



AI IN ESG INVESTING 2022
THE OFFICIAL RULES



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THE OFFICIAL RULES AI IN ESG INVESTING COMPETITION SEASON: 2022

1. Introduction

This document contains information and rules of the AI in ESG Investing quantitative competition (2022 ed.), organized by QuantFin – the Quantitative Finance Professional Development Foundation and CFA Society Poland.

2. Basic information

AI in ESG Investing is a competition organized by QuantFin – the Quantitative Finance Professional Development Foundation and CFA Society Poland. The participating teams are students (bachelor or master studies).

3. The task

The teams' task is to create at least ESG indicators and strategy for the given competition company based on financial, non-financial and alternative data and evaluate the effectiveness of ESG criteria in the investment process. The assessment covers, among other things, the innovativeness of the data and methods used (application of numerical methods and machine learning), their adaptability, and the possibility of using them in the long term strategy.

The competition consists of two phases and final:

In **Phase I**, after approval of the team's registration in the competition, the task is to develop and describe a set of at least three (3) variables relating to the ESG criteria based on financial and/or non-financial (alternative) data, assuming that at least one indicator applies to each of the elements of ESG – environmental, social, governance.

The report with the description should have **two A4 pages at most (extended abstract)** and should be prepared following the template developed by the competition organizers. In this phase, it should also be indicated why the proposed ESG measures are accurate for the selected competition company and the group of compared companies (defined by the competition organizers).

The evaluation committee then evaluates the teams based on the submitted application forms and reports, and selects up to 8 best reports that will be promoted to Phase II.

In **Phase II**, the selected teams develop the models from Phase I. Then, based on the proposed indicators, they build quantitative models (based on numerical and machine learning methods), which allow to calculate the value of indicators and build a long-term company strategy aimed at positive movement of indicators from the perspective of compliance with ESG criteria. The report with the solution should consist of **no more than 6 A4 pages, drawn up following the prepared template**. In addition, the indicators should also be estimated for compared companies.

During each phase of the competition, the team must prepare a report in the form of a publication containing the solution to the competition task, which should have practical and significant application in the investment industry and in the academic environment. The report should consist of:

1. **description of data and variables** that were used in the process of building indicators and to assess the effectiveness of using ESG criteria in the investment process among compared companies and long-term strategy
2. **description of the methods used** – the methodology of building indicators should be based on measurable and objective criteria
3. **numerical results**
4. **technical documentation** – references, data, code, etc.



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The Final

The four finalists will present their solutions during the final meeting organized by QuantFin and CFA Society Poland. The final presentation should take no more than 15 minutes, and only concern the information contained in the final report. Teams should focus on presenting the soft aspect of the strategy as a supplement to the analytical report.

4. Schedule

Phase	Stage	From	Till
kick-off	The official start of the competition		tbc
I	Registration	tbc	tbc
	Preparation and sending of the report	tbc	tbc
	Assessment	tbc	tbc
	Phase I results announcement		tbc
II	Handing over of the 2nd task		tbc
	Preparation and sending of the report	tbc	tbc
	Assessment	tbc	tbc
	Phase II results announcement		tbc
Final	Presentations and award ceremony		tbc

DETAILED INFORMATION AND DEFINITIONS

5. Teams

Each team should be composed of 2 to 4 students, regardless of whether they are from the same or different universities. All of them have to be bachelor's or master's degree students. In addition, each team can optionally have **one academic mentor**, which the students should choose. A team may make changes in their team composition only during phases I and II of the competition.

Team registration

Each team has to:

1. Register until [tbc/2022] with a questionnaire available [here »](#) and, if qualifying for the competition, send a task solution report by day [tbc].
2. Accept the terms and conditions of participating in the competition, including the personal data processing clause.

Limitations

A person may not take part in the tournament if:

1. they are employed by the Organizer/Partner;
2. there exists another potential conflict of interests between the team member and the Organizer or the Partner.

6. Academic mentor and business mentor

Each (optional) academic mentor:

1. has to be currently employed by a college/university
2. may help the team through providing tips, suggestions or comments through every phase of the competition
3. may not work directly or indirectly on the report, except as provided under point 2
4. **may not devote more than 6 hours to the team throughout the competition**



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During Phase II of the competition, each team will be assigned a business mentor, who will support the research process of the team. The mentor may not devote more than 6 hours to the team.

7. Phases of the competition

The competition is divided into the two following phases:

1. Phase I – registration; solution of a shortened version of the competition task
2. Phase II – a maximum of 8 chosen teams works on an extended version of the competition task
3. The Final – 4 best teams will have a chance to present the results of their written reports during the finale event.

8. Competition tasks

Phase I

In Phase I, after accepting the competition registration of a team, the task is to develop and describe a set of at least 3 variables relating to the ESG criteria based on financial and non-financial (alternative) data.

