

### VOLUNTARY FINANCIAL REPORTING ON THE INTERNET – ANALYSIS OF THE PRACTICE OF CROATIAN AND SLOVENE LISTED JOINT STOCK COMPANIES

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#### *Abstract*

*An investigation into Internet financial reporting carried out in June 2005 that focused on stock-market listed Croatian and Slovene joint-stock companies has two basic aspects, comparative and explanatory. The comparative aspect of the research showed that Slovene corporations have a statistically significant higher level of financial reporting (as measured with IFR score). The average IFR score for 55 corporate entities from Croatia came to just 6.85, while the average IFR score for 30 Slovene firms was 17.63. The second aspect of the investigation was explanatory, and at the level of each state and sample the intention was to find the variables that affect IFR scores significantly. With respect to the Croatian sample it was shown that the IFR score was statistically significantly and positively correlated with size, profitability, number of shareholders, and amount of traffic on the stock markets. Then regression analysis showed that majority foreign ownership had a positive effect on the IFR score. A statistically significant but negative correlation was established for two sectors, tourism and marine transport. For the Slovene sample, comprising 30 firms, the size, profitability and number of stockholders were not significant variables. However, official listing, proportion of market capitalisation and ratio of market to book values of shares were statistically significantly and positively correlated with the IFR score. Only one sector, transport, was significantly and negatively correlated with the IFR score.*

*Key words: financial reporting, joint stock companies, Internet, Croatia, Slovenia*

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## **1 Introduction**

In the modern business environment the objective of financial reporting is to assemble financial information useful for investors, information simplifying decisions related to investment and granting loans. With the rapid development and ever more widespread use of the Internet, joint stock companies have acquired a very effective communications tool for the presentation of vital information to investors and to creditors. The Internet enables relatively cheap and extremely fast presentation of useful information in varying formats to the millions of people who use the Internet every day. These characteristics have made financial reporting on the Internet the usual practice of the corporate sector in developed countries. Today even the EU Commission is suggesting that firms in member states should make use of electronic media to provide useful information to their investors (Marston and Polei, 2004). Because of the topicality of the issue and the expected growth of the Croatian capital market in the years to come, the fundamental objective of this investigation is the quantification of the level of Internet financial reporting by listed companies in Croatia. For a more accurate insight into the level of Internet financial reporting achieved, a comparison is made with the Slovene corporate sector. Apart from this, at the level of separate samples from Croatia and from Slovenia, the research was aimed at detecting the variables that have a significant influence on the level of voluntary financial reporting on the Internet.

## **2 Previous researches concerning voluntary financial reporting on the Internet**

### ***2.2 Descriptive research***

Descriptive research on financial reporting on the Internet has primarily been aimed at the general characteristics of use of the Web for financial reporting. Descriptive research commonly provides data about the percentage of firms that make use of Internet-based financial reporting, the kind of financial reports issued (balance sheet, account of profit and loss...), the frequency with which reports are made (annually, half-yearly) and the formats used in the reports (PDF or Excel for example). It should be borne in mind that the initial research into the issue was carried out six or seven years ago and is hence no real reflection of today's use of the Web for financial reporting. An example of an early study is research for Ireland in 1998 that showed that 37% of listed firms published financial reports on the Internet (Brennan and Hourigan, 1998). Early investigations in Sweden were done by Hedlin (1999), who determined that the great majority of firms listed on the Stockholm stock exchange did make use of the facility of Internet reporting. Depending on market sector, the percentage ranged between 75 and 95%. However, it was also shown that the firms in the sample did not make use of all the advantages given by the Internet, which advantages include: continuous updating of information, interlinkage among documents and the use of formats suitable for calculations (Excel or ASCII).

Similar research in the same year was carried out into Spanish firms quoted on the Madrid bourse; it was determined that in that country, only 19% of the firms from the sample published any extensive financial information on the Internet (Gowthorpe and

Amat, 1999). Research in 2001 into the 100 biggest corporations in the USA (the Fortune 100) showed that 93% of firms had their own website. Seventy-four per cent published the balance sheet, and 70% of all firms in the sample the profit and loss accounts as well. It was also shown that auditors' reports were published by 65% of these firms, the notes by 63% and the board of management's analysis of operations by 61% of all firms (Hurt, Kreuze and Langsam, 2001). The American authors Ettridge, Richardson and Scholz (2001) also carried out research into a sample of 490 corporations in the USA, determining that they mostly published quarterly (54%) and annual (45%) reports on the Internet. Research carried out in 2004 on a sample of 38 joint stock companies in Croatia showed that only 39.4% of them voluntarily published a set of five annual financial reports, while 13.1% more published a few reports annually. Auditors' reports were found in only 42.1% of the sample, and only 10.5% published quarterly and half-yearly reports. The most commonly used format was PDF (36.8%), while a format that is capable of being user-employed for calculations (Excel) was used by only 5.2% of the firms (Pervan, 2005).

## **2.2 Comparative research**

Another type of study is of the comparative type, in which various aspects of financial reporting on the Internet are analysed in two or more countries. One example of such a study would be the research into the use of financial reporting on the Net for firms in the USA, the UK and Germany (Deller, Strubenrath and Webber, 1999). The research showed that 91% of American firms used Internet financial reporting, 72% of British and 71% of German. It was also shown that the format for figures useful for calculations was used fairly seldom (7-13% of companies in the sample) in all the three countries covered by the research.

Comparative research into corporations from five countries for the years 2001 and 2002, covering Canada, UK, the USA, Australia and Hong Kong) was carried out by Allam and Lymer (2005). This investigation showed that most of the firms (96-100%) published their balance sheet, profit and loss accounts and cash flow reports. PDF was the most frequent format for the presentation of reports from all the countries. Formats suitable for calculations (Excel and Lotus 123) were used fairly infrequently, and were actually found only in 12% of the observations, and only in the UK and the USA.

Authors Geerings, Bollen and Bassink (2003) carried out an investigation into the 50 biggest corporations from France, Holland and Belgium quoted on Euronext. The research showed that the firms from France and the Netherlands used the Internet much more vigorously than did those from Belgium. Firms from all three countries presented their basic financial reports on the Net very frequently, while some of the advantages inherent in Internet reporting (formats fit for calculations, mailing lists and multimedia) were employed less frequently by the Belgian firms.

## **2.3 Explanatory research**

The third type of study has endeavoured to discover the factors affecting corporate decisions concerning their level of Internet financial reporting. As an example of such a

study, we might quote the investigation carried out by Pirchegger and Wagenhofer (1999) for Austrian and Germany listed firms. The authors put together a set of criteria (financial and non-financial information) for an evaluation of the quality of an Internet site, using a scale of 0 to 100. After the quality scores for the Internet sites had been calculated for each firm, the values obtained were put into a regression analysis as the dependent variable. The independent variables used were size of the firm and the free float of the shares on the stock exchange. In the case of the 32 Austrian firms quoted on the Vienna stock exchange, a statistically significant and positive correlation was established between quality of Internet site and size and percentage of shares being freely traded. Also for the sample of German corporations quoted on the stock exchange (DAX 30-30 of the biggest German corporations according to market capitalisation) a positive correlation was determined between Internet site quality and size of firm. However, a negative correlation was determined between Internet site quality and percentage of free float of shares on the stock exchange.

