PhD Course on Archival Data Analysis and Data Management

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Course objective:
The goal of this course is to provide PhD students focused on archival research in financial accounting, management accounting, and auditing with a better understanding of how to apply key data management processes and econometric techniques in accounting-research settings. The course should be of interest to any PhD student planning to conduct quantitative methods, whether that research is archival financial accounting, archival management accounting, experimental, or survey research.[1] Besides the "applied-applied" econometrics nature of the course, time will be allocated to discuss best practices in data management, code and data storage, and the importance of transparency in research for the purpose of replicability.

Motivation:
One of the primary reasons to organize a course like this is because, even after successfully passing more general and theoretically-focused econometrics courses, many junior academics often still lack the training needed to apply the concepts and general applications to more specific settings in accounting research. For example, although many well-trained students are familiar with the theoretical notion of endogeneity, and they know which methods are available, this knowledge is often not sufficient. This is because a textbook application of an econometric method works effectively only when the researcher truly understands the underlying problem, and when s/he truly understands the structure and nature of the data. Understanding the nature of the data is something that requires time, practice, and exposure to different data structures common in accounting. Although exposing students to all of these data structures in one course is infeasible, the goal is to use common accounting research settings to help them better understand the nature of textbook econometric methods in accounting research, and to better understand how to apply these methods in accounting research. Several example datasets will be provided and used in Stata.[2] In addition, students will be made more familiar with the use of simulations in Stata, which can help to better visualize the common econometric problems and solutions.

Course setup:
This intensive 5-day course will be interactive and discussion-based. The main problems and methods will first be introduced through presentations by the course lecturer. Following each presentation, participants will be required to present selected papers that apply the methods in different settings. In addition, each of the topics and methods will be discussed using exercises in Stata using actual samples from accounting research studies and simulation analyses. Participants are expected to hand in solutions to selected homework exercises at the start of each day in the course.

Entry requirements:
There are no formal entry requirements for this course. However, participants are strongly recommended to have passed at least one basic econometrics course, have had basic experience with Stata and do-files, and have an understanding of the different types of archival data commonly encountered in quantitative accounting research. Without this background knowledge, the learning experience will most likely be less effective.

[1] See Bloomfield, Nelson, and Soltes [2016]
[2] Participants are expected to have a recent version of Stata installed on their laptops when participating in the course.

Topics to be covered:

- Observational (archival) versus experimental studies and the experimental ideal
- Selection bias and endogeneity
- Omitted variables bias and control variables
- Control variables and non-linear confounding effects
- Outliers and influential observations
- Scaling and scale effects
- Difference-in-difference analyses
- Fixed effects
- Clustered standard errors
- Propensity-score and other matching methods
- Doubly-robust regression
- Post-matching and -regression tests of confounding effects
- Instrumental variables
- Regression discontinuity design
- Data management, code and data storage, replicability, and research transparency

Preliminary reading list:

Angrist, J. D., and J.-S. Pischke. "*Mostly Harmless Econometrics: An Empiricist's Companion*" (2009).

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Chenhall, R. H., and F. Moers. "The Issue of Endogeneity within Theory-Based, Quantitative Management Accounting Research". *European Accounting Review* 16 (2007): 173–196.

Christensen, H. B., L. Hail, and C. Leuz. "Mandatory IFRS Reporting and Changes in Enforcement". *Journal of Accounting and Economics* 56 (2013): 147–177.

Core, J. E. "Discussion of Chief Executive Officer Equity Incentives and Accounting Irregularities". *Journal of Accounting Research* 48 (2010): 273–287.

DeFond, M., D. H. Erkens, and J. Zhang. "Do Client Characteristics Really Drive the Big N Audit Quality Effect? New Evidence from Propensity Score Matching". *Management Science* 63 (2016): 3628–3649.

Donelson, D. C., J. M. Mcinnis, and R. D. Mergenthaler. "Discontinuities and Earnings Management: Evidence from Restatements Related to Securities Litigation". *Contemporary Accounting Research* 30 (2013): 242–268.

