

Advanced Applied Econometrics and International Trade

ECON5194

ECON5194 Advanced Applied Econometrics and
International Trade
Spring 2024
Class: Monday 678 (13:20-16:20)
Location: Room 503 of Social Science building

Ziho Park
Office Hours: By appointment
E-mail: zihoparkziho@gmail.com
(Please write [Advanced Econometrics Trade] as the header of
your email title so that I can easily spot your email)

Teaching Assistant
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1 Overview

This course applies key econometric methods, including machine learning, to recent empirical international trade literature. Any theoretical portion of the lecture will emphasize applied aspects rather than mathematically proving advanced theorems. Empirically, we will apply these methods to the important international trade literature, majorly focusing on, but not limited to, the impact of Chinese import competition on US economy, the impact of immigration on foreign direct investment, the impact of a trade agreement on the environment, the exporters' decision between direct and indirect exporting, and so on. All these topics will enhance your understanding of the economy.

2 Style of the Class

- The class will not emphasize mathematical models and proofs. Solving math will assume between 0% to 5% of your grades, and 0% of the homework. Intuitively understanding mathematically-written regression equations will be enough, for which little to no "solving" is involved. The emphasis of this class will be applications.
- You are permitted to use AI services like ChatGPT.

3 Grading

Requirement	% of Grade
1. Final exam	40%
2. Final presentation of a paper	40%
3. Homeworks	20%

4 Prerequisites

- Knowledge in ordinary least squares (OLS) will be useful. It's OK if you forgot much of it. It's OK if you did poorly on the econometrics class. I will review it.
- Since the focus of this class is application, you may take this class alongside with your first class in econometrics in the same semester.
- My undergraduate trade class "Trade Theory" is not a pre-requisite for this class. This class will be almost entirely about empirical methods and their applications rather than trade theory, policy instruments, and history of trade.
- Students at any level (undergraduates, masters students, and PhD students) are welcomed.

5 Health and Accommodations

- If you have physical disabilities, feel free to tell me how I can help.
- If you suspect that you might have infectious airborne diseases such as Covid-19, you should follow the advice of the public health authorities.

6 Topics Covered (tentative)

- Topic-wise, you will learn to tackle intriguing questions that will enhance your understanding of the economy. For example,
 1. How did NAFTA affect the US pollution emissions?
 2. How did the imports from China affect the US employment?
 3. Exporting can be directly done by the manufacturer or indirectly through intermediary wholesalers. How does trade cost affect the decision of direct exporting versus indirect exporting?
 4. How do financial frictions and multinational status affect the exporting decision of firms?
 5. How does immigration several decades ago affect the foreign direct investment (FDI) today?
- For all of these questions, you will learn to correctly approach them. These are important logical thinking skills regardless of whatever career you pursue in the future.
 1. How can we argue that it is causation not just correlation, and that the estimates are not biased?
 2. What techniques and arguments are used for this causal analysis?

7 Weekly schedule (tentative)

N	Date	Topic
1	Feb 19	Introduction
2	Feb 26	Ordinary least squares with trade applications
3	Mar 4	Fix effects
4	Mar 11	Shift-share design with trade applications
5	Mar 18	Instrument variables with applications to import competition
6	Mar 25	Regression discontinuity with trade applications
7	Apr 1	Difference in differences (DID)
8	Apr 8	Decomposition of total impact
9	Apr 15	Difference in differences with applications to import competition
10	Apr 22	Advanced topics in DID with trade applications
11	Apr 29	Reading papers that used 2SLS
12	May 6	Reading papers that used DID
13	May 13	Machine learning
14	May 20	Causal machine learning
15	May 27	Final exam
16	June 3	Final paper