Similar research into British companies listed in the FTSE 100-100, the biggest British firms in terms of market capitalisation, was carried out by Craven and Marston (1999). This research discovered a positive correlation between size of firm and financial reporting on the Internet. The Chi square test did not confirm significant correlation between Internet reporting and a given industry. The link between financial reporting on the Internet and profitability and size of joint stock companies in the USA was investigated by Ashbaugh, Johnstone and Warfield (1999). This research covered 290 companies, while the variable of reporting on the Internet was binary (0 or 1). The independent variables in the logit regression model were size (assets), profitability (ROA), the AIMR evaluation of their financial reporting and the percentage of shares owned by institutional investors. The model resulted in the conclusion that only the variable of corporate size was statistically significantly correlated with Internet financial reporting.

Ettredge, Richardson and Scholz (2002) carried out research into US corporations by forming the Internet reporting variable as the aggregate of mandatory and voluntary reporting. The regression in which total Internet reporting was used as the dependent variable resulted in the conclusion that total reporting was statistically positively correlated with the need for capital, corporation size and quality of reporting. Total reporting was negatively correlated with the ratio between return and profit, suggesting that firms with a lower information asymmetry provide less information on the Internet. A regression model with mandatory reporting as the dependent variable showed that mandatory reporting was statistically significantly and positively correlated with size and the return-profit ratio. In the third model, voluntary reporting was statistically positive correlated with the need for capital, with size, with information asymmetry and quality of reporting.

Research that covered 660 firms from 22 countries was carried out by Debreceeny, Gray and Rahman (2002). The development variable of Internet reporting had two dimensions called content and presentation. The regression model resulted in the conclusion that content of Internet reporting was significantly and positively correlated with size, with quotation on foreign stock exchanges, being listed in the US, with technological skills and the importance attached nationally to financial reporting. Financial reporting in the dimension of presentation was significantly positively correlated with size, with listing

in the USA, with ratio between market and book value of shares and with value attached nationally to financial reporting.

Research into the 100 biggest Japanese corporations showed that the existence of a Web site depended on size of the firm, while this was less obviously connected to the level of financial reporting on the Internet (Marston, 2003). The variable of profitability was not statistically significantly correlated with the existence of a web site or with the level of financial reporting. The Chi square test revealed that financial reporting on the Internet was not related to a given industry or to shares being listed on USA stock exchanges. Research into the 50 biggest German corporations for 2002 and 2003 was carried out by Marston and Polei (2004). This research employed a large set of criteria for the evaluation of the level of Internet financial reporting. Research for 2000 and 2003 showed that total Internet site quality score was significantly positively correlated with the listing of shares on foreign stock exchanges. After data transformation the variable of percentage of free float of shares was also positively correlated with the level of financial reporting for both of the years covered by the analysis.

A comparison of research to date reveals that there is no universal notion as to what reporting on the Internet should comprehend. However, most of the authors that develop scores for measuring levels of Internet report include, as the obligatory elements, annual financial reports, reports from previous years, auditors' reports and a report concerning segments of operations. Very often there are announcements for the public, the latest prices of shares, and availability of the contents in English. Some research places the emphasis on the technical aspects of Internet reporting, such as presentation format, videos and sound of important meetings, mailing lists, browsers and on-line ordering of information. Different Internet reporting evaluation components need not have equal importance, and some authors have included into their research a definition of the importance of evaluation components. Pirchegger and Wagenhofer (1999), for instance, point out that the content and the up-datedness of the site are in the opinion of users more important elements than technology and user-support.

### **3 The general business environment in Croatia and Slovenia**

No theoretical framework as yet exists for a comparison of Internet financial reporting among several countries and hence it is not easy to explain the differences discovered by empirical research. Because of the absence of any worked-out theoretical framework the problem of voluntary Internet financial reporting should be looked at in the broader business environment. That is, voluntary Internet financial reporting depends on the supply and demand for useful financial information. Hence it can be assumed that a higher level of per capita GDP and a more significant role for institutional investors will create a greater demand for shares and for financial information. On the financial information supply side, i.e., the corporations, a higher level of corporate governance should result in greater transparency and a higher level of financial reporting. Since this investigation is directed towards Internet financial reporting, then the percentage of Internet users can also be an important factor. For the sake of a better comparison of the Croatian and the Slovene sample from the viewpoint of Internet financial

reporting, it is useful to look at the general business environment of both countries on the basis of the basic macroeconomic indicators, the role of institutional investors, the degree of development of the capital market, quality of corporate governance and percentage of Internet users.

### **3.1 The main macroeconomic indicators**

In comparison with Croatia, Slovenia undoubtedly has a developed economy, which is shown by the macroeconomic indicators. This is particularly reflected in per capita GDP, twice as great in Slovenia as in Croatia. To be precise, Slovene GDP per capita was 115.3% greater in 2003 and 110.5% greater in 2004 than that of Croatia. As compared with the mean per capita GDP for the EU 25, Slovenia was in 2004 at the 78% level, while Croatia was at a level of 46%.

*Table 1 Comparison of selected macroeconomic indicators for Croatia and Slovenia*

	2003		2004	
	Croatia	Slovenia	Croatia	Slovenia
GDP per capita (USD)	6.482	13.955	7.678	16.164
Real rate of growth in GDP (%)	4.3	2.5	3.8	4.6
Rate of unemployment (%)	19.5	11.2	17.9	10.6
Balance of trade (billion USD)	-7.9	-0.6	-8.3	-1.1
Public debt / GDP (%)	53.2	26.7	54.0	26.4

*Source: <http://www.dbresearch.de/servlet/reweb2.ReWEB?rwkey=u1562409&%24rwframe=0>*

As can be seen from the table, Croatia fares worse than Slovenia in all the five indicators selected except in real rate of growth of GDP in 2003. In 2003 and 2004 for example unemployment came to 19.5 and 17.9% in Croatia, but in Slovenia to 11.2 and 10.6%. The balance of trade shows particularly poor figures, the 2004 figures for Croatia showing a deficit of 8.3 billion USD, while the Slovene deficit in balance of trade was 1.1 billion USD. Croatia is also about 50% more indebted than Slovenia, measured by the public debt and GDP ratio. These macroeconomic indicators show that the Slovene economy is more developed than the Croatian, which is today in need of many reforms aimed at inducing more rapid growth.

### **3.2 The financial system**

The financial systems in Croatia and Slovenia share a common feature, which is the domination of banks over institutional investors. According to data available for 2004, banks accounted in Croatia for 89.1% (Table 2) and in Slovenia for 82.7% of the assets of financial institutions (Bank of Slovenia, 2005). From the annual report of the Slovene central bank of 2004, it appears that insurance firms had a share of 8.1%, privatisation funds 4.2%, open-end investment funds of 3.1% and pension funds of 1.95% of the assets of all financial institutions.

*Table 2 Asset structure of financial institutions in Croatia (2004)*

Financial institution	Share of overall assets (%)
Banks and savings banks	89.1
Insurance companies	5.5
Open-end investment funds	1.7
Closed-end investment funds	0.4
Mandatory retirement funds	3.0
Voluntary retirement funds	0.04

*Source: www.hnb.hr, www.hagena.hr, www.crosec.hr and www.dinados.hr*

From the data collected for 2004, it can be seen that institutional investors in Croatia had a 5.14% share of assets of financial institutions, but in Slovenia the corresponding figure was 9.2%. From this it can be concluded that institutional investors have a more important role in Slovenia than in Croatia, their share in the assets of financial institutions being 79% greater than is the case in Croatia. The more important role of institutional investors in Slovenia is derived above all from the share of the privatisation funds (4.2%).

