

Data sources: For this study, we used secondary data. The sources of the data consist of annual and interim reports of the companies, articles, research papers and other data from the Romanian Stock Exchange (BVB) or other websites.

Methods: The secondary data is collected from research articles and journals and then analyzed using statistical tools. The acquired data were processed in graphs and tables. In the case of examination of financial statements, the quantity is expressed in financial units. The category of extensive indicators includes: subtractive and state indicators [4].

Techniques for data collection and analysis: The secondary data was collected from the financial statement of the 5 companies chosen, for a period of 4 years under review. The data have been analyzed using financial ratios formulas, as well as various statistical tools and techniques. We have used as base to our conclusions the DuPont method or the DuPont Identity. Also known as the DuPont formula, DuPont analysis, DuPont Model or DuPont equation, is a method for assessing a company's return on equity (ROE) breaking its into three parts. This formula is used to discover if there are significant differences between how the performance of the company is assessed. Being perhaps one of the most important indicators of performance, DuPont formula measures operating efficiency, asset use efficiency and financial leverage. [5]

The DuPont ratio can be used as a compass in this process by directing the analyst toward significant areas of strength and weakness evident in the financial statements.

By analyzing each component of the ROE equation, insight is gained into whether a company's return is based on high profitability, proficient management of assets, or leverage for risk (Smart, Megginson, & Gitman, 2007).

$$\text{ROE (DuPont formula)} = \frac{\text{Net profit}}{\text{Revenue}} x \frac{\text{Revenue}}{\text{Total assets}} x \frac{\text{Total assets}}{\text{Equity}} \qquad (1)$$

$$= \text{Net profit } x \text{ Asset Turnover } x \text{ Financial leverage [6]} \qquad (2)$$

Firms can be compared within an industry utilizing the DuPont analysis's financial ratios through a cross sectional analysis or a time series basis (Ou & Penman, 1989; Eisemann, 1997; Abarbanell & Bushee 1997; Fairfield & Yohn, 2001; Milbourn & Haight, 2005; Soliman, 2008).[7]

ANALYSIS:

Table 1. ROE for Farmaceutical Remedia, authors' calculations

Company	Indicator / Year	2011	2010	2009	2008
REMEDIA	Net profit	0.0200	0.0107	0.0059	-0.0228
	Asset turnover	1.2487	1.3489	1.4314	1.3430
	Financial leverage	4.0904	4.9648	4.1955	4.7005
	ROE %	10.23576	7.187683	3.571085	-14.3742

In the year 2008, the company has registered a loss, which determined a negative ROE. For the remaining years, we can observe a constant rise of the ROE, mostly because of the uniform rate of the Financial leverage.

Table 2. ROE for Antibiotice, authors' calculations

Company	Indicator / Year	2011	2010	2009	2008
ANTIBIOTICE	Net profit	0.0720	0.0515	0.0542	0.0490
	Asset turnover	0.6273	0.6203	0.5834	0.5861
	Financial leverage	1.5652	1.4956	1.5565	1.4912
	ROE %	7.071352	4.774755	4.923808	4.282115

The company has a low level of Net profit, but does not record loss on the analysed years. The Asset Turnover and the Financial leverage have a relatively constant level during the years. The highest value of Return on Equity is registered in 2011.

Table 3. ROE for Biofarm, authors' calculations

Company	Indicator / Year	2011	2010	2009	2008
BIOFARM	Net profit	0.1522	0.1752	0.2994	-0.3273
	Asset turnover	0.5053	0.4892	0.4325	0.4431
	Financial leverage	1.2011	1.1542	1.1112	1.1327
	ROE %	9.236797	9.889334	14.3913	-16.4286

The values were varying during the analysed years. Net profit is the ratio which dragged down the total ROE. The lowest values appeared in 2008 and it was caused by the recorded loss of the company. On the other hand, the highest values appeared in 2009 because of a relatively high value of Net profit and Financial leverage.

Table 4. ROE for Ropharma, authors' calculations

Company	Indicator / Year	2011	2010	2009	2008
ROPHARMA	Net profit	0.0277	0.0309	0.0145	0.0088
	Asset turnover	0.9918	1.2176	1.5130	2.0698
	Financial leverage	4.2576	3.5367	3.9239	3.1832
	ROE %	11.71743	13.31314	8.58787	5.768278

The values of the equity indicator vary during the analysed period. The highest value is recorded in 2010, where the Net profit ratio is at its highest value.

