Determinants of voluntary Internet Financial Reporting: analysis for selected CEE countries

M. Bartulović and I. Pervan

Abstract—Research on Internet financial reporting was conducted on the sample of 91 companies whose securities are listed on the following capital markets: Zagreb Stock Exchange, Ljubljana Stock Exchange, Belgrade Stock Exchange, Sarajevo Stock Exchange and Banja Luka Stock Exchange. Research results have shown that there are differences in the level of the Internet financial reporting between observed countries. For example the highest level of Internet financial reporting measured through IFR score was reported in Slovenia and it amounted 23.25 while the lowest level of transparency was measured on Banja Luka Stock Exchange where the IFR score was only 3.61. In the second part of the research authors analyzed the variables that affect IFR scores significantly. Results have shown that for each of the observed capital markets it is possible to identify variables which significantly influence the level of Internet financial reporting. As variables that significantly influence IFR scores on the observed markets regression models pointed out the following variables: official listing, turnover, assets and industrial sectors.

Keywords—Internet financial reporting, comparative analysis, trends.

I. INTRODUCTION

FINANCIAL statements are the primary source of publicly available information on listed company's performance and its business activities. Therefore, transparent financial reporting is crucial for efficient functioning of capital markets. Pervan & Bartulović [1] state that transparent financial reporting is an essential prerequisite for efficient functioning of capital markets and good investment decisions. According to modern accounting frameworks the aim of financial reporting and disclosure is to provide useful information about company's financial position, profitability and cash flows.

Today, in modern business environment Internet and its applications are unavoidable tools for disseminating financial information to investors and other users. According to [2] providing information about business results is the most significant opportunity for communicating with investors. Since Internet is widely used for informing investors and other users about business activities and financial performance of listed companies there is a large number of scientific papers which analyzed Internet financial reporting practices of listed companies in USA and EU. However, it is important to notice

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that there are still a small number of papers dealing with Internet financial reporting on the emerging capital markets of Central and Eastern Europe.

A basic characteristic of these markets during the last decade is that they have been growing rapidly, attracting a large number of domestic and foreign investors and thereby it is interesting to analyze the achieved level of Internet financial reporting on these markets. Comparative Internet financial reporting analysis is conducted on a sample of companies that list their securities on the following markets: Ljubljana Stock Exchange, Zagreb Stock Exchange, Banja Luka Stock Exchange, Sarajevo Stock Exchange and Belgrade Stock Exchange.

Conducted research has two aspects: comparative and explanatory. In the first, comparative part of research authors define achieved level of Internet financial reporting measured through Internet Financial Reporting Score (IFR score) and compare it among five selected markets. According to different levels of development and different characteristics of selected markets (macroeconomic environment, demand for financial information, corporate governance system), significant differences in IFR score are expected and Kruskall-Wallis test is used in order to test these differences.

In the second, explanatory part of the research authors try to define factors that are positively related to IFR score for each of the analyzed capital markets. Regression analysis is used in order to test how factors such as company size, profitability, industry, official listing, market capitalization and stock turnover influence Internet financial reporting.

II. PREVIOUS RESEARCH CONCERNING FINANCIAL REPORTING ON THE INTERNET

The development of Internet technology and the expansion of its use for voluntary financial reporting have stimulated a large number of academic studies in this area. Research related to Internet financial reporting can be classified in the following three categories: research related to practical application of Internet financial reporting in individual countries, research related to comparison of Internet financial reporting practices between different countries and research into the factors that affect financial reporting on the Internet in individual countries.

The first type of research, so called descriptive research is focused on examining general characteristics of the use of Web for financial reporting in individual countries. Within the

research results the authors provide data about the percentage of corporations that use Internet financial reporting, the types of financial reports issued (balance sheet, profit and loss account,...), the frequency of publishing the reports (annually, half-yearly,...) and the format of published reports (pdf, Excel,...). An example of an early study related to this topic is the research conducted by Brennan & Hourigan [3] on a sample of Irish corporations. According to the research results only 37% of listed Irish companies published their financial reports on the Internet.

Hedlin [4] founded out that the majority of Swedish firms listed on Stockholm stock exchange did use financial reporting on the internet. Similar results have been reported by Hurtt et al. [5]. Namely, at the sample of 100 biggest corporations in the USA (Fortune 100) authors came to the result that 93 companies had their own Web site. Furthermore, 74% of companies publishes balance sheet on their Web pages and 70% of companies announces profit and loss account as well as cash flow statement.

