

# Final Project Guide

Econometrics - Pedram Jahangiry

Fall 2022

You are expected to submit a **term paper** for this course. Everything **must** be written in *R Markdown*. The **term paper** should include the following sections:

1. **Introduction:**

- Describing the research question
- Why does that matter? Why do you think it is an interesting question?

2. **Data:**

- How / where did you collect the data? (You can use the data sets available in *Wooldridge* package)
- Introducing the variables (dependent and independent variables. It is recommended to include at least one dummy variable (optional))
- Summary statistics of the variables (Mean, std, median, and etc)
- Distribution charts of the variables (optional)

3. **Empirical framework:**

- Writing down the model (both the True and Estimated version of the model)
- Discussing the functional form (if you use *log* model then explain why you needed to use *log* model. Or you may want to use quadratic functional form, or including the interaction terms or ...)
- Describing the estimation technique (OLS vs WLS vs FGLS)
- Discussing the assumptions (linearity in parameters, zero conditional mean, no perfect collinearity, homoskedasticity, normality of errors, multicollinearities and etc)

4. **Results**

- Regression results
- Interpreting the regression results (**Coefficients**,  $R^2$ , adjusted- $R^2$ ,  $F$  and  $t$  statistics, and etc)
- Hypothesis testing
- Confidence intervals for predictions
- Testing for heteroskedasticity

5. **Conclusion:** One or two paragraphs of your concluding remarks.

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A) The term paper is **teamwork**!

B) A paper proposal is due by **Tuesday Nov 15** at midnight. Please provide one simple paragraph explaining what the research question is, what the dependent and independent variables are.

C) Final **presentations** will be scheduled on the last week of classes.

- Each presentation should take no more than 20 minutes. (So 10 to 15 slides is enough)
- Class attendance is **mandatory** for the presentation day. If you need to skip the class for any reasons, you should let me know in advance.
- I highly encourage all the team members participate in the presentation.

D) Final **term paper** is due by **Sunday Dec 11th 11:59pm**. Please submit the following files:

1. the Word document
2. the Rmarkdown.rmd file
3. the presentation Powerpoint.

**Good luck!**