Table 5. ROE for Zentiva, authors' calculations

Company	Indicator / Year	2011	2010	2009	2008
ZENTIVA	Net profit	0.1340	0.2210	-0.0164	0.1061
	Asset turnover	0.6870	0.6552	0.5327	0.6326
	Financial leverage	1.3498	1.1677	1.1702	1.2093
	ROE %	12.42276	16.90802	-1.02249	8.11728

The year 2009 is an unprofitable one for the company, as it register loss and the return on equity becomes negative. The remaining period analysed are highly profitable.

Table 6. Compared ROE for the 5 analyzed companies, author's calculations

Company / Year	2011	2010	2009	2008	Average ROE
ROE Remedia	10.23576	7.187683	3.571085	-14.3742	1.655087883
ROE Antibiotice	7.071352	4.774755	4.923808	4.282115	5.263007372
ROE Biofarm	9.236797	9.889334	14.3913	-16.4286	4.272202242
ROE Ropharm	11.71743	13.31314	8.58787	5.768278	9.846678723
ROE Zentiva	12.42276	16.90802	-1.02249	8.11728	9.10639171

Analysing Table 6, we can say that Ropharm is the average most profitable company, in the given period, with a return on investment of almost 10% [8].

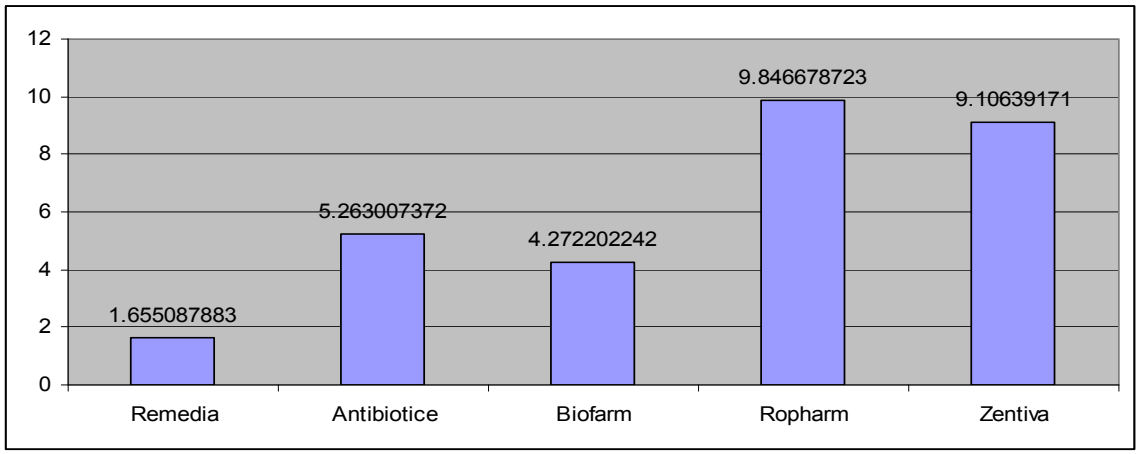

Chart 1. ROE for the chosen companies – absolute values

So, if the initial hypothesis in correct, the highest average value of tradable shares should be Ropharm's, followed by Zentiva and Antibiotice.

Summarizing data collected from the Bucharest Stock Exchange website, the following average prices for 52 weeks results:

