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EXAMINATION OF THE NON-FINANCIAL REPORTING PRACTICES OF HUNGARIAN PUBLIC INTEREST ENTITIES

Theses of Doctoral Dissertation

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The relevance of the topic

In our day, the range of information published in traditional financial reports is becoming less and less sufficient to cover the stakeholders' growing information needs. One of the reasons for this is that changes in the rules on financial reporting have followed the economic processes and emerging trends that affect economic operators with a delay.

The traditional accounting paradigm had already been criticised in the 1970s. Additional reports appeared in Heinen's 1978 model in order to correct the information asymmetry due to the weaknesses in accounting rules (Lakatos 2013). Yet, there is neither scientific consensus, nor generalised business practice regarding the disclosure of non-financial information.

One of the emerging global trends in the past few decades has been the focus on the environmental and social impact, embedding and effective functioning of organisations. There is an increasing tendency to complement the past-oriented approach with forward-looking aspects, that is, besides past performance and financial risks, future challenges, the vulnerability of companies, their long-term prospects and their value-creation processes are getting more and more emphasis. Today, the idea of sustainability is getting widespread, it permeates business life deeply, stakeholders focus more and more on the activity of economic operators and its effect on society and environment. The emergence of responsible investors, consumers and business partners requires a different approach and communication from companies.

As the aforementioned issues are not covered fully by present reporting practices, businesses are publishing more and more complex and increasingly extensive additional reports, i.e. the reporting process has been reformed.

Today, the development of the reporting strategy requires the coordination of complex tasks. It has become obvious that besides the financial aspects, non-financial information also has a very important role. Recent trends show the spread of integrated reporting, in which companies do not draw up a separate financial and non-financial report, but combine the contents provided and take them into account to the same extent. Therefore, it could be said that not only the quantity and content of the reports is changing, but also the way they are published (Rowe 2015; Zahorodnya 2016).

Other than being a very important practical topic, non-financial reports and the effective usability of the information published in them draw more and more attention from the scientific community. More and more results of investigations into the reporting culture of different countries are being published. The non-financial reporting practices of listed companies were investigated by Mio and Venturelli (2013) in Italy and the UK, by Hoffmann et al. (2018) in Germany and by Sierra-Garcia et al. (2018) in Spain.

Checking the literature, we did not find research that looked into the Hungarian non-financial reporting culture, therefore we thought that researching Hungarian reporting practices would be worthwhile. The idea was supported by Albu et al. (2017), in which work the authors emphasise the importance of examining the reporting culture of each country individually, during which process the documents available in the languages of each of the country are analysed, the results are made available to the international research community, thus making the trends observed in different countries comparable.

The timeliness of the topic is supported by the Directive 2014/95/EU, which made NFR compulsory for certain PIEs from the financial year 2017. The introduction of the regulation makes compliance-type research possible. Results of international research show that the regulation has a positive impact on the intensity of the non-financial reporting of entities, i.e. more non-financial information is available. The results also show correlation between the level of NFR and the economic performance of these entities. According to research examining reporting trends, there is an increase (77%) in NFR in Europe, although the pattern varies: in Eastern Europe, the ratio is lower than in Western Europe (65 and 82%, respectively) (KPMG International 2017: 11).

Dissertation aims and hypotheses development

In the light of the foregoing, in order to create the possibility of comparing Hungarian reporting practices with those of other countries, we consider it important to explore the domestic non-financial reporting culture. We also aim to investigate how the implemented regulations have affected companies' reporting practices. In literature, the published information is examined using several different methodologies, but the motivating factors behind the companies' reporting practices get less emphasis. In our research, we attempt to categorize these motivating factors.

The aim of the doctoral dissertation is to understand the drivers of non-financial disclosure of Hungarian public interest entities (PIEs) and to explore the current reporting practices, and also to propose improvements.

By making a formerly voluntary practice mandatory for certain companies, the implementation of Directive 2014/95/EU had a significant impact on researching NFR, researchers have turned their attention to the possible effects of the implementation. Consistent with international literature, our first three hypotheses are formulated about the possible effects of regulations of non-financial reporting.

Hypothesis 1: Directive 2014/95/EU will lead to an increase in the average intensity level of NFR provided by companies.

One of the possible effects of the regulations is that even entities that previously have not disclosed NF information will do so, and also that disclosure of entities that previously published voluntarily will become more intensive. As a result, we expect an increase in the average intensity level of NFR (Dumitru et al. 2017; Matuszak and Różańska 2017; Venturelli et al. 2017). To examine the first hypothesis, we need to analyse the NFR practices of the entities within the scope of the Directive, pre and post ED. Disclosure practices for the financial year before the entry into force of the Directive (2016) and the financial year after the entry into force (2017, 2018) were measured using content analysis, which method is widely used in international literature.

The quantification of qualitative NFI, i.e. the measurement of disclosure intensity, was carried out through qualitative content analysis.

Hypothesis 2: Directive 2014/95/EU will lead to a narrowing gap in the intensity levels of NFR provided by companies.

The implementation of the Directive is expected to have a greater impact on the intensity levels of NFR provided by companies that did not apply voluntary disclosure previously, which should lead to a more uniform reporting practice. This effect is identified as coercive isomorphism (Dumitru et al. 2017; Tiron-Tudor et al. 2019). To verify our second hypothesis, disclosure practices have to be examined, for which task we carry out content analysis.

Hypothesis 3: The threefold (environmental-social-ethical) criterion of the Directive prevails in the Hungarian reporting practice.

Our third hypothesis relates to the regulation of the content of non-financial disclosure. It is expected that the regulation will lead to a balanced presentation of environmental, social and ethical information in reports. To support this hypothesis, we will also use the content analysis mentioned above, creating sub-indices measuring the reporting intensity of each topic.

The other two hypotheses relate to factors beyond regulation.

Multiple motivating factors may affect the non-financial reporting practices of entities, which factors can be divided into mandatory and voluntary incentives. Our third hypothesis is related to these factors:

Hypothesis 4: The presence of certain attributes may indicate if a given entity will rather be incentivized by mandatory or voluntary incentives.

Evidence from international studies shows that there are criteria that show which companies are more affected by regulation and which are not (Dumitru et al. 2017; Matuszak – Różańska 2017). We will also use the content analysis methodology to test the above hypothesis, comparing the characteristics of the company groups based on different intensity growth.

Hypothesis 5: There are company specific factors that correlate with the intensity of the non-financial reporting practices of entities regardless of the regulation.

In formulating our fifth hypothesis, we sought to answer the question of whether we can identify characteristics that are associated with non-financial disclosure practices of firms regardless of regulation (Ortas et al. 2015; Sierra-Garcia et al. 2018; Dalal – Thaker 2019; Mion – Loza Adaui 2019). To test the hypothesis, a mixed methodology has been compiled. The intensity index determined in the content analysis was used as dependent variable to build a multivariate statistical model.

