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SEGMENT DISCLOSURES IN THE FINANCIAL STATEMENTS OF STOCK COMPANIES IN THE REPUBLIC OF SERBIA AND THE REPUBLIC OF CROATIA

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Information about the segments of a company is an important basis for making business decisions. In order for decisions based on segment information to be adequate, that information should be communicated in accordance with regulations. This paper is aimed at examining the adequacy of the segment information of listed companies in the Republic of Serbia and the Republic of Croatia and determining whether the volume of disclosed financial segment information is related to the company size and character of the audit firm. The research reveals that, in general, the disclosure of segment information is not fully in line with the International Financial Reporting Standard 8 - Operating Segments and that the joint-stock companies with a higher value of their total assets disclose financial segment information in more detail. However, there is no statistically significant difference in the amount of the segment information disclosed between the companies whose financial statements are audited by large audit firms and those that are the clients of other audit firms.

Keywords: segment reporting, International Financial Reporting Standard (IFRS) 8, stock companies, Belgrade Stock Exchange, Zagreb Stock Exchange

JEL Classification: M41, M42

INTRODUCTION

Segment reporting has been the subject of theoretical and empirical studies since the mid-20th century after it was concluded that consolidated financial statements could not respond to the increased need for information due to the growing importance of mergers and acquisitions of companies and their diversification (Medved, Milutinović & Tadić, 2016), whereby it was noted that consolidated financial statements would be incomplete without segment information (Chen & Znah, 2003). Therefore, segment reporting has been developed as a complement to consolidated reporting, with the aim of providing

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a better insight into the activities of a group of the legally independent entities that make up the economic whole (Weetman, 2010). However, segment information not only increases the informative value of consolidated financial statements, but the informative value of individual financial statements also increases when segment information is disclosed as well in addition to the information about the whole disclosed in those statements. Segment reporting is one of the key pragmatic aspects of international accounting (Bogicevic, 2013).

I. Medved *et al* (2016, 213) state that the main goal of segment reporting, referring to meeting the information needs of the internal and external stakeholders of a company, is achieved in a way that such reporting, among other things, contributes to:

- reviewing the success or failure of the segments and their contribution to the success or failure of the whole,
- planning and controlling revenues, expenses and results, thus analyzing the cost-effectiveness and profitability of those segments,
- motivating managers and other employees to achieve company goals through achieving segment goals, and
- identifying the merits or responsibilities for the success or failure of the segments.

The disclosure of information about segment operations improves the expressive power of financial statements, i.e. the basis for decision-making by the users of those statements (Stojanović, 2018). Segment reporting facilitates risk assessment and increases investor security (Malinić, Milićević i Stevanović, 2019). Although business activities are characterized by a constant exposure to risks (Jovkovic, 2019), risks do not have to be evenly distributed within an entity, but the risk types and levels may differ between segments. Segment reporting may reduce information asymmetry (Kajüter & Nienhaus, 2017), which may have an impact on lowering the cost of capital for companies.

The importance of segment reporting is also evidenced by the fact that one of the earliest documents of the International Accounting Standards Committee - International Accounting Standard (IAS) 14, Segment Reporting (Stojanović, 2018) - is dedicated to this problem. Nowadays, segment reporting is regulated by the International Financial Reporting Standard (IFRS) 8, Operating Segments, which is based on the management approach, i.e. on the point of view that externally reported segments should coincide with internally reported segments, which means that the segments adequate for internal stakeholders are also adequate for external financial statement users (Obradović, 2008). This means that the management approach allows external financial statement users to view business processes "through the eyes of management" and, therefore, more realistically predict the management decisions that significantly affect the future cash flows of the company (Financial Accounting Standards Board, 1997, paragraph 60). However, a lack of the management approach reflects in the fact that the quality and quantity of disclosed segment information depends on the human characteristics, expertise and ambitions of the management (Turčić, 2012). Segment information communication is brought into close connection with the agency problem (Berger & Hann, 2007), so that, as the persons responsible for preparing financial statements, company managers may be motivated to report incomplete and inadequate segment information (Wang & Ettredge, 2015). In addition to said, the current IFRS 8 is a flexible document, which leaves significant room for variations in segment reporting practices. For the above reasons, the practice of segment financial reporting is an important research area.

