

MScFE 652 PORTFOLIO MANAGEMENT

Group Work Project # 1

[See grading rubric here.](#)

Scenario

What's the difference between a new Portfolio Manager (PM) and an experienced one? The experienced PM has faced many challenges in the real world that complicate the straightforward use of Markowitz portfolio optimization. In other words, the assumptions and conditions of the Markowitz methodology can be difficult to fulfill in everyday situations. Being able to identify, define, and discuss these challenges is no easy matter, but one that demonstrates the experience and wisdom of a good PM. With that in mind, it's time to role play! The scenario is an investigative journalistic discussion of one of the portfolio challenges listed below. One student plays the part of the journalist. The second student plays the part of the portfolio manager. The interviewer has to ask the right questions so that the portfolio manager can address how to manage the challenges.

[For an example interview, please see the appendix.](#)

At a minimum, the interviewer should pose questions on three challenges. These challenges include:

1. Departures from Quadratic Utility
2. Constraints
3. Currency Risk
4. Illiquidity
5. Estimation Error
6. Leverage vs. Concentration
7. Regularization
8. Rebalancing
9. Regime Shifts
10. Kurtosis
11. Prediction vs. Interpretation

Tasks

Scenario with a group of 3 students:

1. Student A interviews Student B. See example in [Appendix](#).
 - A will ask questions about one of the 11 topics above.
 - The result is a 1–2 page question-and-answer format. CODE IS NOT ALLOWED. However, formulas, equations, and graphs can be part of the answer.
2. Student A interviews Student C on another topic.
 - The results are another 1–2 page question and answer format.
3. Student B will interview Student A on an additional topic
 - The results create another 1–2 page Q&A report.
4. Student B will interview Student C on an additional topic
 - The results create another 1-2 page Q&A report.
5. Student C will then perform one interview with Students A and B discussing one additional topic.
 - This last interview will involve both A and B, and they will discuss how their topic relates in any way to the other four previously chosen topics.

Include the name in the roles of each group member in the various interviews.

Scenario with a group of 2 students:

1. Student A interviews Student B. See example in [Appendix](#)
 - A will ask questions about two of the 11 topics above.
 - The result is a 1–2 page question-and-answer format for each topic (2-4 total). CODE IS NOT ALLOWED. However, formulas, equations, and graphs can be part of the answer.
2. Student B interviews Student A on two different topics.
 - The results are another 2–4 page question and answer format
3. Students A and B will select an additional topic and will discuss how this additional topic relates in any way to the other four previously chosen topics.

Include the name in the roles of each group member in the various interviews.

Submission requirements and format

One team member submits on behalf of the entire group the following:

- **1 PDF document*** with 6-10 pages of written report, with text, formulas, equations, and visualizations that illustrate the topics affecting portfolio optimization.
 - Use the available Report Template and fill out the required information on the first page

** **Use Google Docs to collaborate.** Start by uploading the Report Template provided in the Course Overview. Once your report is completed, click File → Download → PDF Document (.pdf) to obtain the copy for your submission.*

Rubric

Your instructor will evaluate your group submission for GPW1 using the following rubric:

Quantitative Analysis (open-ended questions)	Technical and Non-technical Reports	Writing and Formatting
40 Points	30 Points	20 Points
<p>The group is able to apply results, formulas, and their knowledge of theory to real-life finance scenarios by doing the following:</p> <ul style="list-style-type: none"> • Providing all the necessary information to support their arguments. • Presenting arguments that reflect group discussion and research. • Using authoritative references to support a position and provide updated information • Concluding with practical takeaways for more insightful financial decision-making 	<p>Technical Reports contain 3 parts:</p> <ol style="list-style-type: none"> 1) summary of key results; 2) interpretation of results; and 3) the recommended course of action that can reasonably follow from those results and interpretations. <p>Note: Technical reports will include the technicalities of models, such as names, methods of estimation, parameter values, etc. and exclude generalities about the work done. It should NOT include names of Python code that were used.</p>	<p>A submission that looks professional should include:</p> <ul style="list-style-type: none"> • The axes, labels, and scales in graphs. • No significant grammar errors or typos. • Organized, well-structured, and easy-to-read document. • Proper citations and bibliography using MLA format.
	<p>Non-technical Reports contain 3 parts:</p> <ol style="list-style-type: none"> 1) clear explanation of results; 2) the recommended course of action that follows; and 3) the identification of factors that impact each portfolio. <p>Note: AVOID all references to model names, algorithms, and unnecessary details. Instead, focus on the investment decision.</p>	

Appendix

Sample Excerpt of Interview for an ESG Portfolio manager.

Interviewer = I Portfolio Manager = M

I: Today we have with us a portfolio manager, M. Thank you for coming.

M: Thank you for having me.

I: We are here to discuss ESG. Can you start off by telling us what ESG is?

M: Certainly, ESG is Environmental, Social, and Governance.

I: What are the layman's terms for those?

M: Environmental investing means sustainable investing, things that not only do not hurt, but help the environment. The S and G often mix. S could refer to diversity, equity and inclusion, whereas G refers to the structures a corporation uses for decision making to ensure that it is run effectively. So ESG provides a set of criteria with which investment decisions are evaluated.

I: Can these be measured quantitatively?

M: There are ESG scores. These are values on a scale, say between 1 and 100. Companies use these scores on themselves to assess how they are doing.

I: It seems that these are subjective. Are there 3rd parties that provide ESG scores?

M: Yes. For example, MSCI has added ESG as a 17th factor to their Global Factor model. See for example MSCI Reference 1

I: What data does MSCI use? What is the output?

M: They use director profiles, shareholder meeting results, business segment metrics, geographic exposure metrics, policies, programs and performance metrics, governance risks, industry-specific key issues. In the end, these are combined into a 'credit-like' scale. The levels can be CCC or B for laggards, BB, BB, or A for average, or AA and AA for leaders.

I: How often is the data updated?

M: Some data is updated daily! There are weekly updates using a rules-based methodology. Note there are no questionnaires—the data collected is standardized and publicly available.

I: How is ESG related to performance?

M: Over time, this has gotten stronger. Please see Reference 2. As indicated by the MSCI study, "ESG became more relevant as an explanatory variable over the last 2 years, and accounted for a larger share of active return."

I: Let's dive into the equations of how these factors are made.

M: Gladly. We start with