

ECON 8000/9000 Empirical Energy Economics
Reading List and Homework
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Version: 2026-04-20 (Subject to Update)

Housekeeping

Reading Access: Student access link: <https://app.perusall.com/join/ZHOU-NK2M7>

Notation: [R] indicates required readings; [S] for short papers; [L] for a handbook/literature review

Requirement 1: Informal “Mock Response” will be weekly/biweekly reading assignments on Perusall

Requirement 2: Formal “Mock Response” in the format of a short presentation will take place throughout the semester, scheduled or unscheduled

Reading List

Part A: Review of Empirical Methods

In this section, we will review empirical methods that you have learned in your econometrics class. Here, I have selected a few straightforward (and somewhat light-hearted) studies to help you review applied econometrics and gain some insight into energy economics.

Part A.1 Randomized Controlled Trials / Experiments

- [R] Allcott, H. (2011) “Social Norm and Energy Conservation”, *JPubE*, 95 (2011) 1082-1095
- Burkhardt, J., Gillingham, K., Kopalle, P. (2023) “Field Experimental Evidence on the Effect of Pricing on Residential Electricity Conservation”, *Management Science*, 69(12) December 2023, 7784-7798
- Davis, L., Martinez, S., Taboada, B. (2024) “How Effective is Energy-efficient Housing? Evidence from a Field Trial in Mexico”, *JDE*, 143 (2020) 102390

Part A.2 Panel Data Regressions + (Hopefully) Quasi-Experiment in Panel Data

- [R] Scott, J. (2022) “Pounds That Save: The Role of Preference for Safety in Demand for Large Vehicle”, *Journal of Law and Econ*, 65, August 2022
- [S] Knittel, C., Tanaka. (2021) “Fuel Economy and the Price of Gasoline: Evidence from Fuel-level Micro Data”, *JPubE*, 202 (2021) 104496
- [S] Cicala, S. (2023) “Powering Work from Home”, *JUE-Insight*, 133 (2023) 103474
- [S] Barwick, P., Kwon, Y., Wang, B., Zahur, H. (2023) “Pass-through of EV Subsidies: A Global Analysis”, *AEA Papers and Proceedings*, 2023, 113: 323-328
- Severen, C., van Benthem, A. (2022) “Formative Experience and the Price of Gasoline”, *AEJ:AE*, 2022, 14(2): 256-284

Part A.3 DID, Event Studies, Longer-differences, Local Projection DID (LP-DID)

- Gillingham, K., Kotchen, J., Levinsohn, J., Nalebuff, B. (2025) “The Musk Partisan Effect on Tesla Sales”, *NBER WP*, No. 34413, October 2025
- Ta, C., (2024) “Do Conservation Contests Work? An Analysis of Large-scale Energy Competitive Rebate Program”, *JEEM*, 124 (2024) 102926
- [R] Fabra, N., Gutierrez, E., Lacuesta, A., Ramo, R. (2024) “Do Renewable Energy Investments Create Local Jobs?”, *JPubE*, 239 (2024) 105212

Assignment PS1: Panel Data Analysis

- Replication Exercise: Severen and van Benthem (2022) “Formative Experiment and Price of Gasoline”, *AEJ:AE*
- Tasks: See PS1.pdf
- Due: Tuesday 1/20 to Canvas

Part A.4 IV Regressions

Part A.4.1 IV Design Examples

- [S] Fabra, N., Rapson, D., Reguant M., Wang, J. (2021) "Estimating the Electricity to Real-time Pricing: Evidence from Spanish Electricity Market", *AEA P&P*, 2021: 425-429
- Davis, L, Hausman, C. (2020) "Are Energy Executives Rewarded for Luck?", *The Energy Journal*, November 2020, 157-180

Part A.4.2 RD Design

- [R] Smith, A. (2016) "Spring Forward at Your Own Risk: Daylight Saving Time and Fatal Vehicle Crashes", *AEJ:AE*, 2016, 8(2): 65-91
- Englmaier, F., Schmoller, A., Stowasser, T. (2024) "Price Discontinuities in an Online Market for Used Cars", *Management Science*, 64 (6), 2754-2766
- [L] Hausman, C., Rapson, D. (2018) "Regression Discontinuity in Time (RDiT): Considerations for Empirical Applications", *Annual Review of Resource Economics*, 2018 (10), 533-52