Easton, P. D. "Discussion of Revalued Financial, Tangible, and Intangible Assets: Association with Share Prices and Non-Market-Based Value Estimates". *Journal of Accounting Research* 36 (1998): 235–247.

Easton, P. D., and G. A. Sommers. "Scale and the Scale Effect in Market-based Accounting Research". *Journal of Business Finance & Accounting* 30 (2003): 25–56.

Gassen, J. "Causal Inference in Empirical Archival Financial Accounting Research". *Accounting, Organizations and Society* 39 (2014): 535–544.

Gassen, J., H. A. Skaife, and D. Veenman. "Illiquidity and the Measurement of Stock Price Synchronicity". *Contemporary Accounting Research, forthcoming* (2019).

Goncharov, I., and D. Veenman. "Stale and Scale Effects in Markets-Based Accounting Research: Evidence from the Valuation of Dividends". *European Accounting Review* 23 (2014): 25–55.

Gormley, T. A., and D. A. Matsa. "Common Errors: How to (and Not to) Control for Unobserved Heterogeneity". *Review of Financial Studies* 27 (2014): 617–661.

Gow, I. D., G. Ormazabal, and D. J. Taylor. "Correcting for Cross-Sectional and Time-Series Dependence in Accounting Research". *The Accounting Review* 85 (2010): 483.

Hribar, P., and D. C. Nichols. "The Use of Unsigned Earnings Quality Measures in Tests of Earnings Management". *Journal of Accounting Research* 45 (2007): 1017–1053.

Irani, R. M., and D. Oesch. "Monitoring and Corporate Disclosure: Evidence from a Natural Experiment". *Journal of Financial Economics* 109 (2013): 398–418.

Landsman, W. R., E. L. Maydew, and J. R. Thornock. "The Information Content of Annual Earnings Announcements and Mandatory Adoption of IFRS". *Journal of Accounting and Economics* 53 (2012): 34–54.

Larcker, D. F., and T. O. Rusticus. "On the Use of Instrumental Variables in Accounting Research". *Journal of Accounting and Economics* 49 (2010): 186–205.

Lennox, C. S., J. R. Francis, and Z. Wang. "Selection Models in Accounting Research". *The Accounting Review* 87 (2012): 589–616.

Leung, E., and D. Veenman. "Non-GAAP Earnings Disclosure in Loss Firms". *Journal of Accounting Research* 56 (2018): 1083–1137.

Petersen, M. A. "Estimating Standard Errors in Finance Panel Data Sets: Comparing Approaches". *Review of Financial Studies* 22 (2009): 435–480.

Roberts, M. R., and T. M. Whited. "Endogeneity in Empirical Corporate Finance". *Working paper, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1748604* (2012).

Shipman, J. E., Q. T. Swanquist, and R. L. Whited. "Propensity Score Matching in Accounting Research". *The Accounting Review* 92 (2016): 213–244.

Stuart, E. A. "Matching Methods for Causal Inference: A Review and a Look Forward". *Statistical Science: A Review Journal of the Institute of Mathematical Statistics* 25 (2010): 1–21.

Tan, L. "Creditor Control Rights, State of Nature Verification, and Financial Reporting Conservatism". *Journal of Accounting and Economics* 55 (2013): 1–22.

Thompson, S. B. "Simple Formulas for Standard Errors That Cluster by Both Firm and Time". *Journal of Financial Economics* 99 (2011): 1–10.

Tucker, J. W. "Selection Bias and Econometric Remedies in Accounting and Finance Research". *Journal of Accounting Literature* (2010).

Vashishtha, R. "The Role of Bank Monitoring in Borrowers′ Discretionary Disclosure: Evidence from Covenant Violations". *Journal of Accounting and Economics* 57 (2014): 176–195.

Veenman, D. "*Introductory Guide to Using Stata in Empirical Financial Accounting Research*" (2019).

Zhou, X. "Understanding the Determinants of Managerial Ownership and the Link Between Ownership and Performance: Comment". *Journal of Financial Economics* 62 (2001): 559–571.