The practice of financial reporting on the segments of the joint-stock companies listed on the Belgrade Stock Exchange (BSE) in the Republic of Serbia (RS) and the Zagreb Stock Exchange (ZSE) in the Republic of Croatia (RC) is the subject of this paper. In these two neighboring countries, one of which is a European Union member country (RC) and the other is not (RS), all the listed companies are required to follow full International Financial Reporting Standards, which include IFRS 8, when preparing general-purpose financial statements.

The paper is aimed at examining the degree of the harmonization of external financial segment reporting practices with IFRS 8 and whether the company size and the character of the external auditor have an influence on the volume of financial information about segments disclosed in notes to financial statements or not and the degree of such an influence. Given the flexibility of IFRS 8, the paper should also find out whether there are national specifics in segment reporting or not.

According to the stated aim, the paper tests the following research hypotheses:

H1: Listed companies do not disclose adequate segment information.

H2: There is a positive relationship between the listed company size and the amount of the financial information about the segments disclosed by a company.

H3: The financial statements of the listed companies audited by large international audit firms contain more extensive financial information about segments than the financial statements of the listed companies audited by other audit firms.

The hypotheses are tested using the quantitative scientific methodology that includes descriptive statistical analysis, correlation analysis, and group comparison analysis. In addition to that, a significant role in the research is played by the method of comparison in terms of comparing the practice of financial segment reporting between the companies in the RS and the companies in the RC and the results of the empirical research conducted in the paper with the previous research studies conducted in the same country and in other countries.

The following chapter is the Literature Review, dedicated to the literature extant in the field of research, including the results of the previous research studies of the factors affecting the volume of segment information disclosed in general-purpose financial statements. The research methodology and the research sample are described afterwards. The last section of the paper, i.e. the results of the empirical research conducted in the RS and the RC are presented and interpreted, and this section is followed by the concluding remarks and the limitations of the research study, as well as the directions for future research in the considered area.

LITERATURE REVIEW

The International Accounting Standards Board (IASB) issued IFRS 8 in 2006, designating 1st January 2009 as the effective date (with the option of earlier application). IFRS 8 arose in the context of the convergence between IFRSs and the U.S. Generally Accepted Accounting Principles (GAAP) with a slight modification of the Statement of Financial Accounting Standards (SFAS) 131, Disclosures about Segments of an Enterprise and Related Information, published in 1997 by the U.S. Financial Accounting Standards Board (FASB), which was later codified in that country as ASC (Accounting Standards Codification) 280, Segment Reporting.

IFRS 8 significantly differs from its predecessor IAS 14. The most significant difference reflects in the way of identifying reporting segments - the risk-return approach represented in IAS 14 was replaced with the mentioned management approach based on the way of organizing segments within a company for business decisions and performance evaluation. It should not be concluded that internal organization was neglected in IAS 14. It was suitable for external reporting purposes only if it was based on a production or geographical basis (Obradović, 2008), while, according to IFRS 8, it is suitable for the same purposes regardless of whether it is based on any of the mentioned bases or not. In addition to enabling the users of financial statements to view business processes from a management perspective, N. Nichols, D. L. Street and A. Tarca (2013) say that, in relation to IAS 14, the management approach created the preconditions for:

- increasing the number of reporting segments and the amount of disclosed segment information,

- providing timely segment information at relatively low marginal costs,
- increasing diversity in measuring segment performance, and
- a greater consistency of external information about segments with analyses performed by managers.

The IASB (2013) states the following expected benefits of IFRS 8:

- achieving convergence with the U.S. GAAP,
- the better forecasting of an entity's cash flows,
- better information about the risks considered as significant by management, and
- a more frequent disclosure of information, as it is already available.

On the other hand, the IASB expected the following shortcomings to come to light:

- the inconsistency of segments between entities due to differences in the internal structure,
- the insufficient comparability of information over time in the conditions of frequent internal reorganizations,
- a scarce information base for geographical analysis, and
- non-uniform measurement in relation to the same type of segment information between entities.

A significant change also relates to the way segments are marked. Namely, instead of the terms "business segment" and "geographical segment" contained in IAS 14, IFRS 8 uses a single term "operating segment." However, unlike the IAS 14 that required the two-dimensional segmentation of entities (based on products/services and geographical areas), IFRS 8 represents one-dimensional segmentation. According to IFRS 8, the operating segment is the component of an entity:

- that generates revenues and is exposed to the expenses based on the operating activities which may arise from transactions with other components,
- whose results are regularly reviewed by the chief operating decision-maker (CODM) in the context of performance evaluation and making decisions on resource allocation, and for which specific financial information is available.

