

FACUNDO DANZA

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Education

PhD in Economics, New York University, 2018–2024
Thesis Title: *Essays on Climate Adaptation*
MA in Economics, Universidad de Montevideo, 2015–2019
BA in Economics, Universidad de Montevideo, 2012–2015

Teaching and Research Fields

Environmental and Resource Economics, Agricultural Economics, Energy Economics

Teaching Experience

Fall 2022 Labor Economics, New York University, Course Assistant for Prof. Katarina Borovickova
Spring 2022 Introduction to Econometrics, New York University, Teaching Assistant for Prof. Timothy Roper
Fall 2021 Statistics, New York University, Teaching Assistant for Prof. Alberto Bisin
Fall 2020, Spring 2021 Statistics, New York University, Teaching Assistant for Prof. Timothy Roper
Fall 2017, Fall 2016 Public Economics, Universidad de Montevideo, Teaching Assistant for Prof. Isaac Alfie

Research Experience and Other Employment

2021 New York University, Graduate Assistant, Prof. Alfred Galichon
2018 Universidad de Montevideo, Research Assisant, Prof. Alejandro Cid
2017 Universidad de Montevideo, Research Assistant, Prof. Juan Dubra
2014–2016 Universidad de Montevideo, Research Assistant, Prof. Marcelo Caffera
2014-2015 Universidad de Montevideo, Research Assistant, Prof. Ana I. Balsa

Honors, Scholarships, and Fellowships

2023-2024 Sixth Year Funding, Department of Economics, New York University
2023 Data Grant for the project “*Optimal and Sustainable Groundwater Use: Evidence from Nebraska*,” CV Starr Center,

2023	New York University Research Grant for the project “ <i>The Impact of Solar Panel Installation on Electricity Consumption and Production</i> ,” CAF – Development Bank of Latin America
2022	Research Grant for the project “ <i>Illegal Migration and Weather Shocks: Evidence from Rural Mexico</i> ,” CAF – Development Bank of Latin America
2018-2023	MacCracken Fellowship, New York University
2016-2018	Excellence Scholarship, Universidad de Montevideo

Conferences and Seminars

EAERE’s 28th Conference (2024), AWEE (2024), AES’s 98th Conference (2024), Universidad ORT (2024), NCSU (2024), NHH (2024), NYU (2023), Universidad de Montevideo (2023), Academic Workshop on Sustainable Development in Latin America and the Caribbean at CAF (2022).

Research Papers

Optimal and Sustainable Groundwater Use: Evidence from Nebraska

Abstract: The agricultural sector is the primary water consumer in the US. Groundwater is one of its main sources, with 65% of irrigated farmland relying on groundwater for their water supply. Groundwater use presents a common pool problem: if a farmer pumps groundwater, she decreases the aquifer’s water table and thus increases the cost of pumping for farmers in the same aquifer. Studying such a problem is challenging due to a lack of markets and data on groundwater use. In this paper, I leverage detailed farmer-level data on (ground)water use, crop choices, and crop yields to study the equilibrium implications of the current groundwater costs. I focus on the Ogallala Aquifer in Nebraska. In order to estimate the effect of water costs on water use and crop choices, I combine a crop-growth model with an economic model. I use the crop-growth model to recover the precise relation between water use and crop yields. I use the economic model to estimate the marginal cost of water for farmers. I then quantify how farmers respond to water costs by switching which crop they plant or changing the water use per planted crop. I find that farmers are inelastic to water costs: a 10% increase in the water cost would decrease water use by 3%. Moreover, I find that farmers adapt to higher water costs by both reducing the water use per planted crop and fallowing the land. Lastly, I utilize my estimates to compute the optimal and sustainable tax on groundwater use.

Presented at: EAERE’s 28th Conference, AES’s 98th Conference (finalist for Best PhD presentation), Universidad ORT Uruguay, NCSU, NHH, NYU, Universidad de Montevideo.

The Impact of Solar Panel Installation on Electricity Consumption and Production (with Natalia D’Agosti)

Abstract: Since 2010, the Uruguayan government has fostered the installation of solar panels among households and firms to promote small-scale renewable electricity production. Under this policy, agents with solar panels are allowed to feed any electricity surplus into the grid. We study the economic and environmental consequences of this policy. We collect a novel dataset on electricity extraction and injection into the grid at a household/firm level for the whole country. First, we find that installing a solar panel reduces the electricity extracted from the grid. Second, we find that it increases the electricity injected into the grid. Third, we find that it reduces CO₂ emissions by 0.15% with respect to the baseline. Fourth, we find evidence of a rebound effect: electricity consumption after the solar panel installation increases between 20% and 26%. Lastly, we propose an alternative policy that allows agents to store their electricity surplus in batteries instead of immediately injecting it into the grid. This policy would reduce CO₂ emissions by 2.7%, allowing electricity injection into the grid at night when fossil-

fuel facilities satisfy most of the electricity demand. We leverage household and firm-level data to study the effect of a net-metering policy on electricity extraction and injection, showing what countries can expect from implementing such a policy.

Presented (by me or my coauthor) at: 10th AWEEE, ACREEF Workshop, SETI, FSR Climate Conference, Workshop on Fair Energy Transition in Latin America and the Caribbean at CAF, University of Edinburgh, Rutgers University, NYU, Universidad Católica del Uruguay, Universidad de Montevideo.

Illegal Migration and Weather Shocks: Evidence from Rural Mexico (with Eungik Lee)

We study the effect of weather shocks on legal and illegal migration from rural Mexico to the US. First, we find that shocks in the wet season on precipitation and temperature increase migration. The increment is entirely driven by illegal migrants. Second, we propose a mechanism to explain this result: the effect of weather on agricultural production. We find that shocks on precipitation and temperature decrease total harvested land and corn production. Third, we show that young and unwealthy workers are more sensitive to weather shocks. Lastly, we use climate projections to have a first glance on the impact that climate change will have on migration. We find that a shift of the size of climate change would double the number of illegal migrants. Since climate change will increase the frequency and intensity of weather shocks, our findings are increasingly relevant.

Presented (by me or my coauthor) at: Academic Workshop on Sustainable Development in Latin America and the Caribbean at CAF, NYU.

Other Information

Programming Skills:	DSSAT, Git, Latex, MatLab, Python, R
Selected Courses:	Sloan/Berkeley Summer School in Environmental and Energy Economics, 2022
Languages:	English (proficient), Spanish (native)
Citizenships:	Italian, Uruguayan