Key Performance Indicators - Comparative Analysis for Major Brands of Pharmaceutical Production Industry in Romania

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ABSTRACT

Due to the growing importance of emerging markets in Romania, the supply chains of pharmaceutical companies are forced to reevaluate strategies and improve their production and distribution processes. For this reason, it is of utmost importance for the companies that produce pharmaceutical products to define and measure the progress towards their objectives. This study desires to investigate what are the most important financial factors that play role in Romania's major pharmaceutical brands' evolution in the past 4 years. For this purpose, quantitative statistical analysis and comparative analysis were used. In order to make the analysis of the selected companies and to establish the most important financial factors we used Key Performance Indicators (KPI) as a research tool that enabled us to determine which factors were playing the major role in their evolution.

Along with the important financial factors that affected the evolution of the companies in the last 4 years the study will also determine if by correlating the net income, the leverage and the asset turnover and by using profitability ratios we can determine the relevance of a company's price per share towards its investors.

Keywords: key indicators; major brands; measurement; performance; Romanian pharmaceutical companies.

1. INTRODUCTION

The pharmaceutical industry of Europe is an important sector that contributes to the employment, competitiveness and growth of the economy [9]. It encircles various companies that produce, develop and market pharmaceutical products as well as medicinal and biological. These products can be delivered in many forms such as different solutions (for oral consumption, injections or perfusions), various ointments (lotions, creams, unguents or emollients), powders, capsules or tablets, usually distributed through wholesalers and sold in hospitals, pharmacies and by other channels. Due to the fact that most researchers did not focus yet their interest on this domain, we considered it very attractive and engaging, so our study was focused to reveal the compliance rules of this industry and its impact upon the health sector. As Romanian articles [5] reports [7] and specialists [8] entail, the drug market from 2013 was favorable. In spite of the economic crisis from 2013, the pharmaceutical industry continued to grow at a sustained pace. Later, in 2014 the industry actors focused on the claw-back taxes. Since its introduction in October 2011 the method of computation of this

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tax was argued by all actors of pharmaceutical industry. Originally it was introduced as a temporary tax, however, given that the budget allocated to health does not comply with the needs and the level of tax collection is one of the highest in Romania (about 90%), it was clear that the tax authorities and health representatives will not give it up. A different method to compute the fee for the actors in innovative medicines and generics area was proposed. However, this method favored the latter and was contested by the actors in the innovative medicine. At the beginning of 2015 the claw-back has increased with 67% in the last 2 years, due to the lack of transparency and its planning mechanism. Not only such increase was not sustainable but it also infringed the principles of a balanced tax system. Nowadays, the claw-back tax implies all drug producers must contribute to finance the public health system with an amount between 5% and 11% of the revenues made from selling the products. Its value at industry level has reached 400 million RON (Romanian currency) in the first 3 months of 2016 that is 33.6% of the total value of the medicines consumed in that time frame [16]. This aspect is causing serious problems to the patients suffering from serious disease for it limits their access to compensated medication.

Meanwhile, according to the president of the Generic Drug Manufacturers Association in Romania (APMGR), Romania is not a good performer in terms of healthcare system and the indicators in this field place the country in the last area rankings of Europe, the main problem being the small percentage of GDP allocated to “health” as well as the population’s inability to access the medical services. In the last decade the Romanian pharmaceutical industry registered a solid increase in all its segments therefore contributing with more than 1% to the GDP [12]. Although local manufacturers of medicines are found in a restricted number, they expand their production capacity while the "big players" in the pharmaceutical industry, entered the Romanian market by acquiring local manufacturers or by opening various subsidiaries. Even though the total number of medicinal products manufacturers present on the Romanian market is significant (over 184), the first ten, by volume, control around 60% of the market. For companies that are on the market today, the stakes are enormous as powerful innovative products are needed to fuel further growth and to cover losses caused by the expiration of patents or market protection. At the same time, small firms specialize in different segments of value chain, resulting in a power fragmentation between big pharmaceutical companies and specialized firms. The pharmaceutical actors in Romania are either companies specialized in product development, clinical trials and production or those specialized in marketing integrated into the entire value chain of certain products, like vaccines, HIV treatment, hormones or dermatology or oncology. For a long period of time, Romanian companies focused on a generic production less competitive, but lately, it has become a sector with competitive potential and smart specialization. Still, the future of the Romanian pharmaceutical companies belongs to those able to integrate revolutionary concepts, technologies, from the medical field, biology, mathematics and physics alongside with product development, clinical trials and production in order to identify new products as well as new fields of application. This study desires to investigate the important financial factors that contributed to the evolution of Romania’s major pharmaceutical brands in the past 4 years. We suppose that the selected pharmaceutical companies that registered the highest average ROE in the period of 4 year will be the same as the ones who registered the highest price of shares tradable on the Bucharest Stock Exchange. By using the KPI’s as a research tool, we will try to determine if by using profitability, liquidity and solvability ratios the share prices of the companies are relevant to their investors, in comparison to the return on equity. Our study will entail if the investors of the top 5 pharmaceutical brands from Romania are directly or not influenced by the companies’ return on equity.

