ECONGA-1102
Applied Statistics and Econometrics II
Spring 2022
Thursdays 6:20-8:20 PM
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Suggestions Regarding Applied Econometrics Research Projects

Topics

- Macro level models: Dependent and independent macro level variables. You can estimate the model using data from single country or from several countries. Example: Dependent variable could be GDP growth, unemployment rate, inflation rate, exchange rate etc.
- Regional and State level models: Dependent variables could be aggregate state level macro variables.
- Micro level models: In such studies, dependent variable could be overall productivity or labor productivity at the industry or firm level. Model can be built at customer level for any product or service such as churn rate of customers for specific product or specific service carrier. You can also build model at house hold level to study demand behavior of various products for specific region or state based on survey data.
- Discrete choice models: (Binary or Multinomial choice models) Dependent variable could be 'vote for Democrat or Republican candidate' or 'whether customer is satisfied or dissatisfied with any product or service' or choice of mode of transportation etc.
- In each of the above cases, chose appropriate independent variables to explain the behavior of dependent variables. Estimate the relationship between dependent variables and appropriate independent variables by choosing appropriate explanatory variables as well as appropriate function forms of econometric models.

Estimation Methodology

- Apply Seemingly Unrelated estimation method for estimating system of equations
- Use test for heteroscedasticity as appropriate and based on test results, apply OLS or GLS/FGLS estimation method and compare results
- Test autocorrelation in time series data and apply appropriate method of estimation
- Estimate simultaneous equation system by applying 2SLS or 3SLS as appropriate
- In Panel Data model, test for Fixed effects vs. Random effects and apply appropriate method of estimation
- For discrete choice models, apply probit or logit estimation method, calculate marginal effects and compare results
- May apply any methodology you learned in other econometrics classes.

Major Data Sources

Bureau of Economic Analysis

Data available primarily for following variables: GDP, Consumer Spending, Investment, Savings, International Trade & Investment, Price and Inflation, Investment in Fixed Assets, employment etc. Most of these data are available at the aggregate economy level as well as at the state, county and industry level.

Detail industry level data is also available in BEA database.

Bureau of Labor Statistics (BLS)

In US - BLS database, you can get detail data regarding labor market. For example, you can get labor force statistics, productivity, employment statistics by industry etc.

Other Important Sources of Data

World Development Indicator Database. You can get time series data for different countries for all important macro variables. In this database, you can get data for both developing and developed countries, high income, medium income and low-income countries which will facilitate you to compare the results of different countries.

OECD database: This database provide data regarding various OECD countries across time periods for most of the important economic variables needed for research.

Federal Communications Commission (FCC): In this database, you can get all relevant statistics regarding telecommunications industry at the aggregate level. This database is limited to US country only

International Telecommunication Union (ITU): in this database, you can access telecommunications industry related data for more than 200 countries in the world. This will allow you to compare estimated model results across different countries.

You can also use survey data available from various sources.