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# Impact of the ESG Focus on Any Efficiency and Fairness of the Stock Market

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*Abstract*

The need to ensure sustainable development of territories has led to the emergence of responsible issuers and investors. At the same time such actors' impact on the stock indices remains understudied, which makes the studies focused on these issues relevant. The goal of this paper was to see into the impact of investors' ESG focus on the efficiency and fairness of the stock market. The research draws on 2018-2021 data for 232 Russian firms taken from the ESG Ratingby S&P Global Sustainable and https://smart-lab.ru portal. Indicators of particular companies and the market as a whole were estimated using descriptive statistic methods and Cramer's V-coefficient, and cluster analysis was done. The results showed that any ESG rated assets have higher dividend yield and stock price to revenues ratio (P/S multiplier), which are statistically significant, but the P/S value can be recognized as optimal both for sustainability-rated assets and the unrated ones. It is concluded that the Russian stock exchange is currently lacking any distributive justice and any responsible investors'commitment has no influence on the market efficiency. The theoretical value of the study lies in its confirming Eugene Fama's efficient market hypothesis being applicable to responsible issuers' stocks and in defining the indicators of the market's distributive justice. Its scholarly importance stems from its assessing the current rate of the Russian stock exchange's efficiency and fairness when ESG commitments are expanding among investors. The identified failures of the financial market, which managers of responsible companies and shareholders should consider in their activities, are of practical value.

*Keywords*

sustainable development, responsible investing, "efficiency-fairness" dilemma, ESG-rating, Moscow Exchange, stock price, dividends, underpriced stocks, overpriced stocks, environmental responsibility

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# Влияние интереса к ESG на эффективность и справедливость фондового рынка

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*Аннотация*

Необходимость обеспечения устойчивого развития территорий привела к появлению ответственных эмитентов и инвесторов. При этом малоизученным остаётся воздействие подобных акторов на показатели биржевых активов, что делает актуальными исследования, посвященные данным вопросам. Целью этой работы стало изучение влияния ESG-ориентации инвесторов на эффективность и справедливость фондового рынка. В исследовании использованы данные за 2018–2021 годы ESG-рейтинга S&P Global Sustainable и портала https://smart-lab.ru по 232 российским фирмам. Характеристики отдельных компаний и рынка в целом рассчитаны с помощью методов описательной статистики и V-коэффициента Крамера, проведен кластерный анализ. Результаты работы показали, что активы с оценками ESG имеют статистически значимые большие дивидендную доходность и отношение цены акции к выручке на неё (мультипликатор P/S), однако и у активов с рейтингом устойчивости, и без него значение показателя P/S можно признать оптимальным. Сделан вывод о текущем отсутствии дистрибутивной справедливости на российской бирже и не влиянии выбора ответственных инвесторов на эффективность рынка. Теоретическая ценность исследования заключается в уточнении соблюдения гипотезы эффективного рынка Юджина Фама для активов ответственных эмитентов, а также определении показателей дистибутивной справедливости рынка. Научная значимость обусловлена оценкой текущего уровня эффективности и справедливости на российской бирже при распространении ESG-интересов среди инвесторов. Практический интерес представляют выявленные провалы финансового рынка, которые необходимо учитывать в своей деятельности менеджерам ответственных компаний и акционерам.

*Ключевые слова*

устойчивое развитие, ответственное инвестирование, дилемма «эффективность-справедливость», ESG-рейтинг, Московская биржа, цена акций, дивиденды, недооценённые акции, переоценённые акции, экологическая ответственность

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## Introduction

Given that any improvement of the economic efficiency often does not end in the social justice to have changed respectively [1], one of the key economic theory issues is to determine the optimal efficiency-fairness ratio for production and business operations [2]. When ensuring sustainable development of territories and reducing the companies' environmental impact in particular are needed [3–5], solving the "efficiency-justice" dilemma comes into sharp focus. It is commonly accepted that maximizing the use of available resources without spending money on their restoration and maintenance of the high quality of nature is more efficient for economic entities. On the other hand,

such behavior cannot be recognized as fair (and efficient) to future generations, since it deteriorates their environment and reduces the amount of available resources.