As examples of descriptive research conducted in the world studies that were conducted by Gowthorpe & Amat [6] and Ettridge et al. [7] can also be pointed out. In 2005 Pervan [8] conducted a research on a sample of 38 Croatian listed companies, and according to the research results only 39.4% of the observed companies voluntary published a set of five financial reports on their web pages. Research on Internet financial reporting practices for Romanian companies whose shares are quoted on a stock exchange in Bukurest was conducted by Bogdan et al. [9] and as the most important research results authors provide the data that 76.66% of the observed companies has their own Web site while only 48.33% of them use these pages for financial reporting.

In another type of studies, so called comparative research, authors analyze and compare Internet financial reporting practices for two or more countries. Use of Internet for investor relations was, among others, analyzed in studies conducted by Deller et al. [10] and Geerings et al. [11]. Deller et al. [10] analyzed the role of Internet in investor relations and research was performed on a sample of largest US, UK and German corporations. According to the research results 91% of US corporations used the Internet for investor relations and this practice is little less common for UK and German corporations where 72 or 71% of the companies has Investor relation via the Internet.

Geerings et al. [11] conducted research at a sample of 50 largest companies from France, Holland and Belgium quoted on Euronext. According to the research results companies from France and Holland use the Internet for investor relations purposes more than Belgian companies. Furthermore, companies from all three countries presented their basic financial reports on the Net very frequently while some of the advantages of Internet reporting (such as formats suitable for calculations, mailing lists and multimedia) were less frequently used by Belgium companies.

Comparative research for companies from five countries (USA, Canada, UK, Australia and Hong Kong) for the years 2001 and 2002 was carried out by Allam and Lymer [12]. This study showed that most of the companies (96-100%) published their balance sheet, profit and loss account and cash flow report. Furthermore, the authors provided data that PDF was the most frequent format for the presentation of reports while formats suitable for calculations (such as Excel) were found only in 12% of the observations.

Third type of studies dealing with Internet financial reporting is focused on factors affecting corporate decisions concerning their level of Internet financial reporting. As example for this type of research, study conducted by Pirchegger and Wagenhofer [13] for Austrian and German quoted companies can be pointed out. Firstly, authors evaluated the quality of website based on financial and non-financial criteria and then achieved grades for each company were used in regression analysis as the dependent variable. As independent variables the size of the company and the percentage of shares traded on stock exchange were used.

The research results showed that for the sample of Austrian companies Internet financial reporting quality was positively and significantly correlated with both independent variables while for the German sample positive and significant correlation was confirmed between Internet site quality and size of the company. Bonson & Escobar [14] analyzed voluntary disclosure on the Internet using a sample of 300 EU companies. The sample was formed out of the 20 largest companies by market capitalization from each EU country. Based on 23 criteria authors formed a transparency index (TI). Research results showed that TI was statistically related to country of origin, since companies from the North and Central Europe have higher TI in comparison with companies from South Europe. Also, variables industry sector and company size were positively correlated with TI.

Marston [15] analyzed the Internet reporting practice of the 100 largest Japanese companies. Using the Kruskal-Wallis test it was concluded that size was significantly related with the Japanese Web site status, while this relation was less clear for the level of disclosure. The analysis of internet financial reporting for German listed companies was conducted by Marston & Polei [16]. For German sample the level of the Internet financial reporting was positively related with foreign listing status in 2000 and 2003. The free float variable was significant only in 2000. Bonson & Escobar [17] analyzed the differences in Internet financial reporting for 13 countries from Eastern Europe based on 44 criteria which formed the Distance Index (DI). Research was conducted on a sample of 1.543 companies and according to the research results DI was positively correlated with the Big Four Auditor, financial sector and company size.

Pervan [18] analyzed voluntary reporting on the Internet in Croatia and Slovenia and research results showed that the Slovenian companies are more transparent in comparison with Croatian companies. Namely, the measure of Internet financial

reporting (IFR score) was 6.85 for Croatian sample and 17.63 for the Slovenian sample. In 2010 Pervan & Sabljić [19] analyzed trends and influential factors of voluntary Internet reporting for the listed companies in Croatia. Research results have shown that extent of voluntary disclosed information has significantly increased in comparison with early research. Furthermore, market capitalization and official listing were identified as factors that positively influence the level of voluntary Internet disclosure.

Research on Internet financial reporting on the Athens Stock exchange was performed by Despina & Demetrios [20]. Research was conducted on a sample of 302 companies listed on the Athens Stock Exchange and the authors considered 57 factors which reflect the level of Internet financial reporting. First two factors are related to industry sectors and market capitalization while the other 55 factors are grouped in five categories. All factors together constitute an Internet Reporting Index. The average Index value for the companies quoted on Athens Stock Exchange was 30.30 and weighted average score was 49.71. Also, among other, research results have shown that market capitalization is positively related to IFR score.

