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THE ROLE OF NON-FINANCIAL REPORTING IN CORPORATE SUSTAINABILITY OF PHARMACEUTICAL INDUSTRY

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Abstract
Purpose of the study: It is expected that the publication of non-financial reporting in the field of sustainable development of pharmaceutical industry will have a positive effect on the value of the firm. Methodology: As part of this work, to select the best model, all models will be tested using the statistical tests. Then a sample consisting of 1762 observations and the following set of variables will be used to test the models: Tobin's Q, Sales, Capital Costs, Financial Leverage, WACC, Profit Margin, etc. Based on these previous points, a set of panel regressions was built with a fixed effect for testing the hypothesis. Approach: Despite the initial formulation of hypotheses about the positive impact of non-financial reporting on the value of the company, all the results suggest otherwise. The result obtained may be due several factors, for example, the fact that the effect of a variable is delayed or not at all because non-financial reporting has a low level of readability, which only leads to costs in the current period and the absence of additional income in the future. Findings: The results obtained support the hypothesis that the effect manifests itself differently in different sectors. For the Industrials and utility sector, there is a positive significant effect at all reasonable levels of significance of the GRI variable on the dependent one, which may indicate that investors in this industry are interested in non-financial reporting, which leads to added value.

Keywords: non-financial reporting; corporate sustainability; pharmaceutical industry; corporate social responsibility; the cost of the company; financial statements; profitability of assets.

1. INTRODUCTION

The problems of survival and the possibility of an environmental catastrophe bring to focus the need to take all possible measures to improve the condition of our planet. The environment exists inseparably from human actions, ambitions, and needs (Abeysekera, 2013), (Kulustayeva et al., 2020). That is why it is necessary to regulate the most diverse realms of human life, primarily the creation of global rules for doing business that would help improve the world around. Thus, we borrow ecological capital from future generations without the possibility of its return (Adams, 2013), (Palmer & Witanapatirana, 2020), (Adams, 2015).

The essence of the concept of sustainable development is as follows: for society to develop safely without negative consequences for future generations, restrictions should be imposed on the use of natural conditions based on the current state of technology and social organizations, as well as the ability of the biosphere to absorb the effect of human activity (Adams & Larrinaga-González, 2007). The above limitations should be present both at the global level, by increasing the efficiency of using natural resources and limiting their use by large companies, and at lower levels by changing the way of life of ordinary people to more environmentally-friendly that would correspond to the current state of the environment.

Nevertheless, the main subject of research of this work is the component of sustainable development, which mainly concerns the financial and non-financial activities of companies (Dumitru et al., 2015),. "Corporate sustainability" or "Corporate social responsibility" - terms that in several studies are interchangeable (although there are a number of researchers who separate them), but which mainly relate and describe the process of creating social, environmental and economic value of companies in the long term, whose activities are carried out by the principles of sustainable development (Ashrafia et al., 2019), (Balashova, Šilerová & Melikhov, 2015), (Ashrafia et al., 2018). In general, for a corporation to meet the criteria for sustainable development, its business model must meet the concept of "Triple bottom line", which implies that the company should strive for economic prosperity, environmental improvement

(Abramovich et al., 2017) and social well-being (Elkington, 1997).

2. LITERATURE REVIEW

The topic of the impact of non-financial reporting on financial indicators is being discussed quite actively among various researchers (Flower, 2015), (Ligtenberg, 2013), (Kuzina, R.W., 2014). There are completely different approaches to the study of the above-mentioned question, both theoretical and empirical. One of the first proposed models for estimating the value of a company was first proposed by J. Ohlson (1995) and became truly classical for many studies on this topic. The company's valuation model based on the residual value for the first time decomposed the stock price as the sum of the book value of the company and the expected residual income of the company in future periods Ohlson.

Quite a large number of studies devoted to the research of the impact of sustainable development activities on the financial performance of the company (Eccles et Krzus, 2010; Kaspina et al., 2015; Gapsalamov et al., 2020; Kashirskaya et al., 2020), it was found that the direction of this influence is positive. For example, in the study Niskala, & Schadewitz (2010), a modification of the classical model proposed by J. Ohlson was used to study how the fact that a company reports according to the GRI criteria influences the market value of a company's capital.

One of the earliest studies on this topic was conducted by Preston & O'Bannon (1997) on the data of American companies for the period 1982-1992. According to Fortune surveys, the authors for the first time describe all possible directions of influence of a non-financial variable on a dependent ("lead-lag", "lag-lead", etc.) and provide a theoretical basis for each of the possible scenarios. As a result of this study, the authors obtained a significant positive effect of the variable responsible for non-financial information on the dependent one, while no negative effect was observed in one of the 270 calculated correlations.

