

ACCT930: Empirical Design in Accounting Research Spring 2022

University of Pennsylvania
The Wharton School
Department of Accounting

Instructors: Prof. Daniel Taylor

Location: Class — Friday 12p-3p, SHDH 217
Office hours — by appointment, SHDH 1312
Zoom Meeting ID: 952 8785 9336 Pass: acct270

Course objectives: This course focuses on holistic research design. The objective of the course is for students to learn how to design a set of rigorous empirical tests for a given research question and set of hypotheses. The first part of the course reviews a variety of econometric methods (difference-in-differences, matching, regression discontinuity) and research design choices (e.g., measurement error, fixed effects, levels v. changes). By the end of the first part of the course, students are expected to know the key concepts underlying each method and understand the econometric consequences of various research design choices. The second part of the course is an application to existing research topics within the accounting literature. In the second part of the course, students will be given papers and tasked with critiquing and extending the research design.

By the end of class, students should have a grasp on the tools used in modern empirical analysis, be able to critically evaluate a study's research design, and be able to develop a multi-faceted set of tests for a given research question. The course is intended for students with exposure to the academic accounting literature with a reasonable grasp of statistical inference and regression. Students should have already taken the Empirical Accounting Seminar (or be concurrently enrolled) and knowledge of statistics and econometrics equivalent to advanced undergraduate courses is presumed.

Textbook: Any conversation on empirical design is heavily shaped both by one's knowledge of econometric methods, and by one's philosophical approach to empirical work. The course and associated discussion will rely heavily on the material in the following sources, each of which I consider a "must read" for empirical researchers in accounting.

J. Stock; M. Watson; *Introduction to Econometrics*. 1st edition (2003), ISBN 0-201-71595-3.

J. Angrist; J. Pischke; 2009. *Mostly Harmless Econometrics: An Empiricist's Companion*

M. Roberts; T. Whited; [Endogeneity in Empirical Corporate Finance](#). *Handbook of the Economics of Finance*.

V. Atanasov; B. Black; 2016. [Shock-based Causal Inference in Corporate Finance and Accounting Research](#). *Critical Finance Review*.

Todd Gormley's notes also offer an excellent synopsis of the technical details of the methods that we will see <http://www.gormley.info/phd-notes.html>. If you have not already seen some of

the more advanced statistical methods (e.g., regression discontinuity, IV, difference-in-differences), I suggest reviewing his slides and following up with Angrist and Pischke or Roberts and Whited.

Of course, to do meaningful empirical work, methods are not sufficient. One also needs theory and an appropriate empirical setting. Testing *solid theory* in an *appropriate setting* with a *simple method*, beats *no theory* in an *inappropriate setting*, with an *advanced method*. Theory and setting are two main ingredients to empirical work that you will not see discussed in econometric texts that deal with theoretical properties of estimators. These topics are often field specific, and shape how one approaches empirical work. I have written up my philosophical approach to empirical work that discusses these issues within the context of accounting research:

C. Armstrong; J. Kepler, D. Samuels; D. Taylor. 2021. [Causality Redux: The Evolution of Empirical Methods in Accounting Research](#). *Journal of Accounting and Economics*

You can replicate 99% of my current thinking by reading and understanding that survey paper. It was compiled from my lecture notes for this class.

Grading: Timely and accurate completion of assignments is REQUIRED for a passing grade. Grades are a function of class participation and weekly assignments (35%), mid-term project (30%), and capstone project (35%). Failure to submit assignments on time and/or failure to participate will be reflected heavily in the final grade.

Participation: As class will largely consists of a discussion of the required reading, the success or failure of this class will largely be determined by the extent of student participation.

Weekly Assignments: **Weekly assignments are due 9am the day of class, unless otherwise specified. Assignments will be discussed in class.** These assignments may include answering a few brief questions pertaining to the assigned topic or reading, and/or critiquing/extending the research design of a published paper. Student will be expected to present their work to the class.

Mid-Term: The mid-term for the class will be a take-home multi-part empirical exercise. Assignment and requisite data/code will be provided the first week of class. **Students may work in pairs.**

Capstone: For the final project, students will be provided a menu of “exogenous shocks” asked to review the literature on the particular shock, and attempt to replicate a few key inferences from prior work. **Teamwork is not allowed.**

Schedule

Below are some topics and papers that I would like us to discuss. Please complete the “Week 1” assignment on Canvas prior to the first class. There is a lot to read. I encourage you to focus exclusively on the indicated sections, and focus on identifying each paper’s research question; research setting; the method(s) it applies to answer that question; and the assumptions of the method(s) that were applied. Given our focus on design/methodology, all other details (i.e., motivation, literature review, specific findings, etc) are secondary. Conversations require participation by all involved.

