Socially responsible companies in relation to the polish energy and mining sectors

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Abstract. The article combines the issues of Corporate Social Responsibility in the context of relations with sector indices representing the mining industry or industry related to them. For research purposes, social responsibility is included in the RESPECT Index (RI) and the idea of social investing. In 2009 Warsaw Stock Exchange (WSE), implemented the RESPECT Index, which is a response to a changing reality in a sustainable way. The essence and role of non-financial reporting in the field of Environmental, Social, Governance (ESG) in the context of the new stock index was emphasized. In the paper, the relationships between key sectors of the economy, on the example of selected indices, i.e. WIG-mining, WIG-fuel, WIG-energy in the aspect of socially responsible companies belonging to the RESPECT Index will be discussed. The article refers to stock exchange mechanisms and the rules of companies belonging to sector indices. The main purpose of the research work was to group and estimate the relationship between Polish industry sectors representing mining, energy and fuel sectors, and the RESPECT Index, along with their identification. To achieve this goal, publicly available stock exchange quotations were used in the selected time period as input data 2014 – 2019. Relationships between indices were calculated using a known measure in the form of a correlation coefficient. This matrix presents the relationships of selected sector indices relative not only to RI but also to each other. The presented analysis shows that RI and WIG-mining have the greatest relationship with each other. For a professional investor focused on the activities of an entity within ESG, such an analysis can be used to make a decision about choosing a company for the investment portfolio. The article ends with the presentation of results and summary.

1. Introduction

The mining industry and related industries are facing many challenges related to the strive of being socially (and environmentally) responsible. The implemented standards emphasizing this aspect are associated with a number of initiatives implemented by international organizations such as the Organization for Economic Cooperation and Development, the United Nations UN Global Compact, the United Nations Environment Program, the International Organization for Standardization, the global disclosure system on a micro, macro and meso scale of environmental impact management - CDP, (formerly the Carbon Disclosure Project), Global Reporting Initiative, etc. These organizations also include stock exchange initiatives, e.g. of the Warsaw Stock Exchange (WSE), which in 2009 implemented the RESPECT Index (RI), which is a response to a changing reality in a sustainable way.
RI’s goal constituted, i.e., popularization of high Environmental, Social, Governance standards (ESG) addressed to a wide range of stakeholders along with the growing requirements of non-financial reporting Directive 2014/95/UE [1]. A novelty on the WSE is the WIG-ESG index, which has been operating since 03.09.2019, bringing together companies that comply with the above practices.

The capital market is growing in demand for investments characterized by the highest level of social responsibility. Non-financial data are beginning to play an equally important role. As one can read in the below stated works [2-6] financial information is insufficient information useful in assessing the goodwill by various interest groups. Currently, investors are not only attracted by the amount of possible profit but also the dynamics and longevity of the investment that brings certain profits have gained importance. This is a new market trend because factors such as the quality of services and respect for human and natural capital are becoming more and more significant [7].

2. Material and methods

Sector indices are also called industry indicators and they are listed on the Warsaw Stock Exchange. It is a group of indices representing the condition of a single sector of the national economy. The subjects of scientific interest are indices related to the mining and fuel and energy industries. The hereby paper will analyze the relationships of three profitable sector indices and the index of socially responsible companies (RI).

2.1 WIG- mining

Sector index of the mining industry, which encompasses companies that participate in the WIG index and have been qualified to the "mining" sector. The index reference date is 31 December 2010 (the index value at the time was 4,748.99 points). WIG-mining is a total return index and while determining its value, the value of its shares is taken into account. KGHM has the leading number of shares (Table 1).

| No. | Company   | Block of shares | Block (PLN)* | Share in the portfolio WIG-mining (%) |
|-----|-----------|-----------------|--------------|--------------------------------------|
| 1   | KGHM      | 136 410 000     | 12 181 413 000 | 72.24                                |
| 2   | JSW       | 52 636 000      | 3 995 072 400 | 23.69                                |
| 3   | Bogdanka  | 11 564 000      | 670 712 000   | 3.98                                 |
| 4   | PRAIRIE   | 12 285 000      | 14 250 600    | 0.09                                 |