It can be seen from this definition that not each component of a company is an operating segment. Namely, a part of a company can be considered as an operating segment in the spirit of IFRS 8 only if it has the characteristics of a profit or investment center, as a relatively independent and functionally capable unit whose manager has authority and responsibility for revenues, expenses and a result (the profit center) or (in addition to the above said) for capital investments (the investment center) (Malinić *et al*, 2019). For example, the research and development (R&D) function associated with generating expenses, not revenues instead, cannot be an operating segment (Hoyle, Schaefer & Doupnik, 2016). In addition to this, not each operating segment has to be a reportable segment at the same time, according to IFRS 8 and IAS 18, which preceded it, as well. IFRS 8 allows essentially similar operating segments, such as retail chain stores (Djukić, 2002), to merge for external reporting purposes, also requiring that the significance of operating segments for external financial statement users should be examined, with the consequence that a company's general-purpose financial statements may not always contain information about all the operating segments of the company.

According to IFRS 8, an entity should explain the substance of its reportable segments through nonfinancial and qualitative information, providing information on the factors for their identification and the types of the products and services which they generate revenues on. The key portion of segment disclosures under the same standard, however, is financial (monetary) information, as listed in Table 1 (compared to the information disclosed in accordance with IAS 14). Table 1 shows that, according to IFRS 8, many pieces of financial information are conditional in the sense that they are disclosed in notes to financial statements only if they are available to the CODM, which is a significant difference compared to IAS 14. Therefore, the volume of disclosed information may significantly vary from one company to another (Obradović and Karapavlović, 2016a). Although cash flow statement information is crucial for the assessment of past performance and the prediction of future performance for many financial statement users (Knežević, Mitrović i Ilić, 2016), the disclosure of segment cash flows is not considered in IFRS 8, which J. B. Hoyle *et al* (2016) explain by the fact that this information is often not generated for internal needs, either.

Generally speaking, if relevant financial reporting standards are followed when financial statements are prepared (provided that they are of a good quality - Obradović and Karapavlović, 2016b), financial statements will be a reliable basis for making business decisions (Milošević & Kikanović, 2014). Numerous studies indicate that there is significant room for improving the quality of financial reporting in both the RS and the RC. A survey conducted by V. Obradović and N. Karapavlović (2016a) on a sample of the 500 listed and non-listed companies in the RS in 2013 finds that a relatively small number of companies disclose segment information, which is usually incomplete, and that financial information is often not accompanied by adequate quality explanations. The study conducted by I. Medved

Table 1 Financial segment information in accordance with IAS 14 and IFRS 8

Character of information	IAS 14	IFRS 8
Result	Yes	Yes
Assets	Yes	Yes[1]
Liabilities	Yes	Yes[1]
Depreciation and amortization	Yes	Yes[1]
Revenues from external customers	Yes	Yes[1]
Revenues from transactions with the other operating segments of the same entity	Yes	Yes[1]
Material noncash items other than depreciation and amortization	Yes	Yes[1]
Interest revenue and interest expense	Recommended	Yes[1]
Material items of income and expense	Recommended	Yes[1]
Investment in associates and joint ventures accounted for by the equity method	Yes	Yes[1]
Interest in the profit or loss of associates and joint ventures accounted for by the equity method	Yes	Yes[1]
Income tax expense or income	Yes	Yes[1]
Reconciliations of the total of the reportable segments' revenues, profit or loss, assets, liabilities, and other material items to the entity's corresponding amounts	Yes	Yes
Capital additions	Recommended	Not specified
Other profitability measures	Recommended	Not specified
Information about cash flows	Recommended	Not specified
Information about products and services (revenues for each kind or group of similar products/services)	Not specified	Yes[2]
Information about geographic areas (revenues and noncurrent assets)	Not specified	Yes[2]
Information about major customers (revenues for each customer and the identity of segments/group of segments that generated those revenues, but not the identity of the customer)	Not specified	Yes[2]

Notes: 1 - Information is disclosed only if it is available to the CODM, 2 - Information is not disclosed if it is not available and if the costs of its generation would be unacceptably high.

