ANALYSIS OF PROFIT AND LOSS STATEMENT OF THE LISTED COMPANIES IN CROATIA

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Abstract: *The efficiency of business results of listed companies is significant for investors. If total revenues increase from the year to year, especially business revenues from regular activities, investors receive a positive result of their investment. However, investors pay special attention to the efficiency of costs management, especially of operating expenses to create a revenue. If companies have a bigger increase in revenue than in business expenditures, the management and the investors are satisfied. If lower growth in expenditures is accompanied by faster growth of revenue, management and investor can expect a good reward, bonus or dividends. The main goal of this paper is to determine how successful are managers of listed companies on the Zagreb Stock Exchange for the selected business year in the research period from 2008 to 2017 in increasing of profits of shareholders in the way to maximize the revenues and minimize the expenditures and have they managed to achieve results prior to the financial crisis. The data are processed statistically with the SPSS programme. Vertical analysis of companies listed at the Zagreb Stock Exchange has pointed out a need for improvement of revenues from regular business, i.e. sales. Horizontal analysis of listed companies shows that proportions of the profit and loss statements from 2008 have not yet been achieved. Also, the cost-effectiveness indicators show that a company's management is a little bit more efficient today than in the past, but the reason is financial revenue, and not the increase in sales operation.*

Keywords: *Profit and loss statement, cost-effectiveness indicators, revenue, expenses, sales revenue, profit.*

1. INTRODUCTION

Instability of markets under the influence of constant crisis leaves a mark on a company's business. Companies which are listed on stock exchanges have to constantly improve their business activities and realize positive results in order to keep existing shareholders, but also to attract new ones.

Shareholders are particularly interested in good business performance of the company because a constant increase of share value also enables the growth of their wealth, as well as the growth of the paid dividend. It is therefore in the interest of every shareholder that the company maximizes profit, so their dividends could get as high as possible. Profit and loss statements is therefore in the best interest of shareholders, as well as managers.

The main goal of this paper is to determine how successful are managers of listed companies in the Zagreb Stock Exchange in increasing of profits of shareholders in the way to maximize the revenues and minimize the expenditures in the research years, and if they have managed to achieve results prior to the financial crisis.

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2. CONCEPTUAL FRAMEWORK

Companies prepare and submit financial statements in accordance with International Financial Reporting Standards (IFRS). International Accounting Standards (IAS) [1] prescribe a complete set of financial statements. The profit and loss statement is one of them. In Croatia, according to the Accounting Act [2], all large companies and all companies listed at the Zagreb Stock Exchange need to prepare their financial statements according to the IFRS. Listed companies use the same accounting standards, but they can choose some different way of measurement of some items like depreciation and amortization. Most companies listed at the Zagreb Stock Exchange, 99,07% of them, use the straight-line method [3].

The profit and loss statement "is a summary of profitability of the company over a period of time, such as a year" [4]. It presents revenues and expenditures generated during an operation period. "It is useful to distinguish four broad classes of expenses: cost of goods sold, which is a direct cost attributable to producing of a product sold by the company; general and administrative expenses" [5]. „Expenses recognised in profit or loss should be analysed either by nature [6]. The profit and loss account gives us a picture of a company's performance and future prospects. „If Pepsi's balance sheet resembles a snapshot of the company at a particular time, its profit and loss account is like a video. It shows how profitable the company has been during the past year" [7].

Shareholders get their first impression on business results based on net profit. Shareholders can notice that companies „realize a positive business profit, but negative net profit due to the effect of financing of expenditures and extraordinary expenditures...or...positive net profit as a result of extraordinary income, but at the same time business profit is negative" [8]. Due to the above mentioned it is necessary to do a vertical and horizontal analysis of the profit and loss account.

One of the business indicators which uses information from the profit and loss account is also the indicator of cost-effectiveness. „Cost-effectiveness indicators measure the ratio of income and expenditures and show the income realized per unit of expenditure" [9]. Desirable value of these indicators is greater than 1. In that case, income is greater than expenditure, which means for the company that it operates profitably. With these indicators we conclude does a company perform business operations cost-effective (>1) or not (<1).

Cost-effectiveness indicators are calculated on the basis of indicators listed in Table 1.