Source: [8] based on www.gpw.pl, access 12.11.2018

2.2 WIG- fuel

The index consists of 6 companies representing the sector - fuel and gas. It is the "youngest index" in this ranking, the date of commencement of its listing is 31 December 2015, its base value is 3650.08 points. The detailed composition of the portfolio with the majority stake of PKN ORLEN is presented in table 2.

| No. | Company  | Block of shares | Block (PLN)* | Share in the portfolio WIG-fuel (%) |
|-----|----------|-----------------|--------------|-------------------------------------|
| 1   | PKN ORLEN | 289 049 000.00 | 28 615 851 000.00 | 61.86                              |
| 2   | PGNIG    | 1 624 608 000.00 | 10 153 800 000.00 | 21.95                             |
| 3   | LOTOS    | 86 543 000.00   | 6 341 871 040.00 | 13.71                              |
| 4   | MOL      | 26 241 000.00   | 1 070 632 800.00 | 2.31                               |
| 5   | SERINUS  | 76 247 000.00   | 54 897 840.00   | 0.12                               |
| 6   | UNIMOT   | 3 155 000.00    | 24 230 400.00   | 0.05                               |

Source: [8] based on www.gpw.pl, access 12.11.2018
2.3 WIG-energy

Is an index of the energy sector and vertically integrated mining and energy enterprises (Table 3). The index includes companies that make up the WIG index and, at the same time, have been qualified for the industry sector. The reference date of this index is 31 December 2009 and its value at the time was 3998.60 points (total return index). The index consists of 11 companies with over 50% share of PGE.

Table 3. WIG-energy composition

| No. | Company  | Block of shares (PLN) | Block (PLN)* | Share in the portfolio (%) |
|-----|----------|------------------------|--------------|----------------------------|
| 1   | PGE      | 9 513 505 440.00      | 9 513 505 440.00 | 54.38                      |
| 2   | TAURONPE | 2 264 590 300.00       | 2 264 590 300.00 | 12.94                      |
| 3   | ENEA     | 2 234 974 320.00       | 2 234 974 320.00 | 12.78                      |
| 4   | ENERGA   | 1 858 852 400.00       | 1 858 852 400.00 | 10.63                      |
| 5   | CEZ      | 730 676 250.00         | 730 676 250.00  | 4.18                       |
| 6   | KOGENERA | 307 352 400.00         | 307 352 400.00  | 1.76                       |
| 7   | PEP      | 304 227 000.00         | 304 227 000.00  | 1.74                       |
| 8   | ZEPAK    | 184 418 780.00         | 184 418 780.00  | 1.05                       |
| 9   | MLSYSTEM | 44 533 500.00          | 44 533 500.00   | 0.26                       |
| 10  | INTERAOLT| 33 520 000.00          | 33 520 000.00   | 0.19                       |
| 11  | BEDZIN   | 18 408 000.00          | 18 408 000.00   | 0.11                       |