2. KPI’S ROLE IN MEASURING PERFORMANCE

The subject of “performance” is currently catching the eyes of both corporative members as well as researchers as it represents an ongoing process that has a complex character and

takes into consideration the image of both economic and financial situation of a given entity. Since there is not a concrete equation that will result in the imminent performance of any sort of entity this subject catches the eyes of specialists for it requires attention in order to evaluate and discover intelligent ways to organize and allocate resources, to take decisions and to create sustainable strategies. Ever since 1960 researchers and specialist tried to define the concept of "performance" by using quantitative as well as qualitative methods in the economic and financial literature, that resulted in no concrete definition. Few years later, in the 90's, the concept of "performance" evolved, Bourguignon [3], (1995) constructed his definitions based on the level of accomplishment of the organizational objectives, Niculescu (2005) [13] based his definition of performance on the positive results obtained from an action but both definitions were incomplete for in 2007, Jianu [10] defined the performance as company's multiple goals reflected in multidimensional objectives of its activity. However, disregarding the activity field in which a company operates, most analyzes are linked directly to the features of financial performance for it is not always possible to access economic data and compare it or use it in a performance assessment. Although positive results as well as the accomplishment of organizational objectives are significant features in measuring a company's performance, in 2012 the authors Majumder and Rahmad [11] point out that if accurately analyzed and explained, the financial statement of a company offers important information regarding a company's position on the market along with its performance. In this study we take interest in the financial performance of the companies in the pharmaceutical industry, namely the company's ability to create new resources from its operations - from one day to another in a given number of days. Therefore, the information about performance is represented by financial performance evidence that is gathered and used methodically for this purpose. Such evidence takes into account the taken measures that may improve the financial performance along with factors that alter the results, in other words the efficiency and effectiveness of the activity. Thus, performance indicators and financial ratios became the translated version of the information that defines performance, namely a type of performance measurement. Selecting the right KPI is made based on the organizational goals and the department in which performance is important to be measured as it must take into consideration factors such as strategic objectives, timing of the activity and the current situation of the company in terms of growth, decline or maturity. That is why the KPI used for sales will be different than the ones used for finance. In the literature various companies have been analyzed, in terms of performance, by the use of various accounting measures such as return on total assets by Deloof [6] in 2003, followed by Singh et al. in 2008 [15] who studied the performance in terms of liquidity ratios, Raheman et al. in 2010 [14] that focused on net operating profitability and studied great impact measures such as return on equity, return on assets and gross profit margin. Since the strongest companies in the pharmaceutical sector in Romania are companies that register a ratio high enough to support investment in research and development departments thereby being able to repay their debts and also their shareholders, this study will determine if by using profitability, liquidity and solvability ratios the share prices of the companies are relevant to their investors, in comparison to the return on equity.

3. MATERIAL AND METHODS

Because the pharmaceutical sector in Romania is one of the sectors that thrived even during the crisis and despite the governmental regulations that raised a few barriers, this research is grounded on the analysis of the strongest Romanian pharmaceutical manufacturers that were able to survive the crisis by affording to sustain their investment in areas prone to progress such as research and development [1]. This paper desires to investigate what are the most important financial factors that play role in Romania's major pharmaceutical brands' evolution in the past 4 years. For this purpose, quantitative statistical analysis and comparative analysis were used. In order to make the analysis of the selected companies

and to establish the most important financial factors we used Key Performance Indicators (KPI) as a research tool that enabled us to determine which factors were playing the major role in their evolution.