Research on impact of transparency level (measured through IFR score) on the value relevance of accounting information was conducted by Pervan & Bartulović [21]. They tested the hypothesis that level of transparency is positively related to value relevance of accounting information, meaning that higher transparency should result with higher value relevance of accounting information. According to research results authors confirmed the tested hypothesis since it was possible to distinguish companies that belong to group of countries with lower value relevance from those that belong to group of countries with higher value relevance based on data about transparency level, i.e. IFR score.

Study on Internet financial reporting in Malaysia was conducted by Thangatorai et al. [22]. Results of their study have shown that board independence, financial experts on board, family members on board and director ownership have a significant influence towards the level of corporate voluntary Internet financial reporting.

III. THE STRUCTURE OF THE RESEARCH

A. Sample description

Comparative analysis of Internet financial reporting was conducted on the selected capital markets from Central and Eastern Europe countries. Sample includes capital markets from the following countries: Croatia, Slovenia, Bosnia and Herzegovina and Serbia. The sample includes countries that are characterized by a similar development path of transition countries and the challenges of establishing an efficient capital market. It is important to point out that the markets included in analysis are characterized by weak market activity and there is no active trading for a large number of listed shares. Therefore, it was useful to make a selection and include in this research only those companies whose shares were actively traded in 2012. For the selection a simple criterion was used –

share turnover in 2012.

By subjective decision of the research authors only those companies whose share in total turnover of shares in 2012 was at least 0.5% were included in the sample. Different criteria for the formation of the sample might have resulted in different sample and different conclusions so the way of forming the sample should be taken into account when interpreting research results. However, it should be noted that this way of forming the sample resulted in the coverage of the largest and most liquid companies on the observed capital markets.

Therefore, the sample includes listed companies that realized the above mentioned criteria for the year 2012 and in order to increase the sample homogeneity and comparability of results among countries financial institutions were eliminated from the sample since these institutions are characterized by certain specificities related to preparation and presentation of financial statements.

By complying research criteria a sample for each of the selected capital markets was formed and finally it consisted of 91 companies. Number of companies for each of the observed markets is shown in table 1.

Table 1 Sample overview for the selected capital markets

Capital market	Number of observations
Zagreb Stock Exchange	26
Ljubljana Stock Exchange	12
Belgrade Stock Exchange	16
Sarajevo Stock Exchange	19
Banja Luka Stock Exchange	18
Total number	91

Source: Author's calculation

B. Research hypothesis

The level of voluntary Internet Financial Reporting can be measured using Internet Financial Reporting score (IFR score) developed by Pervan [18]. In his research Pervan developed IFR score which consists out of 30 elements. Criteria for the formation of the overall IFR score are divided into four groups: information from the financial reports (11 elements), other useful information (5 elements), transparency of management and supervisory board (6 elements) and user support (8 elements). Detailed content of each group of criteria is shown in table 2.

Table 2 Criteria for the formation of Internet financial reporting score

A) Information from the financial reports	
1.	Balance sheet
2.	Profit and loss account
3.	Cash flow statement
4.	Changes in shareholder equity statement
5.	Audit report
6.	Notes to the financial statements
7.	Accounting policies

8.	Segment reports
9.	Quarterly reports
10.	Half-yearly reports
11.	Reports from previous years
B) Other useful information	
12.	Last share market price
13.	Press and public releases
14.	Management analysis of operations
15.	Analysis of main business risks
16.	Supervisory board report
C) Transparency of management and supervisory board	
17.	Data about the management
18.	Information about management remuneration
19.	Supervisory board data
20.	Information concerning supervisory board remuneration
21.	Statement of managements responsibility for the financial reports
22.	Code of corporate governance
D) User support	
23.	Special part of the Web for investors
24.	Internal Web page search
25.	E-mail address
26.	Mailing lists
27.	Ability to download reports
28.	Format of reports suitable for calculations
29.	Web page in English
30.	English version of financial reports

Source: [18]

In forming the overall Internet financial reporting score each group of criteria and each individual criterion has an equal weighting. It is important to notice that there are different approaches in the literature (for example [16], [13]) but in order to avoid subjectivity in criteria authors have chosen equal weights for all the criteria. Finally, total Internet financial reporting score is calculated by simple summing grades for each criterion. Grade for each criterion can be 1 (criterion is met) or 0 (criterion not met). The maximum possible IFR score can be 30.