—PART I: REVIEW OF METHODS—

1/14 (Week 1) Review of OLS and Measurement Error

Review of OLS

C. Armstrong; J. Kepler, D. Samuels; D. Taylor. 2021. [Causality Redux: The Evolution of Empirical Methods in Accounting Research](#). *Journal of Accounting and Economics*.

Sections 1 + 2 + 3.1

M. Roberts; T. Whited; [Endogeneity in Empirical Corporate Finance](#). *Handbook of the Economics of Finance*. **Sections 2.1**

Optional OLS Background

Stock and Watson Ch4, 5.2-5.10, Ch7, Ch15

[Week 1 Discussion Questions Due at 9am](#)

1/21 (Week 2) Violations of OLS Independence Assumptions

I. Gow; G. Ormazabal; D. Taylor; 2010. [Correcting for Cross-Sectional and Time-Series Dependence in Accounting Research](#). *The Accounting Review*.

M. Petersen; 2009. [Estimating Standard Errors in Finance Panel Data Sets: Comparing Approaches](#). *Review of Financial Studies*.

Optional Background

C. Cameron; J. Gelbach; D. Miller; 2008. Bootstrap-based improvement for inference with clustered errors. *Review of Economics and Statistics*.

C. Cameron; D. Miller; 2015. A Practitioner’s Guide to Cluster-Robust Inferences. *Journal of Human Resources*.

1/28 (Week 3) Instrumental Variables and Matching: Separating Substance from HypeInstrumental Variables

- M. Roberts; T. Whited; [Endogeneity in Empirical Corporate Finance](#). *Handbook of the Economics of Finance*. **Section 3.**
- D. Larcker; T. Rusticus; 2010. [On the Use of Instrumental Variables in Accounting Research](#). *Journal of Accounting and Economics*. **SKIM**
- C. Armstrong; J. Core; W. Guay; 2013. [Do Independent Directors Cause Improvement in Firm Transparency?](#) *Journal of Financial Economics*. **SKIM**

Matching

- J. Shipman; Q. Swanquist; R. Whited; 2017. [Propensity Score Matching in Accounting Research](#). *The Accounting Review*.
- M. Roberts; T. Whited; [Endogeneity in Empirical Corporate Finance](#). *Handbook of the Economics of Finance*. **Section 6.**
- C. Armstrong; A. Jagolinzer; D. Larcker; 2010. [Chief Executive Officer Equity Incentives and Accounting Irregularities](#). *Journal of Accounting Research*. **SKIM**
- A. Lawrence; M. Minutti-Meza; P. Zhang; 2011. [Can big 4 versus Non-Big 4 Difference in Audit-quality Proxies Be Attributed to Client Characteristics](#). *The Accounting Review*. **SKIM**
- J. McMullin; B. Schonberger; 2017. [Entropy-balanced Discretionary Accruals](#). *Review of Accounting Studies*. **SKIM**

Optional Background

Stock and Watson Ch10 / Angrist and Pischke Ch 4

2/4 (Week 4) Difference-in-Differences Designs: Separating Substance from Hype

- C. Armstrong; J. Kepler, D. Samuels; D. Taylor. 2021. [Causality Redux: The Evolution of Empirical Methods in Accounting Research](#). *Journal of Accounting and Economics*. **Section 3.2 + 4.2**
- M. Roberts; T. Whited; [Endogeneity in Empirical Corporate Finance](#). *Handbook of the Economics of Finance*. **Section 4.**
- V. Atanasov; B. Black; 2016. [Shock-based Causal Inference in Corporate Finance and Accounting Research](#). *Critical Finance Review*. **Sections 4 & 5.**
- W. Guay; D. Samuels; D. Taylor; 2016. [Guiding through the fog: Financial statement complexity and voluntary disclosure](#). *Journal of Accounting and Economics*. **Section 3.3**
- D. Samuels; D. Taylor; R. Verrecchia; 2019. [The Economics of Public Scrutiny and Financial Misreporting](#). *Journal of Accounting and Economics*. **Section 5.5**
- A. Jagolinzer; D. Larcker; G. Ormazabal; D. Taylor, 2020. [Political Connections and the Informativeness of Insider Trades](#). *Journal of Finance*. **SKIM**

- D. Larcker; G. Ormazabal; D. Taylor, 2010. [The Market Reaction to Corporate Governance Regulation](#). *Journal of Financial Economics*. **SKIM**
- M. Barth; W. Landsman; D. Taylor, 2017. [The JOBS Act and Information Uncertainty in IPO Firms](#). *The Accounting Review*. **SKIM**

Optional Background

Stock and Watson 5.1, 5.11-5.13, Ch 8, 11.3 / Angrist and Pischke Ch 5.