The structure of the dissertation

The dissertation comprises five main chapters. In the first chapter, the key concepts related to the subject and their interpretation are presented. This is considered necessary because the subject of the dissertation is relatively new, there is no common usage of concepts, even in international literature. In the literature review, the theories that can support the companies' reporting practices and how these theories can link to non-financial reporting (NFR) are discussed. In the second chapter, the process of NFR is presented with particular attention to the clarification of motivational factors (incentives) and the related standards; and also the links between reporting theories and incentives are identified. In the third chapter, the models and results of the international literature, on the basis of which our investigation was conducted, are presented. The fourth chapter includes our empirical research, in which motivation factors were examined using interviews, while the reporting practice was examined with content analysis. The quantitative data obtained from the content analysis also provided the opportunity to carry out statistical investigations. In the fifth chapter, in addition to the results, we will refer to the limits of the research and make proposals for regulators and businesses.

Methodology and Main results[1][2]

To examine the Hungarian non-financial reporting practices, we chose the methodology elaborated by Dumitru et al. (2017). They constructed a research instrument covering 20 non-financial items relating to four categories (Appendix 1.) and searched the reports for the respective items. They developed a scoring system that also reflects both the intensity and the quality of disclosure: 0: no presentation; 1: narrative presentation; 2: presentation using KPIs or other numerical/quantitative data; 3 (2+1): narrative plus quantitative data presented at the same time. Consequently, the maximum score available for the reports was 60 (20*3), and higher scores mean better quality disclosure.

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[1]Due to the limited space available in the thesis booklet, only some results directly related to the theses are presented in this chapter. In addition, in the doctoral dissertation, an analysis of the legal context and the interview research that explored the motivations are presented. Also please see the appendices.

[2] This chapter is based on Lippai-Makra, E., Kovács Z. I. and Kiss, G. D., 2022. The non-financial reporting practices of Hungarian listed public interest entities considering the 2014/95/EU Directive. Journal of Applied Accounting Research, Vol. ahead-of-print No. ahead-of-print.

Following Dumitru *et al.* (2017), we calculated four indices for each sample company based on the assigned scores and the maximum number of points per category. The indices are constructed as follows:

$I_1 = \left(\frac{P_1}{12}\right) * 100$; $I_2 = \left(\frac{P_2}{21}\right) * 100$; $I_3 = \left(\frac{P_3}{24}\right) * 100$; $I_4 = \left(\frac{P_4}{3}\right) * 100$, where P is the number of points assigned to the entities in the respective categories.

Moreover, to evaluate the overall non-financial disclosure quality, we calculated the following combined index:

$$I_{combined} = \frac{(I_1 + I_2 + I_3 + I_4)}{4}.$$

We found other methods for measuring the disclosure quality in the literature; therefore, we applied an alternate scoring system on the reports of the sample. The aim was to observe the effects of an alternative weighting of the different types of disclosure. Based on Li *et al.* (2008), we recalculated the scores by considering not only the narrative and numerical data but also graphic illustrations (i.e., graphs, not including photographs). Thus, the modified scoring (denoted later as: $I_{combined,mod}$) involves the following: 0: no presentation; 1: narrative presentation; 1: presentation using KPIs or other numerical/quantitative data; 1: graphic illustration. The maximum score was 3 per item and 60 per report in this alternative scoring method, which meant that the entity provided narrative, qualitative, and graphic information on all 20 items from the list.

We attempted to find some company-specific independent variables which have a significant impact on the reporting quality. Based on the literature, we assume that larger (Sierra-Garcia et al. 2018; Mion and Loza Adaui 2019), R&D-intensive (Ortas et al. 2015), and more profitable companies (Dalal and Thaker 2019) can obtain better quality of reporting. We also included dummy variables based on the literature.

The relatively small sample size allows us to use only a limited number of variables; therefore, to describe reporting quality (Q_i), this study uses four different variable groups to represent the size (S_i), know-how-specific assets (A_i), profitability (P_i), and reporting-specific dummies (d_i) for each ith company (1).

$Q_i = const. + \beta_{1:2}S_i + \beta_{3:5}A_i + \beta_{6:8}P_i + \beta_{9:11}d_i + \varepsilon$ (1)

We were looking for the best fitting model, following a horse-race approach, where the residuals (ε) met the statistical requirements (normal distribution, no autocorrelation), and we

could have the highest number of statistically significant variable groups (p < 0.1). This was the core principle of selecting one variable from each group:

- The size of the company (S_i) is represented by the number of employees (no_i) and total assets (BS_i): $S_i \in (no_i, BS_i)$ (Sierra-Garcia et al. 2018; Mion and Loza Adaui 2019);
- The know-how-specific assets of the company (A_i) are represented by fixed assets (FA_i), intangible assets (IA_i), or the ratio of intangible to long-term assets (ILA_i): $A_i \in (FA_i, IA_i, ILA_i)$ (Ortas et al. 2015);
- The profitability (P_i) of the company is represented by net sales (NS_i), operational profit (OP_i), or pre-tax profit (PTP_i): $P_i \in (NS_i, OP_i, PTP_i)$ (Dalal and Thaker 2019);
- The reporting-specific dummy variables (d_i) are covering the issues of index SI (dI_i) (Dumitru et al. 2017) and environmental sensitivity (dS_i) (Barbu et al. 2011; Dumitru et al. 2017), or the audit is conducted by the so-called Big Four companies ($d4_i$): $d_i \in (dI_i, dS_i, d4_i)$ (Dumitru et al. 2017; Manes-Rossi et al. 2018).

The following is an anticipated assumption for the model coefficients: an increased corporate size can contribute to the quality of reporting ($\beta_{1:2} > 0$), whereas the sheer size of know-how-specific assets should be represented in higher quality ($\beta_{3:5} > 0$). However, pairing profitability with an intuitive coefficient is difficult because companies in losses can be motivated more to report to calm investors and creditors ($\beta_{6:8} \sim 0$). Meanwhile, dummy variables represent corporate-specific distortions for the sample to support the normal distribution of the residuals.

Our target variable in this paper is reporting quality (Q_i) measured in terms of combined index based on Dumitru *et al.* (2017) or Li *et al.* (2008). Based on the scores obtained from the content analysis, we attempted to find cause and effect relationship between the disclosure scores representing reporting quality (Q_i) as the dependent variable and the following independent variables:

(1) *Organizational Size (S_i):* measured in terms of employee number or total assets (Sierra-Garcia *et al*., 2018; Mion and Loza Adaui, 2019).
(2) *Know-how-specific assets (A_i):* measured in terms of fixed assets, intangible assets, or the ratio of intangible to fixed assets (Ortas et al. 2015).

(3) *Profitability (P_i):* measured in terms of net sales or operational profit, or pre-tax profit (Dalal and Thaker 2019).

Reporting-specific dummy variables are:

(4) *Sustainability Index*, which takes the value of 1 if the company is selected to a special index, such as DJSI, and 0 otherwise (Dumitru et al. 2017).

(5) *Environmental sensitivity*, which takes the value of 1 if the company operates in an environmentally sensitive domain, and 0 otherwise (Barbu et al. 2011; Dumitru et al. 2017).

(6) *Big 4*, which takes the value of 1 if the company's audit was conducted by one of the so-called Big Four companies (Dumitru et al. 2017; Manes-Rossi et al. 2018).