Source: [8] based on www.gpw.pl, access 12.11.2018

2.4 Socially responsible companies on WSE - RESPECT Index

The RESPECT Index was established in 2009, bringing together companies managed in a responsible and sustainable manner with the highest rating, listed on the domestic market regulated by the Warsaw Stock Exchange. The national commercial supplier of ratings in the area of non-financial information, i.e. Environment, Social, Governance ESG - ECPI WIG20 ESG Leaders Index is the ARS Social Rating Agency (partner of the global rating provider - ECPI). The ECPI ESG rating methodology is a recognizable tool in sorting investments exposed to non-financial risk, inspired by, i.e., international organizations such as UN Global Compact (www.unglobalcompact.org), Global Reporting Initiative (www.globalreporting.org) and UN PRI (www.unpri.org). When assessing which indicators are important for a proper presentation of the impact of a selected industry on the environment, one can use sector reference documents prepared by the European Commission for the needs of the EMAS (EcoManagement and Audit Scheme) system. The entity's economic situation is assessed both in terms of its financial and non-financial condition, i.e. as regards social and environmental impact issues, fitting into the idea of socially responsible business (CSR) [9] and sustainable development [10, 11]. The presence of a listed company in RI gives it the opportunity to raise additional capital and grow faster in value, as well as it gives grounds to believe that it applies a wide information policy to its stakeholders [10]. In the literature, we find many positive aspects of implementing good practices as part of the CSR and SD initiative [12-15]. In research of, for example, [16] we learn that CSR maturity depends on the size of the company and the industry in which it operates. The topic is discussed by practitioners and industry scientists mainly from Africa [17], Australia [18, 19], or developing countries [20, 21].

Verification of the composition of the RI index portfolio in the first stage of selection takes into account the economic criterion, i.e. entities with the highest accounting liquidity. In the second stage, the practices in the field of corporate and information governance, as well as relations with investors are assessed by WSE in cooperation with the Association of Stock Exchange Issuers. The third stage is a verification of the entity's initiatives targeted at stakeholder groups. The last, fourth stage of the assessment takes the form of a survey completed by companies that are audited by an external company [3, 22]. The survey assesses, i.e., the issues of including dialogue with stakeholders in the company's
strategy and management. Especially in the context of corporate social and environmental responsibility, verification of survey questions is the basis for controlling CSR activities in terms of belonging to the RI portfolio. The survey addressed to companies consisted of 17 pages in the original version (first edition of the RI), including 58 questions (the total number of questions was higher, as some questions appear as "1", "1a"). The last, 12th edition, consists of 57 questions on 42 pages. The survey in the first edition was based on questions related to the strategy and management of the organization as well as economic and environmental issues. The document in the 12th edition consists of casual data about the company, followed by three main chapters on of the above-mentioned issues: Environmental (16 questions), Social (20 including 17 a, b, c), and Governance (19 questions). The form of the latest survey, as part of the RI, prepared by Deloitte and the WSE, is characterized by high transparency. Most of the questions it contains are closed and just a few of them are open [23].

The RESPECT Index initiative is seen as the main source of Socially Responsible Investing (SRI) as a long-term investment approach that integrates ESG factors in research, analysis, and selection of securities as part of the investment portfolio [23]. Due to the form of calculation, RI is a total return index, which means that when assessing its value, not only the change in company share prices but also income (including dividends and pre-emptive rights) are taken into account [8]. In the context of a "dividend" understood from the perspective of socio-environmental initiatives, research conducted among international corporations regarding social and environmental benefits indicates that it is implemented in the form of improved production process and quality, innovation, lower risk, and a better reputation, leading to increased profitability [24, 25].

As part of the research objective, in the first stage, the composition of the RESPECT Index was identified in terms of the participation of representatives of the analyzed sectors, i.e. mining, fuel, and energy (Table 4).

Table 4. Identification of the RI composition according to the analyzed sectors of the economy

| Companies Included in the RI Portfolio of the Analyzed Sectors |
|---------------------------------------------------------------|
| **WIG - mining**                                              |
| 1 JSW - Jastrzębska Spółka Węglowa S.A.                      |
| 2 KGHM Polska Miedź S.A.                                    |
| 3 LW Bogdanka - Lubelski Węgiel Bogdanka S.A.                 |
| **WIG - fuel**                                                |
| 1 PGNIG S.A.                                                 |
| 2 PKN Orlen S.A.                                             |
| 3 Grupa LOTOS S.A.                                           |
| **WIG - energy**                                             |
| 1 PGE Polska Grupa Energetyczna S.A.                         |
| 2 Tauron PE S.A.                                             |
| 3 Energa S.A.                                                 |

