



# Course Code Applied Econometrics Module 2, 2023 Fall

## Course Information

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**Instructor: Wang Chunyang**

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Office Hour: Tuesdays and Fridays: 7:30-8:30 AM; 12:30-1:30PM

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**Classes:**

Lectures: Tuesdays and Fridays: 8:30-10:30

Venue: PHBS Building, Room TBD

## 1. Course Description

### 1.1 Context

Course overview: This course will teach applied econometrics skill, including OLS, panel data, instrument variable regressions and so on, and applications to Chinese real estate market, the largest share of GDP and its financial market. The class also teach the structure of writing an empirical paper. The course is about tools application, not math derivation. First part course is Woodbridge's book. (*relevant for the second part of the course*) Second part is model specification from the selected paper. Students will be asked to submit a term paper using these skills, based on the dataset instructor gives or public company data directly from WIND, not necessarily real estate. The empirical paper will be both consequential in terms of regression results and mechanical with clear mechanism (We mostly focus on model specification and validation of identification).

Prerequisites: Basic math such as linear algebra.

### 1.2 Textbooks and Reading Materials

Various lecture notes, mostly based on Woodbridge 5<sup>th</sup> edition,

Introductory Econometrics: A Modern Approach

Current research papers

## 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.  | Y, a term paper will be submitted        |
|  | 1.2. Students are able to professionally present their ideas and also logically explain and defend their argument.  | Y, class participation                   |
| 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.   | Y, discussion in class                   |
|  | 2.2. Students will be able to apply leadership theories and related skills.   | N  |
| 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. | Y, applied econometrics skills           |
|  | 3.2. Our students will practice ethics in the duration of the program.  | Y, class code strictly applied           |
| 4. Our graduates will have a global perspective.                           | 4.1. Students will have an international exposure.  | Y, international dataset                 |
| 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.   | Y, theoretical derivation                |
|  | 5.2. Our students will be prepared to face problems in various business settings and find solutions.  | Y, using data tools                      |
|  | 5.3. Our students will demonstrate competency in critical thinking.   | Y, explore mechanism for their findings. |

## **2.2 Course specific objectives**

## **2.3 Assessment/Grading Details**

## **2.4 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.

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

### 3. Topics and Teaching

We will follow Woodbridge's book closely for the first half of the course. We will focus on the applied econometrics and drop the non-practical ones.

In the second half of the course, we will focus on practical empirical strategies. Most of the empirical papers use these methods of DID, instrumental variable approach, and RDD. The applied side is different from theoretical ones. For example, random coefficient model is almost never adopted. There are some standard procedures but also some variant. For example, in DID, the popular way right now is to plot the year-by-year effects to clearly see the trend.

Reading paper is not necessary (\* will be covered by instructor; rest of the papers will be presented by students)

1. DID approach (more cases for flexible fixed effects – within group comparison)

\*Hodler, Roland, and Paul A. Raschky. "Regional favoritism." *The Quarterly Journal of Economics* 129, no. 2 (2014): 995-1033.

\*Fisman, R., Paravisini, D. and Vig, V., 2017. Cultural proximity and loan outcomes. *American Economic Review*, 107(2), pp.457-92.

\* Schoenherr, David. "Political connections and allocative distortions." *The Journal of Finance* 74, no. 2 (2019): 543-586.

\*Martinez-Bravo, Monica, Gerard Padró i Miquel, Nancy Qian, and Yang Yao. 2022. "The Rise and Fall of Local Elections in China." *American Economic Review*, 112 (9): 2921-58. (Traditional, simple DID, but lots of argument and tests in Robustness)

\*Nian, Yongwei, and Chunyang Wang. 2023. "Go with the Politician" *American Economic Journal: Economic Policy*, 15 (2): 467-96.

Cuñat, V., Cvijanović, D. and Yuan, K., 2018. Within-bank spillovers of real estate shocks. *Review of Corporate Finance Studies*, 7(2), pp.157-193.

Giroud, Xavier. "Proximity and investment: Evidence from plant-level data." *The Quarterly Journal of Economics* 128, no. 2 (2013): 861-915. (plus DID)

Campello, Murillo, and Mauricio Larrain. "Enlarging the contracting space: Collateral menus, access to credit, and economic activity." *The Review of Financial Studies* 29, no. 2 (2016): 349-383.

Jia, Ruixue, and Huihua Nie. "Decentralization, collusion, and coal mine deaths." *Review of Economics and Statistics* 99, no. 1 (2017): 105-118. (generalized DID)

Xu, Guo. "The costs of patronage: Evidence from the British empire." *American Economic Review* 108, no. 11 (2018): 3170-98.

Alder, Simon, Lin Shao, and Fabrizio Zilibotti. "Economic reforms and industrial policy in a panel of Chinese cities." *Journal of Economic Growth* 21, no. 4 (2016): 305-349.