Part A.4.3 Bartik Shift-share-style Design

- [R] Allcott, H., Keniston, D. (2018) "Dutch Disease or Agglomeration? The Local Economic Effects of Natural Resource Booms in Modern America", *RES*, 85, 695-731
- Krause, E. (2026) "Adjusting to the Energy Transition: Training and Transfer in Coal Country", *JEEM*, 136 (2026) 103264

Assignment PS2: RD Regression Analysis

- Replication Exercise: Englmaier et al. (2024) "Price Discontinuities in an Online Market for Used Cars", *Management Science*
- Tasks: See PS2.pdf
- Due: Sunday 1/27 to Canvas

Assignment PS3: Additional Test for RD and RD in Time (RDiT)

- Replication Exercise: Smith (2016) "Spring Forward at Your Own Risk: DST and Fatal Vehicle Crashes", *AEJ:AE*
- Tasks: See PS3.pdf
- Due: Sunday 2/8 to Canvas

Mock Response MRI:

- Sign up on Google Sheet to present one of the following: (i) Cicala (2023) JUE-Insight, (ii) Gillingham et al (2025) NBER WP, and (iii) Allcott & Keniston (2018) RES
- Tasks: 2-5 slides
- Due: Sunday 2/8 to Canvas
- Present: Monday 2/9 in class

Part B: Best Practices for Conducting Empirical Work

Part B.1 Managing Your Empirical Project

- [R] Gentzkow, M., and Shapiro, J. (2014) "Code and Data for Social Sciences: A Practitioner's Guide"
- Ristovska, L. (2019) "Coding for Econ: A Language-Agnostic Guide for Programming for Economists"

Part C: Energy Economics Topics

Part C.1 Pass-through

Key Questions:

- Q: How does the pass-through of a consumer product depend on market structure and other factors?
- Q: How do input cost shocks pass through to consumers?

C.1.1 Empirical Studies

- Fabra, N., Reguant, M. (2014) "Pass-through of Emission Costs in Electricity Market", *AER*, 104 (9) 2872-99
- [R] Pless, J., van Benthem, A. (2019) "Pass-through as a Test for Market Power: An Application to Solar Subsidies", *AEJ:AE* 11(4) 2019
- [S] Muehlegger, E., Sweeney, R. (2022) "Pass-through of Own and Rival Cost Shocks: Evidence from the US Fracking Boom", *REStat*, 104 (6) 1361-1369
- Knittel, C., Meiselman, B., Stock, J. (2017) "The Pass-through of RIN Prices to Wholesale and Retail Fuel under the Renewable Fuel Standard", *JAERE*, 4 (4) 959-1228
- Ganapati, S., Shapiro, J., Walker, R. (2020) "Energy Cost Pass-through in US Manufacturing: Estimates and Implications for Carbon Tax", *AEJ:AE*, 2020 12(2) 303-42
- [S] Barwick, P., Kwon, Y., Wang, B., Zahur, H. (2023) "Pass-through of EV Subsidies: A Global Analysis", *AEA Papers and Proceedings*, 2023, 113: 323-328

C.1.2 Theory and additional readings

- Weyl, E., Fabinger, M. (2020) "Pass-Through as an Economic Tool: Principles of Incidence under Imperfect Competition", *JPE*, 2013 121 (3) 528-583
- [L] Kellogg, R., Reguant, M. (2021) "Energy and Environmental Markets, IO and Regulation", in *Handbook of Industrial Organization, Volume 5*, edited by Hortaçsu, Ho, and Lizzeri, Eds. Elsevier (2021), 5 (1) 615-742. To find the relevant material, search "pass-through" in this handbook chapter.

Part C.2 Energy Paradox / Energy Efficiency Gap Hypothesis

Key Questions:

- Q: Is there an energy efficiency gap in a specific industry/market?
- Q: If yes, what are plausible mechanisms/channels that may result in the energy efficiency gap?
- Q: If no, what may be factors that may lead us to mistakenly conclude there is an energy efficiency gap?