The domination of banks over institutional investors should be lower in the future, particularly because of pensions reform and the role of the obligatory pensions funds. In the total structure of the assets of Croatian financial institutions at the end of 2004, mandatory retirement funds had 3.0% of total assets, but in 2002 they had only 1.1% of total assets. At the end of 2004 in Croatia the obligatory pensions funds had accumulation 9.4 billion kuna of net assets, which is about 23% of GDP for the same year.

However, the assets structure of the obligatory pensions funds shows that the greatest part of these assets comprises government bonds (76%), and only 6.45% of domestic corporate bonds, and 3.45% of domestic equity (HAGENA, 2005). Although the percentage of government bonds in overall assets is reducing, investment in domestic equity is limited because it is statutorily provided for that the mandatory pensions funds can only invest in shares that are listed in the official market. According to the director of HAGENA, the problem for more liberal investment in the shares of public joint stock companies is that in the listings there are corporations that are quite diverse from the standpoint of expected performance; another problem is that transparency is low.

### **3.3 Capital markets**

Since all the previously mentioned research concerning Internet financial reporting has been based on listed firms, the same principle has been applied in the definition of the basic population for the research in Croatia and Slovenia. According to this approach, the research will cover only those firms that list their shares on the stock exchanges in Zagreb or Varaždin.<sup>1</sup> The Zagreb Bourse, in June 2005, had three segments on the equity market; the first listing (4 companies), the public corporations listing (about 133 com-

<sup>1</sup> URL: www.zse.hr; www.vse.hr

panies) and the free market. The Varaždin Bourse had these three segments on its share market; 1 company in the first listing, about 125 companies in the listing for public joint stock companies, and the free market.

In Slovenia there is the Ljubljana Bourse, founded in 1989, and in June 2005 there were two quotations<sup>2</sup>. In the official listing there are 28 joint stock company, while in the free market the shares of about a hundred joint stock companies are traded. Compared with the developed market economy countries, the capital markets in Croatia and Slovenia are still fairly undeveloped. However, in comparison with selected transitional countries in CE Europe, Croatia and Slovenia are in a good position. One of the commonly used indicators for the development of the capital market is the ratio of market capitalisation and GDP. Data concerning capital market development according to this indicator is shown for eight transition countries in Table 3.

*Table 3 Ratio between market capitalisation and GDP in selected transition countries*

Country	Market capitalisation/GDP (%), (2002)
Bulgaria	4.23
Croatia	16.47
Czech R	21.18
Hungary	17.45
Poland	14.55
Romania	10.67
Slovakia	7.40
Slovenia	20.21

*Source: Deloitte Touche Tohmatsu Emerging Markets (2003:29)*

It can be seen from Table 3 that in the sample of eight select transitional countries Slovenia was second in terms of capital market development in 2002, after the Czech Republic. Croatia, according to the indicator used, was in the centre of the list, in front of Romania and Bulgaria, which, like Croatia, are in the process of acceding to the EU. From these data it can be seen that the Slovene capital market was more developed than the Croatian, which is in line with the more important role of institutional investors in Slovenia. World Bank figures show that the share of market capitalisation in GDP in 2003 in Slovenia rose to 25% (World Bank, 2004b). According to annual data from the stock exchanges (Zagreb, Varaždin and Ljubljana) it can be seen that the market capitalisation as a proportion of GDP at the end of 2004 was in both Slovenia and Croatia at about the 30% level. Such data are better than the predictions of World Bank experts who in 2000, using the multiple regression, in the best case scenario forecasted market capitalisation of 25% in Croatia in 2004, and in Slovenia 24% for the same year (Claessens et al., 2000).

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<sup>2</sup> URL: [www.ljse.si](http://www.ljse.si)



Data about market capitalisation show that the Croatian and Slovene capital markets are growing better than expected. The growth of the capital market is affected by numerous factors, but the strengthening of the role of institutional investors must have contributed largely to the trend. In Croatia the growth of the capital market was also stimulated by the entry of foreign, on the whole Scandinavian, institutional investors (TO-ONE, 2005). The importance of the role of institutional investors is borne out by a World Bank study for 26 transition countries, which showed statistically significant and positive correlations between market capitalisation and institutional investor assets as a percentage of GDP. Other statistically significant variables were rate of inflation, protection of shareholders, and distance from Vienna (Claessens et al., 2000).

### **3.4 Corporate governance**

Corporate governance is a very important pillar for the further development of the capital market in transition countries (OECD, 2003). This area, according to the literature available, has not been academically analysed in Croatia or Slovenia, and there is no clear evidence about the level of corporate governance that has been attained. An important element of corporate governance is the equality and protection of shareholders, which the WB study puts forward as a positive and statistically significant variable in the explanation of the market capitalisation of the transition countries (Claessens et al., 2000). The OECD methodology in the analysis of the level of shareholder rights protection achieved takes the following elements into consideration (OECD, 2003):

- free and independent share registration,
- free share transfer
- timely acquisition of relevant information concerning company operations
- participation and voting at the AGM
- selection of the Supervisory Board
- participation in distribution of profits of the corporation.

*Table 4 Protection of shareholder rights in select transition countries*

Country	Evaluation of shareholder rights protection (2000)	Index of shareholder rights protection (2005)
Bulgaria	4.0	5.3
Croatia	2.0	3.0
Czech R	3.0	5.0
Hungary	3.0	4.7
Poland	3.0	6.3
Romania	3.0	5.7
Slovakia	2.0	4.0
Slovenia	3.0	5.7
Average	2.8	4.9
Maximum	6.0	10.0

*Sources: Claessens et al. (2000:9), www.doingbusiness.org.*

According to figures available from two separate studies of 2000 and 2005, it can be seen that the protection of shareholders is better in Slovenia than in Croatia. The evaluation of shareholder rights protection is a combined score based on nine elements. Maximum value of the evaluation of stockholder rights protection comes to 6, while a more detailed account of the methodology of calculation used can be found in Claessens et al., (2000:8-9). According to this evaluation, shown in Table 4, Croatia comes out bottom of a list of eight selected transition countries. According to 2000 figures, Croatia had a score of 2, and Slovenia of 3, while the mean for the selected transition countries was 2.8.

In research in 2005 the so-called shareholder rights protection index was used, ranging from 0 to 10. This index is calculated as the arithmetical mean of three separate indices: the extent of disclosure index, the extent of directory liability index and the ease of shareholder suit index. Each of these three separate indices is a collective evaluation that consists of several elements; a more detailed insight into the elements and calculation of these indices can be found at [www.doingbusiness.org](http://www.doingbusiness.org).

