UNIVERSITY OF CALIFORNIA, BERKELEY
DEPARTMENT OF ECONOMICS

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DESIRED RESEARCH AND TEACHING FIELDS:

PRIMARY	SECONDARY
Choice Theory	Behavioral Economics
Game Theory	Experimental Economics

FIELDS OF CONCENTRATION:
Microeconomic Theory, Financial Economics

DISSERTATION TITLE: "Revealed preferences in theory and experiments"

Expected Date of Completion:	May 2022
Principal Advisor:	Professor Shachar Kariv
Other References:	Professors Chris Shannon and Demian Pouzo

PRE-DOCTORAL STUDIES:

	DEGREE	**DATE**	**FIELD**
UC Berkeley	M.P.P.	2014	Public Policy
PUC Chile	M.A., with honors	2010	Economics
PUC Chile	B.A.	2009	Business and Economics

PAPERS:

- *Preference Recoverability from Inconsistent Choices* [Job Market Paper]

  We study the problem of recovering preferences from choices that violate the Generalized Axiom of Revealed Preferences (GARP). The underlying model is that failure of GARP arises because the agent has an imperfect implementation of her preferences. Existing methods to recover preferences rely on intuitive motivations that specify the structure's imperfect implementations. Instead, we take an agnostic approach, which allows us to propose the first statistically consistent estimator. The main assumption is that revealed preferences, the classical tool to analyze choices, are more likely correct than not and hence a trustworthy source of information. For finite data, the set of possible estimators is characterized by the directly revealed preferences that are interpreted as incorrect. Besides consistency, our estimator also satisfies partial efficiency, a standard requirement in the literature. We apply our estimator to laboratory data and compare it with the one derived from the Varian Index. Our estimator presents a stronger correlation between accuracy and its measure of distance from GARP; it is also significantly faster and more feasible to implement for subjects with many inconsistencies. Finally, we show how to extend our method to a vast class of choice problems beyond the classical consumer setting.

- The generality of the Strong Axiom

  A widespread assumption in economics is that consumers have strictly convex preferences and hence a (single-valued) demand function. When choices are rationalizable strict convexity can be tested by the Strong Axiom of Revealed Preferences (SARP). We extend this test to non-rationalizable choices by recovering preferences under partial efficiency. Our main result shows that for non-rationalizable choices strict convexity cannot be falsified. Hence a demand function is falsifiable only if choices are rationalizable and fail SARP, which we do not observe in laboratory choice data. Our results suggest that assuming strict convexity does not imply a substantial cost.

- On the incentive compatibility of the Bitcoin protocol (with Marcelo Arenas and Martín Ugarte) [work in progress]

  Contrary to traditional payment systems, the Bitcoin protocol does not rely on a trusted central authority to maintain a ledger of transactions. Instead, it relies on a protocol based on a free-entry market, known as the Bitcoin protocol, and proposed by Nakamoto (2008). In this protocol miners compete for appending blocks of transactions to the ledger, generating a tree-like data structure in which the one branch, called the blockchain, is the set of valid transactions (the actual ledger). For users to consider Bitcoin a secure payment system, they need to know that once a transaction has been validated (added to the blockchain) it has a negligible probability of being reversed.

  This work models the Bitcoin protocol as a game of incomplete information. We show that previous studies of the incentives behind the protocol consider oversimplified models, either (1) ignoring important technical aspects of the protocol or (2) analyzing the strategy of a single player without considering the equilibria of the game. We apply our model to show that the original claim made by Nakamoto about the security of the protocol can be sustained as an equilibrium of the game.

PROFESSIONAL EXPERIENCE:

TEACHING:

Graduate Student Instructor, Department of Economics, U.C. Berkeley (Fall 2017- Spring 2021)
Graduate Choice Theory, Graduate Mechanism Design, Graduate Game Theory, Game Theory, Macroeconomic Theory, Intermediate Microeconomics.

Lecturer, Department of Economics, PUC Chile (Spring 2011- Spring 2014)
Principles of Economics.

Lecturer, Business and Economics Department, Universidad de Los Andes, Chile (Fall 2013 - Spring 2014)
Intermediate Micreoconomics, Intermediate Macroeconomics, Advanced Microeconomics, Advanced Macroeconomics.

Teaching Assistant, Department of Economics, PUC Chile (Fall 2006 - Spring 2010)
Graduate Microeconomic Theory, Graduate Econometric Theory, Intermediate Microeconomics, Industrial Organization, Econometrics, Intermediate Macroeconomics, Advanced Microeconomics, Economics and Poverty, Intermediate Calculus, Principles of Economics.

PROFESSIONAL

Economist in the Chairman's team - Superintendencia de Valores y Seguros (2010 - 2013)
Chile's Securities and Insurance Superintendence

FELLOWSHIPS AND AWARDS:

2021-2022	Degree Completion Fellowship. UC Berkeley
2021	Research Fellowship, Foundations of Data Science Institute (NSF Award # 2023505)
2018	Maximum Distinction, Financial Economics Qualifying Exam, Economics PhD, UC Berkeley
2018	Maximum Distinction, Microeconomic Theory Qualifying Exam, Economics PhD, UC Berkeley
2016-2020	BecasChile Scholarship for Ph.D. Degree
2014-2016	BecasChile Scholarship for Master's Degree
2010	Outstanding Academic Performance, M.A. in Economics, PUC Chile
2009	Maximum Distinction, Microeconomics Degree Exam, B.A. in Business and Economics, PUC Chile

OTHER INFORMATION:

Affiliations:	American Economic Association
Languages:	English (fluent), Spanish (native)
Citizenship:	Chile