For the construction of this study both primary as well as secondary data was used. Firstly, data was collected by using the public companies annual reports along with the Ministry of Finance reports and the Romanian Stock Exchange (BVB). In this case the data consisted of the company's financial statements selected for a period of 4 years. The gathered data was analyzed by using statistical tools as well as financial ratios formulas and processed in tables and graphs. Based on the statistical analysis of the data obtained from the companies listed on the BVB and the Ministry of Finance, the study pursued to establish the performance [2] of the selected companies.

In order to make the analysis of the selected companies and to establish their financial and economic performance we used various financial ratios that showed the company's overall strategy for the decision making process of their capital investors [4]. For this purpose we used the most commonly used profitability measure, Return on Equity (ROE). The return on equity will provide information regarding the share of this remuneration and the investments made by the company's shareholders. This rate is one of the important indicators used for assessing the company's financial position on the market, while the increasing remuneration of the invested capital can provide an opportunity for the company to access its financial resources for reinvesting in the business or attract new investors.

By computing the financial rate of return we will be able to determine the company's equity ability to generate an excess of value after paying the capital borrowed. Also this means after writing off this due, it enables the payment of capital to the shareholders through dividends and remuneration. In the same time, the leverage indicator was computed for disclosing the global leverage ratio, computed as division between total debt and equity. This ratio presents the degree of the company's financial independence as well as its ability to use new loans.

RESULTS AND DISCUSSIONS

3.1 Analysis of the statistical data

In order to create the radiography of the pharmaceutical manufacturing companies from Romania and emphasize their competitiveness from 2012 to 2015, we first established the company's hierarchy by analyzing the net turnover, net income and their average number of employees in the last two years.

At the time of the research the BVB [17] listed the following 5 pharmaceutical manufacturers namely, Zentiva S.A. (SCD), Biofarm S.A. (BIO), Antibiotice S.A. (ATB), Ropharma S.A. (RPH) and Farmaceutica Remedia S.A. (RMAH). As illustrated in table 1 the hierarchy of the companies has not changed since the leading pharmaceutical manufacturer in 2014 as well as in 2015 is RPH with the net turnover of approximately 420 million RON (Romanian currency) respectively 434 million RON.

Table 1. Top 5 Romanian pharmaceutical manufacturers in 2014 and 2015

Company's name	**ROPHARMA S.A.**	**ZENTIVA S.A.**	**ANTIBIOTICE S.A.**	**BIOFARM S.A.**	**REMEDIA S.A.**
Country	Brasov	Bucharest	Iasi	Bucharest	Hunedoara
Net turnover 2014	420204438	394072623	320058303	128508851	246842700
Net income 2014	7202901	54242886	31138739	26559851	3055943
Average price	0.3648	0.16788	0.2345571	0.015	0.015

pe share 2014					
Average no. of employees 2014	808	488	1465	380	468
Net turnover 2015	434083007	396824593	325218796	149336199	243811
Net income 2015	8102354	46204961	27178823	27226492	760325
Average price per share 2015	0.379920	0.095932	0.020785855	0.016	0.2678
Average no. of employees 2015	829	497	1458	394	371

In order to find out how profitable a company can be in relation to the company's total assets, the Return on Assets indicator (ROA) was computed for the 5 selected companies on 4 year time frame (Table 2). Also known as the return on investment, ROA was computed by dividing the companies' yearly earnings to their total assets. This indicator is used to offer information to investors concerning the company's efficiency in changing their investing money into net income. From our 5 selected pharmaceutical manufacturers, Biofarm as well as Zentiva are the ones that registered the highest ROA value in 2015. Based on the evolution from 2012 to 2015 Biofarm was able to continuously increase their return on assets recording on average a ROA of 12.01%. Zentiva was also able to increase their ROA from 2012 to 2014 when it suffered a decrease until 2015 obtaining on 4 years an average ROA of 11.77%. Similar to Zentiva, the companies Antibiotice along with Remedia suffered a decrease in ROA from 2014 to 2015 as opposed to Ropharma who managed to increase their ROA. Based on the computation of the ROA indicator, Biofarm is better at transforming their investments into profit as opposed to the other four. At the opposite pole Remedia has registred the lowest average ROA of 1.82% confirming its management is not properly allocating their resources.

