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Fields of Concentration:
Primary Fields: Industrial Organization, Energy/Environmental Economics
Secondary Fields: Development Economics

Qualifying Examinations Completed
2023: Industrial Organization, Microeconomic Theory

Dissertation Title: *Essays on Industrial Organization and Energy/Environmental Economics*

Committee:
Professor Katja Seim (Chair)
Professor Mushfiq Mobarak
Professor Rohini Pande
Professor Steven Berry

Education:
Ph.D., Economics, Yale University, 2027 (expected)
M.Phil., Economics, Yale University, 2024
M.A., Economics, Yale University, 2023
Msc, Economics, Getulio Vargas Foundation, Rio de Janeiro, 2020
Bachelor of Economics, Economics, Getulio Vargas Foundation, Rio de Janeiro, 2017

Fellowships, Honors and Awards:
Sylff Fellowship, Yale University (2025–2026)
Nathan Hale Associates Fellowship, Yale University (2023–2024)
Doctoral Fellowship, Yale University (2021–2027)
FAPERJ Scholarship (2019–2020)
Awarded for strong academic performance.
Full Tuition Scholarship, EPGE (2018–2020)
Awarded for strong performance in the admission process.
BBM (Bank) Scholarship (2016)
Awarded for strong academic performance and commitment to studying full-time at FGV.
Full Tuition Scholarship, FGV (2014–2017)

Research Grants:

Sylff Research Award, Yale Economic Growth Center
Research Grant, Cowles Foundation at Yale University

Teaching Experience:

Yale University 2023–2025
Teaching Fellow for the following courses:

Undergraduate course Intermediate Microeconomics (Fall 2023, SP 2024, Fall 2024).
Summer course Game Theory (Summer 2023, Summer 2024, Summer 2025).
Undergraduate course Introduction to Macroeconomics (Spring 2025).
Undergraduate course Microeconomic Theory (Intensive) (Fall 2025).

FGV-EPGE 2019–2020
Teaching Assistant for the following courses:
Macroeconomics – 2020 (MBA level).
Statistics I and II – 2019 (PhD level).

Work Experience:

BBM Investment Bank, Rio de Janeiro (Summer 2016)

Working Papers:

Infrastructure Provision and Payment Evasion: Evidence from Energy Distribution in Brazil (2026), *Job Market Paper*

Signaling in the Age of AI: Evidence from Cover Letters with Jingyi Cui and Justin Ye (2026), *R&R at Journal of Labor Economics*

Specific Investment and Contract Design: Evidence from Public Transportation with Guillermo Diaz, Kei Kawai and Andre Trindade (2026).

Work In Progress:

Long-Term Contracts, Locked-In Coal, and Energy Transition with Meichen Chen

Sectoral Electricity Demand and the Gains from Cost-Reflective Pricing with Ana Victoria Pelliccione, Marcelo Sant'Anna, and Andre Trindade

Programming:

Python, Julia, Matlab, R, Stata

Languages:

Portuguese (native), English (fluent), French (intermediate – B2), Spanish (beginner)

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References:

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Dissertation Abstract

Infrastructure Provision and Payment Evasion: Evidence from Energy Distribution in Brazil [Job Market Paper]

How should regulators incentivize electricity reliability when a substantial share of consumers does not pay for the service they receive? This is the case in Brazil, where roughly 15% of residential electricity consumption goes unpaid and outages remain frequent and prolonged. On the one hand, distribution companies have weaker incentives to invest in areas where a large share of households do not pay for electricity, because the marginal revenue generated by improvements in service quality is smaller. On the other hand, paying consumers in those same areas receive worse service, which can in turn push households out of the formal payment system. I study this feedback loop by first documenting its existence and then analyzing how alternative regulatory frameworks can mitigate it.