Source: Authors, based on: Lucchese & Di Carlo, 2016, 101.

et al (2016) also confirms the fact that the financial statements of companies in the RS reveal the scarcity of segment information. The studies show that the companies in the RS do not sufficiently respect the relevant standards that deal with the other disclosure areas, namely the disclosures of related parties (Jakšić, 2010), biological assets (Mijić, Spahić i Vuković, 2010; Savić and Obradović, 2020), income taxes (Vučković-Milutinović & Lukić, 2013; Vržina, Obradović & Bogićević, 2020), property (including the investment one), plant and equipment (Obradović and Karapavlović, 2014; Karapavlović, Obradović & Milutinović, 2018), and intangible assets (Obradović, 2018). A survey conducted by D. Spasić and K. Denčić-Mihajlov (2014) reveals that the companies listed on the BSE, disclose 64.34% of the information required by the standards on average. The companies in the RC have a longer tradition in applying IFRSs compared to the companies in the RS. Namely, IFRSs (initially only IASs) have been applied in the RC since 1993 (Mamić-Sačer and Ramač-Posavec, 2012), whereas in the RS, they have been applied since 2003 (financial institutions) and 2004 (other profit-oriented entities). However, the studies show that there is room for improving the quality and transparency of the annual financial statements of the listed companies in the RC (Pervan, 2006; Pivac & Čular, 2012; Pervan, 2013; Pivac, Vuko & Čular, 2017; Vržina *et al*, 2020). The first research hypothesis is defined based on all the foregoing.

Numerous researchers have been trying to determine which factors encourage the preparers of financial statements either to disclose or not to disclose segment information. J. Prather-Kinsey and G. K. Meek (2004) find that large companies disclose more information in their financial statements than small ones. A. Prencipe (2004) and M. M. Alfaraih and F. S. Alanezi (2011) state that large companies are characterized by a more complex organizational structure, greater experience, and the availability of extensive resources, including modern information and communication technologies, as well as a greater responsibility to shareholders and the desire to attract new investments, which means that they will communicate more extensive information about their segments. In their explanation of the reasons why large companies report more extensive information about their segments, M. Chavent, Y. Ding, L. Fu, H. Stolowy and H. Wang (2005) state that, due to the established system of internal reporting, these companies have lower costs of generating segment information, while small companies are trying to protect themselves from the competition by hiding important information. P. Dumontier and B. Raffournier (1998), A. Prencipe (2004), L. Patelli and A. Prencipe (2007); P. N. Pardal and A. I. Morais (2011); M. M. Alfaraih and F. S. Alanezi (2011); E. Leung and A. Verriest (2015); V. Obradović and N. Karapavlović (2016a), R. A. Mateescu (2016) and P. Amado, F. Albuquerque and N. Rodrigues (2018) also confirm the fact that large companies disclose more extensive information about their segments. Based on the foregoing, the second research hypothesis is defined.

P. Dumontier and B. Raffournier (1998), J. Prather-Kinsey and G. K. Meek (2004), E. Bonsón and T. Escobar (2006); M. M. Alfaraih and F. S. Alanezi (2011) and R. A. Mateescu (2016) find that the companies whose financial statements are subject to audit by the so-called "Big Four", namely Deloitte, PricewaterhouseCoopers (PwC), Ernst & Young (EY) and KPMG, disclose more information in their financial statements than the companies that are not the clients of the "Big Four." P. Dumontier and B. Raffournier (1998) point out the fact that large audit firms use their independence from clients to influence them to fully comply with relevant standards when preparing financial statements, thus protecting their own reputation, and that, thanks to good international training and continuous professional development, employees at large audit firms have greater professional competences for auditing the financial statements prepared based on IFRSs compared to employees in small audit firms. J. A. Souza, A. S. Neto, G. C. Benedicto and D. J. Mendonça (2016) point out the fact that large audit firms do not accept audit arrangements with the firms that disclose a small amount of information in their financial statements, segment information included. The third research hypothesis is defined based on the foregoing.