Table 2. Compared ROA for the 5 selected entities

Entity	2012	2013	2014	2015	Average ROA
BIO	10.60%	12.15%	12.74%	12.55%	12.01%
SCD	9.93%	11.25%	13.96%	11.94%	11.77%
RMAH	2.80%	1.89%	2.02%	0.57%	1.82%
RPH	1.95%	2.10%	2.52%	2.87%	2.36%
ATB	5.27%	6.13%	6.18%	4.99%	5.64%

The next indicator, Return on Equity (ROE) was computed by measuring the 5 companies' profitability to discover how much profit they generate by using the shareholder's money (Table 3). Therefore, ROE was computed by dividing the company's net income to their shareholder's equity in order to show how well the selected companies use their investments to generate a growth in their earnings. Based on the computation Biofarm has successfully managed to increase ROE from 2012 to 2015 obtaining an average ROE of 13.52% in opposed to Zentiva that has decreased from 2014 to 2015 but still obtained a bigger average ROE of 16.02%. In opposition it seems Remedia has suffered a significant decrease of their return on equity from 2012 to 2015 obtaining an average of 7.69% in the last 4 years. Based

on the computation of ROE indicator Zentiva is better at using its investments for increasing their earnings as opposed to Ropharma.

Table 3. Compared ROE for the 5 selected entities

Entity	2012	2013	2014	2015	Average ROE
BIO	7.33%	15.55%	15.10%	16.13%	13.52%
SCD	12.52%	16.08%	19.94%	15.57%	16.02%
RMAH	14.10%	7.33%	7.58%	1.75%	7.69%
RPH	7.66%	6.68%	6.31%	6.62%	6.81%
ATB	9.44%	9.06%	8.93%	7.46%	8.72%

The net profit margin is the indicator that illustrates how much of each monetary unit collected as revenues by our companies' turns into profit. Thus, it is the percentage of revenue that remains after all operating expenses, taxes and interest were deducted from the company's total revenue. This indicator is very important in declaring a company's financial health, and it was computed by dividing the net profit of a company to its revenues. By analyzing Table 4 we can say that on average the most "healthy" pharmaceutical company, from a financial point of view, is Biofarm with an average profit margin of 20.15% followed by Zentiva with 12.14% and Antibiotice with 9.2%. Also, this means Biofarm is one of the companies that are good at converting their revenues into available profit for their shareholders, as opposed to Remedia that registered a low average profit margin ratio compared to Biofarm.

Table 4. Compared net profit margin for the 5 selected entities

Entity	2012	2013	2014	2015	Average net profit margin
BIO	20.05%	21.74%	20.60%	18.23%	20.15%
SCD	13.24%	13.95%	13.76%	11.64%	13.14%
RMAH	2,34%	1.27%	1.24%	0.30%	1.28%
RPH	1.71%	1,75%	1.72%	1.85%	1.75%
ATB	8.92%	9.89%	9.76%	8.23%	9.20%

In order to measure the ability of a company to sell its merchandise or its inventory we computed the gross margin ratio, in other words the profitability of selling the inventory. The purpose for computing this ratio is to identify only the profit that comes from each company after selling their inventory, profit that can be used afterwards to pay operating expenses. This ratio was obtained by extracting the cost of the goods sold from the company's net sales. Based on the data obtained after computing the gross margin rate for the 5 pharmaceutical companies, we can observe a decrease from 2013 to 2014 at Biofarm and Zentiva, and a decrease in their gross margin from 2014 to 2015 for all pharmaceutical manufacturers but Biofarm (Table 5). With an average rate of 22.41% Biofarm has the most favorable ratio followed by Zentiva with 16.48% and Antibiotice with 11.76% as opposed to Ropharma and Remedia that scored low ratios. Having a higher profit percentage means the companies Biofarm, Zentiva and Antibiotice have more money to pay their operating expenses such as rent, utilities and employee's salaries. However often this percentage obtained after selling the inventory can also be used by the companies to fund other sections of their business.