Input data for regressions should be similarly scaled, which can be achieved easily through the logarithm of the data. However, due to the occurrence of negative data in our case, the annual Z-score was calculated for each annual variable-vector to standardize them (2):

$$zv_{i,t} = \frac{v_{i,t} - E(v_{i,t})}{\sigma(v_{i,t})} \tag{2}$$

Classical linear regression assumes that grouped data mean fall on some linear surface, and the parameters can be estimated on this basis. Ordinary least squares (OLS) regression offers a model: $\min_{\mu \in \Re} \sum_{i=1}^{n}(y_i - \mu)^2$ for random y and μ unconditional population mean:

$$y = const. + \beta_1 x_1 + \cdots + \beta_n x_n + \varepsilon \tag{3}$$

where the residuum (ε) of the regression is not autocorrelated (Durbin–Watson statistics are between 1.8 and 2.2) and have a normal distribution (Jarque–Bera test p-value > 0.1).

However, due to the previously mentioned structural reasons behind the small size of the available data, this study used ridge regressions to overcome the following limitations. The Gauss–Markov theorem requires that the least squares estimator has the smallest variance among the other linear unbiased alternatives; however, infinite variance and therefore biased results will occur if some of the explanatory variables ($X \in (x_1, \ldots, x_n)$) are perfectly correlated. Even under more realistic common movements, the following symptoms can occur: small changes in the data can contribute to wide swings in parameter estimates, and coefficients can have high standard errors or counterintuitive signs or magnitude. The bias of multicollinearity appears mostly when the dataset is short. The need for more information does not require more observations, but dropping variables responsible for the bias can be one possible way. Although the least squares estimator can be written as $\hat{\beta}_{ls} = (X'X)^{-1}X'y$, the ridge estimator contains a

biasing parameter ($k > 0$) to multiply a diagonal matrix (D) to secure an unambiguously smaller covariance matrix: $\hat{\beta}_r = (X'X + kD)^{-1}X'y$. Even if the bias-parameter involves some sort of bias at the regression parameters, the estimation with a $1 > k > 0$ will still be more efficient than what we can find at the OLS model (Greene 2003; Kovács 2008). Therefore, both the ridge regression results and the OLS will be presented in this paper to provide control.

After determining the results of the sample entities (Table I), we applied the same four levels of disclosure quality used by Dumitru *et al*. (2017): 0 = no disclosure; 1%–30% = low-quality disclosure; 31%–70% = medium-quality disclosure; 70%–100% = high-quality disclosure. Based on the $I_{combined}$ index, we conclude that the ED has a moderate impact on the non-financial reporting practices of the sample firms, because the 3% increase in average disclosure score is only enough to bring the sample to medium-level quality. Moreover, the effect of the Hungarian local regulations is visible: entities provide considerably more environmental information in the reports than the other categories. Standard deviation of the disclosure scores of entities is relatively high for Hungary, but decreased as a result of the ED. The results can be interpreted as an evidence for coercive isomorphism and especially the influential role of national regulations. Social and employee-related matters show the largest increase over the three years, yet, the level still remains medium in this category.

Table I. NFR intensity of entities classified as real sector

Index 2016	1	2	3	4	5	6	7	8	Avg	Max	Min	SD
I1. Business model	25,00	66,67	8,33	66,67	0,00	8,33	75,00	0,00	31,25	75,00	0,00	30,547 66
I2. Environmental matters	14,29	100,00	4,76	100,00	0,00	19,05	100,00	0,00	42,26	100,00	0,00	45,140 09
I3. Social matters	4,17	54,17	8,33	87,50	0,00	8,33	45,83	0,00	26,04	87,50	0,00	30,458 73
I4. Ethical matters	0,00	33,33	0,00	100,00	0,00	0,00	0,00	0,00	16,67	100,00	0,00	33,333 33
I Combined	10,86	63,54	5,36	88,54	0,00	8,93	55,21	0,00	29,06	88,54	0,00	32,399 81
Category	low-q.	med.-q.	low-q.	high-q.	no discl.	low-q.	med.-q.	no discl.	low-q.			
Index 2017	1	2	3	4	5	6	7	8	Avg	Max	Min	SD
I1. Business model	16,67	66,67	16,67	66,67	33,33	8,33	50,00	16,67	34,38	66,67	8,33	22,219 51
I2. Environmental matters	14,29	100,00	19,05	100,00	0,00	23,81	100,00	28,57	48,21	100,00	0,00	40,855 19
I3. Social matters	4,17	54,17	25,00	87,50	16,67	4,17	45,83	16,67	31,77	87,50	4,17	26,998 06
I4. Ethical matters	0,00	33,33	0,00	100,00	0,00	0,00	0,00	0,00	16,67	100,00	0,00	33,333 33
I Combined	8,78	63,54	15,18	88,54	12,50	9,08	48,96	15,48	32,76	88,54	8,78	28,451 08
Category	low-q.	med.-q.	low-q.	high-q.	low-q.	low-q.	med.-q.	low-q.	med.-q.			
Index 2018	1	2	3	4	5	6	7	8	Avg	Max	Min	SD
I1. Business model	16,67	66,67	16,67	66,67	50,00	8,33	33,33	16,67	34,38	66,67	8,33	22,219 51
I2. Environmental matters	14,29	100,00	19,05	100,00	14,29	23,81	33,33	19,05	40,48	100,00	14,29	34,830 33
I3. Social matters	4,17	58,33	25,00	87,50	16,67	4,17	79,17	16,67	36,46	87,50	4,17	31,440 39
I4. Ethical matters	0,00	33,33	0,00	100,00	0,00	0,00	33,33	0,00	20,83	100,00	0,00	33,071 89
I Combined	8,78	64,58	15,18	88,54	20,24	9,08	44,79	13,10	33,04	88,54	8,78	27,966 49
Category	low-q.	med.-q.	low-q.	high-q.	low-q.	low-q.	med.-q.	low-q.	med.-q.			

Source: Lippai-Makra et al. (2022) p. 8.

The sample shows a mixed picture of applying standards (GRI) or relying on their own reporting formats. We agree with Venturelli *et al.* (2020) in that reaching the goal of comparability will be critical for the upcoming years. The results reveal that the overall reporting quality of the Hungarian sample is low with a combined index value of 29.03 in 2016. It only slightly increases above the medium limit (to 32.76 and 33.06) in 2017 and 2018, respectively.

The environmental matters category produced the highest average scores throughout the whole period. As in Hungary, HAA had already required environment-related disclosure long before the ED, this is in line with the phenomena found by Dumitru et al. (2017) and Tiron-Tudor et al. (2019) for the case of Romania, where business model had been required by local regulation pre ED and consequently favored in disclosure in the sample.

The category with the lowest index is about ethical matters similar to the case for Poland and Romania (Dumitru et al. 2017). Many of the Hungarian entities still did not disclose any information on ethics in 2017–2018. The other two sections (business model and social) remain on a medium level around 31–34 and 26–36, respectively, with the latter showing the greatest increase (over 10%) in the period.

Concerning entities, we observe that two of them had not disclosed any information on environmental, social, and ethical matters before the ED, but had started to do so after the implementation of the new regulations. One of the three members of the low-quality disclosure group performed a significant increase (5.36–15.18); others remained virtually on the same level and in the same category. The members of the medium-quality and high-quality disclosure categories also remained on similar levels, with one entity having falling scores. The reporting practices of these latter firms who reported NFI on formation on a voluntary basis did not significantly change, plausibly because their incentives come from the information needs of the stakeholders, which is more of a voluntary motivation and unrelated to the ED which is consistent with the results of Matuszak and Różańska (2021).