The aim of this research is to determine IFR score or the achieved level of Internet financial reporting for each of the observed markets and then compare the differences in the levels of Internet financial reporting for all the markets included in research. More precisely, in order to compare the levels of Internet financial reporting it is necessary to test out the statistical significance of the differences between the average values of IFR scores for all the markets included in this study.

Differences in the level of Internet financial reporting are expected because of the differences in corporate governance practices and reporting, in the role of institutional investors and different level of capital markets development and finally because of the macroeconomic differences among observed countries.

Based on the above mentioned first working hypothesis is formed as follows:

H1: There are differences in the level of Internet financial reporting among observed countries from the Central and Eastern Europe.

Namely, it is possible to hypothesis that a higher level of GDP per capita and a stronger role of institutional investors create greater demand for shares and indirectly, a greater demand for financial and other kind of information on company's operations. At the same time, a higher level of corporate governance and an equal treatment of all shareholders should result in better transparency and a higher level of financial reporting.

Taking into account all the above mentioned it can be assumed that companies listed on Slovenian capital market should have the highest level of Internet financial reporting, while the lowest level, because of the general business and macroeconomic characteristics, can be expected on the capital markets in Bosnia and Herzegovina, i.e., on Banja Luka and Sarajevo Stock Exchanges.

In the second, explanatory part of the study, authors try, at the level of each country and at the level of each capital market, to determine factors that significantly influence the level of Internet financial reporting. In this part of research, IFR score presents a dependent variable which is assumed to depend on one or more independent variables.

In defining factors that influence the level of Internet financial reporting, based on previous research in this area, authors take into consideration following variables: the company size, profitability, market activity and industrial sectors. Description of independent variables is given in table 3.

Table 3 Description of independent variables

Variable	Symbol	Description
Size (company assets)	ASTS	From balance sheet (31.12.2011.)
Profitability (return on equity)	ROE	Net income/equity (2011.)
Official market	OFMAR	Dummy (1-yes, 0-no)
Market capitalization	MCAP	Market capitalization at the end of 2011.
Share turnover	TURN	Share turnover in 2011.
Industrial sectors		
Tourism	TOUR	Dummy (1-yes, 0-no)
Pharmaceuticals	PHAR	Dummy (1-yes, 0-no)
Food industry	FOOD	Dummy (1-yes, 0-no)
Transport	TRANS	Dummy (1-yes, 0-no)
Trade	TRADE	Dummy (1-yes, 0-no)
Energetic	ENER	Dummy (1-yes, 0-no)
Construction	CONS	Dummy (1-yes, 0-no)

Source: Author's calculation

In the second, explanatory part of the study, the following hypotheses was formed:

H2: Factors such as size, profitability and market activity of shares influence significantly the level of Internet financial reporting.

In this research authors assume, in accordance to studies that are based on the assumption that larger companies have greater agency costs and that more vigorous financial reporting can reduce agency costs [16], that company size, presented through the size of company's assets, is positively related to IFR score. Furthermore, since according to the signaling theory more profitable companies tend to separate from less profitable companies by enhanced financial reporting, positive relationship between the profitability variable (measured through return on equity – ROE) and IFR score is expected.

Market activity of shares can also significantly influence the level of transparency and Internet reporting. Namely, since all the markets included in analysis can be characterized as markets in development and large number of shares is not liquid, it can be assumed that market activity will influence IFR score significantly.

If shares are actively traded it could be expected that there will be larger demand for financial and non-financial information which will finally result in higher level of voluntary financial reporting. Finally, for all the variables that represent market activity of a share (official listing, market capitalization and turnover) significant and positive relation with IFR score is expected. In order to control the sector effects dummy variables for sectors represented in the sample will be included in the analyses.

IV. RESEARCH RESULTS

A. *Comparison of the IFR scores for the observed capital markets*

Research on the Internet financial reporting practices was conducted at the end of 2012 at a sample of 91 companies whose shares were listed on one of the following capital markets: Zagreb Stock Exchange, Ljubljana Stock Exchange, Belgrade Stock Exchange, Sarajevo Stock Exchange and Banja Luka Stock Exchange. IFR scores and characteristics of the level of Internet financial reporting are shown in table 4.

