Environment, Social, and Corporate Governance in Russian Markets

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November 22, 2021

1 Introduction

The acronym ESG, Environmental, Social, and Corporate Governance, has come to identify a set of corporate policies focused on social and environmental consciousness. Historically, state-managed or trade-unions managed pension funds have engaged in some forms of socially responsible investments, which had a positive spillover for workers, such as social housing, or other ethical investments intended to promote human rights and prevent exploitation of the workforce. The objective was twofold, on the one side, responsible companies started to disinvest from those businesses non-compliant with the ethical principles inspiring their entrepreneurial missions; on the other, they aimed to create a social impact, beyond the mere financial performance.

In later times, concerns were raised by discrimination in the workplace, mostly due to gender, race, and sexual orientation. That enlarged, if not shifted, the focus on corporate governance. Traditional studies in the field have found a fresh perspective, aimed at the analysis of the composition of the boards and, more in general, the executive management to emphasise possible biases toward men and white men in particular.

Further, there is a third dimension of the analysis, involving the sustainability of the nations' economic models. The underlying idea is that economic growth should find a limitation dictated by the reasonable use of environmental resources. While the actual thresholds might be difficult to identify, a guiding principle has been introduced by the Brundtland report, creating a basis that is still solid today.[1] Specifically, *sustainable development* is a development that "meets the needs of the present without compromising the ability of future generations to meet their own needs" (cf. Brundtland 1987).

Despite the different interpretations of development, on the one side, and environment, on the other. The recent debate has focused on the climate change

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[1] The World Commission on Environment and Development, a UN suborganisation, chaired by Gro Harlem Brundtland, published a report named "Our common future", in 1987. The report became so influential that both the Commission and its study came to be known after the chairwoman. See Brundtland 1987

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induced by human activity, in particular economic activities. There is a wealth of scientific evidence (however, beyond the scope of this study) regarding the so-called "greenhouse effect". While this is a natural process by which some gases (greenhouse gases) contribute to keeping the earth warm, if the quantity of the greenhouses gases is excessive, they can induce excessive heating, with potentially catastrophic consequences. The most significant threat, in this regard, comes from carbon dioxide (CO_2) produced from the combustion of fossil fuels.

At the government level, a primary actor in embracing and evangelizing the ESG stance has been the European Union, which, as early as 2001, has recognised the responsibility of enterprises for their impact on society and has identified responsible companies as those "integrating social, environmental, ethical, consumer, and human rights concerns into their business strategy and operations", see Commission of the European Communities 2001.

Another effort worth mentioning is the Global Reporting Initiative. The GRI is a standards organisation founded in 1997 by the Coalition for Environmentally Responsible Economies and the United Nations Environment Program. The GRI publishes Sustainability Reporting Guidelines, which aims at the betterment of the standards concerning sustainability reporting. When compared to similar efforts, GRI standards are important since they cover all aspects of the so-called "triple bottom line", that is, economic, environmental and social performances. See Global Sustainability Standards Board 2021.

A relatively new topic, affecting both the 'S' and the 'G' of the ESG stance, is the issue of inclusion and diversity in the workplace, which also calls for education regarding gender identity and gender expression (cf. Bendett 2020). A U.S. GRI member, the Governance & Accountability Institute, encourages employees to choose their desired pronouns, possibly the singular "they" for non-binary employees.[2] This, in turn, implies the practice of adding the pronouns one identifies with to the email signatures, starting meetings by sharing pronouns, and advertising them on one's social handles.

The expansion of the field, of the involved actors and issues at stakes, under the broad notion of ESG, has required a more analytical systematisation of the subject. In these days under the umbrella ESG term we include in the first place the Corporate Social Reposibility (CSR), which is principally focused on the self-regulation on behalf of firm promoting ethical practices. The regulations can extrisecate through corporate policies, and guidlines, often set in adherence with international standards organisations. However, more and more often, we assist to a shift from voluntary to mandatory schemes, given the number of governement and authorithes concerned with the subject, which makes the "beyond-comapliance" acceptation of CSR less adherent to the current scenario. For example, the EU Non-Financial Reporting Directive requires large companies to disclose non-financial data in order to assess the position and impact of their activity, relating to, as a minimum, environmental, social and

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[2]In 2019, Merriam-Webster declared 'they', as the word of the year. Retrieved from merriam-webster.com/words-at-play/woty2019-top-looked-up-words-they

employee matters, respect for human rights, anti-corruption and bribery matters (See Council of European Union 2014). Another key point is the surge in environmental consciousness, which has recently shifted the focus on "corporate sustainability". That intends to stress that sustainability is a shared effort that can only be achieved through a systemic approach where the economic, social, and environmental concerns coexist.