Furthermore, we also examined the number of disclosures of different kinds for the 20 items included in the content analysis to see which ones resulted in the most and least information for the report users (Appendix 1). The top six items remain the same across 2016–2018: impact on the environment; business model—brief description; GHG emissions; actions taken to ensure the protection and development of the local communities. Regarding fifth and sixth place, health and safety and working conditions, respectively, became much more frequent in 2017–2018. The items with the lowest score vary for the three years but two of them remain in the list of the four least-disclosed data: prevention of human rights, corruption, and bribery and the implementation of fundamental conventions of the International Labour Organisation.

The theoretical model was tested with ridge regression (Table II), where each model-group was tested, and our results were filtered through the above-mentioned horse-race strategy. In this section, we discuss the result of the most representative models, but Appendix 2 contains the similar results of the OLS regression to present the robustness of our results. The OLS provided more significant results, but these results may be biased by anomalies regarding the small sample size because all coefficients were large, and the size had a counterintuitive value.

The $I_{combined}$ approach proved to be more useful in describing the main characteristics

of the companies in the high-quality reporting category in the first two years, whereas the $I_{combined,mod}$ provided better results in 2018. This indicates that the weighting used in the scoring methodology is a factor that influences the applicability of statistical methods.

Focusing on the details, we can assume corporate size as a key variable in determining reporting quality, but it was counterintuitive in 2016 and insignificant in 2018. This means that larger companies do not necessarily disclose more NFI than smaller entities. However, intangible assets can contribute to the value-added of the company because of their significant positive impact. Not surprisingly, intangible assets were filtered out in all cases, meaning that intangible assets require special attention from a reporting point of view to maintain transparency. Profitability had no stable representation in this case, but it provided the highest coefficient in the model. This result can be interpreted as a consequence of cyclicality and requires further investigation of longer time periods.

Operating in an environmentally sensitive domain or participating in a sustainability index proved to be meaningful to manage corporate-specific biases. However, the sample size does not allow us to make further statements because we only used these dummy variables to achieve non-autocorrelated and normally distributed residuals.

From an investor viewpoint, this means that users of financial statements can expect to obtain more NFI from participants of more intangible-intensive sectors. This is not surprising because the common ground between intellectual capital reporting and non-financial reporting is that both areas challenge the traditional accounting paradigm. However, the stakeholders require NFI from all sectors; therefore, the role of policymakers and standard setters is still crucial on the path toward a new era of integrated reporting.

Table II. Ridge regression results

		2016				2017				2018			
		I_comb		I comb-mod		I_comb		I comb-mod		I_comb		I comb-mod	
		Coeff.	p	Coeff.	p	Coeff.	p	Coeff.	p	Coeff.	p	Coeff.	p
const.		−0,0746	0,1130	−0,0723	0,2521	0,0578	0,0604	0,0496	0,2498	0,1118	0,3192	0,3613	0,0401
size	No												
	BS	−0,9273	0,0317	0,1546	0,5503	1,6880	0,0013	1,0874	0,0175	0,3286	0,3762	−0,6750	0,2533
asset	FA												
	IA	0,6379	0,0004	0,6278	0,0012	0,3460	0,0006	0,4871	0,0011	0,6635	0,0133	1,2647	0,0042
	ILA												
profit	NS									0,4336	0,2735	1,4155	0,0649
	OP					−0,9267	0,0066	−0,4289	0,1471				
	PTP	1,4928	0,0080	0,3867	0,1825								
dummy	Index									−0,4510	0,2592	−1,4474	0,0298
	Sens.	0,1992	0,0483	0,1949	0,1287	−0,1541	0,0235	−0,1325	0,1299				
	BIG4												
diag.	DW	2,1946		1,9907		2,0894		2,1711		2,2443		2,0457	
	R2	0,9980		0,9951		0,9993		0,9978		0,9920		0,9923	
	normal		0,5000		0,5000		0,5000		0,5000		0,1267		0,1742

Source: Lippai-Makra et al. (2022) p. 10

Theses

In our empirical research, the non-financial reporting practices of Hungarian PIEs with reporting obligations were examined in the light of the 2014/95/EU Directive, for three consecutive financial years. The research was based on a methodology and a map of items found in the international literature, which was supplemented with interviews. Based on our research, the following theses can be formulated.

Our first hypothesis, that Directive 2014/95/EU will lead to an increase in the average intensity level of NFR provided by companies, was confirmed for all groups of enterprises examined. The non-financial reporting intensity was measured by the Combined Index. In both the real sector and in the group of Hungarian banks, the average disclosure intensity increased from a low to a medium level by the end of the period. The average disclosure intensity for foreign banks and foreign insurers also increased. The results are in line with those found in the literature (Venturelli et al. 2020; Matuszak – Różańska 2021).On this basis, we accept our first hypothesis and formulate the following thesis:

Thesis 1:Directive 2014/95/EU has led to an increase in the average intensity level of NFR provided by companies.

Our second hypothesis, that Directive 2014/95/EU will lead to a narrowing gap in the intensity levels of NFR provided by companies was also confirmed. The results show that non-financial reporting by companies is becoming more homogeneous following the implementation of the Directive. The standard deviation of the non-financial reporting score of entities decreased over the period in all the sectors examined, showing that reporting practices have become more homogeneous. The results are in line with those found in the literature (Matuszak – Różańska 2021). We accept our second hypothesis and formulate the following thesis:

Thesis 2: Directive 2014/95/EU has led to a narrowing gap in the intensity levels of NFR provided by companies.

Our third hypothesis, that the threefold (environmental-social-ethical) criterion of the Directive prevails in the Hungarian reporting practice, had to be dismissed. In the examined period, the balanced appearance of the aforementioned threefold criterion cannot be proved, however; the results showed the leading role of the environmental factor, which is explained

by the fact that the Hungarian Accounting Act already required certain environmental factors to be disclosed in the annual reports or in the business reports, even before the Directive entered into force. These results are consistent with the finding of Dumitru et al. (2017) that the non-financial disclosure of Romanian companies has been influenced by the past practices of national legislation. The authors identified this effect as coercive isomorphism. Based on our results, the following thesis can be formulated:

Thesis 3: Due to the specific characteristics of the Hungarian accounting regulations, the reporting of environmental factors gets the most emphasis in the reporting practices of Hungarian entities.

Our fourth hypothesis, that the presence of certain attributes may indicate if a given entity will rather be incentivized by mandatory or voluntary incentives, is accepted with the following clarification: only one attribute could be identified. The results of the content analysis showed that companies that are components of a sustainability index, for example DJSI, any of the ESG-specific MSCIs or the Wiener Börse CEERIUS, had already shown at least medium NFR intensity before the Directive, and did not change their non-financial reporting practices after its implementation. This result is consistent with the findings of Dumitru et al. (2017) and Matuszak - Różańska (2021).Thus, our fourth thesis is as follows:

Thesis 4: Companies that are components of a sustainability index are more likely to be incentivized by voluntary incentives than by mandatory ones.

Our fifth hypothesis states that there are company specific factors that correlate with the intensity of the non-financial reporting practices of entities. To examine this hypothesis, a multivariate model was formed, based on our literature review. According to our results, the intangible assets show a positive significant effect in all three examined years. This result is consistent with the findings of our previous research (Lippai-Makra et al. 2019). Company size and profitability, however, do not seem to show such a general and uniform pattern, which might be due to the effect of the implemented regulations on NFR. This led to our fourth thesis:

Thesis 5: The value of intangible assets in the real sector explains the non-financial reporting intensity, regardless of regulation.

