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EDUCATION

The Pennsylvania State University

2018 - 2024

Ph.D. in Economics

Universidad del Rosario

2014-2017

M.A. in Economics

Universidad Nacional de Colombia

2009-2014

B.A. in Economics

FIELDS OF SPECIALIZATION

Applied Microeconomics, Public Economics, Industrial Organization, Econometrics

RESEARCH

Distributional Effects of a Nonlinear Price Scheme in Public Utilities

Nonlinear pricing schemes are the primary instruments that policymakers use to ensure access to public utilities for low-income households while penalizing high-income households for overconsumption. In this paper, I evaluate the effectiveness of these pricing schemes and introduce a novel methodology to analyze their impact on the distribution of consumption and welfare in public utilities, specifically focusing on the case of water utilities in Bogotá, Colombia. To achieve this, I employ a combination of reduced-form and structural model techniques, leveraging Bogotá's unique context, where households have historically encountered diverse pricing schemes, including introducing additional nonlinear elements in the pricing scheme through a 2012 policy change. Notably, the results reveal that the nonlinear pricing scheme exhibits regressive characteristics, benefiting wealthier households with higher consumption levels and more significant welfare gains. Furthermore, the evidence suggests that income effects, driven by changes in the virtual incomes of households, are the primary driving force behind these outcomes. These findings underscore the necessity for an alternative approach to achieving more significant equity in the distribution of benefits within public utilities.

The Water Vital Minimum: Analyzing the Bogotá Free Water Policy

With Juan Miguel Gallego, Juan Daniel Oviedo, and Carlos Sepulveda.

Szabo (2015) analyzes the effects of a free water allowance in South Africa equal to the World Health Organization's recommended minimum. The author demonstrates that the free allowance acts as a lump-sum subsidy without significantly affecting water consumption. Furthermore, it is shown that it is possible to reallocate the current subsidy to form an optimal tariff without needing a free allowance. In this study, we revisit Szabo's analysis using data from Bogotá, Colombia, where a similar policy was implemented. First, employing the methodology proposed by the author, we successfully replicate the original results on consumption, revealing a minimal impact. Second, we reexamine the calculation of the price elasticities for water, identifying lower price elasticities. Third, we replicate creating an optimal tariff that increases social welfare.

TEACHING EXPERIENCE

The Pennsylvania State University

Graduate Teaching Assistant: Economic Mergers (Undergraduate) 2023

Graduate Teaching Assistant: Sports Economics (Undergraduate) 2022

Graduate Teaching Assistant: Environmental Economics (Undergraduate) 2020-2022

Graduate Teaching Assistant: Intermediate Microeconomics (Undergraduate) 2020

Universidad del Rosario

Teaching Assistant: Theory of Regulation and Informality (Undergraduate) 2017

Teaching Assistant: Mathematical Economics (Graduate) 2016

RESEARCH AND RELEVANT WORK EXPERIENCE

The Pennsylvania State University

Research Assistant: Prof. Karl Schurter Summer 2021, Summer 2022, Summer 2023

Leico Consultores

Economic Analyst 2017-2018

Universidad del Rosario

Research Assistant: Prof. Juan Daniel Oviedo 2014-2018

GRANTS AND AWARDS

Science Ministry of Colombia Scholarship 2020-2022

Banco de la República de Colombia Scholarship 2018-2022

COLFUTURO Scholarship 2018-2020

CONFERENCE AND SEMINAR PRESENTATIONS

IAES 96th Conference (Philadelphia, PA) 2023

LANGUAGES

Spanish (Native), English (Fluent).

COMPUTATIONAL SKILLS

L^AT_EX, Julia, Matlab, Stata, R, Python

REFERENCES

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