Conditions:

1. The data and indicators that are the result of the project relate to the ESG components: environment, social responsibility and corporate governance.
2. The uniqueness of the data sets and the proposed approach to the analyses used in the task will be particularly important in the evaluation process.
3. The solution should be adapted to the analytical process.

The report and the description **should be no longer than two (2) A4 pages** (extended abstract) and should be prepared according to the template provided by the competition organizers. The evaluation committee will then evaluate the teams based on the application forms and reports submitted and will choose 8 best teams that will go through to Phase II.

Phase II

In Phase II, the promoted teams will further develop an extended solution of the task from Phase I – based on the proposed variables, they will build quantitative models (based on numerical methods and machine learning) which allow **to calculate the value of indicators and build a long-term strategy of the company aimed at positive movement of indicators from the perspective of compliance with ESG criteria. In addition, the ratios should also be estimated for compared companies.**

The report containing the solution **should be no longer than six (6) A4 pages** prepared following the template provided. The Phase II task may be further clarified before the beginning of Phase II. The evaluation committee will then evaluate the teams on the basis of the Phase II reports and will subsequently choose four (4) best teams that will have a chance to present their solutions.

Phase I and Phase II task solution should be written in the form of a report that must meet the requirements set out in **the written reports section**.

The Final

During the Final, the best four (4) teams present their solutions to the evaluation committee. **A presentation should have a maximum 10 slides and last up to 15 minutes.** After the presentation session there will be time for **Q&A session (which should last 5 minutes)**.

9. Written reports

In the first and second stage of the competition, each team shall prepare a written report in the form of a publication, which must meet the following requirements.

1. The report shall consist of:

- a. title page containing the name of a team and a summary of a solution (abstract)
- b. solution of a task, which should not exceed 2 A4 pages in Phase I and 6 A4 pages in Phase II. A solution shall consist of:



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- description of data and variables that were used in an indicators building process
- description of methods used – a methodology of building indicators should be constructed on the basis of measurable and objective criteria
- the applicability of the indicators to the strategy of the competition company and the evaluation of the compared companies
- numerical results

c. technical documentation in the form of attachments.

2. The report shall be:

- a. written in English
- b. written by team members under the sole supervision of an academic mentor (an academic mentor function is optional). In Phase II of the competition, each team will be assigned a business mentor
- c. it is recommended for groups to use actual existing researches, however all the analyses / models shall be groups' own work. The analyses / models shall not be copied. The materials used should be cited by using commonly established rules of citation;
- d. based only on a publicly available data and information;
- e. sent by the date specified on the competition website;
- f. prepared from the perspective of an independent market analyst.

Written reports will be evaluated by an evaluation committee according to established criteria. The choice of tools and methods of task realization are up to the participants of the competition. Neither the Organizers nor the Partner provide the tools to accomplish the tasks.

Each team will be informed about the results via email. The decision made by the evaluation committee binds and is not a subject to appeal. Teams qualified for Phase II and the Final of the competition are required to provide information about this fact on chosen social media.

10. Assessment criteria

Reports (Phase I/II) will be assessed in the following three categories:

- **Goal accomplishment** (weight: 0.4)
Does a report contain a solution of the task and how good is this solution? Was the solution appropriate to benchmark companies as well?
- **Innovative character** (weight: 0.4)
Is a solution based on novel techniques? Is it innovative? In this competition innovative character shall be defined as an adoption of mathematical methods and machine learning.
- **Report quality** (weight: 0.2)
Is a report clear and logical? Is a solution to the task described in an understandable way? Does a report refer to scientific research? Are these researches properly cited in the text and do the authors use the appropriate format while creating the visualization?

The report may score from 0 up to 10 points in every category. A weighted sum of the scores in every category will be the team's final grade.

Presentations (Final) will be assessed in the following three categories:

- **Presented solution (weight: 0.25)**
Has the solution been clearly presented? Can the aim/hypothesis, the methods used and the results be understood from the presentation? Is the long term strategy well prepared and communicated clearly?
- **Solution development (weight: 0.25)**
Has the solution been further developed? Did the team extended their ideas beyond initial report? Does final report meet the academic requirements?
- **Innovative character (weight: 0.25)**
Is a solution based on novel techniques? Is it innovative? In this competition innovative character shall be defined as an adoption of mathematical methods and machine learning.



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- **Solution stability across benchmark companies (weight: 0.25)**

Has the solution been proven to be stable across benchmark companies? Is the solution applicable to other (benchmark) companies well? Does indicators make sense for a broader group of companies?

The last bullet point (4) is intended to ensure the objectivity and rationality of the proposed solution. Perfect and well-thought-out measures should be effective the case of the competition company and the context of the entire industry (as previously mentioned).

The presentation may score from 0 up to 10 points in every category. A weighted sum of the scores in every category will be the team's final grade.