Recommendations

On the basis of our research, we divide our recommendations into two groups: recommendations to the legislators and recommendations to the reporting entities.

Recommendations to the legislators

The presented legislation does not endorse the use of a single non-financial reporting standard, moreover, it gives the entities the opportunity On to draw up their own non-financial reporting practice according to their own methodology. In our opinion, this practice makes the situation difficult for both the reporting entities and the target audience of the reports.

Studying the standards and picking one among them, or creating their own reporting methodology represents an additional burden to the reporting entities. This makes it difficult to compare reports for the stakeholders both when they wish to examine the report of the same company in different financial years and when they want to compare the reports of different companies in the same financial year.

The fact that the legislation is so permissible in relation to the applicability of framework schemes is precisely against one of the fundamental principles of the Directive, which makes it difficult for the parties concerned to compare the reports of the individual entities. We recommend the tightening of regulations in respect of usable standards.

We put forward three recommendations concerning the Hungarian legislation. In our opinion point a), relating to the size criteria, should be deleted from the text of the HAA chapter 95/C. § (1) in order not to narrow down the scope of the obliged entities, compared to the personal scope of the Directive. We also recommend that in the original text, the word "szociális" should be replaced with "társadalmi". Although in Hungarian the two words can be considered synonyms, the former (also in Hungarian) usually refers to welfare. Finally, legislators should consider expanding the personal scope of the non-financial reporting regulation based on the opportunity mentioned in the EU directive: the number of obliged entities can be expanded based on company size or the given industry.

There are many large companies in our country whose environmental, social, and ethical issues could be subject to public interest due to their size and the magnitude of their impact. Also, there are environmental-sensitive industries (Barbu et al. 2011, Dumitru et al. 2017)

whose environmental impacts are significant, regardless of the company size. Informing stakeholders about these effects is in the public interest.

Recommendations to the reporting entities

Our recommendations can be summarized in our definition of the best practice of non-financial reporting for entities who report or intend to do so in the future (figure 1).

Figure 1 Best practice of non-financial reporting, based on the results of the dissertation
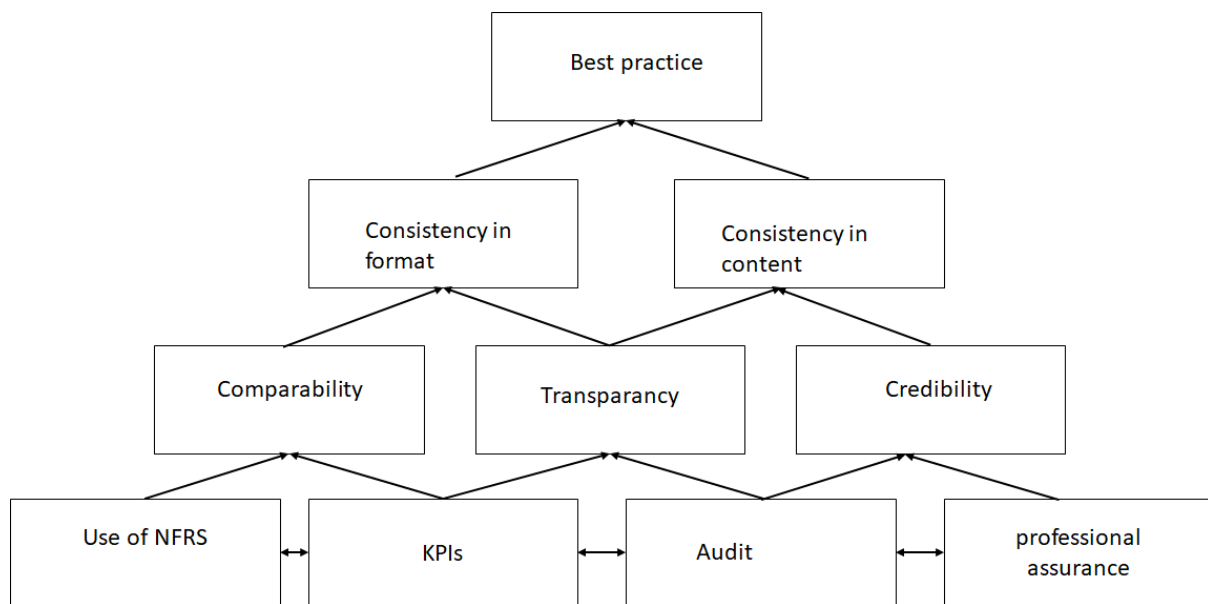
Source: Own construction

We recommend the use of non-financial reporting standards for the reports. The information published should not only be supported by general statements, but also by presenting KPIs. Some non-financial reporting standards, such as GRI, also provide a list of specific KPIs recommended for each topic. In addition, we recommend that the credibility of the report be supported by audit and by other professional assurance. For example, if different environmental reduction targets are set, they shall be supported by appropriate verification tools (e.g. SBTI). By taking these four factors into account, it is possible to ensure that the report complies with the principles of comparability, transparency and credibility, which creates consistency in the content and form of the report. This is how non-financial best practice can be achieved.

Future research directions

The relevance of the topic is also reflected in the fact that there is a constant flow of news on the subject. In late 2020, early 2021, the most exciting news is the creation of new non-financial reporting standards. The European Commission has asked the European Financial Reporting Advisory Group to prepare a possible EU non-financial reporting standard[3]. A professional debate has also started on whether the International Accounting Standards Board (IASB), which administers the International Financial Reporting Standards (IFRS), should issue its own sustainability reporting standard[4]. One possible research direction could be to analyse the different non-financial reporting standards and explore the overlaps and differences between them.

There is further potential in expanding the methodological palette we use. Based on our present results, we plan to conduct a questionnaire survey in an attempt to reach all companies listed on the Budapest Stock Exchange. On the basis of the interviews, we consider it worth looking in more depth at the information needs of stakeholders and the feedback effect mentioned above.

Although investor related issues have been widely researched, the impact of employees and consumers on the reporting practices of companies is an under-researched area and its validity was clearly supported by the interviews. However, steps that can be taken to increase the willingness of companies to respond should be explored.

We aim to develop international research partnerships in order to compare reporting practices across countries, but this will require our first international publications in this area.

The quality of reporting raises interesting research questions. The manual content analysis methodology we use takes the quality of the publication into account by weighing the forms in which the information is presented, but does not take into account aspects such as accessibility, credibility and embeddedness in the strategy (Mion and Loza Adaui 2019).

There is further scope for research into the credibility of the reports. The importance of examining credibility is supported by the research of Abernathy et al. (2017), who mapped the

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[3] https://www.efrag.org/Activities/2010051123028442/Non-financial-reporting-standards# Letöltve: 2021. 01. 29.

[4] https://www.ifrs.org/projects/work-plan/sustainability-reporting/ Letöltve: 2021.01.29.

literature on the credibility of CSR and sustainability reporting. Their results show that there are four areas of credibility that are under-explored: auditing of separate reports, integrated reporting practices, comparison of different non-financial reporting standards, and the legal regulation of non-financial reporting.

As already mentioned in the limitations of our research, we did not address the question of the representability of environmental, social and ethical factors in accounting. Harvard Business School's "Impact-Weighted Accounts" research programme attempts to do just that[5].