RESEARCH METHODOLOGY AND THE SAMPLE

The empirical research was carried out on a sample of the 360 companies listed on the BSE on 1st August 2020 and the 100 companies listed on the ZSE on the same day, the financial statements of the said companies being publicly available at the time of the research. The analysis of the structure of the sample of the companies in the RS according to trading segments shows that the ordinary shares of the four companies are included in the Prime Listing (the bonds of one of them are listed on the Open Market), the ordinary shares of the three companies are included in the Standard Listing (the preferred shares of one of them are listed on the Open Market), the ordinary shares of the 18 companies are traded on the Open Market, while the ordinary shares of the remaining 335 companies are traded through the Multilateral Trading Platform (MTP). The financial statements of the 95 of the 455 companies listed on the BSE (all the 95 companies being on the MTP) and the two of the 102 companies listed on the ZSE were not available. The data about the companies listed on the mentioned stock exchanges were taken from the official internet presentations of these stock exchanges. The notes to the individual and consolidated financial statements of the observed companies for 2018 were used as a source of information about segments, whereas the data from the balance sheets and audit reports for 2018 available on the official website of the Serbian Business Registers Agency and the Croatian Financial Agency were also used for the purposes of the research study. The fact that the financial statements of as many as 20% of the companies listed on the BSE are not publicly available shows that timeliness, as one of the enhancing qualitative characteristics of financial statements (the essence of which is the availability of necessary information when users need it to make economic decisions - Frank, 2020) was violated, and that the current financial reporting regulations (the Accounting Law, the Capital Market Law, the Rulebook on the Conditions and Manner of the Public Disclosure of Financial Statements and Keeping the Register of Financial Statements) were not complied with, which, as B. Savić and N. Obradović (2020) point out, raises the question of the attitude of the authorities in the RS towards the protection of the public interest.

The research hypotheses were tested in the following manner:

- the first hypothesis was tested by comparing the provisions of IFRS 8 with the segment information disclosed by the observed companies in their notes to their financial statements;
- the second hypothesis was tested by means of Pearson's and/or Spearman's correlation coefficient(s), whereby the Cohen guidelines (Pallant, 2007) were taken for the purpose of determining the correlation strength, and the total Balance Sheet assets at the end of 2018 were used as the basis for measuring the company size;
- the third hypothesis was tested by comparing the data for the companies whose financial statements were audited by the "Big Four" and those whose financial statements were audited by other audit firms using the nonparametric Mann-Whitney U group comparison test, applied because it was determined that, in each of the considered cases, the empirical distribution of the variables deviated from the normal, which means that the condition for the application of the parametric t-test was not met.

The second and the third research hypotheses were tested at the level of individual public capital markets (the BSE and the ZSE) and at the level of both markets observed together. Statistical data processing was performed using the IBM SPSS Statistics Version 24.

RESEARCH RESULTS

The review of the notes to the financial statements of the sample companies for 2018 finds that the segment information was disclosed by the 20 joint-stock companies listed on the BSE (namely by the two whose ordinary shares are included in the Prime Listing, the two whose ordinary shares are included in the Standard Listing, the three whose ordinary shares are in the Open Market and the 13 whose ordinary shares are on the MTP), which makes 5.56% of the sample part that refers to the companies in the RS (360 companies). Of the joint stock companies in the RS observed by the survey conducted by V. Obradović and N. Karapavlović (2016a) referring to the year 2013, 12.81% (26 out of 203) disclosed segment information. The presented facts indicate a decrease in the frequency of segment information disclosure by the joint-stock companies in the RS although this frequency was modest even before the decline. The frequency of segment information disclosure is very low for the companies on the MTP - accounting for only 3.88%. This frequency is at the level of 28% in the companies belonging to the other trading segments. Segment information for 2018 was disclosed by the 51 joint-stock companies listed on the ZSE, which accounts for 51% of the observed companies in the RC. The fact that the notes to the financial statements of many companies (especially in the RS) do not contain segment information can be explained by a lack of segmentation for internal reporting and the insufficient motives of the financial statement preparers to disclose this information due to insufficient incentives from the environment, primarily by the auditors (Obradović and Karapavlović, 2016a).

Although, according to IFRS 8, the entities that disclose information about operating segments are required to disclose the basis (factors) for their identification, the three entities listed on the BSE (15% of the entities that disclose segment information) did not do it. The same shortcoming was observed in the ten companies listed on the ZSE, which makes up 19.6% of the companies that disclose segment information. However, the names of the segments generally provide a basis for concluding which factor was used in their identification. In the RS, the segments were identified on the basis of the products/services in the 18 listed companies (90%), and on the basis of the geographical areas in the two of them (10%). In the RC, the segmentation in the 36 (70.6%) listed companies is based on products/services, whereas in 15 (29.4%), the segmentation is based on the geographical areas. The segmentation based on products/services can be said to be dominant in both observed countries, this dominance being more pronounced in the RS. In addition to that, 55% (11 out of 20) of the companies in the RS and 47% (24 of 51) of the companies in the RC do not disclose information about the types of the products and services from which each reporting segment derives revenues, as is required by IFRS 8.

