Research Methodology
Session F
Module III, 2025-2026

Course Information

Instructor: LI Di

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Office Hour: Monday, Tuesday, and Friday 15:30 – 16:30, or by appointment

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Classes:

Lectures: Tuesday, 10:30-12:20
Venue: TBA

1. Course Description

1.1 Context

Course overview:

This course will provide students with a toolbox and working knowledge of cross-sectional and panel data empirical methods for use in *empirical* finance research. This will be accomplished by exposing the students to a variety of methods commonly employed in empirical research.

The study of this course will enable students to:

- Understand causality and identification of causal effects.
- Properly interpret the results of regular regression methods (e.g., OLS) and understand their pitfalls.
- Explore commonly used methods to addressing OLS pitfalls.
- Evaluate pros and cons of a variety of empirical methods.

This course DOES NOT cover:

- Theoretical/modelling research methodologies.
- Time series methods.
- Derivation of Econometrics/statistics properties of various estimators.
- Programming/coding details.

The objective of this course is to help students prepare their graduation thesis, especially the choice of the empirical method. The best way to get the thesis preparation started is to see how other scholars write a research paper, especially how they design the research method and use appropriate tools to implement it. Therefore, a paper presentation component will be included, in which students will be divided into five groups, each of which will be assigned a published article for presentation. The presentation should include:

- Motivation of the paper.
- Research question(s).
- Empirical method(s) used to answer the question(s).
- How to implement the method(s).

- How to interpret the results.
- Your assessment of the method(s), e.g., any issues/errors or room to improve?

Each presentation should not exceed 15 minutes (just like the actual thesis defense presentation). Following the presentation will be a mini session of discussion and Q&A. Students are expected to read all assigned articles (even those that are not assigned for their presentation) and get ready to participate in the discussion.

Students will be also asked to *individually* write a research proposal that sketches out an outline for a possible empirical paper they could write using tools discussed in the course. The research proposal should include, at the minimum:

- An interesting academic question.
- Motivation
- Literature review.
- Empirical method(s) used to properly answer that question (i.e., identification strategy).
- Necessary datasets to implement the research method(s).

Optionally, the proposal can include some preliminary work or results to justify/support the research design and choice of methodology.

Prerequisites:

This course presumes that students have taken master-level courses in accounting, economics, finance, and especially econometrics.

1.2 Textbooks and Reading Materials

Course materials, including reference notes and paper assignments will be distributed electronically.

Textbooks and References:

This course does not have required textbooks. However, students will find the following references helpful:

Mostly Harmless Econometrics: An Empiricist's Companion, by Angrist, Joshua D., and Jorn-Steffen Pischke. 2009. Princeton University Press, New Jersey. [Angrist-Pischke]

Econometric Analysis of Cross-Section and Panel Data, by Wooldridge, Jeffrey M. 2010. MIT Press, Massachusetts, Second Edition. [Wooldridge]

Econometric Analysis, by Greene, William H. 2011. Prentice Hall, N.J., Seventh Edition. [Greene]

Roberts, Michael R., and Toni M. Whited. 2011, "Endogeneity in Empirical Corporate Finance," University of Rochester, working paper, http://ssrn.com/abstract=1748604. [Roberts-Whited]

2. Learning Outcomes

2.1 Intended Learning Outcomes

Learning Goals	Objectives	Assessment (YES with details or NO)
1. Our graduates will be effective communicators.	1.1. Our students will produce quality business and research-oriented documents.	√
	1.2. Students are able to professionally present their ideas and also logically explain and defend their argument.	√
2. Our graduates will be skilled in team work and leadership.	2.1. Students will be able to lead and participate in group for projects, discussion, and presentation.	√
	2.2. Students will be able to apply leadership theories and related skills.	√
3. Our graduates will be trained in ethics.	3.1. In a case setting, students will use appropriate techniques to analyze	√

	business problems and identify the ethical aspects, provide a solution and defend it.	
	3.2. Our students will practice ethics in the duration of the program.	√
4. Our graduates will have a global perspective.	4.1. Students will have an international exposure.	√
5. Our graduates will be skilled in problem-solving and critical thinking.	5.1. Our students will have a good understanding of fundamental theories in their fields.	√
	5.2. Our students will be prepared to face problems in various business settings and find solutions.	√
	5.3. Our students will demonstrate competency in critical thinking.	√

2.3 Assessment/Grading Details

The course grade will be determined by the following scheme:

Research proposal	60%
Group presentation	30%
Class attendance & participation	10%
Total	100%

2.5 Academic Honesty and Plagiarism

It is important for a student's effort and credit to be recognized through class assessment. Credits earned for a student work due to efforts done by others are clearly unfair. Deliberate dishonesty is considered academic misconducts, which include plagiarism; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; or altering, forging, or misusing a University academic record; or fabricating or falsifying of data, research procedures, or data analysis.