Furthermore, it is worth considering the relationship between management accounting and management control in the context of responsible organisational behaviour (Deák and Lukovics 2014).

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[5] https://www.hbs.edu/impact-weighted-accounts/Pages/default.aspx Letöltve: 2021.01.29

References

Barbu, E., Dumontier, P., Feleagă, N. and Feleagă, L., 2011. Mandatory environmental disclosures by companies complying with IAS/IFRS: The case of France, Germany and the UK. [online]. Available from: https://halshs.archives-ouvertes.fr/halshs-00658734 [Accessed 30 Jul 2020].

Dalal, K. K. and Thaker, N., 2019. ESG and Corporate Financial Performance: A Panel Study of Indian Companies. *IUP Journal of Corporate Governance*, 18 (1), 44–59.

Dumitru, M., Dyduch, J., Gușe, R.-G. and Krasodomska, J., 2017. Corporate Reporting Practices in Poland and Romania – An Ex-ante Study to the New Non-financial Reporting European Directive. *Accounting in Europe*, 14 (3), 279–304.

Greene, W. H., 2003. *Econometric analysis*. Upper Saddle River, N.J.: Prentice Hall.

Kovács P., 2008. A multikollinearitás vizsgálata lineáris regressziós modellekben. *Statisztikai Szemle*, 86 (1), 38–67.

Li, J., Pike, R. and Haniffa, R., 2008. Intellectual capital disclosure and corporate governance structure in UK firms. *Accounting and Business Research*, 38 (2), 137–159.

Manes-Rossi, F., Tiron-Tudor, A., Nicolò, G. and Zanellato, G., 2018. Ensuring More Sustainable Reporting in Europe Using Non-Financial Disclosure—De Facto and De Jure Evidence. *Sustainability*, 10 (4), 1162.

Matuszak, Ł. and Różańska, E., 2021. Towards 2014/95/EU directive compliance: the case of Poland. *Sustainability Accounting, Management and Policy Journal*, 12 (5), 1052–1076.

Mion, G. and Loza Adaui, C. R., 2019. Mandatory Nonfinancial Disclosure and Its Consequences on the Sustainability Reporting Quality of Italian and German Companies. *Sustainability*, 11 (17), 4612.

Ortas, E., Gallego-Alvarez, I. and Etxeberria, I. Á., 2015. Financial Factors Influencing the Quality of Corporate Social Responsibility and Environmental Management Disclosure: A Quantile Regression Approach. *Corporate Social Responsibility and Environmental Management*, 22 (6), 362–380.

Sierra-Garcia, L., Garcia-Benau, M. A. and Bollas-Araya, H. M., 2018. Empirical Analysis of Non-Financial Reporting by Spanish Companies. *Administrative Sciences*, 8 (3), 29.

Tiron-Tudor, A., Nistor, C. S., Ștefănescu, C. A. and Zanellato, G., 2019. Encompassing Non-Financial Reporting in A Coercive Framework for Enhancing Social Responsibility: Romanian Listed Companies' Case. *Amfiteatru Economic*, 21 (52), 590–606.

Venturelli, A., Pizzi, S., Caputo, F. and Principale, S., 2020. The revision of nonfinancial reporting directive: A critical lens on the comparability principle. *Business Strategy and the Environment*, 29 (8), 3584–3597.

The author's publications related to the dissertation

Lippai-Makra, E., Kovács Z. I. and Kiss, G. D., 2022. The non-financial reporting practices of Hungarian listed public interest entities considering the 2014/95/EU Directive. Journal of Applied Accounting Research, Vol. ahead-of-print No. ahead-of-print.

Lippai-Makra E. and Kovács Z. I., 2021. Motivációk a no pénzügyi információk közzététele mögött – interjús kutatás a közérdeklődésre számot tartó szervezetek kommunikációjáról. Marketing & Menedzsment, 55 (1), 55–65.

Lippai-Makra E. and Rádóczi Z., 2021. A vállalkozások közzétételi gyakorlatának elméleti megközelítése = Theoretical Aspects of Accounting Disclosure. Köz-gazdaság, 16 (2), 196–206.

Lippai-Makra, E., 2020. A no pénzügyi jelentéstétel szabályozása magyarországon. In: XIV. Soproni Pénzügyi Napok : „Gazdaságvédelem és pénzügyi kiutak" pénzügyi, adózási és számviteli szakmai és tudományos konferencia : Konferenciakötet. Sopron: A Soproni Felsőoktatásért Alapítvány, 113–125.

Lippai-Makra, E. and Tóth, B., 2020. A no pénzügyi jelentések tartalmára vonatkozó előírások. SZÁMVITEL ADÓ KÖNYVVIZSGÁLAT: SZAKMA, 62 (11), 51–51.

Lippai-Makra, E., Tóth, B. and Rádóczi, Z., 2019. Trendek a no pénzügyi jelentések világában. SZÁMVITEL ADÓ KÖNYVVIZSGÁLAT: SZAKMA, 61 (12), 35–37.

The author's other publications

Kovács Zsuzsana Ilona- Kiss Gábor Dávid – Lippai-Makra Edit – Deák István: Az immateriális javakkal kapcsolatos reporting vizsgálata tartalomelemzéssel a legnagyobb hazai vállalkozásoknál (befogadónyilatkozat, Economy és Pénzügy 2021. 1. szám)

Lippai-Makra, Edit – Tóth, Balázs: A non-financial reports tartalmára vonatkozó előírások. ACCOUNTING ADÓ KÖNYVVIZSGÁLAT: SZAKMA 2020/11 p. 51 (2020)

Lippai-Makra, Edit: A NON-FINANCIAL JELENTÉSTÉTEL SZABÁLYOZÁSA HUNGARIANORSZÁGON. In: Kovács, Tamás; Szóka, Károly (szerk.) XIV. Soproni Financial Napok: „Economyvédelem és financial kiutak" financial, adózási és accountingi szakmai és tudományos konferencia: Konferenciakötet. Sopron, Hungarianország : A Soproni Felsőoktatásért Alapítvány, (2020) pp. 113-125. , 13 p.

Lippai-Makra Edit – Tóth Balázs – Rádóczi, Zsolt: Trends a non-financial reports világában. ACCOUNTING ADÓ KÖNYVVIZSGÁLAT: SZAKMA 2019/12 pp. 35-37., 3 p. (2019)

Lippai-Makra Edit – Rádóczi Zsolt – Kovács, Zsuzsanna Ilona: Intellectual Capital Disclosure of Hungarian and Czech Listed Firms. EUROPEAN FINANCIAL AND ACCOUNTING JOURNAL 14: 3 pp. 45-60., 16 p. (2019)

Kovács Zsuzsanna Ilona – Lippai-Makra Edit: Innovation and Sustainability: Disclosure Practices of Hungarian Pharmaceutical Companies. JOURNAL OF ACCOUNTING AND MANAGEMENT 8 : 2 pp. 129-140. Paper: Hrčak ID: 216261, 12 p. (2018)