Despite we have portrayed ESG policies and guidelines as a matter pertaining to the firms and the entities regulating them, this is not the only way to approach the problem under scrutiny. Indeed, consumers might have a strong role in enforcing the policies driving the businesses, by means of their purchasing choices. An educated consumer, understanding the positive impact of CSR on their individual (e.g. perceived product quality), but also at a more collective level (reduce environment impact) might reward responsible firms. In this regard, CSR contributes to improving firms' reputation and consumers might be willing to pay a premium for sustainable products, much like they do for any recognised brand.

When we move in particular to the field of financial economics and so from consumers to investors, we pave the way to a fresh new perspective, which is in fact rigorously analysed under the name of "Socially Responsible Investments" (SRI). Much like the consumer of everyday commodities, an investor can accept a reduced financial return, in exchange for what they consider an ethical investment. In particular, we prefer the wording "impact investing" to address those investors who want to actively impact the environment and society as a whole with their asset allocation.

2 ESG Impact on Performance

While the prominence and momentousness of the ESG issues are beyond dispute, it might be argued whether corporate sustainability and corporate responsibility should be recognised only on the ground of ethical principles or economic performance and enterprise value should play a role as well.

Because social and sustainibility ideas originated in fields outside the boundary of financial economics and polical economy, they were initially received lukewarmly by many prominent economists. As an illustration, while it is well known the Smithsonian invisible hand concept (cf. Smith 2010), by which the actions of individuals pursuing their own self-interests would eventually turn into social good, in his "Capital and Freedom" (cf. Friedman 2020), Milton Friedman went so far as to say that a business owners seeking collective interst, turning private decisions, such as price of goods, into public decision, could harm to the foundations our "free enterprise society". The Nobel Laureate wrote an impactful New York Time column, titled "The Social Responsibility Of Business Is to Increase Its Profits", where he (re)stated a famous quote of his:

> There is one and only one social responsibility of business—to use its resources and engage in activities designed to increase its profits so

long as it stays within the rules of the game, which is to say, engages in open and free competition without deception fraud.[3]

One of the frequent critiques to the first waves of ESG doctrines was the lack of rigour, in particular the rigour required by the economic and financial analysis. However, in more recent times, a host of scholars have undertaken methodologically sound studies, aiming at assessing the impact of CSR policies with formal analytical methods. There are two relevant patterns undertaken by investigators: on the one hand, they analyse the empirical relationship between corporate performance and delivery of ESG policies, on the other, they try to build and test theoretical frameworks justifying the improved results. Of course, these approaches are not mutually exclusive, and the hypothesised CSR effects on reported results still need to be assessed empirically. However, in some cases, it is possible for ESG policies to have a direct effect on organisational efficiency, while in others, it is the indirect consequence of a deliberate investment (or purchasing) choice, on behalf of investors or consumers.

The ethical arguments, and therefore the non-economic justification, has been aptly and unequivocally given in Brammer et al. 2007, who call for "firms to view equality of representation not as a means to an end, but as a desirable end in itself". In like manner, many authors delve into sustainability per se, but that is beyond the scope of this study. We will therefore dwell briefly upon the economic rationales behinds the ethical choice.

In a now-famous quote, the then International Monetary Fund head, Christine Lagarde, had wittingly stated that "if it was Lehman Sisters, it would be a different world", cf. Lagarde 2010. There will never be any empirical test of such a claim, still, the quip has inspired a stream of studies on the questionable myth of women as financially responsible as opposite to reckless men (e.g. Prügl 2012); though, commenting on the "Lehman Sisters hypothesis" and advocating the need of more women in the financial industry, Van Staveren 2014 notes that, based on the state of the art behavioural and neuroeconomics literature, there is no evidence that "the few women who make it to the top tend to perform on average better than men, in particular under uncertainty". With a different and more focused approach, Hagendorff 2019 presents an interesting body of evidence regarding diversity in corporate boards, which we will partly follow here.

Company boards may be regarded as a form of "knowledge-based asset", in that they can generate shareholders value by interconnecting the firms with the external environment in which they operate (cf. Pfeffer and Salancik 2003). Diversity can act as a facilitator and promote the creation of business networks, which will result beneficial for the firms, for example, in bolstering market and credit access. Of course, diversity might also come with a cost, due to coordination, reduced cohesion, and conflicts. In this regard, Adams and Ferreira 2009 show that female directors tend to increase the monitoring, which, other than improving performance, might exacerbate the emotional burden.

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[3]The orignal source is Friedman 2020, but it is also used as a closing remarks in the the New York Time article and republished as Friedman 2007.

Two interesting results regard default rates. Beck et al. 2013 shows that women, as loan officers tend to be more prudent and therefore generate fewer defaults on their managed loans. On the contrary, Berger et al. 2014 finds that young teams tend to take more risks.