Another study aimed at determining the relationship between the financial performance of the company and the publication of environmental reporting Budihardjo, & Wahyuningrum (2018) on the data of 200 companies listed on the Australian Stock Exchange for 2014.

Also in the study Eccles, Krzus & Ribot (2010), conducted on three hundred companies from the SIX 300 index, significant results were obtained. The authors (Leicht, 2013), (Granà & Ceccacci, 2013) conclude that companies with higher environmental performance typically achieve a higher share price, however, the work notes that additional analysis is needed, since this effect may also vary depending on the size and sector of the company.

Nonetheless, not all the authors have concluded that the relationship between the variable explaining the value of the firm and the variable responsible for disclosing non-financial information is positive. For example, the work Soewarno (2018) explores the interdependence between environmental activities, environmental disclosure, and economic performance of a company based on data from companies in the Indonesian stock exchange for the 2015-2016 financial period. Although significant results were obtained from the impact of environmental disclosure on the financial component of the company, nevertheless, the direction of this effect was negative (Williams & Adams, 2013).

The work by Lopez, Garcia & Rodriguez (2007) also explores the relationship between the firm's financial indicators and whether firms follow the principles of sustainable development. A distinctive feature of this study was the use of the DJSI index ("Dow Jones Sustainability Index") for the classification of companies. The sample included 55 European companies for the period 1998–2004. The effect of dummy variables on EBT (dependent variable) turned out to be negative. According to the authors (Loska, 2011), (Kass, 2013), this compliance with the sustainability criteria implies additional costs in the short term, which negatively affects the dependent variable, and the authors assume that in the long term, the impact may be positive.

Why do companies follow the principles of corporate sustainability and keep non-financial reporting?

In a McKinsey survey (McKinsey & Company, 2011)., a dominant number of respondent companies answered that their companies had strategic planning integrated with sustainable development principles (Semenova, Hassel & Nilsson, 2010).

In addition to the above sources of value, it is worth mentioning separately: increasing competitiveness and obtaining additional investments. The first is due to the struggle for socially responsible consumers, whose willingness and readiness to pay is primarily due not to the price of the product, but to the awareness that the producer is socially responsible. In this way, companies whose activities meet sustainability criteria gain greater customer loyalty, which boosts sales and can potentially affect company value (Ailawadi et al., 2014; Gerasimov et al., 2019). In turn, the second is mainly due to the presence in the market of investments of socially responsible investors who are interested in long-term investments in companies whose activities have a positive impact on the welfare of the environment and society (Brundtland, 1987).

For the company to get additional investments and increase sales at the expense of socially responsible consumers, an informational signal is required that the company follows the principles of sustainable development and takes care of the environment and society as a whole (Niskala & Schadewitz, 2010; Rahman, 2017). For example, only at the beginning of 2018, about 11.6 trillion US dollars were invested by the criteria of the ESG, and this figure shows growth annually (Puaschunder, 2019). And perhaps the most obvious motivation is the regulatory requirements that the government places on, for example, large companies with the publication of non-financial reports. Thus, in 2017 in Europe, the concept of the CSR Directive Implementation Act was developed, calling on large firms (with more than 500 employees) to prepare non-financial reporting on an annual basis from 2018 (Weber et al., 2018). At present, all European countries have solidified at the legislative level the requirements of the above act (European Centre For Corporate engagement, 2007).

Also, in several other countries, the preparation, and publication of reports are mandatory and enshrined in law (Danish Commerce and Companies Agency, 2010).

WHAT IS NON-FINANCIAL REPORTING?

Since the mid-1990s, there has been an increase in the popularity of non-financial reporting. The sharp increase in the number of annual reports was due to: first, the introduction of a new regulatory document in Europe, which obligated several companies to publish reports on non-financial activities (Regulation (EC) No 1606/2002), secondly, increased market sensitivity publishing corporate accounts (Allini & Manes Rossi, 2007).

In response to the need in 1997, the Global Reporting Initiative emerges, aimed at helping companies and governments in various countries monitor and report on various aspects of sustainable development. The standards formulated by this organization are among the first that were universally recognized and adopted at the global level. By 2017, about 93% of the top 250 large organizations around the world disclose non-financial information according to GRI criteria.