Data from the 2005 index for shareholder protection once again show that Slovenia is better than Croatia. According to this methodology for the evaluation of investor rights protection, Slovenia is in second place in the eight selected transition countries, with a score of 5.7, after highest placed Poland, which had an index of 6.3. In addition, Croatia brings up the rear according to this principle too, lying with its index of 3 in the last place in the eight selected transition countries. According to available data, few joint stock companies in Croatia had by the end of June 2005 adopted rules of corporate governance to regulate the conduct of the management vis-à-vis the shareholders. Such practice is peculiarly strange since amendments to the Companies Law (Article 272a) of 2003 said the following: *The board of management and the supervisory board of companies the shares of which are listed on the stock exchange are bound each year to make a declaration that they have acted in accordance with the recommendations published in the code of corporate governance and that they will continue to abide by them and to state according to which ones they have not acted or will not act (NN 118/03).*

Transparency of operations and financial disclosures are an essential element of corporate governance for listed corporations. World Bank experts in their study of 2001 say that Croatia was a leader in the application of IASB standards, but the study goes on to point out that “poor auditing” vitiated the quality of financial disclosure (World Bank, 2001).<sup>3</sup> The study says that Croatian joint stock companies do not have to publish a complete annual report with a detailed analysis of management, but only annual financial reports. It is very clear that without a complete annual report, or with only those data required and published by the Securities Commission, shareholders will be deprived of a great deal of useful information that IASB standards actually stipulate<sup>4</sup>. For without complete annual reports, Croatia shareholders will not have at their disposal the following useful information:

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<sup>3</sup> The International Accounting Standards Board (IASB) is the operative body for developing standards of the International Accounting Standards Committee Foundation (IASCF), a non-profit organisation founded in 1973 and reorganised in 2001. The objective of IASCF is the drawing up of high-quality accounting standards, the promotion of them and supervision of the way in which they are applied.

<sup>4</sup> URL: [www.crosec.hr](http://www.crosec.hr)

- segment information (IAS 14)
- accounting policy (IAS 1)
- notes to the financial reports (IAS 1)
- analysis of management performance in the past
- analysis of predicted business risks, of competition

The entry of foreign institutional investors has without doubt had a positive effect on the growth of the capital market in Croatia, but without greater business transparency there will not be many investors to buy shares with a market-book ratio (TO-ONE, 2005). For an assessment of the level of corporate governance, the broking company TO-ONE carried out an investigation into a sample of the 15 largest joint stock companies in Croatia. These six criteria were used for an evaluation of the level of corporate governance:

- prompt announcement of operational, financial reports and relevant information
- quality of reports and communications with investors
- communication of business plans and expectations
- communication of plans to use the profits
- transparency of ownership structure
- stockholder equality and conflict of interests.

Representatives of brokering companies and open-end and pensions fund management companies graded each of the criteria on a scale of 1 to 4. The average score for the 15 companies was quite low, coming to 2.29, which showed that there is a lot of scope for improving corporate governance in Croatia. Research by the Economics Institute of Zagreb, the Versic-Marusic legal firm and the Socius company for the 2001-2003 period showed that as many as 25% of joint stock companies did not regularly supply their financial reports to the Securities Commission. Although 70% of companies did have a Web site, very few used it for informing shareholders. The research highlights the problem of the unequal treatment of shareholders, lack of transparency in management compensation and the need for broader authority for the supervisory board (Vuko, 2005).

The World Bank carried out research into corporate governance in Slovenia and concluded that on the whole investor rights are legally and in practice well protected (World Bank, 2004b). The study says that Slovene corporations have to present annual and half-yearly reports to the public. The differences from Croatia are noted, where there is no requirement to publish a complete annual report, only the basic financial reports. It can be concluded then that Slovene joint stock companies, because of the statutory environment, are used to publishing a broad range of useful information as part of their annual reports about performance. The study goes on to say that in 1996 an association of members of supervisory boards was founded and that from 2000 on it organised training programmes for members. After training, members of supervisory boards can take a certification test. According to the study from 2004, 145 members of supervisory boards had acquired such a certificate. The practices of many joint stock companies bear out the active role of the supervisory board, presenting the report of the supervisory board in their annual report.

### **3.5 Internet use**

Since this research deals with Internet financial reporting it is useful to consider Internet use in general. In an environment in which investors often use the Internet firms can satisfy investor needs for information quickly and cheaply by Internet reporting. However, if investors do not use the Internet very frequently, the inducements for Internet financial reporting will surely be lower. According to data available at the moment, at the end of 2003, there were about 650.000 Internet users in Croatia, or about 18% of the population. By contrast, in Slovenia 37% of the population used the Internet (Kos and Bažant, 2003). More recent data from the Slovene Statistics Office show a similar ratio, for at the end of 2004 43% of the population used the Internet in Slovenia.<sup>5</sup> Research by the firm Gfk of 2005 showed that the number of internet users in Croatia had risen to 35%.<sup>6</sup> Since the percentage of Internet users in Slovenia is greater than in Croatia, it is possible that voluntary Internet financial reporting will be more frequent in Slovenia than in Croatia.

## **4 The framework of financial reporting for listed corporations in Croatia and Slovenia**

### **4.1 Financial reporting for corporations listed on the stock exchanges in Croatia**

In 1992 the Accounting Law was passed and published in Croatia; in 1993 it came into force (NN 90/92). This law prescribes the minimum items of the balance sheet and the profit and loss account, based in turn on the EU 4<sup>th</sup> Directive. Croatia did not go in for the development of national accounting standards, but in the Accounting Law stipulated the use of IASB standards. IASB standards must be employed by listed companies, but all other companies will have to use them after they have been translated and published in the *NN – Narodne novine*. As well as this kind of framework for financial reporting, according to the Accounting Law there is a parallel framework for financial reporting that derives from the legal obligations of Croatian firms to various governmental institutions such as the Tax Administration, Financial Agency, the Croatian Statistics Bureau and the Securities Commission.

Only some of the companies have to supply the Securities Commission, which organises and supervises the functioning of the capital market in Croatia, with their financial reports. If a company issues shares, it is bound to draw up a prospectus in which it will present to the Commission the basic and consolidated financial reports for the last three years, together with that for the last quarter of the current year (NN 84/02). These rules go for the first quotation and for the public joint stock corporations of the Zagreb and Varaždin bourses.<sup>7</sup> Each of the bourses prescribes its own rules for listing in the other quotations. Public joint stock companies must deliver to the Commission quarterly the balance sheet, profit and loss account, cash flow statement and statement on shareholders' equity changes (NN 118/03).

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<sup>5</sup> URL: [www.stat.si](http://www.stat.si)

<sup>6</sup> URL: [www.gfk.hr](http://www.gfk.hr)

<sup>7</sup> According to the Securities Market Law, a public joint stock company is a company that issues shares by public offer and has more than 100 shareholders, its founding equity coming to at least 30 million kuna.

Apart from the fundamental financial reports, the joint stock companies must also supply information such as a list of subsidiaries, the amount of dividends paid out, the number of shares, the market prices of shares, a list of the ten biggest shareholders, liquidity, business combinations, litigation under way, and changes in accounting policy. Although this covers a wide range of financial and non-financial information, the basic shortcoming is in the failure to require the publication of accounting policy and the notes, details about segments, auditing reports and general statements from managements about operations and expected trends in the future. Thus the fundamental financial reports published in the *public information booklet* of the Securities Commission contain only the basic financial data and thus the full business reports that the companies publish openly for investors are certainly more information and useful. Here hence it is possible to conclude that companies listed on the stock exchanges can if they want via the Internet present to a broader circle of users higher quality and more wide ranging financial information than is possessed by the Securities Commission (Pervan, 2005).