At the same time, the thesis about responsible companies being less efficient can be recognized as poorly studied to this day: there are studies both refuting (see, for example, [6–7]) and confirming it (in particular, [8]). Besides, any fairness of revenues distributed between responsible and irresponsible companies, while being indissolubly related thereto, is understudied. When regarding environmental, social and [corporate] governance (ESG) expenditures as the public ones aimed at creating benefit for all actors, it can be recognized as justified that such companies' costs will be compensated by higher yield, higher growth rates of stock prices and ability to pay lower dividends. In view of the above, studying any influence of ESG commitments on the efficiency and fairness ratio being in place in the stock market looks relevant.

This paper aims at studying the impact of investors' ESG focus on the efficiency and fairness of the stock market. Russian companies were the object, and the dynamics of their financial performance in response to changing sustainability indicators was the subject.

The research analyzed 2018–2021 data for 232 Russian firms taken from the ESG Rating by S&P Global Sustainable and smart-lab.ru portal. Indicators of particular companies and the market as a whole were estimated using descriptive statistic methods and Cramer's V-coefficient, and cluster analysis was done.

Confirming Eugene Fama's efficient market hypothesis being applicable to responsible issuers' stocks and defining the indicators of the market's distributive justice can be recognized as the scientific novelty of the paper. Its scholarly importance stems from its assessing the current rate of the Russian stock exchange's efficiency and fairness when ESG commitments are expanding among investors. The identified attributes (failures) of the financial market, which managers of responsible companies and shareholders should consider in their activities, are of practical value.

## Literature review

Realizing the importance of sustainable development of territories has led to increased investors' interest in the issuers' environmental, social and governance qualities, which collectively became known as ESG [9–10].

Sustainable companies, as compared to others, have a bit higher return on assets and corporate value, although initially the stock prices of green firms were underrated [7]. At the same time it is confirmed that, despite the higher alpha coefficient of stocks of issuers having both high and low ESG rates against the unrated assets, only the difference stemming from corporate governance attributes can be recognized as statistically significant [6]. It is demonstrated that while ESG stocks, as compared to other ones, may generate higher returns with the risk being higher [11] or the same [12], their yield is sometimes on par with other stocks with investments bearing the same risk [13].

Similarly, returns on assets having high ESG rates, as compared to the low-rated ones, may be higher [6], the same [14] or lower [15] – in many respects such variances stem from sectoral specifics [16]. And higher earnings are often demonstrated not only by stocks of issuers having high ESG rates but also by the ones of those that have im-

proved their ratings [12; 17], as well as of issuers having opposite rates (when risk is high) [18].

The above suggests that in some cases the return on assets of more responsible companies does not exceed the same indicator of other stocks.

The Russian market of sustainable assets is in its infancy, and many companies have not yet adopted their ESG development strategies [19–20]. Given this and considering the underpriced quotations of responsible firms' stocks at the initial stage of organizing their trading in other countries [7], let us suggest the first hypothesis of the study:

$H_1$: Stocks of Russian issuers with higher ESG rates show lower price growth and higher dividends.

At the same time note that ESG-companies bear additional costs to solve social problems and create and maintain high quality environment being the public good. Accordingly, such a stock yield ratio can be recognized as unfair distribution-wise (the concept of distributive justice was developed in [21–22]).

Next, let us consider any impact of ESG commitment on the economic efficiency of the stock market.

Negative or positive news about issuers' ESG-related activities lead to, respectively, abnormal losses or gains when trading their stocks [23–24]. This is particularly the case for any corporate environment-related actions and to a lesser extent when any social and governance-related ones are meant [23]. Excess earnings are also shown by those ESG stocks that are redeemed by their issuers [14].

The example of ESG stocks shows that responsible investors [15], especially environmentally determined ones [25], often apply a momentum strategy in their stock market trading while believing that rising quotations will continue their rise and the falling ones will continue their fall. Such actions result in overpricing of rising stocks and underpricing, respectively, of the falling ones.

It is also worth noting that the focus on companies' ESG ratings means that investors give insufficient consideration to any signals of stocks being over- or underpriced. In particular, they do not buy securities having low ESG ratings, even if they are underpriced and could yield in the future. At the same time investors do not sufficiently sell overpriced stocks when they have high ESG indicators [26]. Accordingly, quoted market prices are not close to the appropriate ones calculated based on corporate performance fundamentals.

This suggests that:

$H_2$: Stocks of Russian companies having higher ESG ratings are more over- or underpriced.