Table 5. Compared gross margin rate for the 5 selected entities

Entity	2012	2013	2014	2015	Average gross margin rate
BIO	22.50%	24.74%	21.14%	21.26%	22.41%
SCD	16.62%	17.83%	16.35%	15.12%	16.48%
RMAH	2.88%	1.46%	1.57%	0.34%	1.56%
RPH	2.24%	2.16%	2.43%	2.30%	2.28%
ATB	10.67%	10.93%	15.76%	9.71%	11.76%

After computing the profitability ratios for the selected entities, the next step sought to identify the company's ability to pay its short term liabilities by using its current assets. Also known as efficiency and liquidity ratio, the current ratio was computed by dividing a company's current assets by its current liabilities. Based on the computation of this index (Table 6), the pharmaceutical companies Biofarm and Zentiva have registered the highest average of 3.83 and 3.63 therefore these companies have approximately 3 times more current assets than current liabilities. Also, this higher ratio would allow the 3 companies (Biofarm, Zentiva and Antibiotice) to make current debt payments, for when their liabilities become due they can easily pay them without selling the assets that generate long term revenues.

Table 6. Compared current ratio for the 5 selected entities

Entity	2012	2013	2014	2015	Average current ratio
BIO	3.99	4.08	3.59	3.67	3.83
SCD	4.28	3.70	3.74	2.81	3.63
RMAH	1.04	1.04	1.05	1.03	1.04
RPH	1.12	1.09	1.15	1.13	1.12
ATB	1.97	2.29	2.76	2.37	2.33

The next ratio that was computed, the quick ratio, is similar to the current ratio only that it focuses on the company's ability to pay its current liabilities only by using their quick assets, such as: cash and cash equivalents, current accounts receivable as well as short term investments or even marketable securities. As presented in Table 7, by dividing quick assets by current liabilities the pharmaceutical company Biofarm has scored the highest value followed by Zentiva and Antibiotice. On average Biofarm and Zentiva have the ability to pay off their obligations without selling off their capital and long term assets. Both Remedia and Ropharma have a quick ratio under 1 meaning they might have to use their long term assets to generate revenues, aspect that will show the investors that the company's current operations are not generating enough profit to pay the current liabilities.

Table 7. Compared quick ratio for the 5 selected entities

Year	2012	2013	2014	2015	Average quick ratio
BIO	3.49	3.56	3.11	3.11	3.31
SCD	3.74	3.01	3.16	2.32	3.05

RMAH	0.80	0.83	0.71	0.92	0.81
RPH	0.97	0.89	0.78	0.65	0.82
ATB	1.66	1.92	2.28	1.91	1.94

The last ratio of liquidity that was computed is the cash ratio that discloses a company's ability to pay its current liabilities only by using cash and cash equivalents that can easily be used to pay current obligations. For the selected 5 pharmaceutical companies illustrated in Table 8, in 2015, none registered a cash ratio above 1, meaning they need more than their cash reserves to pay off their current debt. This ratio presents a high interest for creditors for they would want to make sure their loans will be repaid. Based on the computation of this index for the 5 selected companies we can say on average Ropharma registered the lowest ratio of 0.09, meaning the company is having difficulties in paying its current liabilities from its cash and cash equivalents.

Table 8. Compared cash ratio for the 5 selected entities

Year	2012	2014	2013	2015	Average cash ratio
BIO	1.56	1.05	1.48	0.87	1.24
SCD	0.78	0.42	0.45	0.06	0.42
RMAH	0.09	0.12	0.14	0.16	0.12
RPH	0.03	0.06	0.22	0.06	0.09
ATB	0.62	0.28	0.06	0.10	0.26

The next ratio that was computed was the debt ratio that showed the companies abilities to pay their liabilities with assets. This solvency ratio measures the financial leverage of a company and it is calculated by dividing the company's total liabilities by its total assets. As presented in Table 9, there is a significant difference between the debt ratios of the 5 selected companies. In this situation, a lower debt ratio such as the ones recorded by Biofarma, Antibiotic and Zentiva implies a stable business activity with a long time potential, as usually a lower ratio implies the company has a low overall debt. Usually a debt ratio of 50% is considered within the normal range.

Table 9. Compared debt ratio for the 5 selected entities

Year	2012	2013	2014	2015	Average debt ratio
BIO	17.11%	16.49%	19.06%	16.03%	17.17%
SCD	22.05%	24.44%	23.63%	29.52%	24.91%
RMAH	79.26%	74.72%	72.38%	69.33%	73.92%
RPH	69.99%	66.67%	57.15%	55.00%	62.20%
ATB	2.71%	31.85%	27.66%	27.91%	22.53%

The next step sought to analyze each company's efficiency in utilizing its assets. For this reason we started by computing the inventory turnover ratio (ITR), the accounts receivable ratio, the suppliers' ratio and the current debt ratio. The inventory turnover ratio (ITR) was used as a tool to evaluate the liquidity of the inventory, such as the number of times a company has sold and replaced its inventory in a period of time. Thus it is computed by dividing the cost of goods sold by the company's average inventory at cost, in other words

net sales divided by inventory. In order to find the average selling period of the inventories we will divide 365 days by the inventory turnover ratio.