#### ***4.2 Financial reporting for joint stock companies listed on the stock exchange in Slovenia***

Since 1993, financial disclosure in Slovenia has been regulated by the Companies Law. This law has twenty articles regulating financial disclosing. The Law also defines the minimum items of the balance sheet and the profit and loss account. In the annual report of a company, as well as financial reports, other information concerning operations have to be presented (Garrod and Turk, 1995). This law prescribed the obligations to audit financial reports were incumbent on large and medium sized joint stock companies, large companies with limited liability, all companies the securities of which are traded on the capital markets, investment companies, banks and insurance companies. From 2001, auditing was carried out in line with International Standards on Auditing (World Bank, 2004a). Changes to the Companies Law (Article 54) said that the annual reports of joint stock companies that are listed on stock exchanges had to be audited. The auditors were bound while doing this to make sure whether the contents of the business reports were in line with the other elements of the annual report (UL RS 54/01).

Unlike Croatia, Slovenia determined on the development and adoption of national accounting standards – SRS or SAS. Hence in Slovenia an independent professional institution for the development of accounting standards was set up – the Slovene Institute for Auditing or SIR.<sup>8</sup> In Slovenia, since 1993, 32 standards have been adopted and united into the SAS. The outline for financial reporting is comparable with the framework of the IASB and covers the 4<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> directives of the EU. It should be pointed out that no special standard for the consolidation of the financial reports has been developed, rather in the introduction to the standards the main principles of the consolidation were explained. Slovene standards have certain differences from the IASB standards. The main area of the differences is in the capitalisation of foreign exchange losses, a broader definition of extraordinary items, capitalisation of start-up costs, recording of treasury stock as investment and recording of long-term receivables as part of current assets (World Bank, 2004a).

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<sup>8</sup> URL: [www.si-revizija.si](http://www.si-revizija.si)

More recent changes in the accounting standards of Slovenia took place in 2001, when new standards were adopted, coming into force in 2002. After that, in practice, 40 Slovene accounting standards were enforced. Since in 2004 Slovenia became a EU member, change in the regulations for financial reporting became necessary. According to regulations in the EU, that is, all companies with shares that are actively traded on the markets must apply the IASB standards. Companies listed on the Ljubljana stock exchange have to supply their reports to the exchange, which will then publish them on the Internet.<sup>9</sup> Apart from that, a summary of the financial reports must be published in the press (World Bank, 2004b). A look at the Web site SEOnet will lead to the conclusion that the published financial reports about joint stock companies from the official market are quite informative. However, a problem is that quite a lot of companies from the free market do not supply their reports regularly.

## **5 The Structure of the Research**

### **5.1 Description of the samples**

In line with the approach to research in other countries, the basic sample consists of companies whose shares are listed on the stock exchanges. Although in June 2005 there were more than 230 companies listed on the stock exchange in Croatia, and in Slovenia about 130, there is no active trading in the shares of quite a lot of these companies. Hence selection was needed, and only those companies whose shares were actively being traded were included in the research. For the selection, a simple criterion was employed – share transactions on the stock exchanges in Croatia and Slovenia in the first quarter of 2005. The author made the subjective decision to include all those companies whose shares recorded transactions valued at a minimum of 300.000 euros in the first quarter of 2005. A different criterion might have been erected leading to different samples and different conclusions, which certainly needs bearing in mind in interpretation of the results of the investigation. However, it should be said that this manner of selecting the sample resulted in the coverage of the largest Croatian and Slovene joint stock companies, which is in line with the approach of researchers in other countries, for in most of these investigations the sample was created by a selection of the biggest companies (Fortune 1000, FTSE 100, DAX 30, the 50 biggest firms from Euronext and the 100 biggest Japanese firms). According to this principle of selection, the following table shows the way the sample was formed.

*Table 5 The formation of the sample from the population*

Country	Croatia	Slovenia
Number of joint stock companies on the official market	5	28
Number of companies on other markets	230	100
Total number of companies in the bourses	235	128
Companies that had shares in the value of more than 300,000 euros traded in January-March 2004	55	30
Percentage of basic set	23,4	23,4

*Source: Zagreb, Varaždin and Ljubljana stock exchanges June 2005*

<sup>9</sup> URL: [www.seonet.ljse.si/menu/default.asp](http://www.seonet.ljse.si/menu/default.asp)

The table shows that the selected samples of companies cover 23.4% of the population of all companies quoted on the stock exchanges. Such a selection is useful because the results of the analysis will relate only to those firms whose shares are being actively traded. The problem of companies in the shares of which there is no active trading lies in the fact that investors for some reasons are not interested in them and there is no real demand for financial and non-financial information about them. Analysing them together would result in unreliable conclusions before the demand for useful financial and non-financial information for the two groups of firms is essentially different.

*Table 6 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 statements
4	Changes in shareholder equity statement
5	Auditing report
6	Notes to the financial reports
7	Accounting policy
8	Segment reports
9	Quarterly reports
10	Half-yearly reports
11	Reports from previous years
B) Other useful information	
12	Most recent market price of the shares
13	Press and public releases
14	Management analyses of operations
15	Analyses of main business risks
16	Reports of the supervisory boards
C) Transparency of management and supervisory boards	
17	Data about the management
18	Information about management remuneration
19	Supervisory Board data
20	Information concerning supervisory board remuneration
21	Statement of management responsibility for the financial reports
22	Code of corporate governance
D) User support	
23	Special part of the Web for investors
24	Internal search engine
25	E-mail address
26	Mailing lists
27	Ability to download reports
28	Formats of reports suitable for calculations
29	Web page in English
30	English version of financial reports

## **5.2 Descriptions of variables**

For measurement of the level of financial reporting, the technique of evaluation pursuant to 30 elements or criteria will be used. As can be seen from the following table, the criteria for the formation of the overall evaluation of Internet financial reporting are classified into four groups.

It needs to be said that in the formation of the overall Internet financial reporting score each set of criteria and the individual criteria have an equal weighting. In the literature, different approaches can be found, some others setting different weightings for each group of criteria (Pirchegger and Wagenhofer, 1999; Marston and Polei, 2004). However, these authors arrived at these weightings through conversations with analysts, managers and students, which necessarily entails a certain level of subjectivity. In order to avoid subjectivity in the definition of weighting in this paper the approach will be used in which all the criteria have equal weighting. Hence the overall level of the level of financial reporting (the IFR score) is calculated by a simple aggregation of the grade for each criterion, which is either 1 or 0 – criterion is met or not met. In the valuation of regression models of variables the IFR score constitutes the dependent variable, which is hypothesised to be dependent on a number of independent variables. Taking into account previous research from the USA, Germany, Austria and other countries as potentially important independent variables we have chosen size, profitability, ownership structure and stock market activity of shares and industry. A detail list of the independent variables is presented in Table 7.

## **5.3 Description of working hypotheses**

There are two levels to this investigation of the practice of Internet financial reporting in Croatia and Slovene listed corporations. At the first, comparative level, the objective is to compare the differences in the levels of Internet financial reporting of the companies of the two countries. More precisely, it is necessary to test out the statistical significance of the differences between the average values of the IFR scores for the Croatian and the Slovene companies. For the sake of establishing a working hypothesis, in this part there is a considerable problem because of the lack of any theoretical framework. Hence the establishment of a hypothesis is fairly intuitive and is based on differences among the basic macroeconomic indicators, the role of institutional investors, the importance of the capital market, the percentage of Internet users and the general level of corporate governance.