## 2. Instrumental variable approach

### 2.1 Bartik instrument

\*Moretti, E., Steinwender, C. and Van Reenen, J., 2020. The Intellectual Spoils of War? Defense R&D, Productivity and International Spillovers. MIT working paper.

Imbert, C., Seror, M., Zhang, Y. and Zylberberg, Y., 2022. Migrants and firms: Evidence from China. *American Economic Review*, 112(6), pp.1885-1914.

### 2.2 Policy Shock and Interaction with Micro-Variables

\*Giannetti, Mariassunta, Guanmin Liao, and Xiaoyun Yu. "The brain gain of corporate boards: Evidence from China." *The Journal of Finance* 70, no. 4 (2015): 1629-1682.

\*Nicholas Bloom, Mirko Draca, John Van Reenen, Trade Induced Technical Change? The Impact of Chinese Imports on Innovation, IT and Productivity, *The Review of Economic Studies*, Volume 83, Issue 1, January 2016, Pages 87–117, <https://doi.org/10.1093/restud/rdv039>

Favara, Giovanni, and Jean Imbs. "Credit supply and the price of housing." *American Economic Review* 105, no. 3 (2015): 958-92.

Chaney, T., Sraer, D., & Thesmar, D. (2012). The collateral channel: How real estate shocks affect corporate investment. *American Economic Review*, 102(6), 2381-2409.

Wen, Jaya. "The political economy of state employment and instability in China." *Job market paper, Yale University* (2020). (triple interaction)

### 2.3 Using other x to keep the exogenous part

David, H., Dorn, D. and Hanson, G.H., 2013. The China syndrome: Local labor market effects of import competition in the United States. *American Economic Review*, 103(6), pp.2121-68.

## 2.4 Leniency Method

\*Wang, Chunyang, 2022. Subsidy and Growth: A New Empirical Approach. SSRN

Farre - Mensa, J., Hegde, D. and Ljungqvist, A., 2020. What is a patent worth? Evidence from the US patent "lottery". *The Journal of Finance*, 75(2), pp.639-682.

## 3 Regression Discontinuity Design

\*He, G., Wang, S. and Zhang, B., 2020. Watering down environmental regulation in China. *The Quarterly Journal of Economics*, 135(4), pp.2135-2185.

Akhtari, M., Moreira, D. and Trucco, L., 2022. Political turnover, bureaucratic turnover, and the quality of public services. *American Economic Review*, 112(2), pp.442-493.

Mian, Atif, Amir Sufi, and Francesco Trebbi. "Foreclosures, house prices, and the real economy." *The Journal of Finance* 70, no. 6 (2015): 2587-2634.

Lu, Y., Wang, J. and Zhu, L., 2019. Place-based policies, creation, and agglomeration economies: Evidence from China's economic zone program. *American Economic Journal: Economic Policy*, 11(3), pp.325-60.

Li, H., Li, J., Lu, Y. and Xie, H., 2020. Housing wealth and labor supply: Evidence from a regression discontinuity design. *Journal of Public Economics*, 183, p.104139.

Howell, Sabrina T. "Financing innovation: Evidence from R&D grants." *American Economic Review* 107, no. 4 (2017): 1136-64.

## 4. Comparable control group

\* Gathmann, C., Helm, I. and Schönberg, U., 2020. Spillover effects of mass layoffs. *Journal of the European Economic Association*, 18(1), pp.427-468.

Greenstone, M., Hornbeck, R. and Moretti, E., 2010. Identifying agglomeration spillovers: Evidence from winners and losers of large plant openings. *Journal of Political Economy*, 118(3), pp.536-598.

\*Currie, Janet, Lucas Davis, Michael Greenstone, and Reed Walker. "Environmental health risks and housing values: evidence from 1,600 toxic plant openings and closings." *American Economic Review* 105, no. 2 (2015): 678-709.

Melissa Dell, Benjamin A Olken, The Development Effects of the Extractive Colonial Economy: The Dutch Cultivation System in Java, *The Review of Economic Studies*, Volume 87, Issue 1, January 2020, Pages 164–203, <https://doi.org/10.1093/restud/rdz017> 5.

#### **4. Assessment Schedule**

Final Exam (40%) : Open book, but electronic devices are not allowed. Two parts. One part is similarly like homework questions from textbook. The other part is simple variant of the paper identification and methodology part, i.e., applied econometrics.

Homework (20%): Late homework is never accepted.

Presentation (15%): Group will be detailed after the number of students is finalized. The paper presentation will mainly (70%) devote time on the methodology and identification part, which this course is about. There should be one key sentence in the beginning of the slides summarizing the whole paper. Please note that the summary should not be “this paper studies how  $x$  leads to  $y$ ”, and should be “this paper finds higher  $x$  leads to higher (or lower)  $y$ ”.

Paper project (20%): Several dataset will be given to you (e.g., Land transaction). You need to submit a term paper based on these data or public company data from WIND. (10 days after final exam)

Class participation (5%)