William Townsend Curriculum Vitae

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Education

2025	Ph.D. Candidate in Economics, University of Oklahoma, Norman, OK
	Committee: Dr. Joan Hamory (chair), Dr. Jayash Paudel, Dr. Tyler Ransom, and Dr. Joseph Ripberger
2017	B.A. in Economics and English Literature, Truman State University, Kirksville, MO
	Honors: Magna Cum Laude and Departmental Honors in Economics
	Member: Phi Beta Kappa

Research Fields

Primary:	Environment and Ecology Economics, Agricultural Economics
Secondary:	Development Economics, Public Economics

Job Market Paper

"Agricultural trade policy and water quality: Evidence from Mexican Hass Avocado Import Program" (Sole Author)

Abstract: The water quality and scarcity in Mexico have been a significant concern among Mexican government officials for decades. Despite numerous policies directed at the nation's poor water quality and lack of access for millions of citizens, the country struggles to enact effective change. In 2016, the U.S. government amended the Mexican Hass Avocado Import Program, extending the ability for all Mexican states to export avocados to the U.S. as long as they met specific USDA sanitation regulations. This paper provides empirical evidence that this policy change provided a trade incentive that led Mexican avocado farmers to incorporate cleaner production methods and apply less harmful pesticides on their avocados. Two-way fixed effects difference-in-differences analysis shows that the change in avocado farming practices improved surface water quality, reducing biochemical oxygen demand (BOD) by approximately 12 percent and chemical oxygen demand (COD) by 11 percent. Additionally, the policy is associated with a 2 percent decrease in nitrate pollution in groundwater. Paired with approximately a 1 percent increase of nitrite in groundwater, this small change in nitrogen poses no threat to human health. These varying effects on groundwater pollution stem from a combination of cleaner avocado practices and increased avocado production. These findings suggest that the policy paved the way for an unexpected improvement in surface water quality in Mexico.

Working Papers

“Guaconomics: Avocado Price Shocks and Crime Rates in Mexico" (Sole Author)
Abstract Avocado trade between Mexico and the United States has exponentially burgeoned since 1997. Politicians have a growing concern about avocado production leading to more harm than good based on drug cartel involvement. Using data on 460 municipalities from 1997 to 2019, I exploit exogenous changes in U.S. weather deviations to show that increased Mexican avocado producer prices differentially decreased homicide in municipalities more climatically suited to grow avocados. This is because of increased agricultural employment from exponential growth in avocado production. However, there are different time heterogeneous effects. I find evidence that after the war on drugs took place in 2006, higher prices differentially increased homicide as well as other crime indicators such as property crime, cattle theft, and reported threats. The heterogeneous effects stem from increased drug cartel presence in the avocado industry.

“Fracking and Tracking: The Effects of Oil and Natural Gas Well Locations on the Housing Market" (with Brent Norwood, Samantha R. Johnson, and Ahmed El Fatmoui)
Abstract: The technique of hydraulic fracturing or “frackingâ has made it possible to produce vast new quantities of oil and natural gas causing states like Colorado, Texas, and Oklahoma to see a dramatic increase in the number of oil and natural gas wells. Using data from the U.S. Department of Homeland Security and Zillowâs ZTRAX data, we estimate the effect of hydraulically fractured oil and natural gas well sites on both urban and rural residential home prices between 2000 to 2018. Using ArcGIS, we create varying buffer zone sizes around well sites exploring how average home prices changed before and after a well opens. We start by using a zip code-level fixed effects model followed by a household-level fixed effects models and repeat sales models and finally a spatial differences-in-differences (SDID) approach. Our results show that homes within half a mile of a well have a 4.5homes that are between half and one mile from a well site see a 2.5homes that are more than two miles away.

“The Effects of Unbalanced FDI Inflow from Trade on the Gender Wage Gap in Mexico" (Sole Author)"

Works in Progress

2024	“Fair for All Sizes? The Impacts of Wayfair on Small to Medium Sized Retail Firms’ Sales and Sales Tax" ” (Sole Author)
2024	“The Effects of Decentralization on Mexico’s Water Quality” (Sole Author)
2024	“Brazil’s Hog Industry and Water Pollution: Impacts on Infant Health” (Sole Author)

Presentations

2025	Allied Social Science Association in San Francisco, CA (January)
2024	Southern Economic Association in Washington D.C. (November)
	Missouri Valley Economic Association in Kansas City, MO (October)
	OU Ph.D. Economics Conference, Norman, OK (May)
2023	Southern Economic Association in New Orleans, LA (November)

Fellowships and Awards

2023	Roberson Research and Travel Grant, University of Oklahoma
2022	Winner of the Chong Liew Summer Research Award, University of Oklahoma
2021	Chong Liew Outstanding 1st Year Graduate Student Award, University of Oklahoma
2021	Bridwell Institute's Graduate Economic Freedom Index Colloquium Grant, Southern Methodist University

Teaching Experience

Instructor

2024	(Spring) Principles of Economics-Macro (ECON 1113-995), University of Oklahoma
	(Spring) Principles of Economics-Macro (ECON 1113-795), University of Oklahoma - For Concurrent High School Students
2023	(Fall) Principles of Economics-Micro (ECON 1113-995), University of Oklahoma
	(Fall) Principles of Economics-Micro (ECON 1113-795), University of Oklahoma - For Concurrent High School Students
	(Summer) Government Relations-Business (ECON 3713), University of Oklahoma
2022	(Fall) Elements of Statistics (ECON 2843), University of Oklahoma
	(Summer) Principles of Economics-Micro (ECON 1123), University of Oklahoma

Graduate Teaching Assistant

2020-Present	Econometric Analysis (ECON 4223), International Trade (ECON 3613), Labor Economics (ECON 3513), Health Economics (ECON 3523), Elements of Statistics (ECON 2843), Principles of Economics-Micro (ECON 1123)

Skills

Coding Skills:	R, Stata, Julia, ArcGIS Pro, Git, Latex, SQL, Python, Office
Languages:	English (Native), Spanish (Advanced)

References

Available upon request