

Juan Ferro

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Fourth year PhD student in the economics department at Universidad de los Andes (Bogotá, Colombia). Interested in Applied microeconomics with research on Crime economics, Public Economics and the study of Social Norms.

WORKING PAPERS

Behavioral responses to fines: direct and indirect deterrence (Job market paper) (link)

Abstract: Governments use fines to deter socially unwanted behavior on a wide array of issues. It is commonly assumed that, fixing the probability of sanction, the higher the price, the more deterrent a fine is. But with limited government capacity for effective enforcement, the fine is often only an invitation for citizens to change behavior. Thus, the perceived fairness of the fine price might moderate deterrence. I explore this behavioral mechanism with data from automated speed cameras in Bogotá, Colombia. I use the fact that the speed threshold for issuing a ticket differs from the posted speed limit (and is unknown to drivers) as a source of exogenous variation, and the high visibility of speed cameras as a way to differentiate direct and indirect deterrence. A regression discontinuity design is used to compare drivers whose speed just exceeded the unknown real limit, and thus get a ticket, with those driving just below the real limit, who do not get a ticket. I find that a ticket causally changes the direct behavior of drivers: ticketed drivers reduce all forms of speeding (direct deterrence). But there is no change in the probability of crashes (indirect deterrence). Using the commercial price of the vehicle as a proxy for wealth, I can also measure the heterogeneous effect of relative price. Drivers at higher wealth levels both reduce speeding and crash participation, while drivers on lower wealth levels show no change in speeding, but an increase in crash participation. My findings are consistent with fines being an invitation by the government to broadly change behavior that is only accepted if it is perceived to be fair. This has specific public policy implications: speeding tickets might not be a well targeted policy for preventing road fatalities. Contrary to extended belief, in some contexts lower fines might be a more behaviorally effective policy tool.

Making inequality unacceptable: an experiment on fiction reading and prosociality (with Jose Guerra)

With funding from III TREES Research Grant Fund

In this field experiment we test the widely accepted hypothesis that fiction reading increases prosociality. Participants are assigned randomly to a four week course on fiction reading or a four week course centered on insights from behavioral economics. We add three elements to this literature. First, a casual estimate from the randomization and construction of a placebo treatment. Second, the use of a revealed preference approach centered on economic games that complements existing self-reported measures from the psychological literature. Third, the measurement of short and medium term effect by capturing preference four weeks after the intervention.

Pilot experiment to be run at Universidad de los Andes in October and November 2025.

Police scandals and deterrence: an exploration from traffic offenses and accidents (link)

Abstract: Increasing the deterrent effect of sanctions is a pressing public policy issue in many areas where the state has limited capacity to punish all wrongdoers. If institutions in charge of enforcing the law are perceived as illegitimate, sanctions might lose their capacity to deter behavior. This paper uses local media, traffic tickets and road crashes in Bogotá, Colombia to study whether sanctions imposed by more illegitimate authorities are less deterrent. Using the fact that traffic control is done by the national police, I consider police scandals that are highly reported in the media as an exogenous negative shock to the perceived legitimacy of the institution in charge of road traffic enforcement. My estimation compares the behavior of drivers that get their first tickets on days just after a police scandal with drivers that get their first tickets just before a scandal. Drivers ticketed just after a police scandal are more likely to not pay their fine and get a second ticket. Furthermore, they are 21% (11%) more likely to be in a crash in the following six months than drivers that get their first ticket just before a scandal (any other day). Finding the opposite effect when news shows the police as the victim also supports my hypothesis of loss of legitimacy causing state sanctions to be less deterrent. My results suggest that in this policy issue increasing the legitimacy of existing sanctions might be more effective than increasing the number of sanctions issued.

The role of legitimacy on deterrence: a speed-control intervention (link)

Abstract: The deterrence effect of legal sanctions has been widely studied and measured. Less attention has been given to the mechanisms by which some sanctions are more deterrent than others. This paper suggests one possible mechanism: the social acceptance of the mandated behavior, which I call legitimacy. I present a model in which individuals respond to a legal sanction for previously non-regulated behavior. An implication of the model is that more legitimate sanctions cause a larger change in the targeted behavior. I test this hypothesis on the *Cámaras Salvavidas* Program, a speed-control intervention in Bogotá, Colombia. I estimate a Non-linear Difference in Difference equation, using the staggered implementation of the program as source of exogeneity and legitimacy of legal sanctions (measured as the ratio of new speed limit to previous speed) as a heterogeneity. The program has a general deterrent effect, that is bigger on locations where the speed limit is more legitimate. It is shown that the result is robust to different ways of measuring legitimacy. Policy implications are discussed, suggesting that less strict but more legitimate sanctions might have a larger impact on reducing socially unwanted behavior.

PERSONAL INFORMATION

Sex: male

Citizenship: Colombian

EDUCATION

Universidad de los Andes, Bogotá, Colombia

PhD in Economics, march 2026 (expected graduation)

Advisors: Jose Alberto Guerra and Ignacio Sarmiento Barbieri.

Master in Economics, 2020.

Research thesis: *The role of gender and sexuality stereotypes on teenage childbearing in Colombia.*

Advisors: Darío Maldonado, School of government, Universidad de los Andes.

Elective courses: Experimental economics, Impact evaluation: statistics and economics, The economics of cities.

Universidad de los Andes, Bogotá, Colombia

Bachelor of Arts, Political Science, 2012

Universidad de los Andes, Bogotá, Colombia

Bachelor of Arts, Law, 2011

TEACHING EXPERIENCE

Microeconomics 101

(Full course)

Mandatory course for all undergraduate students in the Social Science department (Political Science, Psychology)

Spring 2025, 2026

Game theory

(Summer course instructor)

Mandatory course for all undergraduate students in economics

Summer 2025, Summer 2024

Advanced microeconomics (masters and Phd course)

(Teaching assistant to Paula Jaramillo and José Guerra)

Fall 2024

Microeconomics 101

(Teaching assistant to José Guerra and Andrés Moya)

Spring 2024

Introductory microeconomics (master level course)

(Teaching assistant to Andrés Álvarez)

Spring 2024

Advance econometrics (Phd course)

Fall 2023

(Teaching assistant to Oscar Becerra)

OTHER EMPLOYMENT

Mobility Office of Bogotá

Consultant on Data Analysis and Policy

March 2024-

OTHER

Software and programming: Stata, R.

Languages:

- Spanish (native).
- English (excellent). TOEFL 112/120.
- French (basic knowledge)

Other interests: Literature. Author of the novel Experimental Economics (angosta editores, 2023), National Prize of Literature of Colombia for unpublished novels in 2022.

CONTACT INFORMATION

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