According to the definition, GRI non-financial reporting is a form of reporting published by a company or organization aimed at disclosing a company's economic, environmental, and social contribution as a result of its daily activities. In the aforementioned reporting form, companies seek to disclose their long-term goals, objectives, and management model, as well as demonstrate the link between the company's strategy and its commitment to global principles of sustainable development (Sychev et al., 2020).

In addition to the GRI standard, there are other forms and reporting standards. For example, ISO 26000 (2010) (is a standard of social responsibility aimed at increasing the level of social responsibility of companies, SA 8000 is a non-financial reporting form) focused on the observance of human rights and working conditions, Integrated reporting is a standard, that includes both financial and non-financial indicators of a company (for example, information on a long-term company management strategy, potential non-economic risks, conditions in which a company operates, etc.) and many others (SEC, CSA, NAIC, CDP, etc.).

As part of this work, emphasis will be placed on researching the impact of publishing a non-financial report and meeting the criteria for sustainable development on the company's value (Aouadi & Marsat, 2018).

FINANCIAL INDICATORS

To obtain meaningful results and correct model specification, it is necessary to pay particular attention to the choice of financial indicators that will be used in the model. Tobin's Q is designed to reflect the market valuation of a firm's assets relative to their book value. Thus, Tobin's Q is best suited for this work, since the publication of a sustainability report is not fully or completely reflected in the book value of assets (Barth et al., 2015; Frolova et al., 2020). Accordingly, the effect of non-financial publication will not be associated with changes in financial statements, but rather will be contained in changes in value outside of it. Additionally, a model will be built, where the average annual ROA (Return on Assets) will be used as the dependent variable, since this indicator reflects the performance of the company and its financial result for the year, therefore, since the allegedly non-financial reporting does not directly affect the financial condition of assets, however, the effect may be manifested in more efficient use of assets (Preston & O'Bannon, 1997). The indicator responsible for total assets (TOT_ASSET) will be used as a control variable to take into account the size of the company in the model, since the degree of influence of the studied variable on the dependent can also vary depending on the size of the company. Also as control variables will be used: the value of financial leverage (FNCL_LVRG) to take into account the risk factor in the model, WACC, Rate of Return, Capital Costs, and Return on Capital (Aouadi & Marsat, 2018).

NON-FINANCIAL INDICATORS

In this paper, the GRI index is used as non-financial indicators, which is based on the GRI Compliance Index from the Bloomberg system and data on the publication of GRI reporting standards that were collected using RPA methods from the GRI database website (GRI, 2016), (GRI, 2019). The GRI index is a dummy variable equal to "1" if a report on GRI standards was published in the reporting period and equal to "0" if there was no publication.

Additionally, models will be built where the ESG index obtained from the Bloomberg system, which was successfully used in previous studies on this topic (Kiyoung, Hyeongsop & Taihyeup, 2019), (Fatemi, Glaum & Kaiser, 2018). An ESG score is an index that measures the degree of transparency of a company to non-financial reporting, while the index does not reflect the company's actual activity in ESG areas (Lozano, 2017). Thus, for testing models, financial and non-financial indicators were selected such as: Return on Assets (*ROA*), Return on Equity (*ROE*), Capital Expenditures (CAPEX), the value at the end of the fiscal year (SALES), Total Assets (TA), Profit Margin (*PROF_MARGIN*), Financial Leverage (*FNCL_LVRG*), Tobin's Q at the end of the first quarter of the new Fin. of the year (*TOBIN_Q),* Publication of the report on GRI standards (*GRI*), Eligibility for ESG (*ESG*).

The index is a score from 0 to 100, where companies with a higher degree of transparency of published non-financial reports receive a higher score. The index contains information on 7 key indicators, each of which is responsible for a particular aspect of the content of a non-financial report.

3. METHODOLOGY

Thus, it is expected that the publication of non-financial reporting in the field of sustainable development will have a positive effect on the value of the firm. As mentioned earlier, such an orientation of the effect may be due to various factors, for example, the company's activities will become more transparent for potential investors, which will allow a company to more accurately estimate its value, resulting in additional interest from socially responsible investors, which will lead to an increase in market prices. company value.

Separately, it is worth noting that the effect can be both positive and negative. The formation of a report in the field of sustainable development implies additional expenses, therefore, we can expect an increase in costs in the current period, which may lead to a decrease in the cost in the same period. As already stated, previously published non-financial information contains long-term goals and objectives that the company faces, and can also provide numerical data on current activities in the field of sustainable development, therefore, in the long-term, we should expect a positive effect. Thus, it is necessary to expect a time lag between the publication and the moment when the effect is reflected in the value of the company.