Consequently, the current low rate of stock market efficiency related to sustainable stocks [27] is going down further as a result of responsible investors' actions. Here we rely on Eugene Fama's idea of efficiency within the efficient market hypothesis heformulated [28].

## Methodology

The work draws on the ESG Rating by S&P Global Sustainable being part of S&P Global Media Holding. This rating is annual and covers over 8,000 companies across the globe. It has been compiled since 2013 based on company reports and websites,

non-public data provided by companies and information in the news media. Ratings rest on sustainability indicators that affect corporate value, and can range from zero (the worst) to 100 (the best).

The ESG Rating by S&P Global Sustainable was chosen of all the sustainability ones because of its being widely known and generally recognized quality-wise. For example, within a survey conducted in 2020 by ERM, a major sustainability consulting company, this rating was awarded the largest portion of the highest quality investors' evaluations and came off second best by this indicator given the experts' opinions[1].

The companies' financial results were taken from https://smart-lab.ru portal, the following indicators were used:

- average share price over a year;
- amount of dividends paid;
- share's market price to company's book value per share ratio (P/BV) (given fair market valuation, the indicator is equal to 1);
- share's market price to annual net income per share ratio (P/E) (it ranges from 10 to 20 at fair market valuation);
- share's market price to earnings per share ratio (P/S) (at fair market valuation, it ranges from 1 to 2);
- company's value (its stock and debt) to earnings before interest, taxes, depreciation and amortization ratio (EV/EBITDA) (given fair market valuation, it varies from 3 to 7).

Based on the average annual share price, the growth rate of this indicator was calculated.

To ensure the data be comparable with results of international studies, and since any Russian companies whose securities are traded on the stock market must prepare their consolidated financial statements in accordance with the International Financial Reporting Standard (IFRS), all the above multipliers are calculated based on IFRS reports.

The 2018–2021 data were used. Two hundred thirty two companies were selected of the Russian issuers whose stocks are traded on the Moscow Exchange: 26 having ESG rating by S&P Global Sustainable and 206 unrated ones.

Hierarchical cluster analysis, which was conducted by the pair-group method using arithmetic averages, helped to divide ESG rated companies into two groups for each year: the ones with low and high sustainability indicators. As for 2021, such division was made for all components of the rating: environmental, social and governance ones. Then, using Cramer's V-coefficient applied for nominal variables, it was determined whether there was any significant correlation between each of the above financial indicators and:

- ESG rating being in place;
- sustainability rate, low and high ones;
- sustainability rate, low and high ones, for each of the components in 2021 (environmental, social and governance indicators were considered).

[1] Rate the Raters 2020: Investor Survey and Interview Results. URL: https://www.sustainability.com/globalassets/sustainability.com/thinking/pdfs/sustainability-ratetheraters2020-report.pdf (accessed on: September 2022).

## Results and discussion

In 2021 the market value of ESG-unrated issuers' stocks increased 1.15 times higher compared to the stocks of the rated ones (see Table 1). Concurrently, the ESG-unrated companies' stocks brought 0.51 times less dividends. That said, given the return on assets ratio due to the share price being higher than the dividend yield, it may be surmised that the ESG-unrated issuers' stocks were financially more attractive for investors, while having ESG ratings did not enable such companies to save resources on reduction of dividend payments.

*Table 1*

**Financial Performance of Studied Russian Issuers for 2021**

*Таблица 1*

**Финансовые показатели исследуемых российских эмитентов за 2021 год**

| Indicator | ESG-rating | |
|---|---|---|
| | No | No |
| Growth of share price on the stock exchange, times | 1.30 | 1.13 |
| Dividends paid, Rubles per Ruble of share price | 0.03 | 0.06 |
| P/BV | 0.63 | 1.71 |
| P/E | 11.29 | 7.35 |
| P/S | 1.69 | 1.80 |
| EV/EBITDA | 7.06 | 4.74 |

*Source:* calculated by the author.

The lower growth of the market value of ESG-rated issuers' stocks may result from their being already overpriced as far as their book value (P/BV multiplier) is concerned, unlike the unrated companies' ones, which by this indicator can be recognized as underpriced. At the same time, considering earnings (P/E), ESG-rated issuers'stocks can be recognized as underpriced. But when considering earnings, the market price of stocks should be regarded as optimal, given depreciation payments, loan debt and tax burden (EV/EBITDA).