All assessments are subject to academic misconduct check. Misconduct check may include reproducing the assessment, providing a copy to another member of faculty, and/or communicate a copy of this assignment to the PHBS Discipline Committee. A suspected plagiarized document/assignment submitted to a plagiarism checking service may be kept in its database for future reference purpose.

Where violation is suspected, penalties will be implemented. The penalties for academic misconduct may include: deduction of honour points, a mark of zero on the assessment, a fail grade for the whole course, and reference of the matter to the Peking University Registrar.

AI tools requirements：

Using AI tools to complete assignments or assessments without the approval of the course instructor will be regarded as an act of academic dishonesty. Depending on the severity of the situation, penalties will be implemented in accordance with the provisions of the Peking University Graduate Student Handbook.

For more information of plagiarism, please refer to *PHBS Student Handbook*.

3. Important Class Policies

3.1 Class Attendance

Class attendance is required. Each unauthorized absence will result in a deduction of two points

from the class attendance points, and the deduction continues from other parts of the course grade if the attendance points have been used up. Students with three or more unauthorized absences will be automatically dropped from the class. The application for absences must be documented (e.g., doctor's notes), and the approval is at the instructor's discretion. Students who miss a class are responsible themselves to make up the missed materials and to get in-class announcements from peer classmates.

It is important to be punctual, and students should arrive on time. Students must remain in the classroom throughout the class time. Early exits must be approved by the instructor. The instructor will randomly re-check attendance. An unauthorized early exit will be treated as an unauthorized absence.

3.2 Team Activities and Evaluation

Paper presentations will be done in groups. At the beginning of the course, students will be assigned into five teams (self-selection plus random grouping). Each team will have five students (or fewer). Every student must contribute to team works fairly and sufficiently. To prevent free riding, if a student feels that some peer teammates fail to contribute enough, he/she can submit a claim to the instructor. The instructor will investigate the claim and adjust the teamwork grades of the accused students based on the severity of the problem if the accusation is affirmed.

3.3 Class Participation and Cold-Call Policy

Students should actively participate in class activities such as Q&A, discussion, and presentation, etc. To motivate participation, the instructor will make cold calls randomly. A student who is called but fails to meaningfully participate will be penalized with a reduction of one point per occurrence from the grade. Volunteers are highly encouraged and will be awarded (up to five points for active class participation).

3.5 Others

Phones must be turned off or muted during the class. Students should avoid chats with peer classmates unless the instructor calls for a discussion.

4. How to Excel

This course is very intensive. A student who wishes to excel in the class should follow the tips provided below:

A. Review class materials from earlier prerequisite courses such as economics, accounting, finance, and statistics.

B. Preview class materials before arriving in the classroom.

C. Be concentrated and actively participate in activities (e.g., discussion and presentations) in class.

D. DO NOT FREERIDE others.

E. Ask questions whenever they arise. Take advantage of the office hours offered by the instructor. Do not wait and accumulate problems.

5. Topics, Teaching and Assessment Schedule

The following course outline is an approximate schedule of topics to be covered. Please note that it is subject to change.

Date	Topics	Notes
March 3, Tuesday	Course Introduction How to write an academic paper? Academic questions Structure of an academic paper Thesis defense	
March 10, Tuesday	Linear regression Conditional expectation function (CEF) Linear OLS Causality and identification Possible biases Potential solutions	Angrist-Pischke, Sections 3.1-3.2, 3.4.1 Wooldridge, Sections 4.1-4.4 Roberts-Whited, Section 2
March 17, Tuesday	Panel data Fixed effects Random effects Lagged *y* models	Angrist-Pischke, Sections 5.1, 5.3 Greene, Chapter 11 Wooldridge, Chapter 10
March 24, Tuesday	Instrumental variables 2SLS Weak instruments Multiple IVs and overidentification	Angrist-Pischke, Sections 4.1, 4.4, 4.6 Greene, Sections 8.2-8.5 Wooldridge, Chapter 5 Roberts-Whited, Section 3
March 31, Tuesday Apr. 7, Tuesday	Natural experiments and DID Treatment effects Difference-in-differences (DID) Multiple events and stacked DID Falsification tests Triple differences	Angrist-Pischke, Section 5.2 Roberts-Whited, Sections 2.2 and 4 Paper presentations: 1st and 2nd papers on Apr. 7

Apr. 14, Tuesday	Matching and selection Introduction to matching Implementation of matching Heckman selection model	Angrist-Pischke, Sections 3.3.1-3.3.3 Wooldridge, Section 21.3.5 Roberts-Whited, Section 6 Paper presentations: 3rd and 4th papers
Apr. 21, Tuesday	Regression discontinuity Basic idea of RD Sharp vs. fuzzy RD Internal and external validity	Angrist-Pischke, Chapter 6 Roberts-Whited, Section 5 Paper presentations: 5th and 6th papers
Apr. 28, Tuesday	Standard errors and miscellaneous topics Classical vs. robust standard errors Clustered standard errors	Angrist-Pischke, Chapter 8 and Sections 3.4.2, 4.6.3 Greene, Section 17.3 Paper presentation: 7th paper