Besides, it is assumed that in different sectors the degree of effect and the direction of effect may vary. This is primarily because not in all sectors' financial disclosures are mandatory, for example, in Canada, the initially mandatory provision of non-financial reporting was fixed for the financial sector (Fatemi, Glaum & Kaiser, 2018). Besides, the relevance of non-financial reporting for different sectors may be different, which may be associated with different interest from the investor and different degrees of readability (environmental reporting is more relevant for some industries (for example, raw materials) and less relevant for others (for example, finance) (Turley-Mclntyre, Marchl & Stasuik, 2016).

Thus, the following models were chosen as the main hypotheses for testing: the publication of non-financial reporting GRI has a positive effect on the change in Tobin's Q; the publication of non-financial reporting GRI has a positive effect on the growth of return on assets; a higher value of the ESG index in the current period has a positive effect on the change in Tobin's Q; a higher value of the ESG index in the current period has a positive effect on the growth of return on assets.

The extent to which non-financial reporting is published on Tobin's Q manifests itself differently in different sectors.

Descriptive Statistics and Data Processing

In this paper, the above hypotheses will be tested on the top 200 data for the capitalization of Canadian companies listed on the Toronto Stock Exchange from a wide variety of sectors.

The culture of disclosing non-financial reporting in Canada has been around for a long time; back in 2000, the PAS ("Public Accountability Statement") reporting standard was

introduced, obliging banks, trusts, insurance companies with

a capitalization of more than $ 1 billion to publish non-financial reporting by the standard mentioned (Jeffwitz, et al., 2017). Nevertheless, this form of reporting is aimed at disclosing information about public support, jobs provided, the amount of taxes paid, customers, but does not cover other important aspects, such as, for example, the environmental activities of the company (Turley-Mclntyre, Marchl & Stasuik, 2016). Additionally, it is worth noting that the PAS reporting form has not changed since the date of its introduction, which is why this form of non-financial reporting may be inferior in quality and degree of information disclosed to other standards (for example, GRI) due to obsolescence.

Besides, according to (Kiyoung, Hyeongsop, & Taihyeup, 2019), Canada has a media freedom index equal to one; therefore, the relationship between disclosing non-financial information and the value of a firm is supposed to be positive. A total of 174 companies were collected for the period 2002-2018. First, you need to make sure that the sample is balanced. The data source was the Bloomberg system. (GRI. (2016).

Next, it is necessary to analyze the main parameters of the data to determine what needs to be improved or changed in the sample. Baseline data is a matrix with 2874 observations and is as follows (Table 1).

Table 1: Descriptive Variable Statistics

Variable Name	Average	Standard Deviation	Minimum	Maximum
TOBIN_Q	1.627269	1.386339	.0339	42.4325
ROA	2.419779	13.02451	-212.6045	190.1304
ROE	6.591245	26.28748	-200.5378	142.2078
CAPEX	522.8511	1106.393	0	11398
SALES	5356.357	9535.412	0	73588.28
TA	34494.7	121827.7	.0512	1334903
PROF_MARGIN	-732.4958	13131.65	-368976	589.0676
FNCL_LVRG	125.002	936.5619	0	25365.18
WACC	8.999107	3.723073	-5.5638	37.1172
ESG	25.59778	14.14521	4.5455	66.2551
GRI	.2769306	.447592	0	1

Source: authors' calculations (GRI, 2016), (GRI, 2019)

As you can see in table 1, the variables ROA and ROE exhibit fairly large extremal values, so it will be necessary to check them for emissions and adequacy. Similarly, for the PROF_MARGIN variable, the minimum value of which should be checked using the above parameters.

As can be seen in Table 2, there is a rather large number of missing values in the analyzed variables responsible for non-financial indicators of the company (ESG and GRI).

Accordingly, it is necessary to analyze why these values are omitted and eliminate gaps to obtain meaningful results in the model. This is important because when analyzing the impact of the publication of non-financial reporting (for which the GRI variable is responsible) it is necessary that the data from companies should be included in the sample starting from the year when the company first publishes non-financial reporting, otherwise a significant part of the effect of publication may be omitted.

First, part of the data could simply be omitted in the index, therefore, with additional analysis of the GRI database, GRI values for 19 companies in the sample were restored. Secondly, some companies for this period could not yet be quoted on the stock exchange or not be created, therefore using the absence of all financial data for the company as an additional condition, part of the data is removed from the sample. For other companies that are not in the GRI database, but the financial data for which the value by the GRI criterion is present is filled with "0".