2/11 (Week 5) Regression Discontinuity: Uses and Abuses

- D. Lee; T. Lemieux; 2010. [Regression Discontinuity Designs in Economics](#). *Journal of Economic Literature*. **ALL**
- M. Roberts; T. Whited; [Endogeneity in Empirical Corporate Finance](#). *Handbook of the Economics of Finance*. **Section 5**.
- A. Boone; J. White; 2015. [The Effect of Institutional Ownership on Firm Transparency and Information Production](#). *Journal of Financial Economics*. **SKIM**
- C. Armstrong; S. Huang; D. Taylor; 2014. Institutional ownership and reporting quality. Distinguishing Selection from Monitoring. *working paper*. **SKIM [on canvas]**
- V. Cunat; M. Gine; M. Guadalupe; 2012. [The Vote is Cast: The Effect of Corporate Governance on Firm Value](#). *Journal of Finance*. **SKIM**
- C. Flammer; 2015. [Does CSR Lead to Superior Financial Performance? A Regression Discontinuity Approach](#). *Management Science*. **SKIM**
- R. Vashishtha. 2014. [The role of bank monitoring in borrowers' discretionary disclosure: Evidence from covenant violations](#). *Journal of Accounting and Economics* **SKIM**
- G. Nini; D. Smith; A. Sufi; 2012. [Creditor Control Rights, Corporate Governance, and Firm Value](#). *Review of Financial Studies* **SKIM**
- P. Iliev. 2010. [The Effect of SOX Section 404: Costs, Earnings Quality, and Stock Prices](#). *Journal of Finance*. **SKIM**

Optional Background

Angrist and Pischke 3.3, Ch6

——**PART II: APPLICATION OF METHODS**——

2/18 (Week 6) Thinking Carefully About Exogenous Shocks II: What v. Why

- B. Kelly; A. Ljungqvist; 2012. [Testing Asymmetric-Information Asset Pricing Models](#). *Review of Financial Studies*.

Background:

- F. Derrien; A. Kecskes; 2013. The real effects of financial shocks: Evidence from exogenous changes in analyst coverage. *Journal of Finance*. Intro only
- R. Irani; D. Oesch; 2013. Monitoring and corporate disclosure: Evidence from a natural experiment. *Journal of Financial Economics*. Intro only
- K. Balakrishnan; M. Billings; B. Kelly; A. Ljungqvist; 2014. Shaping liquidity: On the causal effects of voluntary disclosure. *Journal of Finance*. Intro only

2/25 (Week 7) Thinking Carefully About Exogenous Shocks I: Theoretical Assumptions

- C. Armstrong; J. Kepler, D. Samuels; D. Taylor. 2021. [Causality Redux: The Evolution of Empirical Methods in Accounting Research](#). *Journal of Accounting and Economics*.
Section 3.3
- D. Acemoglu; S. Johnson; J. Robinson; 2001. [The Colonial Origins of Comparative Development: An Empirical Investigation](#). *American Economic Review*. **SKIM**
- T. Andersen; J. Bentzen, C. Dalgaard; P. Selaya; 2012. [Lightning, IT Diffusion, and Economic Growth Across US States](#). *Review of Economic Studies*. **SKIM**
- E. Miguel; S. Satyanath; E. Sergenti; 2004. [Economic shocks and civil conflict an instrument variables approach](#). *Journal of Political Economy*. **SKIM**
- M. Bruckner; A. Ciccone; 2011. [Rain and the Democratic Window of Opportunity](#). *Econometrica*. **SKIM**
- M. Kearney; P. Levine; 2015. [Media Influences on Social Outcomes: The Impact of MTV's 16 and Pregnant on Teen Childbearing](#). *American Economic Review*. **SKIM**

**3/4 (Week 8): Thinking Carefully About Exogenous Shocks III:
Identification is About More than Just a Regression Specification**

- C. Armstrong; J. Kepler, D. Samuels; D. Taylor. 2021. [Causality Redux: The Evolution of Empirical Methods in Accounting Research](#). *Journal of Accounting and Economics*.
Section 4
- J. Jennings, J. Kim, J. Lee, and D. Taylor. 2021. [Measurement Error and Bias in Causal Models in Accounting Research](#). working paper.