The advances in the fields of statistical inference and machine learning allow for the measurement of soft variables, of quantitative nature, which, in the past, were not possible to integrate into quantitative models. One of such variables is culture. In every organisation, culture is an essential ingredient of governance, producing consistent organisation behaviours and business practices. There are well-known companies famous for their values and management style, e.g. formal, hierarchical, or non-hierarchical, and by their attitude toward innovation or traditional values. While these approaches to company management are well recognised by scholars, and often by consumers too, until recently, it was not simple to measure such qualitative attributes, in an objective way. Software tools allow now to make textual analyses of a huge number of public documents and generate metrics, which can be mapped in terms of culture and company values. Fiordelisi and Ricci 2014 analyse 10-K filings in a sample of banks, discriminating them on specific wording, such as those emphasising collaboration, competition, and control. With a similar approach, Nguyen et al. 2019 identify banking whose culture put strong emphasises on aggressive competition and find that those banks are associated with a higher risk-taking behaviour.

3 The case for Russian ESG: preliminary considerations

A simple explanation regarding diversity relies on the enlargement of the opportunity set of skilled resources. In fact, if skills are equally distributed in different groups – let us assume for simplicity men and women – and if top skilled employees account for 5% of each group, with 100 applicants per group, we have overall 10 top skilled employees. However, if, due to gender bias, the women are excluded, then we have only 5 top skilled people. When comparing two companies, one affected by gender bias and another not affected, we expect the latter to perform better, in so far as it has more skilled workers. This tenet is relatively simple to be tested empirically: given a sample of firms, if on average fewer biases are reported, then higher financial performance should be observed. In practice, as scholars, we have availability of several ESG measures, and we can expect that these proxies will be able to explain the observed market returns.

A consequential step, under a strictly financial perspective, is the integration of the ESG concerns in the asset allocation process. Once we introduce proper ESG measures, we can adjust the Markowitzian efficient frontier with sustainability constraints.[4] To this end, we can use the ESG scores available from

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[4]Ironically, Markowitz was a PhD student of Friedman, one of the early critics of the doctrine of socially responsible investments.

specialised providers and quantify the risk-return profile of socially responsible investments. We will now briefly sketch this approach.

Let r be the stochastic vector of returns for each portfolio security, let $\bar{r}$ be the vector of expected returns and w the vector of portfolio shares/weights and let R be the portfolio return. The portfolio expected return (using both scalar and matrix notations) is then given by:

$$\bar{R} = \mathbb{E}R = \mathbb{E}\sum_i w_i r_i = \sum_i \mathbb{E}w_i r_i = \sum_i w_i \bar{r}_i = w'\bar{r} \tag{1}$$

If **S** is the covariance (of returns) matrix, portfolio variance is given by:

$$\sigma_R^2 = \mathbb{V}R = \sum_{ij} w_i w_j \sigma_{ij} = w'\mathbf{S}w \tag{2}$$

The traditional portfolio problem can be set equal to (using both scalar and matrix notations):

$$\min_w \quad \frac{1}{2}\sigma_R^2 = \frac{1}{2}\sum_{ij} w_i w_j \sigma_{ij} = \frac{1}{2}w'\mathbf{S}w$$

$$\text{sub}$$

$$\sum_i \mathbb{E}w_i r_i = \sum_i w_i \bar{r}_i = w'\bar{r} = \mu, \ \mu \in \mathbb{R}$$

$$w'\mathbf{1} = 1$$

where the scalar μ is the investor's desired portfolio return.

To adjust the Markowitzian problem with sustainability constraints, we start by introducing a vector e, denoting the firms' commitment to ESG. This vector can be proxied with commercial scores, such that e_i denotes the observed sustainability score of the i-th firm. Now, we can use the notion of conditional expectation, that is we can condition both the expected return (1) and the variance (2) with sustainability scores:

$$\bar{R}_e = \mathbb{E}(R|e) \tag{3}$$

$$\mathbb{V}(R|e) = \mathbb{E}((R - \mathbb{E}(R|e))^2|e) \tag{4}$$

We can also use the adjusted measure of risk-return profile to maximise the investor utility, assumed here as the difference between the new expected return (3) and variance (4):

$$\max_w \ \mathbb{E}(R|e) - \lambda\mathbb{E}((R - \mathbb{E}(R|e))^2|e)$$

Once we identify the optimal weight vector w^*, we can view it in terms of ESG score, that is:

$$\frac{w^{*'}e}{e'\mathbf{1}}$$

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Finally, we can define a related risk-adjusted performance measure, such as the Sharpe ratio. First, we need to identify the *ESG-conditional covariance*:

$$\mathsf{cov}(r_i, r_j|e) = \mathbb{E}((r_i - E(r_i|e))(r_j - E(r_j|e))|e)$$

This allows us to define a *ESG-conditional covariance matrix*, $\mathbf{S}_e$, whose generic element is $\mathsf{cov}(r_i, r_j|e)$. From this, the **green Sharpe ratio** can follow:

$$\frac{\mathbb{E}(R|e) - f_f}{w^{*\prime}\mathbf{S}_e w^*}$$

where R_f is the risk free rate.