Table 4 Basic characteristics of IFR score

Capital market	Number of observations	IFR score
Zagreb Stock Exchange	26	21.27
Ljubljana Stock Exchange	12	23.25
Belgrade Stock Exchange	16	9.75
Sarajevo Stock Exchange	19	6.74
Banja Luka Stock Exchange	18	3.61

Source: Author's calculation

The research results indicate that the level of Internet financial reporting is the highest in Slovenia since IFR score for the sample of companies whose shares are listed on Ljubljana stock exchange equals 23.25. Slovenia is followed by Croatia, which has slightly lower IFR grade and it equals 21.27.

In three other observed countries IFR score is rather low and it amounts 9.75 for Serbia, while according to expectations the lowest IFR score was measured at capital markets in Bosnia and Herzegovina. So the IFR score for the sample of companies listed on Sarajevo Stock Exchange equals 6.74, and for the companies listed on Banja Luka Stock Exchange IFR score equals only 3.61.

The first results of the analysis of Internet financial reporting indicate that there are obvious differences in the IFR scores among observed countries. In order to test the statistical significance of the noticed differences Kruskal-Wallis test was applied. Here it is important to point out that the normality of the variable IFR score was tested using Komolgorov-Smirnov test, which comes with the statistical program SPSS.

According to this test, the IFR variable did not follow a normal distribution which is why the testing of the differences of the arithmetical means of IFR scores was conducted using Kruskal-Wallis test. Results of Kruskal-Wallis test are presented in table 5.

Table 5 Testing the differences between the arithmetical means of IFR score using Kruskal-Wallis test

Test statistics [a, b]	
	IFR score
Chi-Square	55.719
Df	4.00
Asymp. Sig.	0.001
a. Kruskal-Wallis test	
b. Grouping variable	

Source: Author's calculation

The results of Kruskal-Wallis test show that there are significant differences between arithmetical means of IFR scores among observed countries since empirical significance equals 0.0001 and hypothesis that there are significant differences between arithmetical means of IFR scores among different countries is accepted.

B. *Analysis of variables influencing the IFR score*

The aim of this research was besides determining the level of Internet financial reporting and differences in IFR scores among observed countries, to examine which factors significantly influence the level of voluntary Internet financial reporting. Variables that influence IFR score significantly were determined by using multiple linear regression.

Variables that influence IFR scores for each of the capital markets are presented in table 6.

Table 6 Results of estimated regression models

Zagreb Stock Exchange				
Variables	β	Std. Error	Sig.	VIF
Constant	20.384	0.965	0.0001	-
OFMAR	5.649	1.634	0.002	1.00
CONS	-6.267	2.346	0.014	1.00
Adj. R^2	0.413			
DW	2.041			
Ljubljana Stock Exchange				
Variables	B	Std. Error	Sig.	VIF
Constant	27.079	1.165	0.0001	-
TURN	-5.105E-6	0.000	0.0001	1.00
Adj. R^2	0.754			
DW	1.990			
Belgrade Stock Exchange				
Variables	B	Std. Error	Sig.	VIF
Constant	12.333	1.778	0.0001	-
TRADE	-11.833	4.704	0.027	1.286
Adj. R^2	0.291			
DW	2.142			
Sarajevo Stock Exchange				
Variables	β	Std. Error	Sig.	VIF
Constant	4.246	1.237	0.005	-
ASTS	3.349E-9	0.000	0.016	1.020
OFMAR	9.236	4.150	0.046	1.897
PHAR	10.926	5.637	0.076	1.875
Adj. R^2	0.656			
DW	1.542			
Banja Luka Stock Exchange				
Variables	β	Std. Error	Sig.	VIF
Constant	0.667	1.257	0.604	-
OFMAR	3.179	1.394	0.039	1.11
Adj. R^2	0.219			
DW	2.369			

Source: Author's calculation

In order to determine which factors significantly influence the level of Internet financial reporting on the Croatian capital market IFR score was included in multiple regression model as dependent variable while all potentially important variables from table 3 were included in the model as independent variables. After that, using the backward method of elimination of variables the optimum regression model covering two variables which are OFMAR and CONS was formed.

The evaluated regression model was significant as a whole since the calculated F-ratio equals 9.444, with resulting significance of 0.001. The degree of explanation of the model amounts 41.3%. In order to test multicollinearity problems the statistical package SPSS uses so-called VIFs. Since none of VIFs was greater than 5 it can be concluded that there is no multicollinearity problem.

The evaluated parameter with the variable Official market (OFMAR - sig. 0.002) suggests that the level of Internet financial reporting is significantly and positively related with listing on the official market. So it can be concluded that companies whose shares are listed on the official market averagely observed have higher IFR score. Out of the included sector dummy variables only the construction sector has significant (sig. 0.014) but negative relationship with IFR score. On the sample of Croatian listed companies size hypotheses was not confirmed since the variable assets was not statistically significant meaning that Croatian companies have similar levels of Internet financial reporting regardless of size.