In turn, for the remaining indicators responsible for the financial result of the company, the missing values were filled with random values so that the sample remained unbiased. Next, you need to bring the values to a normal distribution. For example, the Tobin's Q parameter can be brought to a distribution similar to normal by the logarithm to improve the quality of the model. Similarly, for SALES and CAPEX, TA, variables are logarithmic, but to avoid gaps due to division by 0, the variable values of both variables are shifted by a positive value. Requirements for normality are necessary for further testing since several tests require a normal or asymptotically normal distribution (for example, the Breusch-Pagan-Hoff test, the Price – Winston amendment).To test the hypothesis of normality, we carry out the Harker-Beer statistical test (Figure 1):

After analyzing the results obtained in Figure 1, we can conclude that for all variables the hypothesis about the normal distribution of residuals is rejected, therefore we can only say that the residuals of the above quantities are distributed according to the central limit theorem asymptotically normal. Next, you need to get rid of emissions. For example, if we analyze the spread of ROA in time, it will be obvious that this variable has outliers that need to be eliminated.

A similar analysis was carried out for the remaining variables. After processing the source data, the standard deviations of the ROE and ROA variables were reduced by approximately 25% and 30%, respectively. The maximum ROE and ROA values decreased from 190 and 142 to 63 and 27 as a result of emission processing. Similarly, after processing the emissions for the variable FNCL_LVRG (financial leverage), the maximum

value was reduced from 25365 to 342.

After processing and bringing the variables to a normal distribution, it is necessary to determine the significance of the time effect based on panel Table 1, 2 and Fig.2 of Descriptive Statistics.

Analyzing the results presented in Figure 2 by comparing the difference between the maximum and minimum values for most variables, more significant fluctuations by company tickers (betweenmax-min<withinmax-min). While in terms of ln_TA, more significant fluctuations result from a temporary effect (9,81>6,8). It should also be mentioned separately that it helps to reduce the standard error for some of the variables.

Table 2: Analysis of missing values in variables

Time	ROA	ROE	CAPEX	SALES	TA	PROF_MARGIN	FNCL_LVRG	WACC	ESG	GRI	TOBIN_Q
2002	29	123	26	27	24	30	26	24	173	173	31
2003	24	30	16	17	15	21	16	15	173	173	21
2004	15	25	10	11	11	16	12	11	173	173	13
2005	11	15	4	4	4	12	5	4	157	158	7
2006	4	11	2	2	2	9	3	2	147	146	5
2007	2	5	1	0	0	5	0	0	83	79	3
2008	0	3	0	0	0	5	0	0	9	1	1
2009	0	0	0	0	0	4	0	0	3	0	1
2010	0	0	0	0	0	4	0	0	3	0	1
2011	0	0	0	0	0	4	0	0	3	0	1
2012	0	0	0	0	0	4	0	0	0	0	1
2013	0	0	0	0	0	3	0	0	0	0	1
2014	0	0	0	0	0	3	0	0	0	0	1
2015	0	0	0	0	0	3	0	0	0	0	1
2016	0	0	0	0	0	2	0	0	0	0	1
2017	1	1	1	1	1	3	1	1	1	1	1
2018	4	4	4	4	4	30	4	4	4	4	4
Total	90	217	64	66	61	158	67	61	929	908	94

Source: authors' calculations (GRI, 2016), (GRI, 2019)

Skewness/Kurtosis tests for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	joint adj chi2(2)	joint Prob>chi2
ln_TOBIN_Q	2.0e+03	0.0000	0.0000	.	0.0000
ln_SALES	2.0e+03	0.0000	0.0000	.	0.0000
ln_CAPEX	2.0e+03	0.0000	0.7747	.	0.0000
ln_TA	2.0e+03	0.0000	0.0000	40.28	0.0000
FNCL_LVRG_w	2.0e+03	0.0000	0.0000	.	0.0000
PROF_MARGI~w	2.0e+03	0.0000	0.0000	.	.
ROA_w	2.0e+03	0.0000	0.0000	.	0.0000
ROE_w	2.0e+03	0.0000	0.0000	.	0.0000
EBIT	1.8e+03	0.0000	0.0000	.	0.0000
WACC_w	2.0e+03	0.0000	0.4729	.	0.0000

Figure 1. Test Results Harku-Bera

Source: authors' calculations according to Table 1 and Table 2

DESCRIPTIVE STATISTICS BY SECTOR

All companies were divided into 9 sectors by the Bloomberg Classification System (BICS). The largest percentage of companies fall into the Finance (Financials) and Materials (Materials) sectors, which is consistent with the study (Turley-Mclntyre, Marchl & Stasuik, 2016). At the same time, the smallest companies fall into the Consumer Staples and Telecommunications (Communications) sectors. When visually comparing the distribution of companies depending on the value of the GRI variable (publishing and not publishing non-financial reporting of a company) by sectors, there are no obvious strong shifts in the number of companies within sectors, using the statista (Turley-Mclntyre, Marchl & Stasuik, 2016).