The next indicator calculated was the receivable turnover ratio, also known as “accounts receivable turnover” or the “debtor’s turnover ratio”. This indicator shows the efficiency of a company in managing the customer’s issued credits as well the collection of that credit. Because the money owned on the credit agreement does not have interest the longer it takes to a company to collect its credit sales, the biggest is the sum of money that is lost during that period. Thus, the average duration of the accounts receivable was computed by dividing the 365 by the receivable turnover ratio for that given period.

The third indicator that was calculated in this category for the 5 companies was the accounts payable turnover ratio. This indicator was used to measure the rate at which our selected companies pay off their suppliers and was computed by dividing the total purchases made from suppliers by the average accounts payable amount on one year period.

The last indicator that was computed for each company was the current debt rotation ratio which allowed us to find the period on which the company is able to pay its short term debts. It is obtained by dividing the current debts to the sales, computed for one year period. Usually this indicator is important for investors for they are able to identify the most secure company to invest in.

In the situation of Biofarm (Table 10) the average selling period of the inventory for 2012 and 2013 was 54 and 52 days decreasing to 51 and 44 days in 2014 and 2015. Thus it takes on average 46 days for Biofarm to sell and replace its inventory. Based on the computations the average accounts receivable for Biofarm have increased from 2012 to 2014 from 193 days to 210 days. However from 2014 to 2015 they suffered a decrease reaching 185 days. Theoretically this number varies based on the size of the company, usually the smaller the period the better. Still in this situation we can say the high ratio suggests the company is efficient in collecting accounts receivable and they have a high proportion of customers that pay their debts quickly. Based on the computation of the average accounts payable turnover ratio, it seems that the ratio is falling from one year to another, signaling that Biofarm is taking longer in 2014 to pay off its suppliers than in previous years. Still the number registered in 2015 showed Biofarm has improved its turnover ratio meaning they were able to pay off their suppliers faster. By analyzing the current debt rotation ratio of Biofarm we can see the number of days the company is able to pay its short term debts have decreased from 2012 to 2015 from 107 to 83. This is showing the company is improving its ability to pay off its short term debts.

Table 10. Biofarm rotation rates 2012-2015

Indicator	**2012**	**2013**	**2014**	**2015**
Inventory turnover (days)	54	52	51	46
Average accounts receivables (days)	193	198	210	185
Average accounts payable (days)	91	80	272	67
Current debt rotation (days)	107	100	105	83

In the situation of Zentiva, represented in Table 11, the average selling period of the inventory for 2012 was 44 days, increasing to 62 in 2013 and decreasing to 41 and 45 days in 2014 and 2015. Therefore, it takes on average 45 days for Zentiva to sell and replace its inventory. Based on the computations the average accounts receivable periods for Zentiva have decreased from 2012 to 2014 from 226 days to 190 days. However from 2014 to 2015 they managed to increase the ratio, reaching 185 days. Based on the size of the company we can say the high ratio suggests Zentiva is not so efficient in collecting accounts receivable. After calculating the average accounts payable turnover ratio, it seems that the ratio had some minor fluctuations from 2012 to 2015. However, based on the obtained data

from 2015 Zentiva is taking on average around 45 days to pay its suppliers. By analyzing the current debt rotation ratio of Zentiva we can see the number of days the company is able to pay its short term debts have decreased from 90 to 71 days in 2013-2014 and increased from 71 to 93 days in 2014-2015.

