MATERIALS FOR ARE212

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Contents

A pdf version of this file can be found at README.pdf

1. General Policies

1.1. Readings.

- "Hansen" refers to Gary Hansen's Econometrics Textbook.
- Unresolved references of the form "**foo84**" or similar are keys with values that can be looked up in are212_materials.bib. This last is a bibtex database which you're free to use. The bibtex file includes some links to pdf files which you may find useful.

2. Videos

See ARE212 Youtube Channel for videos of lectures, etc.

3. Topics

3.1. Multiple Equation Models.

- Notes on Multiple Linear Equation Models
- Reading
  - Hansen Ch. 11. General contemporary reference on systems of linear regressions.

. *Date*: April 12, 2020.

  - Trygve Haavelmo. 1944. The probability approach in econometrics. *Econometrica* 12 (Supplement): 1–118. Classic discussion of the "probability approach" to estimating economic models; one of the key documents distinguishing econometrics from statistics; one of the key
  - Carl F Christ. 1994. The Cowles Commission's contributions to econometrics at Chicago, 1939-1955. *Journal of Economic Literature* 32 (1): 30–59. `https://www.jstor.org/stable/pdf/2728422.pdf`. Discussion of the birth of econometrics at the Cowles Commission; beyond its historical importance, worth reading to understand the source of much of the jargon we now use.
  - Stock and Trebbi 2003; S. Wright 1921; P. G. Wright 1928 (Appendix B). On the origins of instrumental variables. The Wright papers are some of the earliest and clearest discussions of identification.
- Jupyter notebooks
  - file:random_variables0.ipynb
  - classical_regression.ipynb
  - file:weighted_regression.ipynb

3.2. **Causality & Correlation.**

- Notes on Causality & Correlation
- Reading
  - Ragnar Frisch. 2011. *A dynamic approach to economic theory: lectures by Ragnar Frisch at Yale University.* Edited by Olav Bjerkholt and Duo Qin. Lectures given by Frisch at Yale in 1930. Routledge. Highly insightful and only recently published lectures Frisch gave at Yale in 1930.
  - Trygve Haavelmo. 1943. The statistical implications of a system of simultaneous equations. *Econometrica, Journal of the Econometric Society:* 1–12. A founding document of the structural (Cowles Commission) approach to economics.
  - Trygve Haavelmo. 1944. The probability approach in econometrics. *Econometrica* 12 (Supplement): 1–118. Classic statement regarding the "probability approach" to economics.
  - Arthur S. Goldberger. 1972. Structural equation methods in the social sciences. *Econometrica* 40 (6): 979–1001. Insightful, historically informed reflections on identification of structural models in economics.

  - Judea Pearl. 2015. Trygve Haavelmo and the emergence of causal calculus. *Econometric Theory* 31 (1): 152–179; James Heckman and Rodrigo Pinto. 2015. Causal analysis after Haavelmo. *Econometric Theory* 31 (1): 115–151; Judea Pearl. 2013. Reflections on Heckman and Pinto's "causal analysis after haavelmo". Unpublished working paper. `https://escholarship.org/content/qt5b27h1nm/qt5b27h1nm.pdf`. Back and forth between Pearl & Heckman/Pinto. They agree on one thing: Frisch & Haavelmo were right.
  - Judea Pearl. 2009. *Causality.* Models, Reasoning, and Inference. Second. New York: Cambridge University Press. Pearl's textbook on causality.
  - Milton Friedman. 1953. The methodology of positive economics. In *Essays on positive economics,* 3–43. Chicago: University of Chicago Press. Classic essay on the usefulness of "falsifying" economic models and the role of assumptions.
  - Stanford Encyclopedia of Philosophy, "The Problem of Induction"
  - Hume, An enquiry concerning human understanding
  - Sewell Wright `https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1200501/pdf/111.pdf`
  - Guido W Imbens and Donald B Rubin. 2015. *Causal inference in statistics, social, and biomedical sciences.* Cambridge University Press. Up-to-date statement and discussion of the Neyman-Rubin potential outcomes model, with focus on the assignment model.
  - James J Heckman. 2010. Building bridges between structural and program evaluation approaches to evaluating policy. *Journal of Economic literature* 48 (2): 356–98. Contemporary survey comparing "reduced form" and "structural" approaches to causal inference.
  - James J. Heckman. 1997. Instrumental variables: a study of implicit behavioral assumptions used in making program evaluations. *The Journal of Human Resources* 32 (3): 441–462. `http://www.jstor.org/stable/146178`. Critique of potential outcome approach in program evaluation.
- Jupyter notebooks
  - wright34.ipynb

3.3. **Identification & Instrumental Variables.**

- Notes on Identification and Instrumental Variables
- Reading
  - Hansen Chapter 12
  - Joshua D Angrist and Alan B Krueger. 2001. Instrumental variables and the search for identification: from supply and demand to natural experiments. *Journal of Economic Perspectives* 15 (4): 69–85
  - Timothy G Conley, Christian B Hansen, and Peter E Rossi. 2012. Plausibly exogenous. *Review of Economics and Statistics* 94 (1): 260–272
  - Victor Chernozhukov and Christian Hansen. 2008. The reduced form: a simple approach to inference with weak instruments. *Economics Letters* 100 (1): 68–71. `https://faculty.chicagobooth.edu/christian.hansen/research/ch_weakiv_mar07.pdf`
- Data
  - Angrist-Krueger (1991)

3.4. **Generalized Method of Moments.**

- Notes on GMM
- Reading
  - Hansen Chapter 13
  - Review normal linear regression model (E.g., Hansen Chapter 5)
  - Gary Chamberlain. 1987. Asymptotic efficiency in estimation with conditional moment restrictions. *Journal of Econometrics* 34:305–334
  - Whitney K. Newey and Kenneth D. West. 1987. Hypothesis testing with efficient method of moments estimation. *International Economic Review* 28 (3): 777–787