Variable		Mean	Std. Dev.	Min	Max
ESG	overall	25.54387	14.15259	4.5455	66.2551
	between		11.98031	8.884292	55.2469
	within		7.319305	-20.81063	50.27822
GRI	overall	.2791274	.4486815	0	1
	between		.3500892	0	1
	within		.2771028	-.6439495	1.195794
ln_TOB~Q	overall	.278067	.489353	-3.38434	3.747915
	between		.3531928	-1.31982	2.037522
	within		.340692	-1.786453	2.931906
ln_SALES	overall	7.207918	2.252114	0	11.20625
	between		2.116619	0	10.61439
	within		.7061607	2.191949	12.8345
ln_CAPEX	overall	4.920509	2.131257	0	9.341281
	between		1.930755	0	8.658348
	within		.8627266	-.7464697	9.157561
ln_TA	overall	8.501104	1.951197	-.058689	14.10437
	between		1.852828	3.844808	13.65281
	within		.5134252	4.597608	11.40232

Variable		Mean	Std. Dev.	Min	Max
EBIT	overall	514.5644	1234.279	-9084.987	10568.32
	between		892.4134	-430.5445	4902.544
	within		824.6349	-9410.013	9200.261
ROA_w	overall	2.454368	8.664965	-27.2339	27.6273
	between		5.234299	-20.68869	22.90213
	within		6.944472	-34.87605	42.59536
ROE_w	overall	6.660067	19.70444	-62.8737	63.5622
	between		13.3746	-62.8737	63.5622
	within		14.35803	-66.72403	83.28351
PROF_M~w	overall	.2951187	66.4062	-405.6923	128.4738
	between		54.98451	-405.6923	93.99569
	within		38.07077	-389.922	260.9007
WACC_w	overall	9.523172	3.743447	3.8729	20.3026
	between		2.840546	4.765145	16.73897
	within		2.428046	-.4674916	19.00702
FNCL_L~w	overall	80.31407	96.97729	0	534.4608
	between		82.73404	0	425.726
	within		51.14211	-218.5467	444.8476

Figure 2. Panel Descriptive Statistics
Source: authors' calculations to Table 1, 2

4. RESULTS/FINDINGS

MODEL DESCRIPTION

As a result of the analysis performed in the previous paragraphs, a sample consisting of 1762 observations and the following set of variables will be used to test the models: Tobin's Q (ln_TOBIN_Q), Sales (ln_SALES), Capital Costs (ln_CAPEX), Financial Leverage (FNCL_LVRG), WACC, Profit Margin (PROF_MARGIN), Total Assets (ln_TA), Return on Assets (ROA), Return on Equity (ROE), ESG Index, Publication Index of the GRI report. At the same time, the variables Tobin's Q, Sales, Capital Expenditures, and Total Assets are logarithmic.

The following model specification will be used to test the H1 and H5 hypotheses:

$$TobinQ_{it} = \beta_0 + \beta_1 CAPEX_{it} + \beta_2 LEVERAGE_{it} + \beta_3 ROE_{it} + \beta_4 ROA_{it} + \beta_5 WACC_{it} + \beta_6 PROFMARGIN_{it} + \beta_7 SALES_{it} + \beta_8 GRI_{it} + \epsilon_{it}$$

$$TobinQ_{it} = \beta_0 + \beta_1 CAPEX_{it} + \beta_2 LEVERAGE_{it} + \beta_3 ROE_{it} + \beta_4 ROA_{it} + \beta_5 WACC_{it} + \beta_6 PROFMARGIN_{it} + \beta_7 SALES_{it} + \beta_8 GRI_{it} + \varepsilon_{it}$$

The following model specification will be used to test the H2 hypotheses:

$$ROA_{it} = \beta_0 + \beta_1 CAPEX_{it} + \beta_2 LEVERAGE_{it} + \beta_3 ROE_{it} + \beta_4 WACC_{it} + \beta_5 PROFMARGIN_{it} + \beta_6 SALES_{it} + \beta_7 GRI_{it} + \epsilon_{it}$$

$$ROA_{it} = \beta_0 + \beta_1 CAPEX_{it} + \beta_2 LEVERAGE_{it} + \beta_3 ROE_{it} + \beta_4 WACC_{it} + \beta_5 PROFMARGIN_{it} + \beta_6 SALES_{it} + \beta_7 GRI_{it} + \varepsilon_{it}$$