The profitability variable (ROE) was also not significant meaning that companies have the same level of Internet financial reporting regardless of profitability. As previously stated, relation between market activity and IFR score was confirmed only for the variable Official market while other two variables representing market activity (Turnover and Market capitalization) were not statistically correlated to IFR score.

Analysis for the companies listed on the Slovenian capital market was conducted on the sample of 12 companies. The selected set of potentially significant independent variables from table 3 was included in the initial regression model. Initial analysis has shown a multicollinearity problem among independent variables. In order to resolve this problem variables Official market, Transport, Trade, Size, Market capitalization and ROE were excluded from further analysis.

In the end, final regression model included variables Turnover and three industrial sectors (Food, Energetic and Pharmaceutics) as independent and IFR score as dependent variable. The evaluated regression model was significant with resulting significance of 0.0001. The explanatory power for the model is quite higher compared to the Croatian sample and equals 75.4%. In the final version of the model there was no multicollinearity problem which is logic since all the variables that caused this problem were previously eliminated from the model.

When variables indicating share market activity are observed than a significant (sig. 0.0001) but negative correlation is noted between variable Turnover and IFR score which suggests that more traded companies have lower level of IFR score. At the analyzed sample differences in IFR scores among industrial sectors were not noted meaning that there are no differences in the level of Internet financial reporting among different countries.

Finally, it should be noted that the analysis of influencing variables on the Slovenian capital market was conducted on a rather small sample since only 12 companies met the research criteria and this limitation should be taken into consideration when interpreting research results.

The analysis of the variables influencing IFR score on the Serbian capital market was conducted on a sample of 16 companies whose shares were listed on the Belgrade Stock Exchange. In the first step multicollinearity between independent variables was tested and the initial regression model showed that there was no multicollinearity problem since none of the VIFs was greater than 5. After that the regression model with IFR score as dependent variable and all the variables from table 3 as independents was analyzed.

Achieved regression model was statistical as a whole with resulting significance of 0.027. The explanatory power for the model was quite low and it can be concluded that influencing variables included in the model explain only 29.1% of IFR score. There was no multicollinearity problem. Using the backward method of elimination of the variables the optimum regression model was modified and only one influencing variable, TRADE sector, was included in the model.

Based on the achieved results it can be concluded that influencing variables related to size, profitability and market activity are not significantly related to IFR score. Such results indicate that companies listed on Belgrade Stock Exchange regardless of size, profitability and market activity have the same IFR scores.

The analyzed regression model separated only the sector variable TRADE as significant variable (sig. 0.027). The sign with this variable was negative so it can be concluded that companies from the Trade sector have lower IFR score in comparison to other industrial sectors.

All potentially important independent variables from table 3 were included in initial regression model with data for 19 companies whose shares were listed on the Sarajevo Stock Exchange. It is important to note that in the first step multicollinearity among independent variables was tested and in order to resolve noticed problems the variable Turnover was eliminated from the further analysis. After that regression model with IFR score as dependent and all the other variables as independents was analyzed.

The evaluated regression model was significant as a whole since the calculated F-ratio amounted 10.547 with 0.0001 significance. The explanatory power for the model, i.e. adjusted coefficient of determination equals 65.6%. In the final version of the model there was mo multicollinearity problem since all the VIFs are less than 5.

At the sample of companies listed on the Sarajevo stock exchange the size hypothesis was confirmed since the variable assets is significantly (sig. 0.016) related to IFR score. So, it can be concluded that larger companies have higher level of Internet financial reporting. The variable profitability is not statistically significant meaning that companies, regardless of profitability, have the same level of Internet financial reporting.

Furthermore, out of three variables indicating the stock market activity, only the variable Official market is statistically significant (sig. 0.046). Namely, dummy variable for Official market has positive sign and it is statistically significant, meaning that companies listed on the official market of the Sarajevo Stock Exchange, averagely observed, have higher IFR score. Variables Turnover and Market capitalization are not statistically significant. Out of the sector dummy variables only pharmaceutical sector is statistically significantly (sig. 0.076) and positively correlated to IFR score indicating that companies from this industrial sector have higher IFR score in comparison to companies from other industrial sectors.