It is possible to hypothesise that a higher level of per capita GDP and a stronger role of institutional investors will create a greater demand for shares and, indirectly, a greater demand for financial and other kinds of information. 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. Since this investigation is directed to financial reporting on the Internet, the percentage of Internet users might also be an important factor in the decision concerning reporting or not reporting on the Web. Taking into account the considerations from the third part of this work, it can without any doubt be concluded that all the values of all the potentially important factors from the business environment are better in Slovenia than in Croatia. Hence we can hypothesise that the joint stock companies from the Croatian sample would have a lower IFR score than those in the Slovene sample.



*Table 7 A detail list of the independent variables*

Independent variable	Symbol	Description
<i>Size</i>		
market capitalisation	MCAP	measured March 31, 2005
earnings	EARN	from the profit and loss account of 2004
assets	ASTS	from balance sheet end of 2004
<i>Profitability</i>		
return on assets	ROA	ratio of net profit and assets (2004)
return on equity	ROE	ratio of net profit and equity (2004)
return on sales	ROS	ratio of net income / sales (2004)
<i>Ownership structure</i>		
number of shareholders	NOSH	according to data of the Securities commission (Croatia) and the Central Clearing agency for Slovenia (end of March 2005) <sup>10</sup>
majority foreign ownership	MFOW	dummy (1-Yes, 0-No). according to data of the Securities Commission (Croatia) and the Central Clearing Agency for Slovenia (end of March 2005)
<i>Market activity</i>		
official market	OFMAR	dummy (1-yes, 0-no)
percentage of market capitalisation	MCAP (%)	market capitalisation of section/ total market capitalisation of sample (end of March 2005)
share transactions	TURN	transactions in shares in January – March 2005.
ratio of traded/issued shares	T/ISSU	number of traded/number of issued shares January – March 2005
ratio of market/book value of shares	M/B	ratio of market and book value of shares as of March 31 2005
<i>Industrial sectors</i>		
tourism	TOUR	dummy (1-yes, 0-no)
pharmaceuticals	PHAR	dummy (1-yes, 0-no)
food industry	FOOD	dummy (1-yes, 0-no)
banks and insurance companies	FIN	dummy (1-yes, 0-no)
transport	TRANS	dummy (1-yes, 0-no)
commerce	COMM	dummy (1-yes, 0-no)
shipping	SHIP	dummy (1-yes, 0-no)

At the second level, at the level of each country and the two separate samples the aim of the research is to discover the factors that have an important impact on the score. For the formation of the working hypotheses, the theoretical frameworks from previous investigations into Internet reporting were used. The construction of the hypothesis includes

<sup>10</sup> URL: [www.kdd.si](http://www.kdd.si)

certain transitional aspects that were not considered in the developed market economy countries. Explanatory research usually makes use of different theories to explain voluntary financial theory (agent theory, signalling theory and cost-benefit theory). Most such investigations start off from the hypothesis that large companies have greater agent costs and that more vigorous use of financial report can reduce agent costs (Marston and Polei, 2004). Starting off from such theoretical assumptions, it is realistic to expect a positive link between size of company and IFR score.

Signalling theory starts off from the assumption that more profitable companies endeavoured to stand out from the less profitable by enhanced financial reporting. Hence a positive correlation between Internet financial reporting evaluation and profitability can be expected. Profitability in the Slovene and particularly in the Croatian transitional context can have another dimension as well. That is, joint stock companies in transitional countries are still undergoing the restructuring process. It is possible that for less profitable companies, financial reporting on the Internet at the current moment constitutes a minor activity and an additional cost. This particularly holds for the quotation of the public joint stock companies in Croatia, which have been forced by the regulations since 2002 to have their shares listed on the stock exchange. For most such firms, relations with investors are not all that important, and there is no stimulus for higher quality financial reporting.

Ownership structure may also be an important factor in IFR score because companies with a small number of shareholders have essentially different relations with their owners than those with a high percentage of shares that are freely traded. Dispersal of ownership usually means that the main source of information for investors have to be publicly accessible (Pirchegger and Wagenhofer, 1999). In such conditions the Internet is technically speaking an approach that allows for rapid and cheap communications with a large number of investors (current and potential) providing a large range of useful information. Hence it can be assumed that corporations with a larger number of owners will also have a high Internet financial reporting score. In Croatia, foreign ownership could also be an important factor since a large number of listed companies in Croatia are foreign owned. Since foreign owners are on the whole from more developed countries of the EU (Germany, Italy and Austria) with developed capital markets and better corporate governance, their approach to financial reporting could well be different. Perhaps foreign owners might be more aware of the importance of transparency in their business operations than domestic owners and it might be expected that foreign ownership would lead to a higher level of financial reporting on the Internet in Croatia.

An additional important factor for the IFR score in a transitional environment might be the activity of shares on the market. Since the Croatian and Slovene capital markets are in development, and many shares are not liquid, stock market activity of the shares could be an important factor. If shares are actually traded in, it could be expected that there would be a greater demand for financial and non-financial information and in consequence of higher level of financial reporting. Apart from that, with companies with a higher level of voluntary financial reporting it is possible to expect a higher market level (a high market to book ratio) because of the greater transparency of operations and the broader range of useful information and, by way of consequence, a small investor risk. In the control of sector effects dummy variables for sectors represented in the samples will be included in the regression models.

## 6 The results of the research

### 6.1 Comparison of the IFR scores for Croatian and Slovenian joint stock companies

On the basis of the empirical research carried out in June 2005 and the model of scoring defined, the following features of IFR scores were obtained (Table 8):

*Table 8 Basic statistical characteristics of the IFR scores*

Characteristics of IFR score	Croatia	Slovenia
Number of observations	55	30
Arithmetical mean of IFR scores	6.85	17.63
Standard deviation	8.08	5.87
Lowest value	0.00	3.00
Median	2.00	19.00
Highest value	29.00	26.00

As was foreseen, the companies in Croatia have on average a much lower IFR score, coming to 6.85, while the average IFR score for Slovene companies was 17.63. For formal statistical testing of the significance of the difference, t-test has to be applied for the difference of the arithmetical means of the two independent samples. Here it is important to point out that the normality of the variable IFR score for both samples was tested with the Kolmogorov-Smirnov test, which comes with the statistical programme SPSS. According to this test, the variable of IFR score followed a normal distribution, which is important for a proper application of t-test. According to the t-test carried out for the difference of the arithmetical means of the IFR scores of the two independent samples, the average difference (10.78) was statistically significant because significance was less than 5% (Table 9). The same conclusion can be arrived at assuming and not assuming the equality of variance for the two observed samples. Hence it can be concluded that Croatian corporations have on average a statistically significant lower level of Internet financial reporting than Slovene corporations.

