

ECON 4144

Health and Education Economics
Department of Economics
Hong Kong University of Science and Technology

Summer 2023

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Department of Economics

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Lectures: Tuesday and Thursday 1:00pm – 3:50pm (LSK 1005)

Extra sessions (only if necessary) Tuesday 4:00pm – 4:50pm (LSK 1007)

Office hour: Thursday 4:00pm – 4:30pm (LSK 6007)

Teaching Assistant: TBA

TA Office hours: TBA

1. Course Overview

This course has two objectives: 1) To explore how Economics can be used to understand health and education, and 2) to provide tools and skills to evaluate program and policy in this field. It will start with a review of economic tools to evaluate impacts of programs and policies: micro-econometrics including OLS, IV approach, diff-in-diff estimation, and regression discontinuity design. Rest of the course will focus on recent empirical papers on health and education economics.

2. Recommended Prerequisite

Introductory Econometrics (ECON 3334) or similar course is recommended (not mandatory).

3. Student Learning Outcomes

1) To develop cognitive skill: Evaluate and compare differing social scientific perspectives on health and education issues around world (SILO 1, 3, 4, and 6).

2) To evaluate current health and education policies: Critically assess existing policies on health and education, and develop empirical and cost/benefit tools to evaluate their impacts. (SILO 1, 3, 4, and 6).

3) To apply evaluation skills to policies: Perform data analysis using Excel and Stata. (SILO 1, 3, 4, 6, and 7).

4) To create professional writing skills: Write reaction papers for an academic audience (SILO 1, 2, 3, 4, and 6).

5) To develop interpersonal skills: Present, discuss, evaluate and defend supplemental readings in front of a large group (SILO 1, 2, 3, 4, and 6).

4. Course Website

All course materials and announcements will be posted on CANVAS: <http://canvas.ust.hk>. You should visit CANVAS frequently to receive the latest announcement, obtain class material and verify your grading record.

5. Course Requirement and Grades

1) Reading and Reaction papers (10%) – 27 July

You will be expected to write reaction papers. (max two pages, single, font size 11) We need to choose two topics

The primary focus of the course will be on reading and working through articles published or suitable for major economics journals. The syllabus lists papers in each session.

The content of these notes is somewhat open: you can 1) summarize in a paragraph the core contention of the paper, 2) critique key aspects of the results, and 3) discuss strengths or weaknesses you saw in the paper, gaps you identified, or ideas/extensions that occurred to you during reading. You should submit the paper before class starts and it cannot be handed in late. For all required primary literature, please come to class prepared to discuss your answers to the following questions.

**** Guide for Critical Reading:** As you read primary literature for this course, it will be helpful to address the following questions to understand the purpose, design, conclusions and limitations of studies.

1. What type of study design was used?
2. What were the investigators' study aims and/or hypotheses?
3. What was the exposure of interest and how was it measured?

4. What was the outcome of interest and how was it measured?
5. What methods were used to measure the association of interest?
6. Were there any potential confounders in this study? If so, what were they, and how did the investigators adjust for these in the study?
7. Were there any biases in this study? If so, what were they?
8. What were the conclusions from this study? Are they valid?
9. What were the limitations of this study?
10. Based on these findings, what study might you do next? (This can be a study to address a new question, or a study to address the same question in a better way.)
11. What are the potential public health policy implications of these findings?

2) Econometrics Homework (10%: 5% each) – Due on 5th July

There will be econometrics homeworks.

3) Journal Replication Practices (10%) – Due on 10th July

You will replicate tables and figures from two research papers using STATA. A guideline and data will be posted at course webpage.

4) Journal Presentation (10%: 5% each)

You will be assigned for in class journal presentation. You may select articles in the reading list. Presentation will be around 30 min including Q&A and discussion. Presentation slides must be no longer than 20. I encourage you to drop by my office at office hour to ask questions on assigned paper for the presentation.

5) Exam 1 (15%) – 6 July (class time)

The exam 1 will ask about empirical estimation strategy (econometrics).

6) Exam 2 (30%) – 3 Aug (class time)

The exam 2 is cumulative. It covers entire course including econometrics part.

7) Research Proposal (10%) – 7th Aug

Your group (max 3 people) will write about 10 page research proposal displaying original ideas (Font size 11, Line spacing: 1.5). It will contain 1) description of public policy, 2) literature review, 3) identification strategy, 4) data, and 5) outcome variables. Research questions have to be directly linked to the topics we will cover in the course. You have to submit research proposal and presentation slides to CANVAS. Late proposal will not be accepted. Proposals will be presented in the class, and you could get some feedback.