Description	Numerator	Denominator
Cost-effectiveness of total business operations - ETB Ratio	Total revenues	Total expenses
Cost-effectiveness of sales business of cost-effectiveness of operative business - EOB Ratio	Sales revenues	Sales expenditures
Financing cost-effectiveness – EFO Ratio	Financial revenues	Financial expenditures

Table 1: Cost-effectiveness indicators [10]

Profit and loss account analysis is mostly performed on the level of individual companies, as well as in the paper Vujević & Balen, in which it was found that the cost-effectiveness of a regular boat line is bigger than the cost-effectiveness of the whole business operations of a maritime transport company, namely in 2003 for 19.62%, in 2004 for 19.11% and in 2005 for 16.09% [11].

3. THE GOALS, BASIS, AND HYPOTHESIS OF THE RESEARCH

The research described in this paper is based on information obtained from the financial statements of 96 companies listed on Zagreb Stock Exchange in 2017, 2012 and 2008.

For statistical testing of main goal is use three statistical hypotheses.

The first statistical hypothesis:

H0: There is not a statistically significant difference in the cost-effectiveness of total business operations - ETB ratio depending on which year ratio is calculated.

H1: There is a statistically significant difference in the cost-effectiveness of total business operations - ETB ratio depending on which year ratio is calculated.

The second statistical hypothesis:

H0: There is not a statistically significant difference in the cost-effectiveness of sales business of cost-effectiveness of operative business - EOB ratio depending on which year ratio is calculated.

H1: There is a statistically significant difference in the cost-effectiveness of sales business of cost-effectiveness of operative business – EOB ratio depending on which year ratio is calculated

The third statistical hypothesis:

H0: There is not a statistically significant difference in the financing cost-effectiveness – EFO ratio depending on which year ratio is calculated.

H1: There is a statistically significant difference in the financing cost-effectiveness – EFO ratio depending on which year ratio is calculated.

For the statistical analysis, this paper uses Descriptive Analysis, Nonparametric test like as Friedman test and Wilcoxon signed-rank test. In Wilcoxon signed-rank test, a new significance level is 0.017, according to Bonferroni correction. The statistical study used the software IBM SPSS.

4. EMPIRICAL RESULTS

The research included 96 companies listed on Zagreb Stock Exchange in 2017, 2012 and 2008. In Chart 1 is visible that 29% of companies are coming from touristic sector, 21% from other than food production sector and 18 % from food production sector.

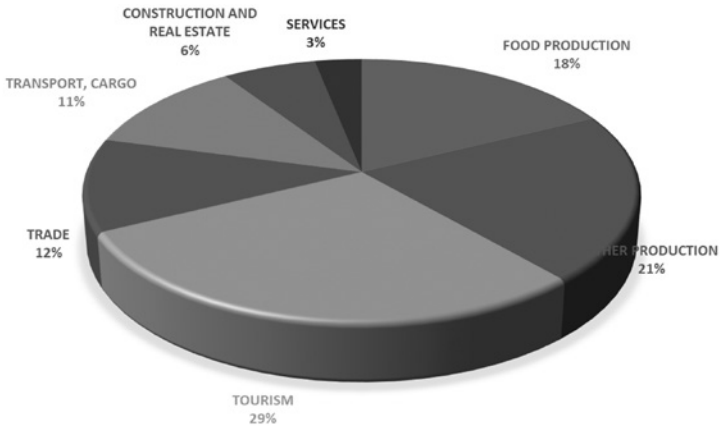


Chart 1: The Activities of the Listed Companies

Most important elements of profit and loss account are total revenue, total expenditures, sales revenue, operating expenditures, financial revenues, financial expenditures and net profit. The main elements of profit and loss account of researched companies for 2008, 2012 and 2017 are visible in Chart 2. All elements have the highest values in 2008.

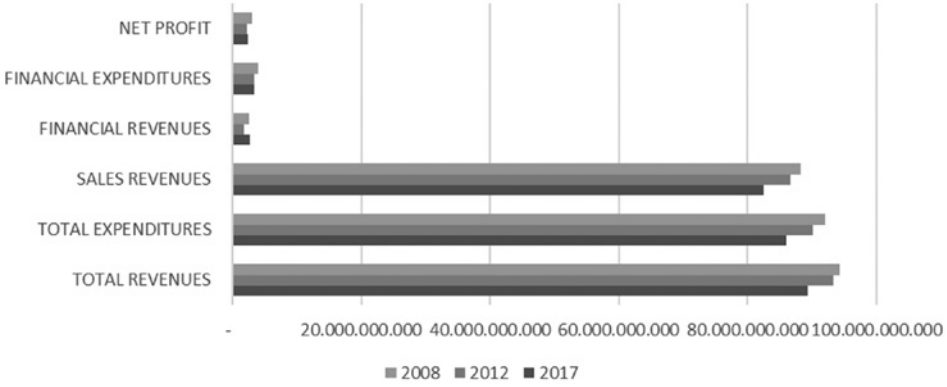


Chart 2: The basic characteristic of Profit and Loss Statement of listed companies