Student presentation of papers

- R. Novy-Marx, 2014. [Predicting anomaly performance with politics, the weather, global warming, sunspots, and the stars](#). *Journal of Financial Economics*
- Bourveau, T., Y. Lou, and R. Wang. 2018. [Shareholder Litigation and Corporate Disclosure: Evidence from Derivative Lawsuits](#). *Journal of Accounting Research*
- D. Donelson, L. Kettell, J. McInnis, S. Toynbee. 2021. [The Need to Validate Exogenous Shocks](#). *Journal of Accounting and Economics*

- V. Fang; A. Huang; J. Karpoff; 2015. [Short Selling and Earnings Management: A Controlled Experiment](#). *Journal of Finance*
- B. Black; H. Desai; K. Litvak; W. Yoo; J. Yu; 2019. [The Reg SHO Reanalysis Project](#) working paper.
- V. Fang; A. Huang; J. Karpoff; 2019. [Reply to The Reg SHO Reanalysis Project](#). working paper.

3/11 NO CLASS (Spring Break). Midterm assignment due 3/14

3/18 (Week 9) Review midterm assignment & Vocational Issues

Relaxed Discussion of Vocational Issues, Bring Questions

Robert Bloomfield: [How to be a Good \[Accounting\] Professor](#) (Chapter 1-4)

Michael Weisbach: [The Economists' Craft](#) (Preface, Part 1, Part 3, Part 4)

3/25 (Week 10) Vocational Skills—Reviewing

Alex Edmans: [Purpose of a Finance Professor](#)

Michael Weisbach: [The Economists' Craft](#) (Chapter 11)

Robert Bloomfield: [How to be a Good \[Accounting\] Professor](#) (Chapter 6)

Berk, Harvey, Hirshleifer: [Preparing a Referee Report](#)

Berk, Harvey, Hirshleifer: [How to Write an Effective Referee Report](#)

[AKST paper](#): AKST: RAST 2 reports, TAR Rnd1 2 reports, JAR 1 report

[LT paper](#): LT: JAE report, TAR reports

4/1 (Week 11) Matching Research Question and Research Design

D. deVaus; 2001. *Research Design in Social Research* **Chapters 1-2 (on canvas)**

C. Armstrong; J. Kepler, D. Samuels; D. Taylor. 2021. [Causality Redux: The Evolution of Empirical Methods in Accounting Research](#). *Journal of Accounting and Economics*.

Section 5

4/8 (Week 12) Writing

Robert Bloomfield: [How to be a Good \[Accounting\] Professor](#) (Chapter 4)

Michael Weisbach: [The Economists' Craft](#) (Part 2)

J. Shapiro: “Four Steps to an Applied Micro Paper” (on canvas)

4/15 (Week 13): Credibility Revolution? We Aren't Doing Classical Statistics

- J. Angrist, J-S Pischke, 2010. The Credibility Revolution in Empirical Economics. [Journal of Economic Perspectives](#). **Introduction.**
- J. Heckman; B. Singer; 2017. [Abducting Economics](#). *American Economic Review*.

Student presentation of papers

- C. Armstrong; J. Kepler, D. Samuels; D. Taylor. 2021. [Causality Redux: The Evolution of Empirical Methods in Accounting Research](#). *Journal of Accounting and Economics*.
Section 3.3
- J. Simmons; L. Nelson; U. Simonsohn; 2011. [False-Positive Psychology: Undisclosed Flexibility in Data Collection and Analysis Allows Presenting Anything as Significant](#). *Psychological Science*.
- Brodeur, A., Le, M., Sangnier, M. and Zylberberg, Y., 2016. [Star Wars: The empirics strike back](#). *American Economic Journal: Applied Economics*, 8.1: 1-32.
- Brodeur, A., Cook, N. and Heyes, A., 2020. [Methods Matter: P-Hacking and Publication Bias in Causal Analysis in Economics](#). *American Economic Review*, 110.11: 3634-3660.
- Gelman, A. and Loken, E., 2014. [The statistical crisis in science](#). *American scientist*, 102.6: 460-466.
- Gelman, A. and Loken, E., 2017. [Measurement error and the replication crisis](#). *Science*, 355/6325: 584-585

4/22 (Week 14) Capstone project due. Student presentations of capstone project