3.1   Data set used

To test the hypotheses discussed above, we use a data set of both company disclosed non-financial data and external ESG scores. As for the latter, we refer to scores published by Bloomberg. Because we focus our analysis on Russian company, we refer to the Moscow Exchange. In particular, we take into account the companies included in the indices listed in Table (1). The first column shows the trading symbol of each index, followed by the constituent number in the next one, and the last row gives the total count of constituents taken once, that is 73.

Symbol	Constituents
RUL INDEX	30
RTSI$ INDEX	43
MOEXBC INDEX	15
CRTX INDEX	14
Overall constituents	73

Table 1: List of Moscow Exchange indices used, with constituent count. The reference date is Dec 2020

Given the importance for the Russian economy, the first ESG items analysed concern energy. In Fig. (1), we show the distribution of energy intensity levels among top companies. To make the data meaningful, we scale them by realised sales, the number of employees, and balance sheet assets. The results are presented as histograms and density plots. We note that there are unusual gaps in the middle values and also a relevant number of data in the neighbourhood of zero. This discontinuity might be dictated by the specific nature of the data, but requires further investigations, perhaps with international comparisons. Preliminarily, in Table (2) we show the companies with the lowest value, and, not surprisingly, they are banks or bank-related businesses. Another data fact worth mentioning is the huge number of missing values. This comes as no surprise, because sustainability disclosure is a relatively new practice, anyway, it needs to be accounted for in terms of quality of data. For this reason, in

Table (3), we present the percentage of missing values for each energy variable. When there is no disclosure for one variable, the same is for the others too, so the values are the same.

	INT_PER_SALES	INT_PER_EMPLOYEE	INT_PER_ASSETS
MOEX RX	0.30	7.71	0.00
SBER RX	0.47	5.39	0.04
VTBR RX	0.23	4.42	0.02
MOEX RM	0.30	7.71	0.00
SBER RM	0.47	5.39	0.04
SBERP RM	0.47	5.39	0.04
VTBR RM	0.23	4.42	0.02

Table 2: Companies with the lowest energy usage, among the 73 largest companies listed on the Moscow Exchange The reference date is Dec 2020

	Missing Values
ENERGY_INTENSITY_PER_SALES	32.88%
ENERGY_INTENSITY_PER_EMPLOYEE	32.88%
ENERGY_INTENSITY_PER_ASSETS	32.88%

Table 3: Missing values for energy data relative to the 73 largest companies listed on the Moscow Exchange The reference date is Dec 2020

Another crucial ESG branch regards the waste generated, sometimes said waste intensity. Beyond the landfill and pollution issues connected with generation of waste, this matter has indirect effects on energy consumption too, since waste management can be energy-intensive, whether one considers transportations or incineration. In Fig. (2) we follow the previous pattern, differentiating waste generated by level of sales, employee number, assets, and we present the density plots and histograms for each of these three variables. We still observe discontinuities in data and a high percentage of missing data. The shares of missing data are presented in Table (4).

	Missing Values
WASTE_INTENSITY_PER_EMPLOYEE	50.68%
WASTE_GENERATED_PER_SALES	50.68%
WASTE_GENERATED_PER_ASSETS	50.68%

Table 4: Missing values for waste data relative to the 73 largest companies listed on the Moscow Exchange The reference date is Dec 2020