At the end of the proposal, please submit each person's contribution to the project (i.e. Student A: 40%, Student B: 30%, and Student C: 30%), and this will be reflected in the final score. Final individual scores will also be calculated in the following way: your group score * {100 + (your contribution rate – average contribution rate)} / 100. For example, your group score is 80, you have 3 people in your group, and your contribution is 40%, then you will get 85.35 (=80 * (100+40-33.3)/100). Deadline is 5 Dec.

8) Class participation (5%)

I will randomly check a class attendance throughout the semester. If you attend, you will get one credit. I will also give credit for your class participation.

Schedule

(*subject to change. Check your email and course webpage for updates)

Econometrics Review (20, 22, 27, 29 June and 4 July)

Causality and Randomized Experiment

OLS

Multivariate Regression

Omitted Variable Bias

Interactions and log

Critical Assessment of Empirical Studies

Assessing Social Experiments

Difference in Differences

Fixed Effect Model

Instrumental Variables

Regression Discontinuity Design

Exam 1 (July 6 – Class time)

Journal Presentation (11, 13, 20, 25, 27 July) * No class on 18th July.

Student Research Idea Presentation (1 Aug)

Exam 2 (3 Aug – Class time)

1) Health Economics (focusing on fetal origin hypothesis)

Reading material: 10 Months in Utero Determine the Life Course

Almond, Douglas. "Is the 1918 influenza pandemic over? Long-term effects of in utero influenza exposure in the post-1940 US population." *Journal of political Economy* 114.4 (2006): 672-712.

Almond, Douglas, Lena Edlund, and Mårten Palme. "Chernobyl's subclinical legacy: prenatal exposure to radioactive fallout and school outcomes in Sweden." *The Quarterly journal of economics* 124.4 (2009): 1729-1772.

Almond, Douglas, and Bhashkar Mazumder. "Health capital and the prenatal environment: the effect of Ramadan observance during pregnancy." *American Economic Journal: Applied Economics* 3.4 (2011): 56-85.

Barker, D.J.P. 1995. "Fetal origin of coronary heart disease." *British Medical Journal* 311 (6998):171-174

Isen, Adam, Maya Rossin-Slater, and W. Reed Walker. "Every breath you take—every dollar you'll make: The long-term consequences of the clean air act of 1970." *Journal of Political Economy* 125.3 (2017): 848-902.

Lee, Chulhee. "In utero exposure to the Korean War and its long-term effects on socioeconomic and health outcomes." *Journal of health economics* 33 (2014): 76-93.

Nilsson, J. Peter. "Alcohol availability, prenatal conditions, and long-term economic outcomes." *Journal of Political Economy* 125.4 (2017): 1149-1207.

Persson, Petra, and Maya Rossin-Slater. "Family ruptures, stress, and the mental health of the next generation." *American economic review* 108.4-5 (2018): 1214-52.

2) Education Economics (focus on Early Childhood Education Policy)

Reading material: Reason Why the Government Should Invest in the Well-Beings of Children

Adhvaryu, Achyuta, James Fenske, and Anant Nyshadham. "Early life circumstance and adult mental health." *Journal of Political Economy* 127.4 (2019): 1516-1549.

Bleakley, Hoyt. "Malaria eradication in the Americas: A retrospective analysis of childhood exposure." *American Economic Journal: Applied Economics* 2.2 (2010): 1-45.

Carneiro, Pedro, and Rita Ginja. "Long-term impacts of compensatory preschool on health and behavior: Evidence from Head Start." *American Economic Journal: Economic Policy* 6.4 (2014): 135-73.

Currie, Janet, and Cathy Spatz Widom. "Long-term consequences of child abuse and neglect on adult economic well-being." *Child maltreatment* 15.2 (2010): 111-120.

Garces, Eliana, Duncan Thomas, and Janet Currie. "Longer-term effects of Head Start." *American economic review* 92.4 (2002): 999-1012.

García, Jorge Luis, et al. "Quantifying the life-cycle benefits of an influential early-childhood program." *Journal of Political Economy* 128.7 (2020): 2502-2541.

Garces, Eliana, Duncan Thomas, and Janet Currie. "Longer-term effects of Head Start." *American economic review* 92.4 (2002): 999-1012.

Grönqvist, Hans, J. Peter Nilsson, and Per-Olof Robling. "Understanding How Low Levels of Early Lead Exposure Affect Children's Life Trajectories." *Journal of Political Economy* 128.9 (2020): 3376-3433.

Heckman, James, Rodrigo Pinto, and Peter Savelyev. "Understanding the mechanisms through which an influential early childhood program boosted adult outcomes." *American Economic Review* 103.6 (2013): 2052-86.