Appendices

1. *Appendix* List of non-financial reporting entities

Sorszám	Név	Number of employees			BS (t.Ft)			Sales (t.Ft)		
		2015	2016	2017	2015	2016	2017	2015	2016	2017
1	ANY Nyrt.	805	842	888	11 420 772	15 373 582	17 672 853	21 366 017	24 911 120	26 180 920
2	Magyar Telekom Nyrt.	10 357	9 432	9 154	1 207 024 000	1 175 529 000	1 109 661 000	656 342 000	602 651 000	610 851 000
3	MASTERPLAST Nyrt.	645	800	848	57 170 501	60 081 387	68 716 840	83 773 139	80 162 711	88 810 045
4	MOL Nyrt.	27 080	25 290	25 855	3 914 883 000	4 103 786 000	4 231 700 000	4 090 662 000	3 553 005 000	4 130 320 000
5	OPUS GLOBAL Nyrt.	1 020	1 960	2 011	16 363 629	37 915 827	48 070 992	11 379 150	15 314 717	42 551 766
6	RÁBA Nyrt.	1 715	1 598	1 541	34 578 869	33 501 987	36 437 867	46 137 795	42 628 737	43 842 346
7	Richter Gedeon Nyrt.	11 465	11 820	12 369	746 994 000	813 877 000	760 865 000	365 220 000	389 690 000	444 356 000
8	WABERER`S I. Nyrt.	5 586	6 250	7 255	440 719 902	513 847 064	680 478 855	522 480 448	572 351 812	674 381 501
Bankok										
9	OTP Bank Nyrt.			35 633						
10	Takarék Jelzálogbank Nyrt.			811						
11	MKB Nyrt.			1 777						
12	Budapest H. és F. Bank Zrt.			2 911						
13	CIB bank Zrt.			2 097						
14	Citibank E. plc. Mo.-i fiókt.	Not to be examined		2 395	Not to be examined			Not to be examined		
15	ERSTE BANK H. Zrt.			2 917						
16	K&H Zrt.			3 328						
17	Raiffeisen Bank Zrt.			2 326						
18	Sberbank Magyarország Zrt.			658						
19	Unicredit Bank Hungary Zrt.			1 659						
Biztosítók										
20	AEGON Magyarország Zrt.			955						
21	Allianz Hungária Bizt. Zrt.			808						
22	Generali Biztosító Zrt.	Not to be examined		1 413	Not to be examined			Not to be examined		
23	Groupama Biztosító Zrt.			1 020						

Forrás: Own construction based on the annual reports

2. *Appendix* Documents examined using content analysis

		No.	Examined reports			No. of examined pages			Standards used			Assurenced byBig4			UN SDG		
			2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018
Real sector	Hungarian	1	Annual	Annual	Annual	55	62	64	none	none	none	yes	yes	yes	no	no	no
		2	Annual + Sust.	Annual + Sust.	Annual + Sust.	139	232	236	GRI	GRI	GRI	yes	yes	yes	yes	yes	yes
		3	Annual	Annual	Annual	30	23	30	none	none	none	yes	yes	yes	no	no	no
		4	Annual	Annual	Annual	276	284	139	GRI, IIRC	GRI, IIRC	GRI, IIRC, SASB	yes	yes	yes	yes	yes	yes
		5	Annual	Annual	Annual	62	78	37	none	none	none	no	no	no	no	no	no
		6	Annual	Annual	Annual	25	25	29	none	none	none	yes	yes	yes	no	no	no
		7	Annual + Sust.	Annual + Sust.	Annual + Sust.	110	106	96	GRI	GRI	GRI	yes	yes	yes	no	no	no
		8	Annual	Annual + Sust.	Annual	5	85	92	none	none	none	yes	yes	yes	no	no	no
Pénzügyi szektor	Banks – Foreign	9	Annual + Sust.	Annual	Annual	116	108	111	GRI	GRI	GRI	yes	yes	yes	yes	yes	yes
		10	Annual	Annual	Annual	38	34	36	none	none	none	yes	yes	yes	no	no	no
		11	Annual	Annual	Annual	99	103	109	none	none	none	yes	yes	yes	no	no	no
		12	Annual	Annual	Annual	67	82	128	none	none	none	yes	yes	yes	no	no	no
		13	Sust.	Sust.	Sust.	41	153	149	GRI	GRI	GRI	no	no	no	yes	yes	yes
		14	Sust.	Sust.	Sust.	107	145	201	GRI, CDP	GRI, CDP, TCFD	GRI, CDP, TCFD	no	no	no	yes	yes	yes
		15	Annual	Sust.	Sust.	167	23	21	none	GRI	GRI	no	yes	yes	no	yes	yes
		16	Sust.	Sust.	Sust.	44	50	51	GRI	GRI	GRI	no	no	no	no	no	yes
		17	Sust.	Sust.	Sust.	190	166	174	GRI	GRI	GRI	yes	yes	yes	yes	yes	yes
		18	Annual	Annual	Annual	304	198	212	GRI	GRI	GRI	no	no	no	no	yes	no
		19	Annual	Annual	Annual	175	138	145	GRI, IR	GRI, IR	GRI, IR	yes	yes	yes	yes	yes	yes
	Insurance – Foreign	20	Sust.	Sust.	Annual	63	52	448	none	TCFD	GRI, IR	no	no	yes	yes	yes	yes
		21	Sust.	Sust.	Sust.	79	90	176	none	none	none	no	no	no	yes	yes	yes
		22	Sust.	Annual	Annual	102	358	360	GRI	GRI	GRI	no	no	no	yes	yes	yes
		23	Annual	Annual	Annual	34	32	32	none	none	none	no	no	no	no	no	no
						2328	2627	3076									
							8031										

Source: Own Construction

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3. *Appendix* The NFR intensity of the financial sector