*Table 9 T-test for testing the significance of the difference between the arithmetical means of IFR scores.*

	t-ratio	Significance (doubled sided t-test)	Difference in arithmetical means of IFR score
Assuming equal variances	-6.430	0.000	-10.78
Not assuming equal variances	-7.049	0.000	-10.78

A detailed view of the differences of IFR scores is shown in Table 10. From this it can be seen that Slovene corporations have better scores in all groups of criteria. For example, for the first group, four basic financial reports (balance sheet, profit and loss account, cash flow statement, all changes in shareholder equity statement), this is presented in from 29.1 to 32.7% of companies. But in the Slovene sample, as many as 90-93.3% of companies publish such information. Significant differences appear in other reports, while the smallest

*Table 10 Comparison of elements of IFR score for Croatian and Slovene joint stock companies*

	Croatia		Slovenia		Difference ( $\Delta$ %)
	Number of firms	Percentage of firms	Number of firms	Percentage of firms	
A) Information from the financial reports	1	2	3	4	5 = 2 - 4
Balance sheet	18	32.7	28	93.3	-60.6
Calculation of profit and loss	18	32.7	28	93.3	-60.6
Cash flow statement	17	30.9	28	93.3	-62.4
Statement on all changes to shareholder equity	16	29.1	27	90.0	-60.9
Auditor's report	15	27.3	26	86.7	-59.4
Notes to financial reports	13	23.6	21	70.0	-46.4
Accounting policy	13	23.6	20	66.7	-43.1
Segment information	7	12.7	6	20.0	-7.3
Quarterly reports	3	5.5	8	26.7	-21.2
Half-yearly reports	4	7.3	8	26.7	-19.4
Reports from previous business years	15	27.3	24	80.0	-52.7
B) Other useful information					
Most recent market price of shares	11	20.0	17	56.7	-36.7
Releases for press and public	17	30.9	18	60.0	-29.1
Analysis of business operations by the board	11	20.0	27	90.0	-70.0
Analysis of main operating risks	7	12.7	14	46.7	-30.0
Report of the supervisory board	7	12.7	26	86.7	-74.0
C) Transparency of management and supervisory board					
Information about the management	12	21.8	25	83.3	-61.5
Information about remuneration of management	3	5.5	7	23.3	-17.8
Information about the Supervisory Board	10	18.2	25	83.3	-65.1
Information about remuneration of members of the Supervisory Board	2	3.6	4	13.3	-9.7
Management declaration of responsibility for reports	6	10.9	8	26.7	-15.8
Code of corporate governance	3	5.5	10	33.3	-27.8
D) User support					
Special part of the website for investors	7	12.7	14	46.7	-34.0
Internal search engine	10	18.2	14	46.7	-28.5
Email address	52	94.5	30	100.0	-5.5
Mailing lists	3	5.5	0	0.0	5.5
Ability to download reports	15	27.3	28	93.3	-66.0
Report formats suitable for calculations	2	3.6	1	3.3	0.3
English version of web site	39	70.9	19	63.3	7.6
English version of financial reports	21	38.2	18	60.0	-21.8

difference (7.3%) is determined for segment information. For the second group of criteria for the IFR score, i.e., other useful information, in the Croatian sample percentages varied from 12.7% to 30.9%, while Slovene companies had quite a lot higher percentages, ranging from 46.7% to 90%. For example, the insignificance of the role of Croatian supervisory

boards can be seen in the very few reports from the board, which were found in only 12.7% of the companies in the sample. At the same time, in the Slovene sample the report of the supervisory board was shown to interested users by as many as 86.7% of companies.

In the transparency of management and supervisory boards, information concerning the management was presented by 21.8% of Croatian but 83.3% of Slovene joint stock companies. One interesting feature is that a very small percentage of companies in both countries reveal data about corporate officer remuneration (5.5% in Croatia, 23.3% in Slovenia). A similar conclusion can be made about supervisory board member remuneration, which is presented by only 3.6% of Croatian and 13.3% of Slovene companies. The code of corporate governance is also very rare in Croatia, being presented by only three companies (5.5%). In the Slovene sample 33.3% of companies have a code. For the sake of easier access to useful information, investors can click on the special part of the site reserved for investors in 12.7% and 46.7% of the Slovene companies. The only the three elements of the IFR score in which Croatian firms do better than Slovene are mailing list, data format suitable for calculations and English version of the Website. However, an English version of the financial reports is presented by 60% of Slovene and only 38.2% of Croatian companies.

## **6.2 Analysis of variables influencing the IFR score in the case of Croatian companies**

The approach to this research is not only descriptive and comparative, its aim also being to determine which variables have a significant effect on the level of voluntary financial reporting on the Internet. More precisely, the objective is to examine, for the two samples separately, which variables have a significant effect on IFR score. As statistical instrument, the multiple linear regression model was chosen. All potentially important variables from Table 7 are included in the initial regression model. After this, by the backward method of elimination of variables (Rozga, 1994), the optimum regression model covering the seven independent variables in the following table was arrived at:

$$IFR\text{-Score} \beta_0 + \beta_1PRIH + \beta_2ROS + \beta_3BDION + \beta_4STRVL + \beta_5PROM + \beta_6TUR + \beta_7BROD \quad (1)$$

It should be said that all five continuous variables that entered into the final model according to the Komologorov-Smirnov test carried out followed the normal distribution. Table 11 depicts the result of the regression analysis. The evaluated regression model is significant as a whole because the calculated F-ratio is 13.029, with a resulting significance of 0.00001%. The degree of explanation of the model is also at a high level because the adjusted coefficient of determination comes to 60.9%. For the sake of testing out the potential problem of multicollinearity, the statistical package SPSS employs so-called VIFs<sup>11</sup>. Since no VIF is greater than 5, it can be concluded that multicollinearity is not a major problem. Autocorrelation of residuals in SPSS is tested with the use of the Durbin-Watson test. Because of the calculated value of 1.898 and the table of critical values (Rozga, 1994)

<sup>11</sup> Variance Inflation Factors, or VIFs, are calculated as the ratio  $1/(1-R^2)$ , where  $R^2$  marks the auxiliary regression model in which the independent variable  $X_i$  from the basic model is treated as a dependent variable while all the other independent variables from the basic model are still treated as independent (Gujurati, 1992:302).

it appears that in the evaluated model there is no problem in autocorrelation of residuals. Residuals are also tested out for normality with the use of the Komolgorov-Smirnov test, which shows that residual follow the normal distribution. The diagram of dispersion of standardised expected residuals and the standardised residuals of the evaluated model do not suggest the existence of any problem of heteroscedasticity.