C.2.1 Literature Survey Articles

- [L] Allcott, H., Greenstone, M. (2012) "Is There an Energy-Efficiency Gap", *JEP*, 26 (1)
- [L] Gerarden, T., Newell, R., Stavins, R. (2017) "Assessing the Energy-Efficiency Gap", *JEL*, 55 (4)
- [L] Gillingham, K., Myers, E. (2025) "Economics of Energy Efficiency", in *Handbook of Electricity Regulation*, Edward Elgar Publishing

C.2.2 Empirical Studies

- Fowlie, M., Greenstone, M., Wolfram, C. (2018) "Do Energy Efficiency Investments Deliver? Evidence from the Weatherization Assistance Program", *QJE*, 133, 1597-1644
- [R] Busse, M., Knittel, C., Zettelmeyer, F. (2013) "Are Consumers Myopic? Evidence from New and Used Car Purchases", *AER*, 103 (1) 220-56
- Sallee, J., West, S., Fan, W. (2016) "Do Consumers Recognize the Value of Fuel Economy? Evidence from Used Car Prices and Gasoline Price Fluctuations", *JPubE*, 135 (2016) 61-73
- Myers, E. (2019) "Are Home Buyers Inattentive? Evidence from Capitalization of Energy Cost", *AEJ:EP*, 11 (2) 165-188
- Myers, E. (2020) "Asymmetric Information in Residential Rental Markets: Implications for the Energy Efficiency Gap", *JPubE*, 190 (2020) 104251
- Gillingham, K., Houde, S., van Benthem, B. (2021) "Consumer Myopia in Vehicle Purchases: Evidence from a Natural Experiment", *AEJ:EP*, 13 (3) 207-38

Research Project Step 1: Informal Research Sketch of 2-4 Ideas

- Collaboration allowed.
- Due: Tuesday 2/24 to Canvas
- Discuss: Wednesday 2/5 in class

Assignment PS4: Valuation Ratio (VR) and Implied Discount Rate (IDR)

- Replication Exercise: Busse et al. (2013) "[Are Consumers Myopic?](#)", *AER*
- Tasks: See PS4.pdf
- Due: Sunday 3/1 to Canvas

Part C.3 Energy Efficiency and Rebound Effect

C.3.1 Literature survey articles

- [L] Gillingham, K., Rapson, D., Wagner, D. (2015) "[The Rebound Effect & Energy Efficiency Policy](#)", *REEP*, 10 (1)
- [L] Borenstein, S. (2015) "[A Microeconomic Framework for Evaluating Energy Efficiency Rebound and Some Implications](#)", *Energy Journal*, 36 (1)

C.3.2 Empirical Studies

- [R] Linn, J. (2016) "[The Rebound Effect for Passenger Vehicles](#)", *Energy J*, 37 (2)
- Aydin, E., Kok, N., Brounen, D., (2017) "[Energy Efficiency and Household Behavior: The Rebound Effect in the Residential Sector](#)", *RAND J*, 48 (3) 749-782
- West, J., Hoekstra, M., Meer, J., Puller, S. (2017) "[Vehicle Miles \(Not\) Traveled: Fuel Economy Requirement, Vehicle Characteristics, and Household Driving](#)", *JPubE*, 145 (2017) 65-81

Assignment PS5: Valuation Ratio (VR) with Quantity Effect + Impact of Rebound Effect

- Replication Exercise: (i) Gillingham et al. (2021) "[Consumer Myopia in Vehicle Purchases: Evidence from a Natural Experiment](#)", *AEJ:EP* and (ii) Linn (2016) "[The Rebound Effect for Passenger Vehicles](#)", *Energy Journal*
- Tasks: See PS5.pdf
- Due: Sunday 3/8 to Canvas

Research Project Step 1.5: Peer Discussion of Research Sketch

- Task: Continue peer discussion as we have done in class
- Check: Monday 3/8 in class

Research Project Step 2: Research Proposal Presentation

- Collaboration allowed.
- Due: Tuesday 3/10 to Canvas
- Present: Wednesday 3/11 in class