Index 2016	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Avg.	Max	Min	SD
I1. Business model	100,00	0,00	8,33	0,00	16,67	66,67	25,00	25,00	100,00	33,33	58,33	25,00	66,67	50,00	8,33	38,89	100,00	0,00	32,16
I2. Environmental matters	71,43	0,00	0,00	0,00	57,14	71,43	0,00	42,86	85,71	28,57	61,90	19,05	100,00	100,00	28,57	44,44	100,00	0,00	35,45
I3. Social matters	70,83	0,00	12,50	0,00	29,17	79,17	0,00	37,50	91,67	58,33	79,17	12,50	79,17	87,50	25,00	44,17	91,67	0,00	33,88
I4. Ethical matters	100,00	0,00	0,00	0,00	33,33	100,00	0,00	0,00	100,00	33,33	100,00	0,00	33,33	33,33	0,00	35,56	100,00	0,00	41,22
I Combined	85,57	0,00	5,21	0,00	34,08	79,32	6,25	26,34	94,35	38,39	74,85	14,14	69,79	67,71	15,48	40,76	94,35	0,00	33,15
Category	high	none	low	none	medium	high	low	low	high	medium	high	low	medium	medium	low	medium			
Index 2017	9	10	11	12	13	14	15	16	17	18	19	20,00	21,00	22,00	23,00	Avg.	Max	Min	SD
I1. Business model	100,00	0,00	8,33	25,00	16,67	66,67	41,67	33,33	100,00	33,33	58,33	25,00	66,67	66,67	25,00	44,44	100,00	0,00	29,76
I2. Environmental matters	71,43	0,00	0,00	4,76	57,14	71,43	28,57	42,86	90,48	28,57	61,90	33,33	100,00	100,00	47,62	49,21	100,00	0,00	32,70
I3. Social matters	70,83	0,00	16,67	29,17	29,17	79,17	54,17	50,00	91,67	58,33	83,33	16,67	79,17	87,50	45,83	52,78	91,67	0,00	28,25
I4. Ethical matters	100,00	0,00	0,00	33,33	33,33	100,00	33,33	33,33	100,00	33,33	100,00	0,00	33,33	33,33	0,00	42,22	100,00	0,00	37,45
I Combined	85,57	0,00	6,25	23,07	34,08	79,32	39,43	39,88	95,54	38,39	75,89	18,75	69,79	71,88	29,61	47,16	95,54	0,00	29,16
Category	high	none	low	low	medium	high	medium	medium	high	medium	high	low	medium	high	low	medium			
Index 2018	9	10	11	12	13	14	15	16	17	18	19	20,00	21,00	22,00	23,00	Avg.	Max	Min	SD
I1. Business model	100,00	0,00	16,67	41,67	16,67	66,67	41,67	33,33	100,00	33,33	58,33	41,67	66,67	66,67	25,00	47,22	100,00	0,00	28,16
I2. Environmental matters	71,43	0,00	42,86	4,76	57,14	100,00	28,57	42,86	90,48	28,57	61,90	47,62	100,00	100,00	47,62	54,92	100,00	0,00	31,63
I3. Social matters	70,83	0,00	16,67	29,17	29,17	79,17	54,17	50,00	91,67	58,33	83,33	62,50	79,17	87,50	45,83	55,83	91,67	0,00	26,61
I4. Ethical matters	100,00	0,00	33,33	100,00	33,33	100,00	33,33	100,00	100,00	33,33	100,00	100,00	33,33	33,33	0,00	60,00	100,00	0,00	38,87
I Combined	85,57	0,00	27,38	43,90	34,08	86,46	39,43	56,55	95,54	38,39	75,89	62,95	69,79	71,88	29,61	54,49	95,54	0,00	25,92
Category	high	none	low	medium	medium	high	medium	medium	high	medium	high	medium	medium	high	low	medium			

Source: Own Construction

4. Appendix The NFR intensity of the examined entities

			Relow sector							Pénzügyi szektor																		
										Bans											Insurance companieas							
										Hungarian banks				Foreign banks							Foreign insurance companies							
Index 2016	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Avg.	Max	Min	SD
I1. Business model	25,00	66,67	8,33	66,67	0,00	8,33	75,00	0,00	100,00	0,00	8,33	0,00	16,67	66,67	25,00	25,00	100,00	33,33	58,33	25,00	66,67	50,00	8,33	36,23	100,00	0,00	31,81
I2. Environmentlow matters	14,29	100,00	4,76	100,00	0,00	19,05	100,00	0,00	71,43	0,00	0,00	0,00	57,14	71,43	0,00	42,86	85,71	28,57	61,90	19,05	100,00	100,00	28,57	43,69	100,00	0,00	39,11
I3. Socilow matters	4,17	54,17	8,33	87,50	0,00	8,33	45,83	0,00	70,83	0,00	12,50	0,00	29,17	79,17	0,00	37,50	91,67	58,33	79,17	12,50	79,17	87,50	25,00	37,86	91,67	0,00	33,85
I4. Ethiclow matters	0,00	33,33	0,00	100,00	0,00	0,00	0,00	0,00	100,00	0,00	0,00	0,00	33,33	100,00	0,00	0,00	100,00	33,33	100,00	0,00	33,33	33,33	0,00	28,99	100,00	0,00	39,69
I Combined	10,86	63,54	5,36	88,54	0,00	8,93	55,21	0,00	85,57	0,00	5,21	0,00	34,08	79,32	6,25	26,34	94,35	38,39	74,85	14,14	69,79	67,71	15,48	36,69	94,35	0,00	33,36
Category	low	m	low	h	n	low	m	n	h	n	low	n	m	h	low	low	h	m	h	low	m	m	low	m			
Index 2017	1,00	2,00	3,00	4,00	5,00	6,00	7,00	8,00	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Avg.	Max	Min	SD
I1. Business model	16,67	66,67	16,67	66,67	33,33	8,33	50,00	16,67	100,00	0,00	8,33	25,00	16,67	66,67	41,67	33,33	100,00	33,33	58,33	25,00	66,67	66,67	25,00	40,94	100,00	0,00	27,79
I2. Environmentlow matters	14,29	100,00	19,05	100,00	0,00	23,81	100,00	28,57	71,43	0,00	0,00	4,76	57,14	71,43	28,57	42,86	90,48	28,57	61,90	33,33	100,00	100,00	47,62	48,86	100,00	0,00	35,75
I3. Socilow matters	4,17	54,17	25,00	87,50	16,67	4,17	45,83	16,67	70,83	0,00	16,67	29,17	29,17	79,17	54,17	50,00	91,67	58,33	83,33	16,67	79,17	87,50	45,83	45,47	91,67	0,00	29,56
I4. Ethiclow matters	0,00	33,33	0,00	100,00	0,00	0,00	0,00	0,00	100,00	0,00	0,00	33,33	33,33	100,00	33,33	33,33	100,00	33,33	100,00	0,00	33,33	33,33	0,00	33,33	100,00	0,00	38,07
I Combined	8,78	63,54	15,18	88,54	12,50	9,08	48,96	15,48	85,57	0,00	6,25	23,07	34,08	79,32	39,43	39,88	95,54	38,39	75,89	18,75	69,79	71,88	29,61	42,15	95,54	0,00	29,72
Category	low	m	low	h	low	low	m	low	h	n	low	low	m	h	m	m	h	m	h	low	m	h	low	m			
Index 2018	1,00	2,00	3,00	4,00	5,00	6,00	7,00	8,00	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Avg.	Max	Min	SD
I1. Business model	16,67	66,67	16,67	66,67	50,00	8,33	33,33	16,67	100,00	0,00	16,67	41,67	16,67	66,67	41,67	33,33	100,00	33,33	58,33	41,67	66,67	66,67	25,00	42,75	100,00	0,00	26,95
I2. Environmentlow matters	14,29	100,00	19,05	100,00	14,29	23,81	33,33	19,05	71,43	0,00	42,86	4,76	57,14	100,00	28,57	42,86	90,48	28,57	61,90	47,62	100,00	100,00	47,62	49,90	100,00	0,00	33,49
I3. Socilow matters	4,17	58,33	25,00	87,50	16,67	4,17	79,17	16,67	70,83	0,00	16,67	29,17	29,17	79,17	54,17	50,00	91,67	58,33	83,33	62,50	79,17	87,50	45,83	49,09	91,67	0,00	29,84
I4. Ethiclow matters	0,00	33,33	0,00	100,00	0,00	0,00	33,33	0,00	100,00	0,00	33,33	100,00	33,33	100,00	33,33	100,00	100,00	33,33	100,00	100,00	33,33	33,33	0,00	46,38	100,00	0,00	41,40
I Combined	8,78	64,58	15,18	88,54	20,24	9,08	44,79	13,10	85,57	0,00	27,38	43,90	34,08	86,46	39,43	56,55	95,54	38,39	75,89	62,95	69,79	71,88	29,61	47,03	95,54	0,00	28,54
Category	low	m	low	h	low	low	m	low	h	n	low	m	m	h	m	m	h	m	h	m	m	h	low	m			

Source: Own Construction