As noted above, sustainability-unrated companies' stocks are underpriced against their book value (P/BV) but are insignificantly overpriced as far as earnings allowing for depreciation payments, loan debt and tax burden (EV/EBITDA) are concerned, and they show optimal values of other multipliers.

The aforesaid suggests that investors mostly overprice ESG-rated stocks and underprice those unrated.

The calculated Cramer's V-coefficient shows there being statistically significant correlation between being sustainability-rated and two financial indicators of issuers: the amount of dividends paid (statistical significance rate is 0.1 %) and the share price

to earnings ratio (significance rate is 1–10 %) (see Table 2). Thus, the divergence of these indicators of ESG- rated and unrated companies in particular can be treated as significant. Given that sustainability-rated issuers and the unrated ones show the optimal P/S multiplier value, the amount of dividends paid by ESG-rated companies being higher than those paid by unrated companies matters. Sustainability-rated stocks being substantially overpriced and other stocks being underpriced, which was shown above, cannot be recognized as statistically significant.

*Table 2*

**Correlation between Russian Issuers' Financial Characteristics and Their Being ESG-Rated**

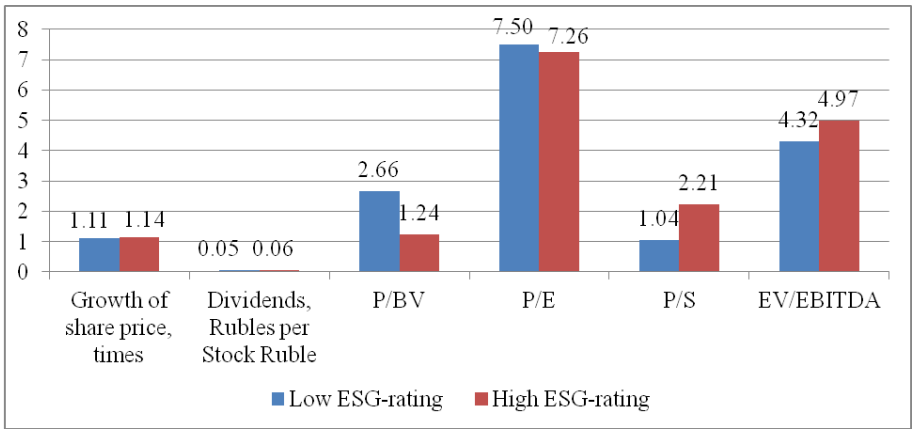
*Таблица 2*

**Взаимосвязь между финансовыми характеристиками российских эмитентов и их ESG-рейтингами**

| Indicator | Cramer's V-coefficient / Statistical significance rate | | | |
|---|---|---|---|---|
| | 2018 | 2019 | 2020 | 2021 |
| Growth of share price on the stock exchange, times | 0.989/0.439 | 1.000/0.299 | 1.000/0.322 | 1.000/0.439 |
| Dividends paid, Rubles per Ruble of share price | 0.978/< 0.001 | 0.966/< 0.001 | 1.000/< 0.001 | 0.800/0.002 |
| P/BV | 0.915/0.515 | 0.954/0.376 | 0.944/0.464 | 0.967/0.281 |
| P/E | 0.965/0.545 | 0.962/0.454 | 0.965/0.529 | 0.945/0.645 |
| P/S | 0.945/0.007 | 0.907/0.082 | 0.931/0.031 | 0.948/0.024 |
| EV/EBITDA | 0.975/0.401 | 0.988/0.414 | 1.000/0.313 | 0.955/0.624 |

*Source:* calculated by the author.

The performed cluster analysis helped to determine high and low values of ESG-indicators and their individual components. In 2021 issuers having higher sustainability ratings showed a 2.14 times higher share price to earnings per share ratio, while its showings suggest the stocks having higher ESG ratings to be overpriced (see Figure). The market price to book value ratio was 0.47 times lower for issuers having high sustainability ratings: companies having higher ESG rating were less overvalued by the market.




Financial performance of Russian issuers having low and high ESG ratings for 2021 (calculated by the author)

Финансовые показатели российских эмитентов с низким и высоким ESG-рейтингами за 2021 г. (рассчитано автором)

At the same time, the calculation of Cramer's V-coefficient and the rate of its statistical significance does not allow to recognize any of the above differences as significant (see Table 3). There is no correlation between Russian issuers' sustainability ratings and their financial characteristics.