Source: [8] based on www.gpw.pl, access 12.11.2018

The main source of input data were the values of stock exchange quotations of selected WSE indices over the last 5 years obtained in quarterly closing results. The quotation data is presented in Table 5 and on the chart, which shows the dynamics of changes in the values of individual indices.
Table 5. The dynamics of changes in the values of individual indices (31.03.2014 – 29.03.2019)

| Date       | RESPECT Index | WIG-mining | WIG-fuel | WIG-energy |
|------------|---------------|------------|----------|------------|
| 31.03.2014 | 2634.13       | 3821.04    | 3155.27  | 3985.66    |
| 30.06.2014 | 2736.10       | 4164.49    | 3280.15  | 4353.38    |
| 30.09.2014 | 2867.38       | 4156.24    | 3209.07  | 4643.91    |
| 31.12.2014 | 2674.05       | 3481.62    | 3381.16  | 4268.12    |
| 31.03.2015 | 2836.84       | 3686.98    | 4068.96  | 4479.03    |
| 30.06.2015 | 2811.05       | 3182.74    | 5036.24  | 4162.55    |
| 30.09.2015 | 2515.93       | 2599.96    | 4703.67  | 3299.66    |
| 31.12.2015 | 2268.85       | 1956.85    | 4468.32  | 2928.40    |
| 31.03.2016 | 2424.54       | 2349.19    | 4797.12  | 3114.33    |
| 30.06.2016 | 2156.93       | 2099.64    | 4696.12  | 2682.73    |
| 30.09.2016 | 2234.61       | 2816.67    | 4500.15  | 2396.24    |
| 30.12.2016 | 2515.65       | 3516.44    | 5668.84  | 2551.21    |
| 31.03.2017 | 2810.41       | 4157.63    | 6561.69  | 2876.20    |
| 30.06.2017 | 2973.98       | 4106.07    | 7128.31  | 3037.52    |
| 29.09.2017 | 3178.70       | 4596.66    | 7996.11  | 3361.72    |
| 29.12.2017 | 3077.59       | 4394.93    | 7140.43  | 2990.57    |
| 30.03.2018 | 2754.83       | 3509.02    | 5946.63  | 2457.61    |
| 29.06.2018 | 2596.43       | 3509.32    | 6011.42  | 2344.45    |
| 28.09.2018 | 2725.52       | 3439.57    | 7362.82  | 2208.13    |
| 31.12.2018 | 2792.60       | 3423.39    | 7998.16  | 2410.68    |
| 29.03.2019 | 2865.58       | 3518.82    | 8208.77  | 2440.12    |

Source: [8] based on www.gpw.pl, access 12.11.2018

Figure 1 shows how quickly the value of indices decreased or increased over time under analysis. It can also be seen that in many places, when the index value decreases, e.g. WIG-mining in 2015, the RI value decreases immediately, but it is not so sharp.

Figure 1. Chart of RI quotations and sector indices in 2014-2019
Source: [8] based on www.gpw.pl, access 12.11.2018
3. Results
In assessing the relationship between the RESPECT Index and sector indices (WIG-mining, WIG-fuel, WIG-energy), it was decided to choose a method consisting in calculating the correlation coefficient between the RI and a given WIG sector. Such relationships between indices were calculated using a known measure in the form of a correlation coefficient. The correlation coefficient is used to show the relationship between two features (x, y phenomena).

The results obtained in the form of the estimated value of the correlation coefficient were presented in the form of a correlation matrix. It is worth mentioning that these were correlations that were tested and not the causality. This matrix presents the relationships of selected sector indices relative not only to RI but also to each other (Table 6). The results obtained illustrate both positive and negative correlation levels. When analyzing the results, it can be noticed that RI in relation to the WIG-mining vector index is characterized by the highest degree of relationship (obtained value: 0.87, i.e. strong correlation). Based on the obtained correlation coefficient for this relationship, the so-called linear determination indicator has been assessed, which amounts to 75.69%. Another positive correlation is the relationship between the RESPECT index and WIG-fuel - the index reached the value of 0.47 (average correlation strength). The second lowest value of the relationship indicator is the RI relationship with WIG-energy - a value of 0.26 indicates a weak correlation. The obtained results show a negative correlation, significant from the point of view of analyzing the interdependence of sector subindices. This applies to the relationship of quotations between WIG-fuel and WIG-energy (-0.67).

