

# MScFE 560 FINANCIAL MARKETS

## Group Work Project # 1

[See grading rubric here.](#)

### Scenario

Equities, bonds, and cryptocurrencies are 3 different asset classes that have similarities and differences. We'll start by examining some of the differences among them.

Then, with a better understanding of how concepts like credit risk, shorting, and financing costs affect these asset classes, we'll tackle a recent crisis in the cryptocurrency world. More specifically, we will revisit the FTX scandal, analyze its causes, and investigate how regulators and financial entities can avoid a repeat of similar events in the future.

### Tasks

You are given 2 tasks:

- 1) In the first task you will collect data for a given portfolio, compute relevant statistics, describe how to implement some relevant operations, and discuss your results.
- 2) In the second task you will be asked to submit a 1000-word transcript for an interview showing a panel discussion regarding one specific regulation that will be proposed following the FTX scandal.

### Step 1:

Each team member picks one of the 3 asset classes below (a different one for each team member)::

- 1) Income stocks
- 2) Sovereign and corporate bonds
- 3) Cryptocurrencies

**Note:** Each student in a group of 2 members will pick one of the 3 asset classes. A group of 1 student will select any one of the 3 asset classes.

For each asset class, create a portfolio using a minimum of 3 **individual assets from the same class** (no standalone ETFs to act as a portfolio, please! That will cost you points). Be sure to clearly identify the individual assets used within each portfolio.

Each team member prepares a 1-page summary addressing the following statistics about the returns as shown in the [sample sheet](#) available:

- Average return
- Volatility (standard deviation)
- Skewness
- Kurtosis
- Correlations among assets within the same portfolio
- Covariances among assets within the same portfolio

Consider a period of at least 2 years of either daily or weekly data. Explain all the steps and specify if returns, volatilities, etc., are daily, weekly, or annualized.

Note that the **sample sheet is provided for illustrative purposes to show how your final outputs should look like. Do not use this set of random data.**

Optionally, **each team member is also encouraged to create a true portfolio** assigning a specific weight to each individual asset within the portfolios and compute the same statistics as above for the entire portfolio, besides the individual assets, so that for example you can comment on whether multiple assets provide differentiation benefits.

Each team member must also address the following 2 questions for their portfolio:

- Shorting
  - Can this portfolio be sold short?
  - If it can be sold short, explain the mechanics.
- Credit Risk
  - Does this portfolio have credit risk?
  - If it has credit risk, explain what the credit risk is for your portfolio.

## Step 2:

Distribute the following roles among your team members:

- Student A will play the technical interviewee
- Student B will play the non-technical interviewee
- Student C will play the role of journalist

The journalist will:

- Create questions that aim to explain the motivation, foundation, theoretical underpinnings, intended outcomes, and lack of success to date of the regulation. The journalist will direct his/her questions to either the technical specialist or the qualitative risk manager.

The non-technical interviewee will:

- Provide qualitative responses that can be followed by people with fundamental finance knowledge.

The technical interviewee will:

- Provide more technical terms that can be followed by people with solid financial knowledge. Ideally, the technical interviewee will address issues discussed, namely liquidity, leverage, moral hazards, etc. that are not necessarily common in the regular news.

**In groups of two students**, the journalist role will be shared between Student A (the technical interviewee) and Student B (the non-technical interviewee).

**A group of one student** will play the journalist role and either the non-technical or technical interviewee, at their choice.

### **Step 3:**

**In groups:** All team members will decide on the nature of the questioning: Will it focus on leverage? Will it address fraudulent behavior? Once the nature of questioning is done, then all parties can agree on the points they want to cover. So interviewees can help decide the types and even wording of questioning.

The questions should address:

1. A specific outline of the regulation itself.
2. The scope of the regulation (company-level, industry-level, national-level, multi-national, global).
3. The intended effect of the regulation and some context for why it was deemed necessary.
4. An explanation of how this regulation fits into the general theme and rationale of financial regulation.
5. A description of some of the possible downsides and unintended consequences of the regulation.
6. A comparison between points 3) and 4).

7. Concise and relevant details of the FTX crisis that motivated the regulation
8. The occurrence of misbehaviors such as Greed, Fraud, Corruption, Hiding Losses, ...
9. The occurrence of incompetence such as Negligence; Ignorance; Bad Assumptions or Programs, ...
10. The effectiveness (if any) that ethics training would provide.
11. The purported effectiveness of deterring misbehaviors and incompetence .
12. The extent of underlying problems (1 particular individual, 1 corporation, 1 industry, ...). For instance, will additional regulation have an effect on financial innovation? How would this create problems for certain classes of financial tools more than others, if any.

