

CHEN-TI CHEN

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ACADEMIC APPOINTMENTS

The Ohio State University 2023 Aug.–
Assistant Professor, Department of Agricultural, Environmental, and Development Economics

Cornell University 2021 Jun.–2023 May
Postdoctoral Research Associate, Dyson School of Applied Economics and Management
and Cornell Lab of Ornithology

EDUCATION

Ph.D., Economics, Iowa State University, 2021

M.S., Agricultural & Resource Economics, University of California, Davis, 2015

B.S., Agricultural Economics, National Taiwan University, 2012

PEER-REVIEWED PUBLICATIONS

Xiong, T., W. Zhang, and C.-T. Chen. 2021. **A Fortune from Misfortune: Evidence from Hog Firms' Stock Price Responses to China's African Swine Fever.** *Food Policy*. 105: 102152.

Chen, C.-T., J.M. Crespi, W.F. Hahn, L.L. Schulz, and F.A. Taha. 2020. **Long-Run Impacts of Trade Shocks and Export Competitiveness: Evidence from the U.S. BSE Event.** *Agricultural Economics*. 51(6): 941-958.

WORKING PAPERS

Chen, C.-T., G.E. Lade, J.M. Crespi, and D.A. Keiser. 2022. **Size-Based Regulations and Environmental Quality: Evidence from the U.S. Livestock Industry.**

Abstract: Agricultural nutrients are a primary source of water pollution in the United States. The growing prevalence of concentrated animal feeding operations (CAFOs) in the U.S. Midwest raises concerns among the public and regulators about their impact on local environmental quality. This paper studies the effects of the 2003 Clean Water Act regulations on surface water pollution associated with hog CAFOs in Iowa. We compile a novel dataset linking historical regulatory records to downstream surface water pollutant monitors. The regulation decreased ammonia concentrations downstream of CAFOs by 6 to 9 percentage points, modestly improved dissolved oxygen concentrations, but did not reduce phosphorus concentrations. Pollution reductions are largest during heavy precipitation months, consistent with the regulations reducing on-site spills and local field runoff of nutrients. However, we also find evidence of increased pollution from regulated medium-sized facilities. We show that the overall the regulatory updates had little discernible impact on any water quality measure, raising concerns regarding the overall benefits of the regulation.

SELECTED WORK IN PROGRESS

Improving Benefits of the Conservation Reserve Program for Biodiversity (with Alison Johnston, Catherine Kling, Amanda Rodewald, and Ivan Rudik)

Abstract: Decades of agricultural intensification has resulted in the degradation of ecosystem services that aggravates the loss of habitat and biodiversity. Among the most concerning is the loss of grassland bird species in the North America. This study present large-scale evidence that Conservation Reserve Program (CRP), the largest private agricultural land retirement program funded by the Farm Bill, leads to increased grassland bird abundance and richness. We find that birders on average observe 3.5 times the number of birds, and twice the number of species, in a county enrolling all eligible land into CRP compared to a county without any CRP fields. However, we find suggestive evidence that the magnitude of the benefits is smaller relative to regional field experiments. In addition, at the larger-scale CRP seems to benefit less species that depend more on grassland habitat.

Property Value, Homeowner Wealth and Sorting Effects from Locally Undesirable Land Uses (with Yongjie Ji and Tracy Turner)

Abstract: This study uses Zillow's ZTRAX property transactions database combined with unique administrative data to examine land-use disamenity impacts in the form of concentrated animal feeding operations (CAFOs) on residential house prices. In a difference-in-differences framework, we evaluate the disamenity on house prices before and after establishment of CAFOs, with a third difference accounting for impacts before and after a 2003 Clean Water Act regulatory change that altered the disamenity intensity. We then combine the disaggregated price change estimates with US Census data to investigate the extent and distributional effects of housing wealth loss and neighborhood sorting.

The Clean Water Act and CAFOs: Effects of Regulatory Avoidance on Productivity (with John Crespi)

Abstract: This paper examines unintended policy consequences of the size-based environmental regulation on livestock operation productivity, where the regulation incentivizes operations to downsize to below the threshold to avoid the regulation. A theoretical framework is developed to model the effect of the Clean Water Act regulation updates in 2003 on livestock operation size and productivity distributions, as well as aggregate output. Our model predicts that the size-based regulations create bunching of operations at the threshold from downsizing to avoid compliance. We then use the confidential farm-level Census of Agriculture data from 1997 to 2017 and use a modified Regression Discontinuity Design to estimate the industry productivity loss.