The horizontal analysis of profit and loss statement of listed companies is shown in Table 2. The horizontal analysis shows that the main elements like total revenue, total expenditure, sales revenue and financial expenditure have not reached observed years. Increase in financial revenue takes place due to the fact that companies consolidated their financial assets at group level. Net profit has increased by 4% in 2017 according to 2012 because tax decreased from 20% to 18% or 12% in 2017.

YEAR	TOTAL REVEN.%	TOTAL EXPENS. %	SALES REVEN. %	FINANC. REV. %	FINANC. EXP. %	NET PROFIT %
2017/2012	96	95	95	153	99	104
2017/2008	91	93	93	106	83	78
2012/2008	95	98	98	69	83	75

Table 2: The Horizontal Analyses of Profit and Loss Statement of listed companies

For all investors, net profit is the most important element of profit and loss statement. Net profit is the main source of investor's dividends. Chart 3 shows the only investors in companies in food production. Tourism and trade activities could expect some dividends in all three years.

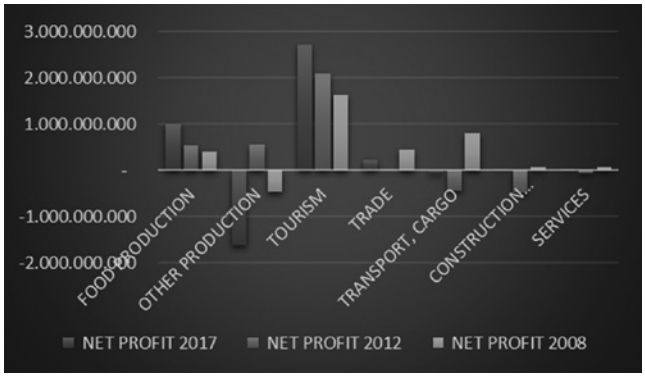
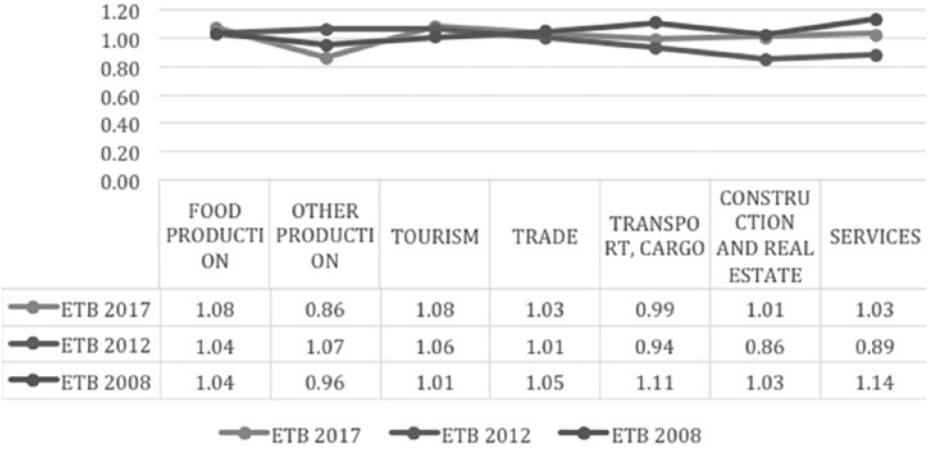


Chart 3: Net profit of listed companies according to the activities

The average ratio of total revenues and total expenses of researched companies listed in 2017 and 2012 is 1.04 and in 2008 it is 1.02. The ratio according to the activities is visible in Chart 4. The

ETB ratio in food industries, tourism and trade activities shows a ratio bigger than 1 in all three years. The amount of total revenue is bigger than total expenditure in those three activities (food, tourism and trade). Tourism shows a permanent increase in the ratio from year to year. The food production had the same ratio for 2008 and 2012 (1.4) and shows an increase in 2017 (1.08).