To address these questions, I assemble highly disaggregated administrative data at the household and neighborhood levels on electricity consumption, nontechnical losses—electricity consumed but not paid for—outages, tariffs, network infrastructure, and maintenance. I proceed in two steps. First, I estimate each direction of the feedback loop in reduced form. To study how service quality affects payment evasion, I exploit high-frequency weather shocks, using extreme wind events as an instrument for accumulated service interruptions. The results indicate that one additional interruption over the preceding year increases the share of electricity that is stolen by approximately 0.38 percentage points in lower-income neighborhoods. To study the reverse direction—whether increases in payment evasion lead to reductions in investment in service

quality—I examine firms' transformer replacement decisions, exploiting variation in consumer electricity prices induced by changes in generation costs as an instrument for payment evasion. The results show that a one-percentage-point increase in unpaid electricity consumption reduces subsequent transformer replacement by approximately 3% of its mean.

Second, to quantify the welfare costs of payment evasion and evaluate alternative electricity-pricing policies, I develop and estimate a structural model of household electricity demand and payment behavior, which I combine with a model of firms' local reliability-provision decisions. This framework allows me to measure the externality that electricity theft imposes on households that continue to pay for electricity and simulate how alternative tariff structures affect payment behavior, firms' investment decisions, and consumer welfare. On the demand side, households make a two-stage decision. They first choose whether to participate in the formal market or evade payment and then, conditional on that choice, decide how much electricity to consume. Because these decisions are jointly determined, I allow the unobserved taste shocks governing electricity consumption and payment behavior to be correlated, and estimate how both prices and reliability affect the intensive and extensive margins of demand. On the supply side, rather than imposing that regulated distribution companies maximize profits, I recover their objectives from observed outage-restoration and equipment-replacement decisions. The results indicate that firms' behavior cannot be fully explained by local profit maximization alone and is consistent with distribution companies placing weight on factors beyond their own revenues and operating costs. On average, firms place an estimated weight of 0.23 on consumer surplus relative to a normalized weight of one on profits.

Finally, I use the estimated model to conduct two sets of counterfactual exercises. First, I study the elimination of payment evasion, as if enforcement improved sufficiently to induce all households to participate in the formal market. The results indicate that outage frequency would fall by 11.8% overall, with substantially larger effects in poorer regions. In areas in the bottom quartile of household income, outage frequency falls by 27%, and households that already pay for electricity gain R$21 per month in welfare, equivalent to 20% of their average electricity bill. Second, I examine whether pricing and subsidy policies can reduce payment evasion and improve service quality even in the absence of changes in enforcement. The optimal region-specific pricing policy raises tariffs in higher-income areas where households are less responsive along the payment-evasion margin, while lowering tariffs in areas with a greater propensity to evade payment. Holding the average tariff unchanged, this policy reduces overall payment evasion from 12.3% to 8.7%. In the poorest quartile of regions, payment evasion falls from 23% to 16%, outage frequency declines by 17%, and consumer surplus increases by 9.4%. The central lesson is that payment evasion and service quality reinforce one another: poor reliability reduces households' willingness to pay, while payment behavior changes firms' incentives to invest in and maintain service quality.

Specific Investment and Contract Design: Evidence from Public Transportation, with Guillermo Diaz, Kei Kawai and Andre Trindade

This paper analyzes empirically how relation-specific investment reduces costs under concession contracts, focusing on public transportation services in French municipalities. We first document evidence showing that concession contracts with different incentive pay and duration affect operational costs in ways that are consistent with the presence of relation-specific investment. We then estimate a structural model of concession contracts with adverse selection, moral hazard and dynamic investment decisions in relationship-specific capital. We find that the efficient level of investment reduces operational costs by 10.8% relative to the case of no investment, and that a sequence of 10-year concession contracts achieves 75% of these efficiencies.

Signaling in the Age of AI: Evidence from Cover Letters, with Jingyi Cui and Justin Ye (*R&R at Journal of Labor Economics)*

This paper studies the impact of generative AI on labor market signaling using the introduction of an AI-powered cover letter writing tool on a large online labor platform. The data tracks both access to the tool and usage at the application level. Difference-in-differences estimates show that access to the tool increased textual alignment between cover letters and job posts and raised callback rates. These private gains, however, erode the signal itself: as AI-assisted letters spread, alignment becomes less informative about applicants. Indeed, after the tool's introduction, the correlation between alignment and callbacks fell by 51%, consistent with AI reducing the signal content of cover letters. In response, employers shifted toward alternative signals, including workers' prior work histories.