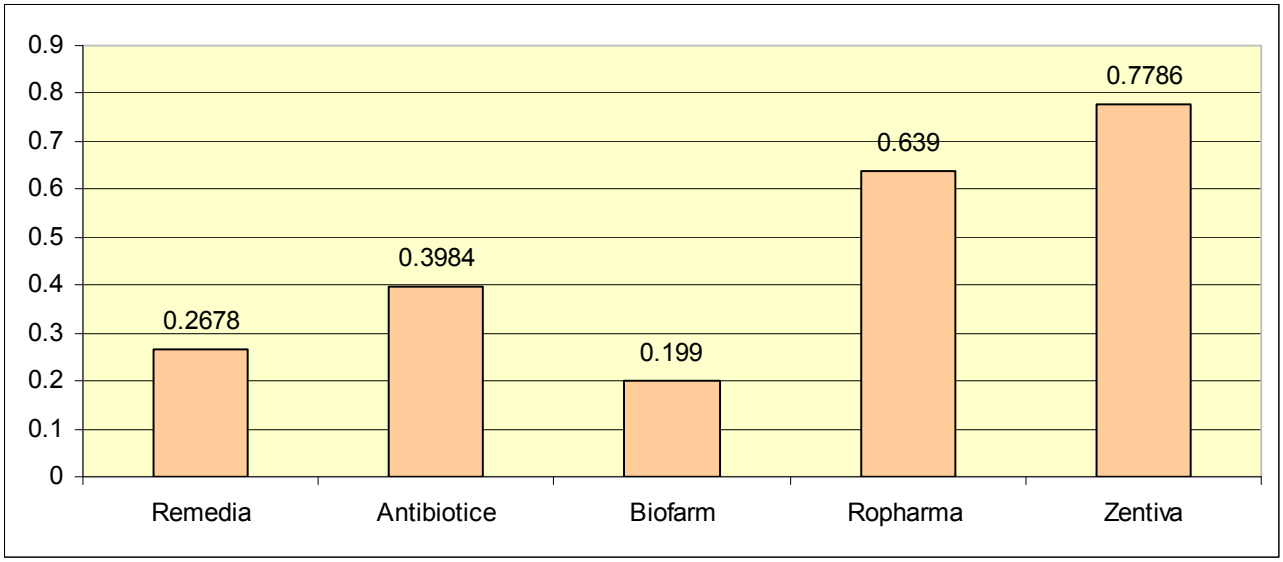

Chart 2. Average price for 52 weeks
Source: http://www.bvb.ro/TradingAndStatistics/Preturi52sapt.aspx

We can observe that the highest average price for a share is Zentiva's, followed by Ropharma and Antibiotice.

CONCLUSION

In this paper, we have tried to determine with the help of profitability ratios like ROE, analyzing the correlations between the net income, the asset turnover and the leverage, if the companies' share price are relevant to investors, once compared with the return on equity.

Our study demonstrated that in terms of price per share, the investors are not directly influenced by the return on equity of analyzed companies.

As a conclusion, the DuPont analysis that we made by calculating Net profit, Assets turnover or ROE for the 5 companies chosen, emphasize that absolute measurements are not relevant every time. Therefore, to have a common basis of comparison between several sets of data is necessary when calculating the ratio between effect and effort, but not relevant enough for connecting profitability with price per share.

"ACKNOWLEDGMENT
This paper has been financially supported within the project entitled „Doctorate: an Attractive Research Career", contract number POSDRU/107/1.5/S/77946, co-financed by European Social Fund through Sectoral Operational Programme for Human Resources Development 2007-2013. Investing in people!"

ENDNOTES

[1] http://www.money.ro/industria-farma-a-concediat-in-2009-un-om-din-zece_430576.html
[2] http://oglindadevest.ro/wp-content/uploads/2012/03/Industria-farmaceutica-in-Romania.pdf
[3] http://www.capital.ro/detalii-articole/stiri/top-10-companii-farmaceutice-din-romania-174918.html
[4] *Subtractive indicators* show the variation of state of given groups of assets or liabilities which are always applied to the same time. *State indicators* present the state of property and its financial resources of cover to the given time. (Zálešáková J., *Financial Analysis of D H J – Kovo, s.r.o.*, 2010)
[5] http://www.money-zine.com/Investing/Investing/DuPont-Equation/
[6] Eagle, D., Djatej, A., *The Percent-Change Extension to the DuPont Identity*, Asian Journal of Finance & Accounting, 2012, Vol. 4, No. 2, www.macrothink.org/ajfa
[7] Pellika J.R.K., Comparing lodging REITs using DuPont analysis: Evaluating shareholder equity, http://digitalscholarship.unlv.edu/thesesdissertations
[8] The average ROE has been around 10% to 12%.

REFERENCES

1. Almazari A. A., Financial Performance Analysis of the Jordanian Arab Bank by Using the DuPont System of Financial Analysis, www.ccsenet.org/ijef International Journal of Economics and Finance Vol. 4, No. 4; April 2012
2. Herciu M., Ogrean C., Belascu L., A Du Pont Analysis of the 20 Most Profitable Companies in the World, 2010 International Conference on Business and Economics Research, vol.1 (2011) © (2011) IACSIT Press, Kuala Lumpur, Malaysia
3. http://peregrin.jmu.edu/~drakepp/investments/modules/module8.pdf
4. http://www.businessmagazin.ro/analize/industrie/medicamente-made-in-romania-cine-sunt-marii-producatori-7909061/?p=1
5. http://www.capital.ro/detalii-articole/stiri/top-10-companii-farmaceutice-din-romania-174918.html
6. Isberg, S. C., Financial Analysis with the DuPont Ratio: A Useful Compass, The Credit and Financial Management Review
7. Pellika J.R.K., Comparing lodging REITs using DuPont analysis: Evaluating shareholder equity, http://digitalscholarship.unlv.edu/thesesdissertations
8. Soliman, M. T., Using Industry-Adjusted DuPont Analysis to Predict Future Profitability, Stanford University 2004
9. www.investorsfriend.com
10. Zanjirdar M., Seifi M., Review of relationship between dividend policy and performance: Evidence of Iran's capital market, African Journal of Business Management Vol. 6(40), pp. 10507 - 10513, 10 October, 2012, available online at http://www.academicjournals.org/AJBM