The following model specification will be used to test the H3 hypothesis:

$$TobinQ_{it} = \beta_0 + \beta_1 CAPEX_{it} + \beta_2 LEVERAGE_{it} + \beta_3 ROE_{it} + \beta_4 ROA_{it} + \beta_5 WACC_{it} + \beta_6 PROFMARGIN_{it} + \beta_7 SALES_{it} + \beta_8 ESG_{it} + \epsilon_{it}$$

$$TobinQ_{it} = \beta_0 + \beta_1 CAPEX_{it} + \beta_2 LEVERAGE_{it} + \beta_3 ROE_{it} + \beta_4 ROA_{it} + \beta_5 WACC_{it} + \beta_6 PROFMARGIN_{it} + \beta_7 SALES_{it} + \beta_8 ESG_{it} + \varepsilon_{it}$$

The following model specification will be used to test the H4 hypothesis:

$$ROA_{it} = \beta_0 + \beta_1 CAPEX_{it} + \beta_2 LEVERAGE_{it} + \beta_3 ROE_{it} + \beta_4 WACC_{it} + \beta_5 PROFMARGIN_{it} + \beta_6 SALES_{it} + \beta_7 ESG_{it} + \epsilon_{it}$$

$$ROA_{it} = \beta_0 + \beta_1 CAPEX_{it} + \beta_2 LEVERAGE_{it} + \beta_3 ROE_{it} + \beta_4 WACC_{it} + \beta_5 PROFMARGIN_{it} + \beta_6 SALES_{it} + \beta_7 ESG_{it} + \varepsilon_{it}$$

MODEL SELECTION

The following models were chosen as the models for analysis: FE, RE, Pooled OLS. The results of the models are presented in Figure 3 below (authors' calculations).

It should be noted that all the models constructed demonstrate significance since the F-statistic rejects the hypothesis that all coefficients are equal to zero. At the same time, the variables responsible for non-financial indicators demonstrate the significance of at least 10%. Nevertheless, the results of Table 1, when testing H1, show that the variable is significant only in Fixed and Random Effects models, and the results of Table 2 when checking H2, demonstrate significance only in the Pool OLS model.

Variable	Pool	Random	Fixed
ln_CAPEX	-0.0016	0.0061	0.0120
ln_SALES	-0.0069	-0.0378***	-0.0585***
FNCL_LVRG_w	0.0004***	0.0007***	0.0008***
ROE_w	-0.0055***	0.0003	0.0011
ROA_w	0.0361***	0.0172***	0.0143***
WACC_w	0.0233***	0.0247***	0.0247***
PROF_MARGI~w	-0.0014***	-0.0005***	-0.0003
GRI	-0.0158	-0.0466**	-0.0458**
_cons	0.0320	0.2032***	0.3195***

legend: * p<.1; ** p<.05; *** p<.01

Model 1

Variable	Pool	Random	Fixed
ln_CAPEX	0.2554***	0.0564	-0.1351
ln_SALES	-0.4718***	-0.4174***	-0.1756
FNCL_LVRG_w	-0.0144***	-0.0069***	-0.0025
ROE_w	0.3266***	0.3484***	0.3556***
WACC_w	0.0176	0.0590**	0.0505
PROF_MARGI~w	0.0307***	0.0345***	0.0362***
GRI	-0.7873***	-0.1849	-0.0272
_cons	3.7694***	3.0330***	1.8782**

legend: * p<.1; ** p<.05; *** p<.01

Model 2

Variable	Pool	Random	Fixed
ln_CAPEX	0.0016	0.0142**	0.0203**
ln_SALES	0.0025	-0.0208**	-0.0360***
FNCL_LVRG_w	0.0005***	0.0007***	0.0009***
ROE_w	-0.0060***	-0.0000	0.0009
ROA_w	0.0379***	0.0162***	0.0125***
WACC_w	0.0268***	0.0299***	0.0298***
PROF_MARGI~w	-0.0012***	-0.0001	0.0003
ESG	-0.0018**	-0.0029***	-0.0031***
_cons	-0.0583	0.0514	0.1322

