Daniel B. Walton

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Education

PhD in Economics, Stanford University, 2021 (expected)
Primary Fields: Microeconomic Theory and Econometrics
Advisors: Gabriel Carroll and Matt Jackson
MA in Economics, Stanford University, 2017
BS in Mathematics and Economics, *Magna Cum Laude*, Brigham Young University, 2015

Work Experience

Economic Consultant, *RedPeak Economics Consulting*, 2018-

- Engineered and built large datasets by scraping/matching
- Modelled markets for causal inference to establish damages (regression, LASSO, VAR, Gibbs sampling, random forests)
- Consulted on LIBOR/Euribor futures/swaps markets, BBSW, consumer retail, two-sided markets, credit cards

Research and Teaching Assistant, *Stanford University*, 2015-

- Taught foundational finance (theory and stats): Intro to Finance, Financial Decision-Making, Money and Banking
- Taught 1st-year graduate game theory: incomplete info, IO, auctions

Programming and Language

Proficient: Python (pandas, statsmodels, scikit-learn), R, Matlab, LaTeX, Unix script, Stata.
Some experience: C++, Mathematica, Javascript, HTML.
Spoken: English (native), Russian (fluent).

Selected Publications and Papers

"Deterministic Intertemporal Price Discrimination." [Job Market Paper] (Nov 2020)

I study the problem of a durable-goods monopolist with commitment who sells to strategic, dynamically arriving buyers. Since buyers are forward-looking, it may seem that the seller should randomize in order to not fully reveal the timing of price reductions. However, when buyer types are single-dimensional and buyer utilities are all risk-neutral, or linear, in price, the seller optimally chooses a deterministic price path, so that buyers know future prices with certainty. This is in contrast to stochastic results for related mechanism design problems and cases when buyers are risk-averse, and provides a justification for pure-strategy pricing used in many models of intertemporal price discrimination. I consider two applications of the framework, one where consumers are all present from the beginning of the market, and one where consumers arrive at a constant rate over time. In the first model, prices decline smoothly and the seller can perfectly separate types. In the second case, prices exhibit smooth and volatile phases, and are cyclical, with regularly-timed price reductions.

Buyer types are not perfectly separated in this case, leading the seller to sometimes change price discontinuously.

"When are Robust Contracts Linear?" with Gabriel Carroll. (Aug 2020) *(R&R Econometrica)*

We study a class of models of moral hazard in which a principal contracts with a counterparty, which may have its own internal organizational structure. The principal has non-Bayesian uncertainty as to what actions might be taken in response to the contract, and wishes to maximize her worst-case payoff. We show that if the possible responses to any given contract satisfy two properties a richness and a responsiveness property then a linear contract is optimal. This framework thus delineates a broad range of models in which linear contracts are optimally robust to uncertainty, including not only direct contracting with an agent, but also various models of hierarchical contracting and contracting with teams of agents. We also further apply the modeling apparatus to compare the principals payoffs across different organizational structures.

"An Analysis of the Performance of Target Date Funds" (Oct 2020), with John Shoven. NBER WP #27971

This paper presents a thorough evaluation of target date funds for the period 2010-2020. These funds have grown enormously in assets, reaching $1.4 trillion by the end of 2019. They account for approximately 24 percent of all of the assets in 401(k) accounts. The paper reports on the results of a style analysis evaluation of TDFs which results in their effective asset allocation. Lower cost TDFs tend to match the benchmark, whereas higher cost TDFs deviate considerably from theirs. We examine how TDFs performed in the stock market crash between 2/19/20 and 3/23/20 and find that the value of long-dated TDFs (those with a target date of 2045 and beyond) fell by between 30 and 35 percent, whereas the 2025 funds, designed for people roughly 60 years old, lost between 20 and 25 percent of their value. We find that past performance only weakly influences future expected performance.

"On Using Interval Response Data In Experimental Economics" (2018), with James McDonald and Olga Stoddard, *Journal of Behavioral and Experimental Economics*, 72, 9-16.

Many empirical applications in the experimental economics literature involve interval response data. Various methods have been considered to treat this type of data. One approach is to use maximum likelihood estimation, assuming that the underlying variable of interest is normally distributed. In the case of distributional misspecification, these estimation approaches can yield inconsistent estimators. In this paper, we explore a method that can help reduce the misspecification problem by assuming a distribution that can model a wide variety of distributional characteristics, including possible heteroskedasticity. The method is applied to the problem of estimating the impact of various explanatory factors associated with individual discount rates in a field experiment. We find that the underlying distribution of discount rates exhibits skewness, but not heteroskedasticity.

"Distributional Assumptions and the Estimation of Contingent Valuation Models" (2019), with James McDonald and Bryan Chia, *Computational Economics*

Contingent valuation methods are well-established techniques for measuring the value of

goods and services not transacted in markets and have been applied in many different settings. The parameter estimates depend upon the survey design, the model specification, and the method of estimation. This paper introduces a partially adaptive estimation procedure, based on two families of flexible probability density functions to adjust for distributional misspecification and accommodate possible heteroskedasticity. These methods are applied to the problem of estimating the willingness to pay to protect Australias Kakadu Conservation Zone from mining. In this application, the assumption of homoskedasticity is not rejected for the GB2 family, but is rejected for the SGT. A Monte Carlo simulation confirms the importance of the homoskedasticity assumption as well as the impact of the bid design.

Teaching Experience

Teaching Assistantships:
Introduction to Financial Decision-Making (Econ 43), Stanford University

- *I designed this new course with Michael Boskin, John Shoven, and Alex Gould. Enrollment was over 360 in its first year, making it the largest economics course at Stanford.*

First-year Graduate Game Theory (Econ 203), Stanford University
Introductory Finance (Econ 140), Stanford University
Money and Banking (Econ 111), Stanford University
Advanced Econometrics (Econ 588), Brigham Young University
Introductory Econometrics (Econ 388), Brigham Young University
Intermediate Macroeconomics (Econ 381), Brigham Young University

Honors, Awards, & Fellowships

Ric Weiland Graduate Fellowship, Stanford Economics Department Fellowship, Outstanding TA Award, BYU Mathematics Academic Excellence Award, BYU Heritage Full-Tuition Scholarship