Most of the environment measures presented until now lead to atmospheric emissions. The intensity and the modality with which energy is produced and waste is managed determine the level of greenhouse gasses, which in turn can affect dramatically the temperatures. In Fig. (3) we show the density plots and
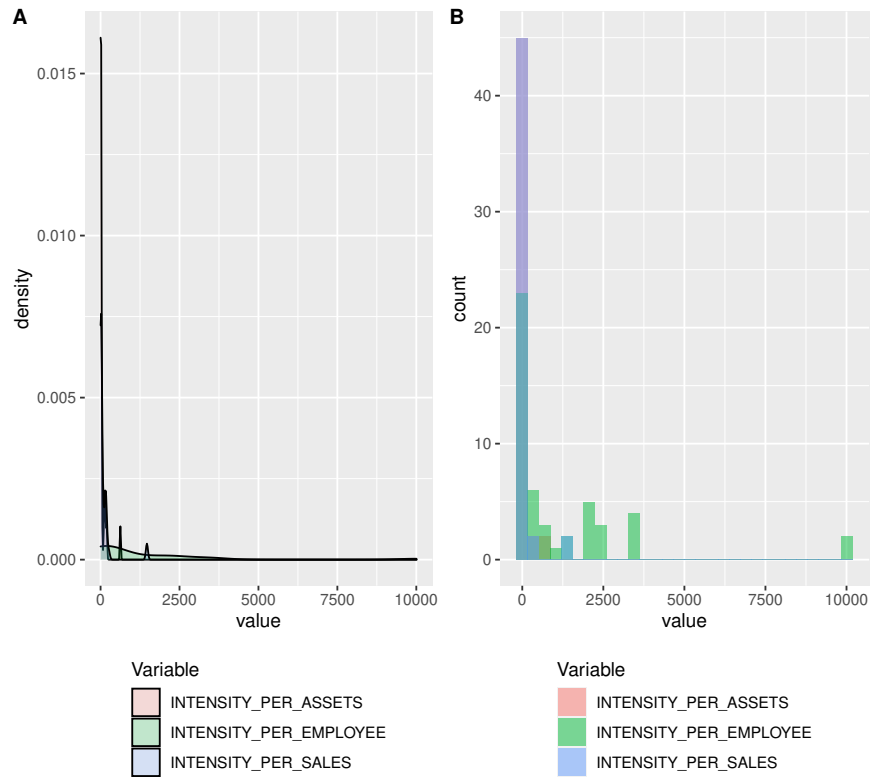
Figure 1: Density plots (A) and histograms (B) of energy data relative to the 73 largest companies listed on the Moscow Exchange. Data consist of energy intensity per sales, per employee, and per assets. The reference date is Dec 2020.
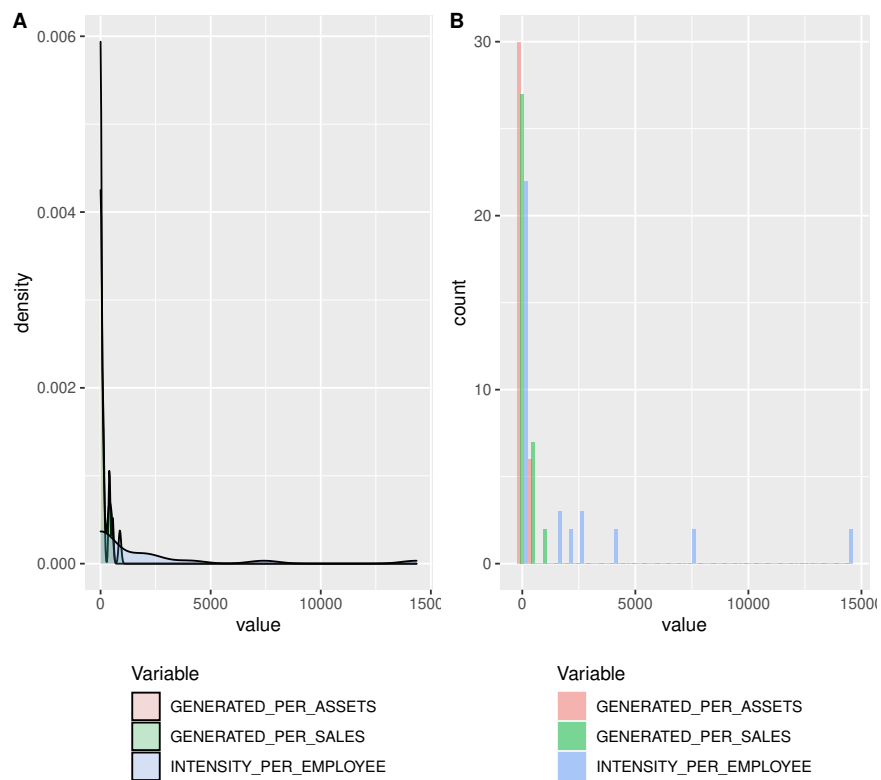
Waste Generated

Figure 2: Density plots (A) and histograms (B) of waste generated by the 73 largest companies listed on the Moscow Exchange. Data consist of waste generated per sales, per employee, and per assets. The reference date is Dec 2020.

histograms for two type of emissions: carbon emissions (COx) and nitrogen emissions (NOx). In the case of COx and NOX data discontinuities and missing values are particularly significant. Indeed Table (5) shows a percentage of missing values as high as 64%.

	Missing Values
NOX_EMISSIONS_PER_SALES	64.38%
SOX_EMISSIONS_PER_SLES	64.38%

Table 5: Missing values for emissions data relative to the 73 largest companies listed on the Moscow Exchange The reference date is Dec 2020

Fig. (4) shows the density plots and histograms related to female workforce. Statistically speaking data do not present anomalies, but it is definitely less so under the perspective of gender gap. In fact, there is still today an outstanding number of listed companies in Russia, with zero women in their board. Somewhat surprisingly the variable related to female executives, while being, hierarchically speaking, less important, shows an even higher level of companies with zero women as executives. As noted, we do not observe anomalies in missing data. These are shown by Table (6) and can be considered in the norm.