In order to determine which variables significantly influence the level of Internet financial reporting for the companies listed on Banja Luka Stock Exchange IFR score was entered in multiple regression model as dependent variable while all the potentially important variables from table 3 were included in the model as independent variables. After that, using backward method of elimination of variables optimum regression model which included only the variable OFMAR was modified. The evaluated regression model was significant as a whole since the calculated F-ratio equals 5.199 with significance of 0.039.

The explanatory power for the model is quite low and amounts just 21.9% but these results are consistent with quite low level of Internet financial reporting on the Banja Luka Stock Exchange. In final regression model the calculated VIFs are less than 5 which indicate that there is no multicollinearity problem in the model. In the case of companies listed on Banja Luka Stock Exchange size hypotheses was not confirmed since the variable assets was not statistically significant. The profitability variable (ROE) also was not significant meaning that companies listed on Banja Luka Stock Exchange, regardless of size and profitability, have the same IFR scores.

Variable Official market is statistically significant (sig. 0.039) while the other two variables which indicate stock market activity (turnover and capitalization) were not statistically significant. So, it can be concluded that companies listed on official market of Banja Luka Stock Exchange have higher IFR score than other companies. Out of sector dummy variables none of the observed variables is statistically significant and this suggests that there are no differences in IFR scores among different industries.

V. CONCLUSION

The results of conducted research indicate that there are significant differences in the level of Internet financial reporting between five observed countries. The highest level of Internet financial reporting is noted for Slovenian companies and IFR score amounts 23.25 for the Slovenian sample. A little lower level of transparency is evidenced for Croatian sample since measured IFR score equals 21.27.

Quite lower level of Internet financial reporting was measured for Serbian sample where IFR score amounts 9.75. Companies listed on Sarajevo and Banja Luka Stock Exchanges have IFR scores at level of 6.74 or 3.61 meaning that transparency of companies listed on these two stock exchanges is quite lower in comparison to companies listed on the other stock exchanges in the region.

The reasons for the observed differences and lagging behind other Stock Exchanges can be found in the general economic environment, particulate in the demand for financial information and the level of corporate governance. Differences in the level of Internet financial reporting are statistically confirmed using Kruskal-Wallis test for more than two independent samples.

The analysis of influencing variables has showed that in the Croatian sample, companies listed on official market have higher level of Internet financial reporting. Also, it is noted that companies from construction sector have lower level of Internet financial reporting in comparison to companies from other industrial sectors.

For Slovenian sample statistically significant was only the variable indicating stock market activity but it is important to note that the variable sign was negative. Such research results indicate that companies with higher stock market activity have lower level of Internet financial reporting. These results are not consistent to expectations and can be attributed to rather small number of companies included in the research.

The analyzed regression model for the sample of companies listed on Belgrade Stock Exchange as statistically significant variable pointed out only the sector variable TRADE. Sign with this variable is negative so it can be pointed out that companies from the TRADE sector have lower IFR score in comparison to other industrial sectors.

At the sample of companies listed on Sarajevo Stock Exchange statistically significant are variables assets, official market and pharmaceutics. These results indicate that larger companies and companies listed on official market have higher IFR score. Also, companies from the pharmaceutical sector have higher IFR score in comparison to companies from other industrial sectors. In the case of companies listed on Banja Luka Stock Exchange only the variable official market was statistically significant while other variables were not significant. So, it can be concluded that companies listed on the Official market of Banja Luka Stock Exchange have higher IFR score in comparison to other companies.

Averagely observed, it can be concluded that the variables indicating stock market activity are in most of the cases significantly related to IFR score meaning that companies listed on official markets and companies which are more traded have averagely higher level of Internet financial reporting than other companies. Furthermore, on all the markets, and especially on Belgrade, Sarajevo and Banja Luka Stock Exchange it is necessary to increase the level of company's transparency, meaning it is necessary to improve the quality and scope of the reporting which would result in much higher grades of Internet financial reporting.

As possible limitation of the research it is definitely important to emphasize relatively small samples since the criteria for sample formation was formed by author's subjective decision and applying different criteria may have changed the sample and results of the research.

REFERENCES

[1] I. Pervan and M. Bartulović. (2013, May, 15). Impact of transparency level on the value relevance of accounting information: empirical analysis for SEE countries, [Online]. Available: http://www.naun.org/multimedia/NAUN/ijmmas/16-504.pdf

[2] B. Djordjevic. (2013, September, 20). Investor relations on Capital Markets: Comparative Analysis of American, British and Serbian Listed Companies, [Online]. Available: http://www.wseas.us/e-library/conferences/2013/Brasov/EPLS/EPLS-35.pdf

[3] N. Brennan and D. Hourigan, "Corporate reporting on the Internet by Irish companies", *Accountancy Ireland*, vol. 30, no. 6, pp. 18-21,1998.