Hog Production and Environmental Quality: Evidence from Taiwan's Foot-and-Mouth Disease Outbreak in 1997 (With Feng-An Yang and Yau-Huo Shr)

Abstract: The intensification and concentration of livestock production have raised concerns about their impact on environmental quality and human health, making it a significant public health issue. This study leverages the 1997 foot-and-mouth disease (FMD) outbreak in Taiwan as a quasi-experiment to investigate the influence of hog production on environmental quality and infant health. By analyzing the sharp decline in the number of pigs during the outbreak, we find that the substantial reduction in hog production is linked to improved water quality. Specifically, a decrease of 10,000 hogs as a result of FMD leads to a 3% to 7% reduction in ammonia, biochemical oxygen demand (BOD), and chemical oxygen demand (COD) levels.

OUTREACH PUBLICATIONS

Chen, C.-T., J.M. Crespi, and Y. Ji. 2021. The United States' Competitive Positions in Beef, Corn, Pork, Soy, and Wheat Exports: 1980—2019. *CARD Agricultural Policy Review, Winter 2021*.

Chen, C.-T., T. Xiong, and W. Zhang. 2020. Large Hog Companies Gain from China's Ongoing African Swine Fever. *CARD Agricultural Policy Review, Spring 2020*.

Crespi, J.M. and C.-T. Chen. 2019. The United States' Fraught Competitive Position in the World Wheat Market. No. 19-PB 27. *CARD Policy Briefs*.

Crespi, J.M. and C.-T. Chen. 2019. Global Competition Made 2018 a Bad Time to Start a Trade War. *CARD Agricultural Policy Review, Fall 2019*.

Chen, C.-T., G.E. Lade. 2018. Environmental Regulation of Hog Feeding Operations. *CARD Agricultural Policy Review, Spring 2018*.

Chen, C.-T., J.M. Crespi, and L.L. Schulz. 2017. US Export Beef Competitiveness: Do Cattle Inventories Matter? *CARD Agricultural Policy Review, Spring 2017*.

TEACHING

Guest Lecturer

Iowa State University

Introduction to Agricultural Markets 2019

Teaching Assistant

Iowa State University

Agricultural Finance 2020

Economic Analysis of Food Markets 2020

Introduction to Agricultural Markets 2019

Economic Development 2016

Principles of Microeconomics 2015, 2016

University of California, Davis

Financial Management of the Firm II 2015

Financial Management of the Firm I 2014

RESEARCH FUNDING

Taiwanese Overseas Pioneers Grants

Recipient

\$30,000. Ministry of Science and Technology, Taiwan 2020

AWARDS AND HONORS

James R. Prescott Award, Iowa State University (\$5,000). 2018.

Academic Excellence Award, National Taiwan University. 2012.

PRESENTATIONS

2022: AAEA Annual Meeting; NAREA Annual Meeting; Heartland Environmental and Resource Economics Workshop; SEA Annual Meeting

2021: AERE Summer Conference

2020: AAEA Annual Meeting; AAEA Job Market Candidate Showcase; NAREA Annual Meeting; Online Summer Workshop in Environment, Energy, and Transportation (OSWEET)

2019: AAEA Annual Meeting; Heartland Environmental and Resource Economics Workshop; Taiwan Economics Research (Academic Sinica, Taiwan)

2018: AAEA Annual Meeting

SERVICE

Referee: AAEA Annual Meeting (abstract); *Agricultural Economics*; *Agricultural and Resource Economics Review*; *Food Policy*; SEA Annual Meeting (abstract)

Department: Economics Graduate Student Association Treasurer, Iowa State University (2017-2018)

ADDITIONAL INFORMATION

Software: ArcGIS, Microsoft Excel, R, SAS, Stata

Professional Associations: Agricultural & Applied Economics Association (AAEA), American Economics Association (AEA), Association of Environmental and Resource Economists (AERE)

Citizenship: Taiwan

REFERENCES

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Dr. Gabriel E. Lade
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