legend: * p<.1; ** p<.05; *** p<.01

Model 3

Variable	Pool	Random	Fixed
ln_CAPEX	0.2226***	0.0651	-0.1148
ln_SALES	-0.4348***	-0.4074***	-0.1470
FNCL_LVRG_w	-0.0145***	-0.0065***	-0.0016
ROE_w	0.3209***	0.3423***	0.3476***
WACC_w	0.0040	0.0396	0.0254
PROF_MARGI~w	0.0311***	0.0369***	0.0404***
ESG	-0.0245***	-0.0234**	-0.0269**
_cons	4.2908***	3.6886***	2.5109**

legend: * p<.1; ** p<.05; *** p<.01

Model 4

Figure 3: Results of Pool, Fixed, Random Models 1-4 for Equation

5. DISCUSSION/ANALYSIS

Additionally, it is worth noting that models, where Tobin's Q acts as a dependent variable R^2, are an order of magnitude lower (minimum = 13%, maximum = 21%) than in models where ROA acts as a dependent variable (minimum = 68%, maximum = 75%). Moreover, in all models, the directionality of the effect of the ESG and GRI variables is strictly negative, which currently rejects hypotheses H1-H5 about the positive impact of non-financial reporting on the value of the company.

However, the significance of most variables in the model does not generally indicate that the results obtained are significant, it is additionally necessary to conduct a series of tests to select the best model and interpret its results.

As part of this work, to select the best model, all models will be tested using the following statistical tests: Wald Test; Breusch-Pagan Test; Hausman Test; Modified Wald Test for Heteroscedasticity; Wooldridge Test.

Wald Test is carried out automatically. This test is needed to choose which form of the model is better than Pooled or Fixed. Since for all models, the hypothesis H0 that all variables are not significant is rejected, then a model with fixed effects should be chosen (Fixed) since the results of this model additionally take into account individual effects of the sample.

Based on Breusch-Pagan Test Results, it can be argued that using a model with random effects is more justified than using a Pooled OLS model. The hypothesis that the error variance is "0" is rejected. This fact is because individual effects make a significant contribution to obtaining satisfactory results based on Hausman Test Results.

To make the final choice between panel models with fixed and random effects, a Hausman test was applied. It can be concluded that the hypothesis is rejected that the regression coefficients are systematic, which means that, choosing between RE and FE models, the model with fixed effects is more suitable (Figure 7).

```
Modified Wald test for groupwise heteroskedasticity
in fixed effect regression model

H0: sigma(i)^2 = sigma^2 for all i

chi2 (172)  =    1.1e+05
Prob>chi2 =      0.0000
```

Figure 7: The Results of Wald Test Heteroscedasticity
Source: authors' calculations

Based on the results of the Wald Test, it can be argued that the null hypothesis is rejected. This fact means that group heterogeneity is present in the model. The test used is modified and developed specifically for the analysis of panel models. One of the main features of this test in this work is the absence of the requirement to fulfill the premise that errors are normal.

Figure 8 shows the results of the Woldridge Test for the absence of autocorrelation errors. The null hypothesis of the absence of the first-order autocorrelation is rejected, thereby autocorrelation is present in the model.

```
Wooldridge test for autocorrelation in panel data
H0: no first order autocorrelation
    F(  1,     169) =    100.655
          Prob > F =      0.0000
```

Figure 8: Wooldridge Test Results
Source: authors' calculations

The results obtained support the hypothesis that the effect manifests itself differently in different sectors. For example, for the Industrials and utility sectors, there is a positive significant effect at all reasonable levels of significance of the GRI variable on the dependent one, which may indicate that investors in this industry are interested in non-financial reporting, which leads to additional value.

6. CONCLUSION

While for other sectors, the effect of reporting on the GRI criteria is either insignificant or negative, which may be due to the lack of interest of investors in non-financial reporting and its irrelevance for the sector as a whole.

Summing up the above hypothesis H1-H4 is rejected, the hypothesis H5 is confirmed. Thus, within the framework of this article, significant results were obtained. Despite the initial hypotheses about the positive impact of non-financial reporting on the value of the firm, all the results suggest the opposite. The result may be due to several factors, such as the fact that the effect of the variable is delayed or not at all because non-financial reporting has a low level of readability, which leads only to costs in the current period and the lack of additional revenues in the future.

7. LIMITATION AND STUDY FORWARD

Over the past ten years, the management of non-financial reporting has become noticeable, which is associated with such evolving issues on the problem of money laundering. Managing non-financial indicators has become more complicated due to the extensive automation of the process of managing companies and markets in general, which is also associated with negative factors - increased attacks on the image components of the business, increased fraud. In the future, work on this topic will be strengthened and devoted to the study of factors and opportunities for managing non-financial risks as elements of non-financial reporting in general.

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