Table 2 shows that the number of the reporting segments, excluding those marked as "others", ranges from 2 to 7 for the companies in the RS and from 1 to 10 for the companies in the RC. The notes to the financial statements of one company in the RS provide that it consists of three operating segments, but the information about the revenues, results and assets is only presented for the two segments, because the information about the two segments is presented together, for the reason of which fact the company could be treated as a two-segment one. One company in the RS first lists and describes six segments, and then, due to the aggregation of some segments, presents the information for the other three segments. One company in the RS identifies two reporting segments, of which the one is further divided into two and the other into eight sub-segments (these are different types of insurance provided by the insurance company). One company in the RC identifies two reporting segments, one of which is further broken down into four, and the other into two sub-segments. The average number of the segments is 3.1 in the observed companies in the RS and 3.3 in companies in the RC.

The volume of the disclosed segment information varies in both countries. Two companies in the RS report only one piece of financial (monetary) information about the segments - revenues, while one company reports as many as 47 different pieces of financial information, including derived information (the information derived from the other presented information), and the average number of the disclosed pieces of financial information is 12.7. In the RC, one piece of financial information is disclosed by the three companies, while one company discloses as many as 48 different pieces of financial information. The average number of the pieces of financial information

Table 2 The number of the reporting segments in the joint-stock companies in the RS and the RC

Number of segments	RS		RC	
	Number of companies	Share	Number of companies	Share
1	0	0.00%	4	7.84%
2	10	50.00%	19	37.25%
3	5	25.00%	16	31.37%
4	1	5.00%	3	5.88%
5	2	10.00%	2	3.92%
6	1	5.00%	2	3.92%
7	1	5.00%	1	1.96%
8	0	0.00%	0	0.00%
9	0	0.00%	1	1.96%
10	0	0.00%	3	5.88%
Total	20	100.00%	51	100.00%

Source: Authors

about the segments (9.70) is somewhat lower in comparison with the observed companies in the RS.

Table 3 shows that almost the same percentage (about 20%) of the companies in the RS and in the RC (4 out of 20 in the RS, and 10 out of 51 in the RC) do not disclose segment results within the segment information although it is required by IFRS 8. On the other hand, some companies disclose more than one layer (level) of the result - 6 of these companies are listed on the BSE, and 18 are listed on the ZSE. Table 4 shows that income after taxes (a net profit or a net loss) is the most common measure of segment performance in the joint-stock companies in the RS, whereas it is the operating income in the observed companies in the RC.

Out of the 19 companies in the RS that disclose segment revenues, only nine clearly break them down into internal and external components, i.e. into revenues from other segments and revenues from external customers. Segment revenues are disclosed by the 49 companies in the RC, and the 18 of those companies break them down into internal and external components. Three companies in the RS show both income and expenses based on interest, and one shows the net interest. There are three companies in the RS that show both interest income and interest expense, and one showing net interest. Both interest income and interest expense are shown by the three companies in the RC, while six companies show net interest. Segment asset information is identified in the notes to the financial statements of the 15 companies in the RS, with one company disclosing the current assets and one company disclosing the noncurrent assets (the other 13 only disclose the total assets). Out of the 23 companies in the RC that disclose segment assets, there are eight that break them down. It is noticeable that the companies in the RS disclose segment assets more often than the companies in the RC, while the situation is reversed in the case of the liabilities. One company in the RS shows the sum of the segments' equity and liabilities, but does not state which part of that total relates to the liabilities. One company in the RS also discloses the amount of the segments' equity, and two companies in the RC do the same. Despite the fact that IFRS 8 requires that the basis for the calculation of internal transactions should be disclosed, there are only one amongst the observed companies in the RS and four companies in the RC that do so. Three companies in the RS and seven companies in the RC show the reconciliation of the segments' results, revenues, assets and liabilities with the relevant information related to the whole. Table 3 shows that the frequency of the disclosure

Table 3 The frequency of segment information disclosure

Character of information	Number of companies in RS	Number of companies in RC
Result	16 (80%)	41 (80%)
Assets	15 (75%)	23 (45%)
Liabilities	5 (25%)	22 (43%)
Revenues	19 (95%)	49 (96%)
Interest revenue and interest expense or net interest	4 (20%)*	8 (16%)*
Depreciation and amortization	6 (30%)	24 (47%)
Material items of income and expense	8 (40%)	20 (39%)
Interest in the profit or loss of associates and joint ventures accounted for by the equity method	1 (5%)	2 (4%)
Income tax expense or income	5 (25%)	9 (18%)
Material noncash items other than depreciation and amortization	3 (15%)	4 (8%)
Investment in associates and joint ventures	0 (0%)	0 (0%)
Capital additions	1 (5%)	10 (20%)

*Banks are not included because interest income and expense are operating income and expense for them.