	FOOD PRODUCTION	OTHER PRODUCTION	TOURISM	TRADE	TRANSPORT, CARGO	CONSTRUCTION AND REAL ESTATE	SERVICES
ETB 2017	1.08	0.86	1.08	1.03	0.99	1.01	1.03
ETB 2012	1.04	1.07	1.06	1.01	0.94	0.86	0.89
ETB 2008	1.04	0.96	1.01	1.05	1.11	1.03	1.14

Chart 4: The ratio of total revenues and total expenditures of listed companies

The results of the Friedman Test for ETB ratio are shown in Table 3. There is a statistically significant difference in the ratio, depending on the year for which the ratio is calculated $\chi 2(2) = 9.646$. $p = 0.008$. Because $p < 0.05$ we will reject the first null hypothesis.

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum	Percentiles		
						25th	50th (Median)	75th
ETB 2017	96	1.048	0.305	0.171	2.623	0.985	1.038	1.125
ETB 2012	96	0.941	0.285	0.127	2.166	0.818	0.986	1.065
ETB 2008	96	0.949	0.273	0.000	1.554	0.908	1.007	1.049

Friedman Test

Ranks

	Mean Rank
ETB 2017	2.23
ETB 2012	1.78
ETB 2008	1.99

Test Statistics[a]

N	96
Chi-Square	9.646
Df	2
Asymp. Sig.	.008

a. Friedman Test

Table 3: The Friedman Test for ETB ratio

Because there was a statistically significant difference in ETB ratio, we followed up with the Wilcoxon signed-rank tests. Bonferroni correction set a significance level at $p < 0.017$. The result of the Wilcoxon signed-rank test is shown in table 4. There were no significant differences between the Indicator ETB 2008 vs 2012 ($Z = -1.118$. $p = 0.263$) and in 2008 vs 2012 ($Z = -2.317$. $p = 0.021$). However. there was a statistically significant differences in the Indicator ETB in 2012 vs. 2017 ($Z = -3.976$. $p = 0.000$).

	ETB 2012 - ETB 2017	ETB 2008 - ETB 2017	ETB 2008 - ETB 2012
Z	-3.976[b]	-2.317[b]	-1.118[c]
Asymp. Sig. (2-tailed)	.000	.021	.263

b. Based on positive ranks.

c. Based on negative ranks.

Table 4: The Wilcoxon Signed Ranks Test of ETB ratio

The most important ratio is the ratio of sales operations. The average ratio of sales revenues and sales expenses of researched companies listed in 2017 and 2012 is 1.05 and in 2008 is 1.08. The ratio according to activities is visible in Chart 5. The EBO ratio in food industries, tourism and trade activities is bigger than 1 in all three years. The amount of the sales revenue is bigger than sales expenditure in those three activities (food, tourism and trade). Tourism shows a permanent increase in the ratio from year to year for 0.01. Food production had a ratio of 1.13 in 2008, 1.06 in 2012 and 1.08 in 2017.

	FOOD PRODUCTION	OTHER PRODUCTION	TOURISM	TRADE	TRANSPORT, CARGO	CONSTRUCTION AND REAL ESTATE	SERVICES	AVERAGE
EBO 2017	1.08	0.87	1.09	1.04	1.01	1.03	1.18	1.05
EBO 2012	1.06	1.11	1.08	1.02	0.96	0.88	0.94	1.05
EBO 2008	1.13	1.00	1.07	1.07	1.14	1.39	1.19	1.08

EBO 2017 EBO 2012 EBO 2008

Chart 5: The Ratio of sales revenue and sales expenditure of listed companies

The result of the Friedman Test of EBO Ratio is shown in Table 5. There is a statistically significant difference in the Ratio depending on which year ratio is calculated $\chi 2(2) = 8.313$. $p = 0.016$. Because $p < 0.05$ we will reject the first null hypothesis.

The result of the Wilcoxon signed-rank tests for the ratio of the operating revenues and operating expenses (EBO Ratio) is shown in Table 6. There were no significant differences between the Ratio EBO 2008 vs 2017 ($Z = -2.120$. $p = 0.034$) and in Ratio EBO 2008 vs 2012 ($Z = -0.322$. $p = 0.418$). However. there were a statistically significant differences in the EBO Ratio in 2012 vs. 2017 ($Z = -3.183$. $p = 0.001$).

The ratio of financial operation is like expected, less than 1 for all activities, because companies need some external financial assets and pay interest. The average ratio of financial operation of researched listed in 2017 is 0.79 and 2012 is 0.52, and in 2008 is 0.62.