Heckman, James J., Jora Stixrud, and Sergio Urzua. "The effects of cognitive and noncognitive abilities on labor market outcomes and social behavior." *Journal of Labor economics* 24.3 (2006): 411-482.

Heckman, James, et al. "Analyzing social experiments as implemented: A reexamination of the evidence from the HighScope Perry Preschool Program." *Quantitative economics* 1.1 (2010): 1-46.

Løken, Katrine V., Magne Mogstad, and Matthew Wiswall. "What linear estimators miss: The effects of family income on child outcomes." *American Economic Journal: Applied Economics* 4.2 (2012): 1-35.

Havnes, T., and M.Mogstad. 2011. "No child left behind: Subsidized child care and childrens long-run outcomes." *AEJ: Economic Policy* 3 (2):97-129

Conti, Gabriella, James J. Heckman, and Rodrigo Pinto. "The effects of two influential early childhood interventions on health and healthy behaviour." *The Economic Journal* 126.596 (2016): F28-F65.

Aizer, Anna, et al. "The long-run impact of cash transfers to poor families." *American Economic Review* 106.4 (2016): 935-71.

3) Extension: Economics on Family

Reading material: Working Mothers and the Future of Childcare

Bettinger, Eric, Torbjørn Hægeland, and Mari Rege. "Home with mom: the effects of stay-at-home parents on children's long-run educational outcomes." *Journal of Labor Economics* 32.3 (2014): 443-467.

Carneiro, Pedro, Katrine V. Løken, and Kjell G. Salvanes. "A flying start? Maternity leave benefits and long-run outcomes of children." *Journal of Political Economy* 123.2 (2015): 365-412.

Danzer, Natalia, and Victor Lavy. "Paid parental leave and children's schooling outcomes." *The Economic Journal* 128.608 (2018): 81-117.

Havnes, T., and M. Mogstad. 2011. "No child left behind: Subsidized child care and children's long-run outcomes." *AEJ: Economic Policy* 3 (2):97-129

Gathmann, Christina, and Björn Sass. "Taxing childcare: Effects on childcare choices, family labor supply, and children." *Journal of Labor Economics* 36.3 (2018): 665-709.

Ginja, Rita, Jenny Jans, and Arizo Karimi. "Parental leave benefits, household labor supply, and children's long-run outcomes." *Journal of Labor Economics* 38.1 (2020): 261-320.

Persson, Petra, and Maya Rossin-Slater. When dad can stay home: fathers' workplace flexibility and maternal health. No. w25902. National Bureau of Economic Research, 2019.

Han, Y., Park, S., Kim, J., & Hoddinott, J. (2022). Engaging fathers through nutrition behavior communication change does not increase child dietary diversity in a cluster randomized control trial in rural Ethiopia. *The Journal of Nutrition*.

4) Health and Education Policy Failure

Reading material: When Good Intentions Go Awry-Failed Policies to Improve the Well-beings of People

Kim, Hyuncheol Bryant, and Sun-mi Lee. "When public health intervention is not successful: Cost sharing, crowd-out, and selection in Korea's National Cancer Screening Program." *Journal of health economics* 53 (2017): 100-116.

Berry, James, Hyuncheol Kim, and Hyuk Son. "When student incentives don't work: Evidence from a field experiment in Malawi."

Hoff, Karla and Priyanka Pandey (2006). "Discrimination, Social Identity, and Durable Inequalities." *American Economic Review* 96(2), 206–211.

Others

Academic Integrity Statement

Absolute integrity is expected of every HKUST student in all academic undertakings. Integrity entails a firm adherence to a set of values, and the values most essential to an academic community are grounded on the concept of honesty with respect to the intellectual efforts of oneself and others. Academic integrity is expected not only in formal coursework situations, but in all University relationships and interactions connected to the educational process, including the use of University resources. A HKUST student's submission of work for academic credit indicates that the work is the student's own. All outside assistance should be acknowledged, and the student's academic position truthfully reported at all times. In addition, HKUST students have a right to expect academic integrity from each of their peers. For further information regarding the HKUST Code of Academic Integrity (<http://ugadmin.ust.hk/integrity/regulations-1.html>) Unless you have the express permission of the instructor, you should not buy or sell course materials. Such unauthorized behavior constitutes academic dishonesty.

TurnItIn.com Acknowledgment

Students agree that by taking this course that all papers submitted for the course may be subject to submission for textual similarity review to Turnitin.com for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin.com service is subject to the Usage Policy posted on the Turnitin.com site.

Disabilities

If you have a disability that requires accommodation, especially additional time for exams, please let me know as early as possible in the semester so that I can make arrangements. If you have any questions regarding this, please do not hesitate to contact me or speak to me directly.