	Missing Values
PCT_WOMEN_ON_BOARD	9.59%
PERCENTAGE_OF_FEMALE_EXECUTIVES	9.59%

Table 6: Missing values for women data relative to the 73 largest companies listed on the Moscow Exchange The reference date is Dec 2020

Finally, in Fig. (5) we present the Bloomberg scores as regards Environment, Social, and Governance. The figure plots the historical trends of each one. The time series are obtained averaging, for each year, the individual company scores. By visual inspection, we immediately realise, that while there has been a constant improvement in the last 10 years, the corporate governance is an exception. In fact, starting from 2020 we see a decline in the average scores of Russian companies. Fig. (6) completes this score analysis presenting the overall average, and adding a smoothing line to better capture the data trend. We see that, starting on 2014, we have a dramatic surge in the overall ESG score, with a slight decline of the growth in recent years, probably caused by the mentioned low performance for the corporate governance scores.
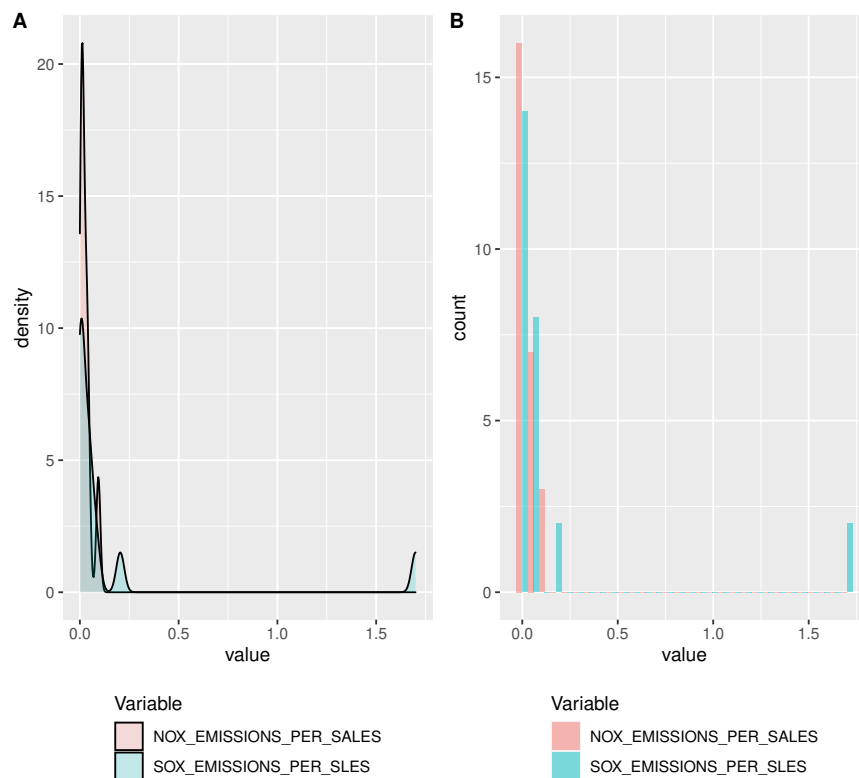
Figure 3: Density plots (A) and histograms (B) of emission of Carbon (COX_EMISSIONS) and Nitrogen (NOX_EMISSIONS) relative to the 73 largest companies listed on the Moscow Exchange. The reference date is Dec 2020.
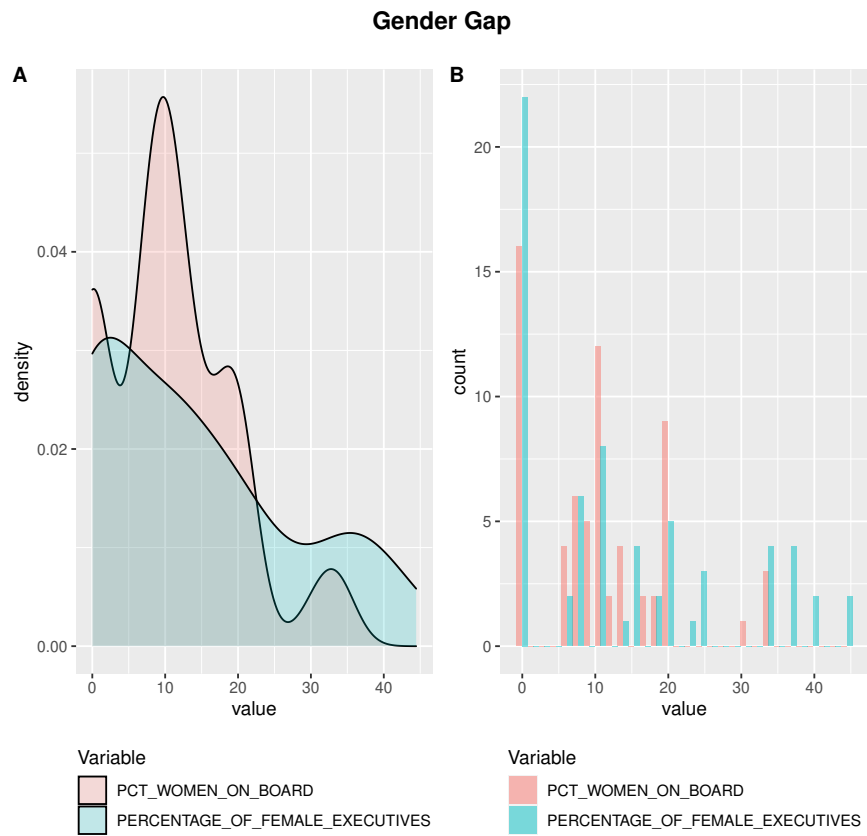
Figure 4: Density plots (A) and histograms (B) of gender data relative to the 73 largest companies listed on the Moscow Exchange. The reference date is Dec 2020.
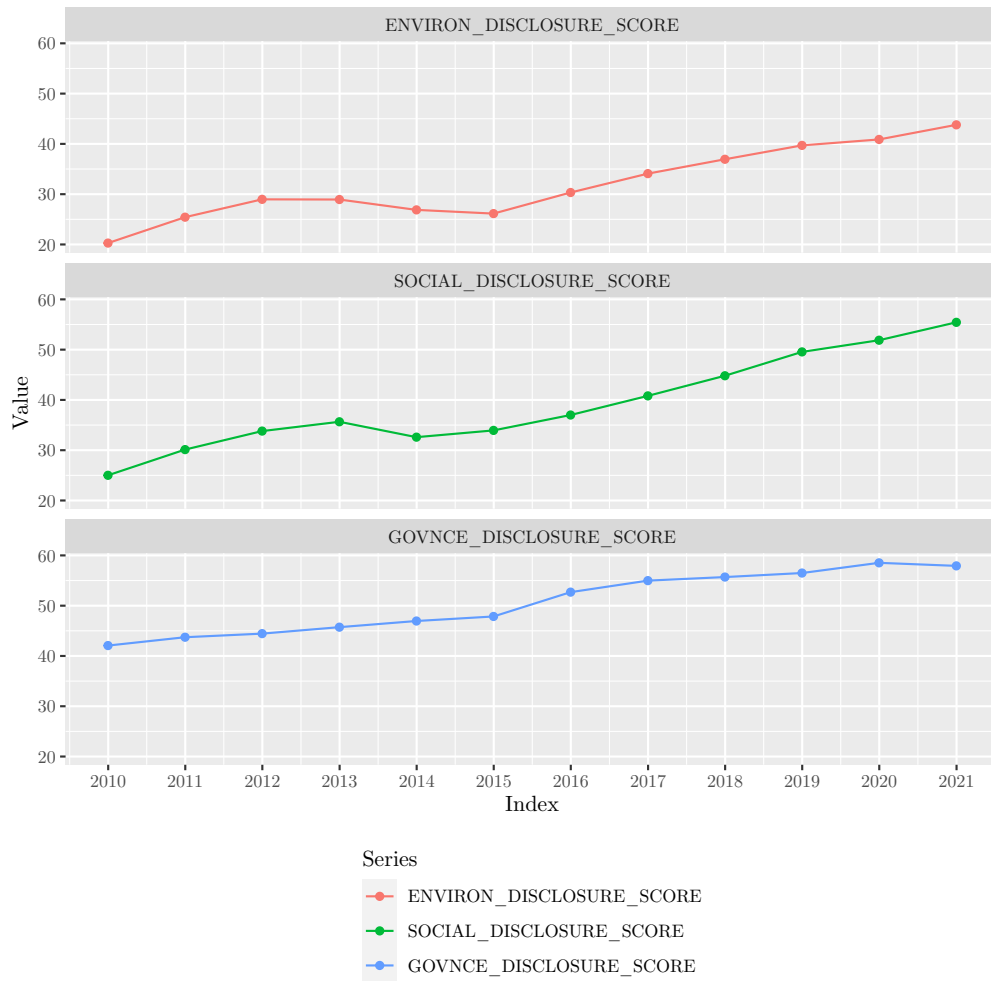
Figure 5: Average ESG historical scores relative to the 73 largest companies listed on the Moscow Exchange. The reference date is Dec 2020.
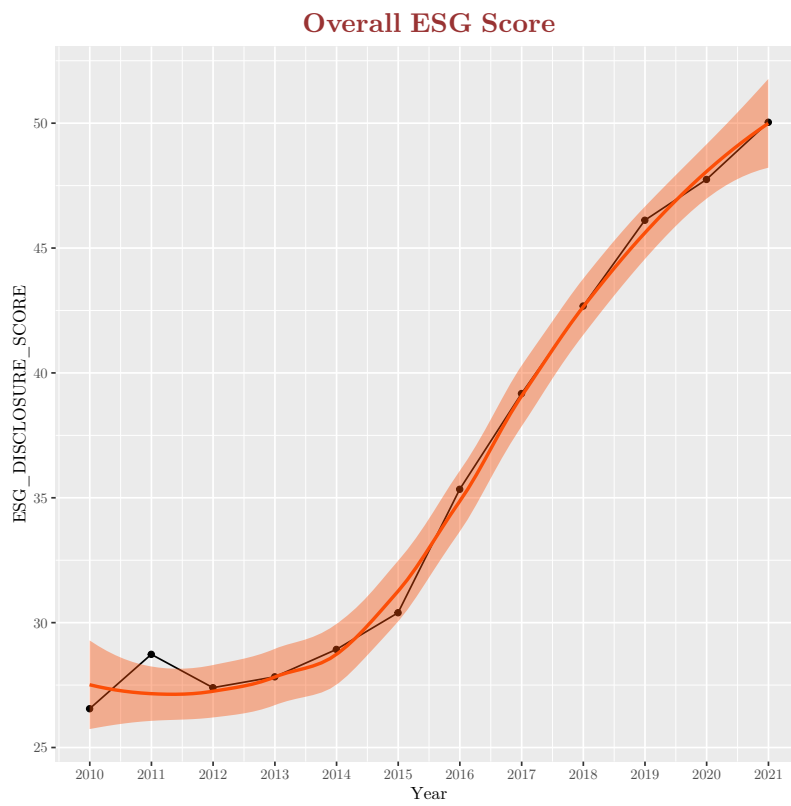
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Figure 6: Overall ESG historical score with smoothing, relative to the 73 largest companies listed on the Moscow Exchange. The reference date is Dec 2020.