Source: Authors

Table 4 The measures of segment profitability

The final type of result disclosed	RS	RC
Operating income	5	16
Income before taxes	3	3
Income after taxes	7	14
Other measures	0	5
Unclear	1	3

Source: Authors

of information about depreciation and amortization and capital additions is higher in the RC than in the RS. On the other hand, the companies in the RS more often disclose significant noncash revenues and expenses, i.e. the revenues and expenses that did not lead to cash flows in a given period (Material noncash items other than depreciation and amortization).

Information about revenues by products and geographical areas is provided by the seven companies in the RS and the two companies in RC. There are four companies in the RS and 16 in the RC that only report revenues by geographical areas. Three companies in both the RS and the RC report the revenues broken down by the products/services sold. In addition to the revenues by the geographical areas, the six companies in the RC report their assets by the geographical areas which the companies operate in, whereas five companies show capital additions by the geographical areas.

Information about the major customers with the amount of the revenue generated from those customers (mostly aggregate amounts) is disclosed by the five observed companies in RS, but only two disclose the identity of the segments that generated those revenues. There are three companies that disclose the identities of their major customers (which is not required by IFRS 8). Seven companies in the RC provide information about the major customers, none of them, however, reporting which segments generated those revenues, and two also provide the names of the major customers.

Based on the above-mentioned, it can be concluded that:

- within the general information about the segments, a number of the companies do not disclose the factors based on which the segmentation was performed, nor the products that contribute to the generation of the segment revenues,
- not all companies report the achieved result of the segment, and
- a very small number of the companies disclose the basis for the measurement of internal transactions and the reconciliation of the segment information with the information on the whole as well.

The mentioned shortcomings related to the disclosure of the segment information of the companies in the RS and the companies in the RC show that IFRS 8 is not consistently applied, i.e. that the companies do not disclose all the information required by this standard in their notes to the financial statements, which on its part results in the acceptance of the first research hypothesis. The insight into the audit reports related to the financial statements of the sampled companies does not reveal the auditor's observations on the inadequacy of the segment information, which fact, together with the presented results of the empirical research, indicates the auditor's insufficient commitment to the segment information. The presented results also suggest that external segment reporting is significantly more common in the companies in the RC than in the companies in the RS, and that the companies in the RS report more pieces of financial information about segments on average as well.

As for the relationship between the company size and the volume of the disclosed financial information about the segments, it was found that:

- there was a strong and statistically significant positive correlation ($rho = 0.743$, $p = 0.000$) for the companies in the RS (based on Spearman's correlation coefficient, since the empirical distribution of the variables deviated from the normal),
- there was a medium and statistically significant positive correlation ($r = 0.308$, $p = 0.028$; $rho = 0.462$, $p = 0.001$) for the companies in the RC (based on Spearman's and Pearson's correlation coefficients applied taking into account the central limit theorem, according to which the distribution of variables in a sample with more than 30 observations tends to a normal distribution),
- there was a strong and statistically significant positive correlation ($rho = 0.523$, $p = 0.000$; $r = 0.501$, $p = 0.000$) for the companies in both the RS and the RC observed together (based on Spearman's and Pearson's coefficients).

These results suggest that, as the size of joint-stock companies increases, the volume of financial information about the segments they disclose increases, too. In other words, in both the RS and the RC, larger companies disclose more financial information about segments in the notes to the financial statements compared to smaller companies. Therefore, the second research hypothesis is accepted. The influence of the company size on the volume of disclosed information is more pronounced in the RS than in the RC.

As for the relationship between the character of the audit firm and the volume of the disclosed financial information about the segments, it was determined that:

- on average, the companies in the RS that were the clients of the audit firms belonging to the "Big Four" had disclosed 20.30 pieces of the financial information about segments, whereas those that were the clients of the other audit firms had disclosed 9.04 pieces of such information; according to the results obtained by having done the Mann-Whitney U test, however, the difference between the volume of the financial information disclosed by the clients of the "Big Four" ($Md = 12$, n = 7) and the clients of the other audit firms (Md = 6, n = 13) was not statistically significant, although it had a medium intensity (U = 22.00, z = -1.89, p = 0.067, r = 0.42);