Table 11. Zentiva rotation rates 2012-2015

Indicator	2012	2013	2014	2015
Inventory turnover (days)	44	62	41	45
Average accounts receivables (days)	226	223	190	209
Average accounts payable (days)	45	54	37	45
Current debt rotation (days)	82	90	71	93

For the Farmaceutica Remedia, presented in Table 12, the average selling period of its inventory in 2012 was 65 days, decreasing to 37 in 2013 and later increasing to 53 days in 2014. However, in 2015 the average selling period was 14 days indicating either excessive inventories, slow movement or obsolete inventories in stock. Still, maintaining excessive inventories can be a sign of poor inventory management, for these fund allocated to the inventory could have been used in other operations of the company's business activity. Based on the computations the average accounts receivable periods for Remedia have decreased significantly from 2012 to 2014 from 167 days to 93 days. Still, the company managed to increase the rate from 2014 to 2015 to 98 days. Since this ratio is dependent on the size of the company, a decreasing ratio can suggest that the company is improving its colleting processes. After calculating the average accounts payable turnover ratio, it seems that the company managed to decrease the number of days at which they pay their suppliers, from 2012 to 2015. Still, based on the obtained data from 2015 Remedia is taking on average around 124 days to pay its suppliers. By analyzing the current debt rotation ratio of Remedia we can see the number of days the company is able to pay its short term debts have constantly decreased from 2012 to 2015 from 235 to 129. This is showing the company is improving its ability to pay off its short term debts.

Table 12. Remedia rotation rates 2012-2015

Indicator	2012	2013	2014	2015
Average inventory period	56	37	53	14
Average accounts receivables period	167	123	93	98
Average accounts payable (days)	221	170	150	124
Current debt rotation (days)	235	177	157	129

As presented in Table 13, for Ropharma the average selling period of its inventory in 2012 was 32 days and it was constantly improved increasing from 40 in 2013 to 60 days in 2015. The increasing average selling period can indicate a fast moving inventory with no excessive inventories. Analyzing the average accounts receivable periods for Ropharma, it is noticeable that the collecting period has decreased significantly from 200 to 74 days in 2012 - 2015. Even if this ratio is dependent on the size of the company its decrease can suggest that the company has good collecting processes, and good customers. After calculating the average accounts payable turnover ratio, it seems that Ropharma significantly decrease the number of days at which they pay their suppliers, from 2012 to 2014. Based on the obtained data from 2015 Ropharma is taking on average around 97 days to pay its suppliers. By analyzing the current debt rotation ratio of Ropharma we can see the number of days the

company is able to pay its short term debts have constantly decreased from 2012 to 2015 from 212 to 126. This is showing the company is improving its ability to pay off its short term debts.

Table 13. Ropharma rotation rates 2012-2015

Indicator	2012	2013	2014	2015
Inventory turnover (days)	32	40	52	60
Average accounts receivables (days)	200	131	102	74
Average accounts payable (days)	170	150	12	97
Current debt rotation (days)	212	197	140	126

For the pharmaceutical company Antibiotice the average selling period of the inventory for 2012 and 2013 was 57 days and increased to 65 and 66 days in 2014 and 2015. Thus it takes on average 66 days for Antibiotice to sell and replace its inventory. By analyzing the average accounts receivable periods for Antibiotice, the company maintained the highest period for collecting their accounts receivable compared to the other pharmaceutical companies analyzed. Even if the collecting period has decreased since 2012 to 2015 the Antibiotice company does not have a high proportion of quality customers that pay their debts quickly. Based on the computed average accounts payable turnover ratio, Antibiotice increased the number of days at which they pay their suppliers, from 2014 to 2015 from 41 days to 68. By analyzing the current debt rotation ratio of Antibiotice we can see the number of days the company is able to pay its short term debts have decreased from 2012 to 2014 but increased from 2014 to 2015 at 141 days. This is showing the company is improving its ability to pay off its short term debts.

Table 14. Antibiotic rotation rates 2012-2015

Indicator	2012	2013	2014	2015
Inventory turnover (days)	57	57	65	66
Average accounts receivables (days)	304	288	262	252
Average accounts payable (days)	58	49	41	68
Current debt rotation (days)	187	156	134	141

4. CONCLUSION

Regarding the pharmaceutical sector in Romania, in our opinion, the claw-back tax that was introduced by the Ministry of Health desired to reduce the subsidized consumption of medicines, in this case by recovering from Romanian producers a significant part from the amount that resulted from market growth. Automatically, this action forced the majority to eliminate from their production certain medicines that were not profitable any longer. Also, we see this sector as being highly concentrated on the producer segment, as the top 10 to 20 pharmaceutical producers have a significant contribution in the total domestic production. However, if analyzing the number of pharmaceutical producers in Romania and compare it to the number of pharmaceutical distributors, we find out that the number of distributors is lower than the one of producers. Still, some of those distributors are among the first exporters of medicines in Romania, such as Antibiotics, followed by Zentiva that exports more than 25% of the production of the medicine called “Nistatina”.