*Table 3*

**Correlation between ESG-Ratings and Financial Properties of Russian Issuers**

*Таблица 3*

**Взаимосвязь между ESG-рейтингами и финансовыми свойствами российских эмитентов**

| Indicator | Cramer's V-coefficient/Statistical significance rate | | | |
|---|---|---|---|---|
| | 2018 | 2019 | 2020 | 2021 |
| Growth of share price on the stock exchange, times | 1.000/0.408 | 1.000/0.408 | 1.000/0.406 | 1.000/0.404 |
| Dividends paid, Rubles per Ruble of share price | 1.000/0.408 | 1.000/0.408 | 1.000/0.406 | 0.816/0.453 |
| P/BV | 1.000/0.347 | 1.000/0.347 | 1.000/0.402 | 1.000/0.397 |
| P/E | 1.000/0.408 | 1.000/0.408 | 1.000/0.350 | 1.000/0.400 |
| P/S | 1.000/0.404 | 1.000/0.293 | 0.951/0.409 | 1.000/0.395 |
| EV/EBITDA | 1.000/0.404 | 1.000/0.404 | 1.000/0.402 | 1.000/0.395 |

*Source:* calculated by the author.

Nor was found any correlation between the showings of individual ESG rating components and financial performance of companies (see Table 4).

*Table 4*

**Correlation between the Environmental, Social and Governance Rating and Financial Performance of Russian Issuers in 2021**

*Таблица 4*

**Взаимосвязь экологического, социального и управленческого рейтинга с финансовыми показателями российских эмитентов в 2021 г.**

| Indicator | Cramer's V-coefficient/Statistical significance rate | | |
|---|---|---|---|
| | Environmental ESG score | Social ESG score | Governance ESG score |
| Growth of share price on the stock exchange, times | 1.000/0.404 | 1.000/0.404 | 1.000/0.404 |
| Dividends paid, Rubles per Ruble of share price | 0.865/0.326 | 0.816/0.453 | 0.824/0.433 |
| P/BV | 1.000/0.397 | 1.000/0.397 | 1.000/0.397 |
| P/E | 1.000/0.400 | 1.000/0.400 | 1.000/0.400 |
| P/S | 1.000/0.395 | 1.000/0.395 | 1.000/0.395 |
| EV/EBITDA | 1.000/0.395 | 1.000/0.395 | 1.000/0.395 |

*Source:* calculated by the author.

Thus, the hypotheses H1 and H2 are rejected.

The study confirmed for the Russian market any ESG-rated stocks to demonstrate higher yield as compared to those unrated, which is shown in [6; 11–12]. There being higher [6] or lower [15] yield shown by stocks having higher sustainability ratings as compared with the ones having lower ratings was refuted for the Russian Exchange; the yield of stocks having high ESG rating is comparable to the one of those having low rating in the Russian market, just as in some others [14]. There is also no statistically significant overpricing or underpricing of more sustainable stocks in comparison with less sustainable ones, which is presented in [15; 25–26]. This may be due to the fact that responsible investing has not gained wide acceptance among domestic investors yet.

## Conclusion

The paper shows that the companies that successfully implement ESG policy and bear additional costs there for have no financial advantages on the Russian stock exchange, which disproves there being any distributive justice on it. At the same time, the efficiency of the market pertaining to both more and less sustainable stocks is similar.

Presumably, such conclusions partly derive from there being few ESG investors. Perhaps, if their number increases, responsible companies will be able to save resources through higher growth of stock quotations and reduction of dividends paid, and this will enhance the market fairness. At the same time, it is necessary to keep in mind the peculiarities of ESG-focused investors' behavior, namely, their giving less consideration to the securities' growth potential (their being currently overpriced or underpriced). Accordingly, it can be expected that in the future the market prices of sustainable stocks, as compared to other ones, will be less consistent with the valuation based on the corporate performance fundamentals. This will reduce the efficiency of the entire stock market, which is meant not only to raise equity but also to valuate companies for transactors, lending institutions, etc.

The aforesaid confirms the need to conduct a similar study based on Russian market data in a few years, after the number of responsible investors increases as expected.

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