- on average, the companies in the RC that were the clients of the audit firms belonging to the "Big Four" had disclosed 10.12 pieces of the financial information about segments, whereas those that were the clients of the other audit firms had disclosed 8.24 pieces of such information; according to the results obtained by having done the Mann-Whitney U test, however, the difference between the volume of the financial information disclosed by the clients of the "Big Four" (Md = 8, n = 39) and the clients of the other audit firms (Md = 5, n = 12) was not statistically significant (U = 185.00, z = - 1.09, p = 0.275, r = 0.15);
- on average, when the companies in the RS and the RC were observed together, the clients of the "Big Four" had disclosed 11.67 pieces of the financial information about segments, and the clients of the other audit firms had disclosed 8.44 pieces of such information; according to the results obtained by having done the Mann-Whitney U test, however, the difference between the volume of the disclosed information by the "Big Four" clients (Md = 8.5, n = 46) and the clients of the other audit firms (Md = 6.0, n = 25) was not statistically significant (U = 428.50, z = -1.769, p = 0.077, r = 0.21).

The presented results show that "Big Four" clients in both the RS and the RC disclose more information about segments compared to other companies, and the difference between these categories of companies is more pronounced in the RS. However, this difference is not statistically significant in the RS and the RC, which means that there is not enough evidence to conclude that the third hypothesis is fulfilled.

CONCLUSION

The comparative analysis of external financial segment reporting in the RS and the RC suggests that there are national specifics in the given area of financial reporting, which is to be expected given the flexibility of IFRS 8. This conclusion is indicated by the findings:

- external segment reporting is significantly more common in joint-stock companies in the RC than in joint-stock companies in the RS,
- that the frequency of the disclosure of some segment information that are of a conditional character (such as information on assets and liabilities) significantly varies between the observed countries, and
- that the segmentation based on products/services and the segmentation based on geographical areas have different shares in these countries (although the segmentation based on products/services is dominant in both countries).

The research study has revealed that approximately every eighteenth company whose securities are listed on the public capital market in the RS, i.e. on the BSE, discloses segment information in the notes to the financial statements. On the other hand, this is done by approximately every other company whose securities are listed on the public capital market in the RC, i.e. on the ZSE, which may be a consequence of stronger incentives to disclose segment information coming from financial statement users, primarily investors and creditors, as well as a more developed segmentation of companies for internal reporting in the RC compared to the RS.

Segment information need not be an integral part of the notes to financial statements. No disclosure is made if a company is not segmented for the purposes of internal reporting. If such information is disclosed, it should be in accordance with IFRS 8. The research study presented in the paper, however, reveals that numerous companies in both the RS and the RC disclose information with a deviation from IFRS 8 because some mandatory information is missing, which leads to the conclusion that the information needs of the participant on the capital market and external auditors do not provide sufficiently strong incentives to disclose detailed and quality information about segments. Therefore, the state institutions responsible for financial reporting, capital market organizers, professional accounting organizations, external auditors, and financial statement preparers as well should pay more attention to segment information in order to improve the information base for making economic decisions, especially investment and credit decisions.

The research study also confirms the fact that the volume of financial information about segments increases with an increase in the value of assets in both the RS (especially there) and the RC, i.e. that larger companies disclose more detailed information compared to those of a smaller size, which may be due to the higher level of the development of the internal reporting system in larger companies and stronger incentives to disclose detailed and quality information which larger companies are exposed to due to their generally greater public accountability. However, no statistically significant relationship between the type of the audit firm and the number of disclosed financial information about segments found by previous research studies conducted in other countries was identified in the RS and in the RC, either, which means that there are no sufficient grounds to state that, compared to other audit firms, large and reputable international audit firms encourage companies in the RS and the RC more to disclose quality segment information and select their clients based on the quality of disclosure.

The key limitation of the paper pertains to the relatively small sample of companies, especially in the RS, which is a consequence of the relatively modest application of financial segment reporting in practice. Therefore, the results of the research study, especially those related to the RS, should be accepted with some reserve. The paper raises a number of issues in the area of segment financial reporting. Future research in this area should focus on examining the impact of the other factors (such as the ownership structure of the company, the number of the supervisory board members, the number of the supervisory board independent members, profitability, the indebtedness level, etc.) on the volume of disclosed segment information and their impact on both mandatory segment information and conditional information. Further research should also pay attention to nonfinancial information about segments, the reasons why many companies (especially in the RS) do not report segment information in their financial statements, as well as the impact of the segments' business on the environment they operate in.

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