According to the Friedman Test for EFO Ratio shown in Table 7. There is a no statistically significant difference in EFO Ratio depending on which year ratio is calculated. The Friedman Test of EFO Ratio shows $\chi 2(2) = 1.521$ $p = 0.467$. Because $p > 0.05$ we will accept the third null hypothesis.

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum	Percentiles		
						25th	50th (Median)	75th
EBO 2017	96	1.094	0.367	0.201	3.137	1.005	1.052	1.150
EBO 2012	96	1.006	0.314	0.005	2.383	0.878	1.018	1.099
EBO 2008	96	0.887	1.083	-9.277	1.640	0.957	1.023	1.083

Ranks

	Mean Rank
EBO 2017	2.24
EBO 2012	1.86
EBO 2008	1.90

Test Statistics[a]

N	96
Chi-Square	8.313
df	2
Asymp. Sig.	.016

a. Friedman Test

Table 5: The Friedman Test of EBO Ratio

Test Statistics[a]

	EBO 2012 - EBO 2017	EBO 2008 - EBO 2017	EBO 2008 - EBO 2012
Z	-3.183[b]	-2.120[b]	-.322[c]
Asymp. Sig. (2-tailed)	.001	.034	.748

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

c. Based on negative ranks.

Table 6: The Wilcoxon Signed Ranks Test of EBO ratio

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum	Percentiles		
						25th	50th (Median)	75th
EFO 2017	96	.881	2.345	.000	22.708	.245	.467	.894
EFO 2012	96	4.106	28.204	.000	274.268	.102	.313	.729
EFO 2008	96	.752	1.387	.000	10.794	.132	.369	.744

Ranks

	Mean Rank
EFO 2017	2.08
EFO 2012	1.91
EFO 2008	2.01

Test Statistics[a]

N	96
Chi-Square	1.521
df	2
Asymp. Sig.	.467

a. Friedman Test

Table 7: The Friedman Test of EFO Ratio

The result of vertical analyses of listed companies shows that structure of profit and loss statement elements are similar in all three years (Table 8). Operating revenue is slightly smaller compared to 2012 and 2008, while operating expenses slightly increased in the total revenue in 2017. Sales revenue, although showing an increase in the 2017 structure over 2008, should increase by a few percent.

DESCRIPTION	**2017 %**	**2012 %**	**2008 %**
OPERATING REVENUE	96.87	97.93	97.39
SALES REVENUE	92.40	93.02	89.48
OPERATING EXPENSES	94.48	93.19	90.54
SALARY	14.65	12.36	9.94
AMORTIZATION & DEPRECIATION	8.46	7.12	5.75
FINANCIAL REVENUE	2.91	1.82	2.49
FINANCIAL EXPENSES	3.67	3.53	4.01
TOTAL REVENUE	**100.00**	**100.00**	**100.00**
TOTAL EXPENSES	96.27	96.52	93.31
NET PROFIT	2.57	2.37	2.97

Table 8: Vertical analyses of listed companies

5. CONCLUSION

Profit and loss statement as one of the basic financial statements provides the first image on business profitability of a company. Investors first, always check the net profit of a company, if they can expect a dividend. Shareholders are, besides net profit, also interested in the revenues structure from which net profit accrues, i.e. is it a result of regular business or is it a result of financial revenues from consolidating the finance of the group.

Vertical analysis of companies listed at the Zagreb Stock Exchange has pointed out a need for improvement of revenues from regular business, i.e. sales. Horizontal analysis of companies listed at the Zagreb Stock Exchange has demonstrated that proportions of the profit and loss statements from 2008 have not yet been achieved, the year which was taken as the reference year in this research. Cost-effectiveness indicators show that a company's management is a little bit more efficient today than in the past, but the reason is financial revenue, and not the increase in sales operation. Cost-effectiveness indicators of operative business are higher than 1, which is positive for all three observed years, but in 2012 and 2017 indicators are lower (1.05) than in the year 2008 (1.08).

The managers of companies listed on the Zagreb Stock Exchange face constant efforts on business improvement, finding new markets, increasing of revenues from sales with lowering of expenditures.

In further research it is necessary to ask the managers of listed companies why is the recovery so slow and will all tax and economic reforms, as well as the upgrade of the rating of Croatia by the S&P agency on BBB – contribute to a faster recovery of the society.

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