Be sure to include in your explanations any comparison or contrast of an activity like lending in the cryptocurrency market with that from equities or fixed income. In other words, you will tie together the ideas from Step 1 into the interview.

Please note: Here's a link to an open access paper with an historical scandal: <https://theconversation.com/ftxs-collapse-mirrors-an-infamous-18th-century-british-financial-scandal-196729>

Feel free to include comparisons to this scandal when addressing Steps 2 and 3.

#### Step 4:

**In groups:** All team members review the interview and make sure it follows a natural conversational tone by adding transitions where key points are synthesized, and each response forms some type of conclusion for the respective question. For example:

*Journalist. What is the primary cause of the disaster?*

*Non-Tech: Inflation is the culprit*

*Journalist: I see how inflation is important. Tech RM, tell me how inflation affected your models?*

*Tech: Good question, because we had model failure from faulty inflation assumptions.*

*Journalist: In the end, bad assumptions hurt everybody...*

#### Step 5:

Be sure to include a **list of references** and use them properly. This is mandatory for every GWP assignment you will submit in his Program.

Just compiling a list of references is not enough. **In your paper you also must show where each reference was used specifically (in-text citation).**

Use the provided [In-Text Citations and References Guide](#) to learn how to add in-text citations and references. In the [Student Resource Center](#) located in the dropdown menu under your name you find several other resources to complete your Group Work Projects properly (i.e., [Academic Writing Guide](#), [Anti-Plagiarism Guide](#), [How to use LIRN](#), the online free library).

## Submission requirements and format

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

1. **1 PDF document\*** with:
  - a. The 1-page summaries from Step 0 for each group member
  - b. the transcript of the interview (1,000 words):
    - i. Use the available Report Template and fill out the required information on the first page
2. In a zip folder make sure that you upload all supporting materials which include also the dataset used and/ or Python code if any was used.

***\* 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
60 Points	40 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"> <li>• Providing all the necessary information to support their arguments.</li> <li>• Presenting arguments that reflect group discussion and research.</li> <li>• Using authoritative references to support a position and provide updated information</li> <li>• Concluding with practical takeaways for more insightful financial decision-making</li> </ul>	<p>Technical Reports contain 3 parts:</p> <ol style="list-style-type: none"> <li>1) summary of key results;</li> <li>2) interpretation of results; and</li> <li>3) the recommended course of action that can reasonably follow from those results and interpretations.</li> </ol> <p><b>Note:</b> 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 the names of Python code that was used.</p>	<p>A submission that looks professional should include:</p> <ul style="list-style-type: none"> <li>• The axes labels and scales in graphs.</li> <li>• No significant grammar errors or typos.</li> <li>• Organized, clear structure, and easy to read document.</li> <li>• Proper citations and bibliography using MLA format.</li> </ul>
	<p>Non-technical Reports contain 3 parts:</p> <ol style="list-style-type: none"> <li>1) clear explanation of results;</li> <li>2) the recommended course of action that follows; and</li> <li>3) the identification of factors that impact each portfolio.</li> </ol> <p><b>Note:</b> AVOID all references to model names, algorithms, unnecessary details, and focus on the investment decision.</p>	

### **Learn more about bonds**

<https://www.finra.org/investors/investing/investment-products/bonds#:~:text=FINRA's%20Market%20Data%20Center%20offers,facts%20about%20a%20particular%20bond.>

<https://www.treasurydirect.gov/>

<https://investor.vanguard.com/investor-resources-education/understanding-investment-types/what-is-a-bond>

### **Learn more about income stocks**

<https://www.fool.com/investing/stock-market/types-of-stocks/income-stocks/>

<https://www.thebalancemoney.com/resources-for-investors-dividend-paying-stocks-2388687>

<https://www.dividend.com/investor-resources/>

### **Learn more about Cryptocurrencies**

<https://www.bankrate.com/investing/cryptocurrency-statistics/>

<https://corporatefinanceinstitute.com/resources/cryptocurrency/types-of-cryptocurrency/>

<https://www.sofi.com/learn/content/understanding-the-different-types-of-cryptocurrency/>

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