Final Project

AFRE 891 SS 24 Michigan State University

Project Description

Throughout the semester, students will work on an independent research project. Partway through the semester students will submit a brief prospectus outlining the proposed project and how it relates to both the course content and your graduate research portfolio. This can take the form of developing a novel dataset, replicating a paper in your field and extending it with the addition of new data or empirical techniques, or using covered course methods to tackle a desired research question. Consider this an opportunity to incubate one of your ideas for a potential third-year paper, or make progress on a new research question.

At the end of the semester, students will give a 10-minute, conference-style presentation on your research project. Each presenter will be assigned a discussant, who will review the final project submission and provide a brief 3-minute oral feedback following the project's presentation.

While the final presentation is structured to mimic the format of an economics conference, I will only be grading on the portion of content that is relevant to our course content (I enjoy separating hyperplanes as much as the next person, but the emphasis of your presentation should be on the empirical work).

In addition to the final research presentation, students will submit **replication packages** (code and utilized data) that will allow for the replication of all figures and tables presented in the research presentation. If there are privacy or data sharing concerns regarding your data, students should make arrangements with me in advance of the final presentation.

Note: I am not expecting this to be a completed research project. Rather, consider this an opportunity to trial an idea that you have and see if you are able to acquire the data or perform a preliminary version of the desired analyses.

Prospectus

Due end of day Friday, March 29 At the end of March, each student is expected to submit a one-page **prospectus**, outlining the proposed project and planned direction. The outline should follow the below structure:

Paragraph 1: Introduction

- Brief motivating background
- Introduce planned project
  - If the project is a **data acquisition** project, give a brief overview of the desired final dataset
  - If the project is an **empirical analysis** project, briefly state the intended question and proposed methodological approach

Paragraph 2: The Big Picture

- your project's question/goal
  - If the project is an **empirical analysis** project, state the research questions
  - If the project is a **data acquisition** project, state the motivation for compiling the proposed dataset
- why the question is important/interesting

- how it relates to the course content

Paragraph 3 (if Data Project): Project Description

- If this is an **original data** project, discuss
  - sources
  - (expected) acquisition steps
  - (expected) cleaning steps
  - The future econometric, machine learning, or descriptive analyses the dataset will make possible in the future

Paragraph 3 (if Empirical Analysis Project): Project Description

- If this is an **empirical analysis** project that will use **secondary data**, briefly discuss
  - data sources and how the data are being acquired
  - (expected) cleaning steps
- Proposed empirical method and parameter estimate/object of interest
  - If you have an idea for an estimating equation or inputs to a machine learning method, feel free to include them

Paragraph 4: Conclusion

Replication Package

Due end of day Friday, April 19 Prior to the final presentations, students must submit a **replication** package that includes all datasets and R scripts used to complete the project.

If this is an **empirical analysis** project, this should include - All secondary data used for analyses - R Scripts/RMarkdown files used to produce all output that will be presented during the final presentation - Readme Markdown or RMarkdown file that provides an overview of the folder structure, and states the tasks completed by each included R script and the order in which included scripts should be run to replicate output

If this is an **original data** project, this should include - All R Scripts/RMarkdown files used to produce the dataset - Readme Markdown or RMarkdown file that provides an overview of the folder structure, and states the tasks completed by each included R script and the order in which included scripts should be run to replicate output

My recommendation is to compile this as a private GitHub repository and then share a zipped copy of the repo with Prof Sears and your discussant.

Make sure your scripts/RMarkdown files are appropriately commented, all necessary packages are identified/loaded, and all filepaths are defined relative to the main project folder.

Discussant

Due end of day Monday, April 22 Prior to the final presentations, discussants should make sure to do the following: 1. Attempt full replication. - Try to run all included scripts and see if you are able to replicate the project. For data projects that involve web scraping, you do not need to perform complete replication - just make sure that you are able to obtain at least a row or two of data using the supplied code. For empirical analysis projects, attempt to replicate all output (tables, estimates, and figures) 1. Prepare a 3 minute discussion (no slides required) to present to the class following the main project presentation - Comment on the overall project and what you liked about it (the idea, the ease of replication, etc.) - Whether or not you were able to successfully replicate the project, and if not at what steps you failed to fully replicate - Any ideas for future extensions or considerations

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Presentations

Final Timing TBD (Tuesday, April 23 and Thursday April 25 or during Finals Week) Finally, prepare a 10-minute, conference-style presentation on your research project. This presentation should follow the standard progression of a conference talk, providing motivation, describing the project goals or research questions, give an overview of the approach to data collection or empirical methods employed, and discussion of results (empirical analysis) or planned next steps (data project).

10 minute presentations are a difficult length, as they require you to efficiently communicate what you're doing, why you're doing it, and why it's exciting. I recommend keeping your deck small (aim for no more than 1 slide per minute) and focusing on what's new and interesting about what you're doing. You can take as given knowledge on anything that we've covered in class, so to the extent that you're paralleling lecture content you can give a brief mention and expand into more detail on anything that goes beyond what we've specifically covered.