Table 6. Correlation matrix of the analysed indices

|       | RESPECT Index | WIG-mining | WIG-fuel | WIG-energy |
|-------|---------------|------------|----------|------------|
| RESPECT Index | 1.00          |            |          |            |
| WIG-mining    | 0.87          | 1.00       |          |            |
| WIG-fuel      | 0.47          | 0.27       | 1.00     |            |
| WIG-energy    | 0.26          | 0.28       | -0.67    | 1.00       |

Source: [8] based on www.gpw.pl, access 12.11.2018

4. Conclusions
Increased awareness of socially responsible investing should become a mission for businesses that are geared toward long-term success. The RESPECT Index initiative together with the new WIG-ESG initiative is perceived as the main source of sustainable and responsible investments, a good turning point for the national economy and the financial market. The constantly growing number of companies, included in the RESPECT Index, is clearly showing the direction in which the largest domestic and foreign companies are heading. In the 1st edition, 16 companies were members of RI, while in the last, 22nd edition (2019) there were 31 companies. These entities meet strict criteria for socially responsible enterprises, implementing sustainable CSR practices. Being a member of RI is also prestige for the company. The announcement of each edition is an opportunity to present the company to a wide range of experts and potential investors. This will allow the development of new ideas that are already operating in the largest global trading areas and are a form of education for society. The constantly growing competition and expectations of stakeholders is a positive impulse to increase public awareness about the corporate responsibility of companies listed on the WSE. The idea of CSR is a fairly new phenomenon in Poland, due to which it arouses curiosity for the capital market. As part of the research, the participation of mining, fuel, and energy sector entities was demonstrated. These companies are often considered as the foundation of the index because they represent a significant share of the portfolio. WIG-mining in RI is represented by KGHM Polska Miedź S.A. (8.59% of shares), Jastrzębska Spółka Węglowa S.A. (2.43% of shares) and Lubelski Węgiel Bogdanka S.A (0.45% of shares). In total, they account for 11.47% of shares in RI. WIG-fuel is represented by PKN Orlen S.A (9.81% of shares),
PGNiG (8.2% of shares), and Grupa LOTOS (5.68% of shares). Their total share is 23.69% RI. WIG-Energia is represented in RI by PGE (5.7% of shares), Tauron (1.59% of shares), and Energa (1.31% of shares), and these companies account for 8.6% of shares in RI. In total, 9 companies from 3 sector indices have a 43.76% share in the RESPECT Index. These companies have been involved in socially responsible business for many RI editions and they are becoming more attractive to investors. It is especially true for companies in the mining and energy sectors, the stock market impulse of belonging to RI increases their image value, as these industries arouse mixed feelings in the media. The main goal of the research has been accomplished, the relationship between indices was examined, based on stock exchange quotations for a 5-year period. The correlation coefficient for RI and three sector indices (WIG-mining, WIG-fuel, WIG-energy) and their relation to each other were calculated. The results were presented using a correlation matrix. The highest degree of relationship occurred between RI and WIG-mining: 0.87 i.e. strong correlation (0.47 between RI and WIG-fuel, a weak correlation relationship occurred between RI and WIG-energy: 0.26; the similar level was obtained between WIG-mining, and WIG-energy: 0.27). A negative level of correlation (-0.67) was recorded between the WIG-fuel and WIG-energy. The presented analysis shows that RI and WIG-mining have the greatest relationship with each other. For a professional investor focused on the activities of an entity within ESG, such an analysis can be used to make a decision about choosing a company for the investment portfolio.

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