*Table 11 Evaluated regression model for Croatian joint stock companies*

Independent variables	Non standard coefficients	Standard errors	t-ratios	Significance	VIF
constant	2.090	1.240	1.67	0.100	–
EARN	0.894	0.000	2.29	0.026	1.98
ROS	0.116	0.049	2.36	0.022	1.19
NOSH	0.000841	0.000	3.10	0.003	1.29
MFOW	3.889	1.673	2.32	0.024	1.14
TURN	0.01782	0.000	1.94	0.058	1.14
TOUR	-3.438	1.645	-2.09	0.042	1.24
SHIP	-8.086	2.635	-3.06	0.004	1.23

Dependent variable: IFR score

Explanation of the model:	Significance of the model:
Coefficient of determination ( $R^2$ ) = 0.660	F ratio = 13.029
Adjusted coefficient of determination (adj. $R^2$ ) = 0.609	Significance = 0.00001

Durbin-Watson test = 1.898

The evaluated parameter with the size variable (EARN) suggests that the level of financing reporting (IFR score) is significantly and positively correlated with size. It should at the same time be emphasised that the remaining two variables of size (assets and market capitalisation) were eliminated as being non-significant. The hypothesis of the link between profitability and IFR score was also confirmed, because the parameter with the variable ROS was positive and statistically significant. In the Croatian transitional context ownership has proved to be an essential factor in financial reporting on the Internet. The hypothesis that dispersed ownership contributes to greater level of IFR was confirmed because the parameter evaluated with the variable NOSH was positive and significant. Majority foreign ownership of companies in Croatia is also positively and significantly correlated with the IFR score. Thus the conception of the role of financial reporting by foreign majority shareholders has shown itself to be significant and the hypothesis concerning the positive impact of foreign ownership on IFR score was confirmed. The hypothesis concerning the correlation between IFR score and market activity is also confirmed because shares that are sold more, looked at on average, have a higher IFR score. The TRANS variable, stock market activity, transactions in shares in the first three months of 2005, was statistically significant and positive with the use of one-sided t-test. Of the included sector dummy variables, only two were statistically significant, but negatively so. That is the model evaluated shows that Croatian companies from the tourist and shipping

companies have a low level of IFR. Other sectors represented in the sample were not significant. Quite why these two sectors are not inclined towards financial reporting on the Internet can only be guessed out, because it is hard to make reliable conclusions without more detailed information. From this point of view, it would be useful in the future to administer questionnaires among the boards of the companies from the sample to discover the factors that in their opinion are significant for the degree of financial reporting on the Internet attained.

### **6.3 Analysis of variables that affect IFR score in the Slovene joint stock companies**

The selected set of potentially significant independent variables of Table 7 was included in the initial regression model with data from 30 Slovene joint stock companies. With the use of the backward procedure, an evaluation of this regression model was obtained:

$$IFI-Score = \beta_0 + \beta_1 SLTR\check{Z} + \beta_2 TKAP\% + \beta_3 M/B + \beta_4 TRANS \quad (2)$$

All the four continuous variables that entered into the final model according to the Komologorov-Smirnov test follow a normal distribution. The basic characteristics of the model are shown in Table 12.

*Table 12 Evaluated regression model for Slovene joint stock companies*

Independent variables	Non-standard coefficients	Standard errors	t-ratios	Significance	VIF
constant	17.393	1.837	9.467	0.000	–
OFMAR	0.672	0.174	3.860	0.001	1.329
MCAP %	3.831	2.199	1.742	0.094	1.508
M/B	5.626	1.520	3.701	0.001	1.180
TRANS	-4.698	1.163	-4.038	0.000	1.199
Dependent variable: IFR score					
Explanation of the model:			Significance of the model:		
Coefficient of determination (R <sup>2</sup> ) = 0.692			F ratio = 14.035		
Adjusted coefficient of determination (adj. R <sup>2</sup> ) = 0.643			Significance = 0.00001		
Durbin Watson test = 1.445					

The regression model tested is significant because as a whole an F-ratio of 14.035 was calculated with a significance of 0.00001%. The explicatory level of the model is a little higher than for Croatian companies because the adjusted coefficient of determination is 64.3%. Since no VIF is greater than 5, it can be concluded that multicollinearity is not an important problem. Residuals were tested for normality with the Komologorov-Smirnov test, which shows that the residuals follow a normal distribution. The diagram of scattering of standardised expected residual and standardised residuals of the model evaluated did not suggest the existence of any heteroscedasticity problem.

The hypothesis of size was not confirmed in the sample of companies from Slovenia, because not a single one of the size variables (earnings, assets, market capitalisation) was statistically significant. Slovene companies, then, irrespective of size, have a similar level of financial reporting on the Internet. Profitability variables (ROA, ROE and ROS) were also not significant, which means that all companies in Slovenia have equal IFR scores irrespective of their profitability. Number of shareholders and majority foreign ownership were also not important variables, unlike the Croatian sample, where both variables were positively correlated with the IFR score.

However, three variables of stock exchange activities were positively and significantly correlated with the IFR score. Dummy variables for the official market had a positive and statistically significant parameter, which means that companies from this segment of the Ljubljana SE, looked at on average, have a high IFR score. The variable of the percentage of market capitalisation (MCAP percentage) is also positive, and is statistically significant when the one-sided t-test is applied. The market to book value of the shares is also a significant and positive variable. This result could suggest that investors place a higher value on more transparent companies, i.e., companies with a higher level of voluntary financial reporting. Of the sector dummy variables, only the transport sector was significantly and negatively correlated with IFR score.

## **7 Concluding remarks**

The results of the empirical research carried out show that Croatian listed companies the shares of which are actively traded on the stock exchanges do not on the whole have a high level of voluntary financial reporting on the Internet. Considering the practice of this form of reporting in companies in developed countries (the UK, the USA and Germany for example) show that Croatian companies lag quite a long way behind. However, they are also fairly far back in comparison with Slovene joint stock companies as well. The research showed that the average level of voluntary financial reporting for the Croatian sample was almost three times lower than that in the Slovene sample. The reasons for this difference and the backwardness of the Croatian companies are probably to be found in the overall business environment, particularly in the demand for financial information and the level of corporate governance in companies.

It can be expected that in Croatia the strengthening of the role of institutional (primarily of the obligatory pension funds) and of individual investors will in the future contribute to a greater demand for financial and other kinds of information. As well as this, work should be done in the companies on the codes of corporate conduct, which are supposed better to protect investors and improve their level of informedness. The legal grounds for this already exists in the amendments to the Companies Law, but as is often the case in Croatia, the problem lies in the consistent enforcement of the law. The problem of the low level of transparency in the operations of joint stock companies could be solved by new laws that would require better quality and more extensive reporting to the Securities Commission, which could make this information publicly available via public information booklets. An example of this is the SEC in the US which via the Web service EDGAR provides investors much better and more extensive information than the “public informa-



tion booklet”. A positive advance would be made by a new Accounting Law, which would require listed companies to publish only complete financial reports, which as well as the basic financial reports would cover all the other information required by IASB standards, as well as auditing reports.

Analysis of independent variables showed that larger and more profitable companies have a higher level of Internet reporting. A larger number of shareholders, a higher share turnover and majority foreign ownership also have a positive effect on transparency. It has been seen that companies in the tourist and shipping sectors have an even lower level of voluntary financial reporting. In the Slovene sample it was the variables of market activities that were statistically significant. Particularly important was the finding concerning the statistically significant and positive correlation between market to book ratio and IFR score, which might suggest that investors place a higher valuation on more transparent companies, since the risks of investing in such companies are lower.

As possible limitations of this research, the relatively small samples should be focused on, but they mirror the economic reality of Croatia and Slovenia at the moment. Since the research covered the biggest companies, it is comparable with research previously carried out for other countries. The author of this research also made a subjective decision about how to form the sample and the application of different criteria would perhaps change the sample and the research results. Future research might cover a broader set of criteria for measuring the levels of financial reporting on the Internet and relative importance might be defined by criteria or sets of criteria. Such an approach to measuring the importance of the criteria that form the dependent variable would require a survey among the users of financial information, but would probably result in higher quality IFR scores and conclusions.

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