Research Methods in Finance Part I

Spring 2010
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Course: 1/3 semester, 3 hours per lecture.
Lecturing time: Thursday, 6:10pm-9:00pm
Classroom: A105.
Office hours: Tue: 2:00-5:00pm

This is the first part of the course on the research methods in finance. There are five lectures where I shall cover two important topics: event study analysis and matching theory. The first topic assesses the impact of some particular event on the target variables before and after the event. Obviously, the target variables are in time-series context. The second topic estimates the causal treatment effect where cross sectional data are involved. Both are extremely important and useful methods frequently used in finance and economic studies. They both involve, of course, some econometric theory but the core theory are not too difficult to learn. I emphasize their usefulness and focus on the implementation and applications. To achieve this goal, I shall also cover related statistical package which is *R* in this course. *R* is a powerful and free statistical packages that contains quite a few useful libraries on event study and matching. It can be downloaded from *http://www.r-project.org*. Students are required to write a empirical project using either one of the two methods. There is no textbook for this course.

Topics

1. Event study (2 lectures)
2. Matching (2 lectures)
3. Labwork (1 lecture)

1 Event study analysis

Contents:

- Outline and an example of event study
- models for measuring normal performance
- measuring and analyzing abnormal returns
- Null hypothesis and power of the test
- Nonparametric tests
- cross-sectional models
- further topics

References:

- Campbell, J. Y.C., A. W. Lo, and A. C. MacKinlay, *The Econometrics of Financial Markets*, Princeton University Press, 1997, chapter 4.
- Kothari, S.P. and Warner, Jerold B., The Econometrics of Event Studies (October 20, 2004). Available at SSRN: http://ssrn.com/abstract=608601
- Abagail McWilliams, A. and Donald Siegel, "Event studies in management research: Theoretical and empirical issues," *Academy of Management Journal*, 1997; 40, 3; 626-657.

2 Matching

Contents:

- Matching basics
- Methodology overview
- Propensity score matching
- Implementing PSM
- Heckmans Difference-in-Differences Matching Estimation

References:

- Dehejia, Rajeev H. and Sadek Wahba "PROPENSITY SCORE-MATCHING METHODS FOR NONEXPERIMENTAL CAUSAL STUDIES," *The Review of Economics and Statistics*, 2002, 84, 151V161.

- Caliendo, Marco and Sabine Kopeinig, ”SOME PRACTICAL GUIDANCE FOR THE IMPLEMENTATION OF PROPENSITY SCORE MATCHING,” *Journal of Economic Surveys* 2008, 22, 31V72.

- Stuart, Elizabeth A., ”Matching methods for causal inference: A review and a look forward,” To appear in *Statistical Science*

3 Softwares

R
available for downlaoding at *http://www.r-project.org*
R libraries

- PerformanceAnalytics
  for event studies

- MatchIt:
  for matching