MGT 6203 Group Project Proposal Template

**Please edit the following template to record your responses and provide details on your project plan.**

**TEAM INFORMATION (1 point)**

**Team #:**

**Team Members:**

[Insert background information: Name, professional background, education background, previous analytics related projects you have worked on]

1. Kerstin Fontus; GT ID: 903943100
2. Team Member 2 Name; GT Id or EdX username
3. Team Member 3 Name; GT Id or EdX username
4. Team Member 4 Name; GT Id or EdX username
5. Team Member 5 Name; GT Id or EdX username

**OBJECTIVE/PROBLEM (5 points)**

**Project Title:** Predicting Recessions from Stock Returns and Macroeconomic Factors

**Background Information on chosen project topic:**

* Many predicted a recession at the end of 2022, but though the economy is still shaky, it has not happened yet, and economists are confident that we can still avoid one. The strong job market has been a factor in this. The inverted yield curve has predicted recessions in the past, but obviously was not accurate for the short 2020 recession. The most popular opinion (38%) on the subject as found by NABE was that inflation will decline without us sinking into a recession. The next popular (26%) was that there will be a recession in the next 1-1.5 years. Another 14% said low long term premiums and no recession. Some have a theory that the inverted yield curve is no longer the best measure of an oncoming recession, so we should try to find other good or better factors that can replace it.
  + <https://www.cnbc.com/2023/09/05/recession-indicator-may-be-broken-odometer-for-economy-says-expert.html>

**Problem Statement (clear and concise statement explaining purpose of your analysis and investigation):**

NABE is indicating that there are possibly better predictors for a recession than the yield curve. We are trying to find one first and foremost by looking at stock prices and returns, to see if there are sectors or companies that yield accurate predictions. We will compare our results with analysis of more traditional macroeconomic factors.

**State your Primary Research Question (RQ):**

Can certain stocks or sectors predict an oncoming recession as well or better than other traditional factors?

**Add some possible Supporting Research Questions (2-4 RQs that support problem statement):**

1. What are the most reliable macroeconomic indicators of a recession?

**Business Justification:** **(Why is this problem interesting to solve from a business viewpoint? Try to quantify the financial, marketing or operational aspects and implications of this problem, as if you were running a company, non-profit organization, city or government that is encountering this problem.)**

If I am a business, I want to know if my sector is reliable in telling when a recession is coming, i.e. if a slump in my sector indicates oncoming economic troubles as a whole instead of internal problems

**DATASET/PLAN FOR DATA (4 points)**

**Data Sources (links, attachments, etc.):**

Yahoo\_finance

Compustat Financial?

**Data Description (describe each of your data sources, include screenshots of a few rows of data):**

**Key Variables: (which ones will be considered independent and dependent? Are you going to create new variables?** **What variables do you hypothesize beforehand to be most important?)**

* This paper states that an aggregate M-score predicts recessions 5-8 qurters ahead of time, due to the fact that it predicts lower real investment 1-4 quarters ahead. M-score catches fraud in corporate earnings reports using 8 financial ratios.
  + https://news.iu.edu/live/news/28112-new-model-predicts-us-recessions-slowdowns-based
  + <https://publications.aaahq.org/accounting-review/article-abstract/98/5/129/10061/Aggregate-Financial-Misreporting-and-the>
  + <https://en.wikipedia.org/wiki/Beneish_M-score>
  + We could try to replicate the results and compare it to yield curve and our stock model.
  + From the paper, they get M score data from Compustat Snapshot “As First Reported” Quarterly database from 1976-2019
  + I think we would need to figure out what companies/sectors we would want to look at first
* Yield Curve
* Stock market returns
* Producer Price index

**APPROACH/METHODOLOGY (8 points)**

**Planned Approach (In paragraph(s), describe the approach you will take and what are the models you will try to use? Mention any data transformations that would need to happen. How do you plan to compare your models? How do you plan to train and optimize your model hyper-parameters?))**

* I think after creating each model, we should apply some sort of change detection to see what periods indicate an economic downturn, and then compare them to the actual years of recession. That comparison will make up most of our analysis.

**Anticipated Conclusions/Hypothesis (what results do you expect, how will you approach lead you to determining the final conclusion of your analysis) Note: At the end of the project, you do not have to be correct or have acceptable accuracy, the purpose is to walk us through an analysis that gives the reader insight into the conclusion regarding your objective/problem statement**

* I personally hypothesize that there are some sectors (namely Real Estate, Finance, consumer discretionary) that predict periods of recession. But after some research, I also think that the economic factors may end up being better.

**What business decisions will be impacted by the results of your analysis? What could be some benefits?**

* Businesses could use this type of analysis to begin cutting costs sooner by slowing down production, conducting some layoffs, and liquidating assets early. Just planning ahead for being short on cash.

**PROJECT TIMELINE/PLANNING (2 points)**

**Project Timeline/Mention key dates you hope to achieve certain milestones by:**

1. Compile all the factors we want to consider and clean the data sets (mid-end October?)
2. Finish building models (mid-end November?)
3. Finish analysis/Report (end Nov-Dec 3)

**Appendix (any preliminary figures or charts that you would like to include):**

Should make plots showing where recession is compared to some of the data we have now.