Part C.4 Nuclear Energy

C.4.1 Empirical Studies

- Kiso, T., Chan, H. R., Arino, Y. (2022) "[Contrasting Effect of Electricity Price on Retrofit and New-build Installation of Solar PV: Fukushima as a Natural Experiment](#)", *JEEM*, 115 (2022) 102685
- Neidell, M., Uchida, S., Veronesi, M. (2021) "[The Unintended Effects from Halting Unclear Power Production: Evidence from Fukushima Daiichi Accident](#)", *JHE*, 79 (2021) 102507
- He, G., Tanaka, T. (2023) "[Energy Savings May Kill: Evidence from Fukushima Nuclear Accident](#)", *AEJ:AE*, 15 (2)
- Jarvis S., Deschenes, O., Jha, A. (2022) "[The Private and External Cost of Germany's Nuclear Phase-out](#)", *JEEA*, 20 (3) 1311-1346
- Davis, L., Wolfram, C. (2012) "[Deregulation, Consolidation, and Efficiency: Evidence from US Nuclear Power](#)", *AEJ:AE*, 4(4): 194-225

Assignment PS6: LP-DID

- Exercises following: Dube et al. (2025) "[A Local Projections Approach of DID](#)", *J of Applied Econometrics*
- Tasks: See PS6.pdf
- Due: Tuesday 3/24 to Canvas

Part C.5 Topics on EV and Vehicle Electrification (not including Demand Estimation for Later)

Key Questions:

- Q: How does EV adoption and usage respond to energy price?
- Q: How does EV adoption affect electricity usage, emissions, etc?
- Q: What's the pass-through of EV subsidies?
- Q: What are potential unintended consequences of vehicle electrification?

C.5.1 Literature Survey Articles

- [L] Rapson, D., Muehlegger, E. (2023) "[The Economics of EVs](#)", *REEP*, 17(2)
- [L] Rapson, D., Bushnell, J., (2024) "[The Limits and Costs of Full Electrification](#)", *REEP*, 18(1)

C.5.2 Empirical Studies

C.5.2.A EV Adoption and Adoption Incentives

- [S] Gillingham, K., van Benthem, A., Weber, S., Saffi, M., He, X., (2023) "[Has Consumer Acceptance of EV Been Increasing? Evidence from Microdata on Every New Vehicle Sales in the US](#)", *AEA P&P*, 113: 329-335
- Muehlegger, E., Rapson, D., (2022) "[Subsidizing Low- and Middle-income Adoption of EVs: Quasi-experiments Evidence from California](#)", *JPubE*, 216, 104752
- Nehiba, C., Tyndall, J. (2024) "[Recharged: Used EV and the Clean Vehicle Tax Credit](#)", *Working Paper*

C.5.2.B Electricity Price, Charging Incentives

- Bushnell, J., Muehlegger, E., Rapson, D., (2025) "[Energy Price and EV Adoption](#)", NBER WP
- Bailey, M., Brown, D., Shaffer, B., Wolak, F. (2025) "[Show Me the Money! Field Experiment on EV Charging Timing](#)", *AEJ:EP*, 2025, 17(2): 259-284

C.5.2.C Effect on Electricity Usage, VMT, Local Emissions

- [R] Holland, S., Mansur, E., Muller, N., Yates, A., (2016) "[Are There Environmental Benefits from Driving EVs? The Importance of Local Factors](#)", *AER*, 106(12): 3700-3729
- Holland, S., Mansur, E., Muller, N., Yates, A., (2016) "[Distributional Effects of Air Pollution from EV Adoption](#)", *JAERE*, 6(S1), 701188.
- [S] Burlig, F., Bushnell, J., Rapson, D., Wolfram, C. (2021) "[Low Energy: Estimating EV Electricity Use](#)", *AEA P&P*, 111: 430-435
- Nehiba, C. (2024) "[EV Usage, Pollution Damages, and the Electricity Price Elasticity of Driving](#)", *JEEM*, 124, 102915

Mock Response MR2:

- Sort amongst yourselves into two groups. Then sign up on Google Sheet to present one of the following: (i) Bushnell, Muehlegger, & Rapson (2025) NBER WP, (ii) Bailey et al. (2025) AEJ:EP, or (iii) Nehiba (2024) JEEM
- Tasks: 8-15 slides
- Due: Tuesday 3/31 to Canvas
- Present: Wednesday 4/1 in class