The continuous economic development of the pharmaceutical markets along with the competitors and the influence of the given legislations and rules are constantly shifting the conditions for the pharmaceutical actors. For this reason small production companies are less likely to survive on the market without selling to other stronger companies or by merging. This study aimed to investigate the financial performance of Romania's major brands in the pharmaceutical manufacturing industry by focusing on the top 5 companies in this sector and by presenting their evolution in the last 4 years regarding profitability, performance and competitiveness. By using the financial statements of the selected companies and their financial and economic reports we were able to compute the economic-financial indicators that measure the performance of the business in terms of their capacity to generate income and profit, in terms of liquidity, concerning their capacity to cover their short term debts and solvability. By using this type of analysis we were able to study the processes and the activities of the selected companies through the results obtained and the resources they consumed in previous years.

Based on the results, we confirmed around 60% of the major part of revenues for the companies Biofarm, Zentiva and Antibiotice is obtained from medicines with low sale price such as aspirin and paracetamol while Remedia and Ropharma declared around 50% to 55%. In terms of employees, Antibiotice allocated more than 10% of their expenses to personnel training while Biofarm and Zentiva did not exceed 10%. Also, Remedia and Ropharma both allocated around 5-7% of their expenses to personnel training.

According to our hypothesis the highest value of tradable shares should be Zentiva, followed by Biofarm and Antibiotice, followed by Remedia and Ropharma. Still by analyzing the data obtained from the BVB in the average prices in the last 52 weeks resulted in a different order, namely Zentiva followed by Antibiotice, followed by Ropharma, Biofarma and Remedia. Thus we can say the company's price per share are not as relevant for the investors in comparison to ROE, thereby the investors cannot be directly influenced by the company's ROE. In our study we pursued a more complete analysis one that also take into consideration other important ratios and provides proof for the reasons why investors should not only take direct consideration on the return on equity ratio when evaluating the company's price per share. Moreover, based on the computation of the data obtained from the BVB and from our company's financial reports, the companies have increased their turnover mostly from 2014 to 2015. In terms of profitability, the companies Biofarm and Zentiva proved to be efficient in changing their invested money into net income thereby providing a high ratio of return on assets. Also these two companies have scored the highest ratio on return on equity and showed how well they use their investments to generate a growth in their earnings. Even after all operating expenses, taxes and interest were deducted from the company's total revenue the two companies were by far occupying the leaders' positions in our top 5 showing a big percentage of their revenues turning into profit. Even in terms of liquidity Biofarma, Zentiva and even Antibiotice confirmed the activity of stable businesses with a long time potential. However the small indicators of the other companies such as Ropharma and Remedia indicate a poor management of the company that in our opinion should be taken as a priority for the years to come. We do not consider, as opposed to smaller companies, that the two might not survive on the short term, still better management decisions should be taken in order to improve the company's profit and loss accounts on long term. If not, an alternative solution for the company would be to opt for mergers and acquisitions thereby diversifying their business, creating synergy and reducing their exposure to the pharmaceutical industry. At the opposite pole we have the companies Antibiotice, Zentiva and Biofarm that based on the financial data are going to remain among the leaders of the Romanian pharmaceutical industry.

For future research we recommend to improve our study by involving more companies and enlarging our data base. As another recommendation we propose the computation of several performance indicators, economic and financial, by taking into account also additional information concerning the exact type of products and services the companies

provide, the clients portfolio and their preferences for consumption, the organizational structure and the resources of the company. Only then the method for calculating the key performance indicators can be approached from different perspectives so that we can evaluate and understand through an integrated system the past, the present and the tendencies of financial "health" of a company found in a continuous changing business environment.

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COMPETING INTERESTS

The authors have declared that no competing interests exist.

AUTHORS' CONTRIBUTIONS

The contributions of authors to this research are balanced in terms of effort, expertise, knowledge and implication. All authors contributed both in terms of data acquisition and interpretation but also in terms of designing and drafting the article. Each author searched and explored for relevant articles, procedures, techniques and database, while the results and their interpretation was done by joint effort. Recommendations and conclusions were developed after various discussions among the three researchers. The final manuscript was read and approved by all three authors.

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