[4] P. Hedlin, "The Internet as a vehicle for investor relations: the Swedish case", *The European Accounting Review*, vol. 8, no. 2, pp. 373-381, 1999.

[5] D. N. Hurtt, J. G. Kreuze and S. A. Langsam, "Using the Internet for financial reporting#, *The Journal of Corporate Accounting and Finance*, vol. 12, no. 3, pp. 67-75, 2001.

[6] C. Gowthorpe and O. Amat, "External reporting of accounting and financial information via the Internet in Spain", *The European Accounting Review*, vol. 8, no. 2, pp. 365-371, 1999.

[7] M. Ettridge, V. J. Richardson and S. Scholz, "Dissemination of information for investors at corporate Web sites", *Journal of Accounting and Public Policy,* vol. 21, pp. 357-369, 2002.

[8] I. Pervan, "Financial Reporting on the Internet and the Practice of Croatian Joint Stock Companies Listed on the Stock Exchanges", *Financial theory and practice*, vol. 29, no. 2, pp. 77-193, 2005.

[9] V. Bogdan, C. M. Pop, "Romanian Companies' Web-Based Disclosure Choices and Capital Markets", *Annales Universitatis Apulensis Series Oeconomica,* vol. 1, no. 10, 2008, Available: http://www.oeconomica.uab.ro/upload/lucrari/1020081/9.pdf

[10] D. Deller, M. Stubenrath and C. Weber, "A survey on the use of the Internet for investor relations in the USA, the UK and Germany", *The European Accounting Review*, vol. 8, no. 2, pp. 351-346, 1999.

[11] J. Geerings, L. H. H. Bollen and H. F. D. Hassink, "Investor relations on the Internet: a survey of the Euronext zone", *The European Accounting Review*, vol. 12, no. 3, pp. 567-579, 2003.

[12] A. Allam and A. Lymer, "Developments of Internet Financial Reporting: Review & Analysis across Five Developed Countries", *The International Journal of Digital Accounting Research,* vol. 3, no. 6, pp. 165-206, 2003.

[13] B. Pirchegger and A. Wagenhofer, "Financial Information on the Internet: a survey of the homepages of Austrian companies", *The European Accounting Review*, vol. 8, no. 2, pp. 383-395, 1999.

[14] E. Bonson and T. Escobar, "A Survey on the Voluntary Disclosure on the Internet. Empirical evidence from 300 European Union Companies", *The International Journal of Digital Research,* vol. 2, no. 1, pp. 27-51, 2002.

[15] C. Marston, "Financial reporting on the Internet by leading Japanese companies", *Corporate Communications*, vol. 8, no. 1, pp. 23-34, 2003.

[16] C. Marston and A. Polei, "Corporate reporting on the Internet by German companies", *International Journal of Accounting Information Systems*, vol. 5, no. 3, pp. 281-368, 2004.

[17] E. Bonson and T. Escobar, "Digital reporting in Eastern Europe: An empirical study", *International Journal of Accounting Informations Systems,* vol. 7, no. 4, pp. 299-318, 2006.

[18] I. Pervan, "Voluntary Financial Reporting on the Internet: Analyses of the practice of Stock-Market Listed Croatian and Slovene Joint Stock Companies", *Financial theory and practice,* vol. 30, vo. 1, pp. 1-27, 2006.

[19] I. Pervan and M. Sabljić, "Voluntary Internet Financial Reporting in Croatia – Analysis of Trends and Influential Factors", *The Business Review, Cambridge*, vol. 17, no. 2, pp. 213-219, 2011.

[20] A. C. Despina and P. L. Demetrios, "The web based financial reporting adopted by the listed companies in the Athens Stock Exchange", *Journal of Modern Accounting and Auditing*, vol. 5, no. 7, pp. 7-20, 2009.

[21] I. Pervan and M. Bartulović, (2013, August, 11). Determinants of value relevance of accounting information: comparative analysis for listed companies from South East Europe, [Online]. Available: http://www.wseas.us/e-library/conferences/2012/Porto/AEBD/AEBD-22.pdf

[22] R. Thangatorai, R. Jaffar and A. S. Zaleha, (2013, September, 23). The Effect of Corporate Governance Mechanism on the Voluntary Internet Financial Reporting: A Case of Malaysia, [Online]. Available: http://www.wseas.us/elibrary/conferences/2013/CambridgeUSA/MMF/MMF-13.pdf