Research Project Step 2.5: Intermediate Result Report

- Due: Tuesday 4/7 to Canvas
- Present: Wednesday 4/8 in class

Part C.6 Regional Effect + Labor Market Effect

C.6.1 Empirical Studies

- Kahn, M., Mansur, E. (2013) "Do Local Energy Price and Regulation Affect the Geographic Concentration of Employment?", *JPubE*, 101 (2013) 105-114
- [R] Severnini, E. (2022) "The Power of Hydroelectric Dams: Historical Evidence from the US Over the 20th Century", *The Economic Journal*, 133, 420-459
- [R] Muehlenbachs, L., Spiller, E., Timmins, C. (2015) "The Housing Market Impact of Shale Gas Development", *AER*, 105 (12): 3633-59
- Brehm, M., Brehm, P., Cassidy, A., Cassidy, T. (2025) "Resource Extraction, Revenue Sharing, and Growth", *Working Paper*
- Yip, C. (2018) "On the Labor Market Consequences of Environmental Taxes", *JEEM*, 89, 136-152
- Fabra, N., Gutierrez, E., Lacuesta, A., Ramo, R. (2024) "Do Renewable Energy Investments Create Local Jobs?", *JPubE*, 239 (2024) 105212
- Allcott, H., Keniston, D. (2018) "Dutch Disease or Agglomeration? The Local Economic Effects of Natural Resource Booms in Modern America", *RES*, 85, 695-731

Assignment PS7: Event Study in TWFE and CSDID

- Replication Exercise: Severnini (2022) "The Power of Hydro Dams", *EJ*
- Tasks: See PS7.pdf
- Due: Sunday 4/19 to Canvas

Part C.7 Demand Estimation

C.7.1.1 Multinomial Logit

- Train, K. (2007) "Discrete Choice Methods with Simulation", Chapter 3 "Logit", *Cambridge U Press*
- Berry, S., Haile, P. (2021) "Foundation of Demand Estimation", *NBER WP 29305*
- Gandhi, A., Houde, J. (2020) "Measuring Substitution Patterns in Differentiated-Products Industries", *NBER WP 26375*

Research Project Step 3: Final Presentation

- Due: Wednesday 4/29 to Canvas
- Present: Thursday 4/30 in class

Bonus Assignment PS8: Simple Logit Demand

- Tasks: See PS8.pdf to be posted
- Due: Sunday 5/10

C.7.1.2 Bonus Material: Slightly More than Multinomial Logit
To be updated

Part D: Self-read Topics not Covered

Part D.1 Strategic Manipulation, Rent-seeking, Loopholes, and Compliance

- Sallee, J., Slemrod, J. (2012) "Car Notches: Strategic Automaker Responses to Fuel Economy Policy", *JPubE*, 96 (2012), 981-999
- Reynaert, M., Sallee, J. (2021) "Who Benefits When Firms Game Corrective Policies" *AEJ:EP*, 13 (1) 372-412
- Anderson, S., Sallee, J. (2011) "Using Loophole to Review the MC of Regulation: The Case of Fuel Economy Standard", *AER*, 101(4), 1375-1409

Part D.2 Solar and Wind Energy

- Adly, J., Gerarden, T., Sweeney, R., (2023) "Investment versus Output Subsidies: Implications of Alternative Incentives for Wind Energy", *JAERE*, 10 (4)
- Pless, J., van Benthem, A. (2019) "Pass-through as a Test for Market Power: An Application to Solar Subsidies", *AEJ:AE* 11(4) 2019

Part D.3 Trendy Topics

Part D.3.1 Data Center

- Knittel, C. Senga, J., Wang, S., (2025) "Flexible Data Centers and Grids: Lower Costs, Higher Emissions?", *NBER WP 34065*
- Mamkhezri, J. Sun, X., Yang, Y. (2025) "The Hidden Cost of the Cloud: Data Centers and Transmission-induced Electricity Prices", *Working Paper*
- Muller, N., (2026) "Measuring the Impact of Data Centers in the US Economy: Monetary Damages from Air Pollution and GHG Emissions", *NBER WP 35100*

Part D.3.2 Crypto-mining

- Benetton, M. Compiani, G., Morse, A. (2023) "When Crypto-mining Comes to Town: High Electricity-Use Spillovers to the Local Economy", *NBER WP*, No. 31312, June 2023
- Papp, A., Almond, D., Zhang, S., (2023) "Bitcoin and CO2 Emissions: Evidence from Daily Production Decisions", *NBER WP 31745*