References

Adams, R. B. and D. Ferreira (2009). "Women in the boardroom and their impact on governance and performance". In: *Journal of financial economics* 94.2, pp. 291–309.

Beck, T., P. Behr, and A. Guettler (2013). "Gender and banking: are women better loan officers?" In: *Review of Finance* 17.4, pp. 1279–1321.

Bendett, J. (2020). *Why Pronouns Matter to Us All.* Tech. rep. Interpublic Group.

Berger, A. N., T. Kick, and K. Schaeck (2014). "Executive board composition and bank risk taking". In: *Journal of Corporate Finance* 28, pp. 48–65.

Brammer, S., A. Millington, and S. Pavelin (2007). "Gender and ethnic diversity among UK corporate boards". In: *Corporate Governance: An International Review* 15.2, pp. 393–403.

Brundtland, G. H. (1987). "Our common future – Call for action". In: *Environmental Conservation* 14.4, pp. 291–294.

Commission of the European Communities (2001). *Promoting a European Framework for Corporate Social Responsibility: Green Paper.* Office for Official Publications of the European Communities.

Council of European Union (2014). *Council Directive 2014/95/EU - Disclosure of non-financial and diversity information by certain large undertakings and groups.*

Fiordelisi, F. and O. Ricci (2014). "Corporate culture and CEO turnover". In: *Journal of Corporate Finance* 28, pp. 66–82.

Friedman, M. (2007). "The social responsibility of business is to increase its profits". In: *Corporate ethics and corporate governance.* Springer, pp. 173–178.

— (2020). *Capitalism and freedom.* University of Chicago press.

Global Sustainability Standards Board (2021). *GRI 1: Foundation 2021.* Tech. rep. Global Reporting Initiative.

Hagendorff, J. (2019). "The Oxford Handbook of Banking". In: Oxford University Press. Chap. Corporate Governance and Culture in Banking.

Lagarde, C. (2010). "Women, power and the challenge of the financial crisis". In: *International Herald Tribune* 10.

Nguyen, D. D., L. Nguyen, and V. Sila (2019). "Does corporate culture affect bank risk-taking? Evidence from loan-level data". In: *British Journal of Management* 30.1, pp. 106–133.

Pfeffer, J. and G. R. Salancik (2003). *The external control of organizations: A resource dependence perspective.* Stanford University Press.

Prügl, E. (2012). "'If Lehman Brothers had been Lehman Sisters...': Gender and myth in the aftermath of the financial crisis". In: *International Political Sociology* 6.1, pp. 21–35.

Smith, A. (2010). *The Wealth of Nations: An inquiry into the nature and causes of the Wealth of Nations.* Harriman House Limited.

Van Staveren, I. (2014). "The Lehman sisters hypothesis". In: *Cambridge Journal of Economics* 38.5, pp. 995–1014.