ECON 691H (by Klara Peter)

Readings:

A Guide to Writing in Economics Prepared by Paul Dudenhefer, EcoTeach Center and Department of Economics, Duke University (posted on Sakai)

http://www.bus.lsu.edu/hill/writing_economics_papers.htm

I. Theoretical Model Questionnaire

"Theoretical model" is an abstract, simplified representation of an economy, of a function (such as a utility function), of a decision making process. It usually includes the series of equations.

1. What is the source of your theoretical model? Did you construct it yourself? Did you borrow some of the elements from another study?
2. What are the assumptions you make in your model? Explain an intuition behind those assumptions.
3. Who is an economic agent in your model? An individual, a firm, a government?
4. What kind of decisions are your economic agents making? Are they utility- or profit-maximizers? What are their endowments, their preferences? What do they know and what is uncertain? What are their choice variables?
5. What is their objective function? For example, you can lay out a profit function.
6. Do you have a budget constraint (time constraint, cost constraint) in your model?
7. What are the main implications/hypotheses from your model?
8. Does you theoretical model indicate which variables should belong in your empirical model?

II. Empirical Model Questionnaire

1. What is your dependent variable?
    a. What is the ideal variable (from your theoretical model)? What is the actual one that you can find?
    b. How is it measured in your dataset? How is it constructed? Provide a detailed description of this variable.
    c. Show the distribution of this variable in your dataset (graphically and in the table format)?
    d. Show the trend in this variable (graphically and in the table format).
    e. Show the mean difference in this variable by some other characteristic (e.g., value added by the size of the company, crime rate by region, wages by gender, etc.)
    f. Do you consider other dependent variables in your analysis? What kind?
2. What is your key independent variable?

a. What is the ideal variable (from your theoretical model)? What is the actual one that you can find?
b. How is it measured in your dataset? How is it constructed? Provide detailed description of this variable
c. Show the distribution of this variable in your dataset (graphically and in the table format).
d. Show the trend in this variable (graphically and in the table format) if it varies over time.
e. Show the mean difference in this variable by some other characteristic (e.g., firm size by industry, police size by city, education by gender, etc.)

3. Write down a simple OLS equation that describes the relationship between your dependent and independent variables.
    a. What does your theoretical model or previous research tell you about what variables should be included in your model?
    b. How does this empirical model test your hypothesis?
    c. Explicitly state the assumptions on your error term. Include the subscript to indicate the unit of estimation.
    d. Are standard Gauss-Markov assumptions likely to be violated in your case? Why?
    e. How are your other control/independent variables measured and constructed? What is the rationale for including them?
    f. Provide summary statistics for other control variables.
    g. What functional form are you going to use? Does your theory say that the relationship could be non-linear? Are you going to include non-linear terms (e.g., quadratic functional form)?
    h. Are there any interaction terms in your empirical model? Why do you need them?
4. Concerns with the OLS model
    a. What are potential concerns for the internal validity of your research design? Examples may include, but are not limited to:
        - Omitted variables
        - Measurement error
        - Reverse causality
        - Selection problem
        - Autocorrelation
        - Multicollinearity
        - Heteroscedasticity
        - Other concerns
    b. Depending on the distribution of your dependent variable, you may consider other estimation methods such as probit, multinomial logit, ordered probit, tobit, and other.
5. Alternative methods/specifications
    a. What methods would you use to address some of the concerns? Examples may include, but are not limited to:

- Simultaneous equations
- Heckman selection adjustment
- Inverse propensity weighting
- Instrumental variables
- Regression discontinuity
- Matching estimator
- Difference-in difference
- Panel methods with fixed and random effects
- Quantile treatment effects
- Non-parametric methods
- Other methods/solutions (please specify)