Mohammad H. Seyedsalehi

Email: m.seyedsalehi@mail.utoronto.ca
Website: smhssalehi.com
Address: 150 St. George Street, Toronto, Ontario M5S 3G7, Canada

Overview

I am an economist specializing in environmental economics and empirical industrial organization. My research examines how firms' pricing decisions and consumer choices shape the effectiveness of environmental incentives, with implications for policy design. My econometric research focuses on empirical Bayes methods and the estimation of structural models.

Education

University of Toronto, Toronto, Canada. Expected 2027
PhD in Economics
Fields: Environmental Econmics, Industrial organzion, Econometrics
Committee: Victor Aguirregabiria (co-supervisor), Stephan Heblich (co-supervisor), Robert McMillan, Eduardo Souza-Rodrigues

Sharif University of Technology, Tehran, Iran. 2021
MSc in Economics (Finance)

Sharif University of Technology, Tehran, Iran. 2018
BSc in Computer Engineering

Working Papers

1. **The Carbon Paradox of Clean Incentives: Evidence from Ethanol [Link]**
   Solo-authored; *Job Market Paper; presented at TMEC 2026*

Publications

1. **Empirical Bayes with Side Information: Incorporating Geographic Relevance into Neighborhood Impact Estimation [Draft available]**
   Solo-authored; *Journal of Applied Econometrics (2nd revise and resubmit)*
2. **The Effects of Order Flow Imbalance on Stock Prices in Tehran Stock Exchange [Link]**
   with Mahdi Barakchian; *Financial Management Perspective, 2022*

Work in Progress

1. **Euler Equations for Dynamic Games**
   with Victor Aguirregabiria
2. **Who Benefits from Green Subsidies? Labor Standards and the Distribution of Gains**
   with Zahra Sedaghat Telgard
3. **One Carbon Market or Many? Optimal Integration of Sectoral Carbon Markets**

Honors, Awards, & Fellowships

University of Toronto: 2021–2026
Doctoral Fellowship ($20,000 × 5); Tuition Fellowship ($9,000 × 5);
Doctoral Recruitment Award ($10,000); Doctoral Completion Award

Exceptional Talent Scholarship for MSc, Sharif University of Technology 2018-2020

Exceptional Talent Scholarship for BSc, Sharif University of Technology 2014-2018

Silver Medal, 22nd International Mathematics Competition (IMC), Bulgaria 2015

Silver Medal, 55th International Mathematical Olympiad (IMO), South Africa 2014

Bronze Medal, 54th International Mathematical Olympiad (IMO), Colombia 2013

Teaching

University of Toronto — *Teaching Assistant* September 2021–Present

Machine Learning Applications in Economics and Finance (5 semesters)	Undergraduate/Graduate
Financial Economics, Banking, and Corporate Finance (3 semesters)	Undergraduate
Financial Risk Management (3 semesters)	Undergraduate/Graduate
Microeconomics and Microeconomic Theory	Undergraduate/Graduate
Macroeconomics and Global Macroeconomic Policy	Undergraduate
International Trade and Monetary Economics	Undergraduate
Climate Economics	Undergraduate/Graduate
Economic Analysis of Law	Undergraduate
Classical Economic Thought	Undergraduate

Employment

Susquehanna International Group (SIG), Sydney, Australia. Summer 2026
Internship offer declined to focus on the academic economics job market.

University of Toronto — *Research Assistant* Summer 2023
To Professor Robert McMillan

Tosan Ofogh Investment Co., Tehran, Iran. Aug 2018–Aug 2021
Co-founded a startup within a hedge fund, conducting market research in the energy sector.

XaaS Cloud Computing Co., Tehran, Iran. Summer 2017
Software Engineering Intern

Big Data Lab, Sharif University, Tehran, Iran. Summer 2016
Research Intern

References

Dr. Victor Aguirregabiria, Professor
University of Toronto, Department of Economics
Email: victor.aguirregabiria@utoronto.ca

Dr. Rob McMillan, Associate Professor
University of Toronto, Department of Economics
Email: robert.mcmillan@utoronto.ca

Dr. Stephan Heblich, Professor
University of Toronto, Department of Economics
Email: stephan.heblich@utoronto.ca

Dr. Eduardo Souza-Rodrigues, Professor
University of Toronto, Department of Economics
Email: e.souzarodrigues@utoronto.ca

Abstracts

The Carbon Paradox of Clean Incentives: Evidence from Ethanol
Solo-authored

Abstract. When carbon pricing faces implementation barriers, promoting low-carbon production offers an alternative; it aims to reduce emissions by making cleaner substitutes more affordable. This paper develops a dynamic framework to assess whether incentives for cleaner production necessarily reduce emissions, considering both substitution toward cleaner goods and rebound effects from increased total consumption. I apply it to Brazil, the world's second-largest ethanol market, where RenovaBio uses incentives funded by fossil fuel distributors to promote ethanol, a cleaner substitute for gasoline. The estimated unified equilibrium model combines supply from heterogeneous ethanol producers, differentiated fuel demand under oligopolistic pricing, and dynamic carbon-credit banking. The answer is no: RenovaBio increases ethanol production but displaces very little gasoline, expanding total fuel consumption and raising emissions by 0.22% relative to policy removal over 2020-2024. In contrast, replacing RenovaBio with an ethanol blending mandate about one percentage point higher generates essentially the same ethanol production, with 1.20% lower emissions than RenovaBio and smaller fuel-price distortions.

Empirical Bayes with Side Information: Incorporating Geographic Relevance into Neighborhood Impact Estimation
Solo-authored

Abstract. This paper introduces a novel methodology for estimating neighborhood impacts on intergenerational mobility. The approach employs a nonparametric empirical Bayes framework that addresses geographic heterogeneity in the underlying data-generating process. First, we propose a theoretical framework to address the long-standing yet unresolved question of how to make better use of highly relevant samples—in this context, data from geographically closer regions—when designing a shrinkage estimator for a target area. We demonstrate, both theoretically and empirically, how neglecting this factor can lead to systematically distorted estimates. Second, using publicly available data, we demonstrate that our relevance-based empirical Bayes method reduces Mean Squared Error (MSE) by 26% to 34% relative to benchmark estimates.

The Effects of Order Flow Imbalance on Stock Prices in Tehran Stock Exchange
with Mahdi Barakchian

Abstract. We investigate the effects of order-book events on the prices of the 30 largest stocks on the Tehran Stock Exchange during 2020. We measure the sensitivity of prices to changes in supply and demand volumes and identify the factors affecting this sensitivity. Following the approach of Cont et al. (2014), we conduct approximately 30,000 OLS regressions and show that, in a low-depth market, mid-price returns are significantly explained by order flow imbalance, which captures the net change in demand—that is, the difference between event volumes on the two sides of the order book. We also show that incorporating order flow imbalance from the first three levels of the order book increases the model's explanatory power for changes in stock mid-prices, indicating that deeper levels of the order book also significantly affect price changes. Moreover, the results confirm that market depth reduces the price impact of order-book events. Our findings are robust across months and stocks.

Who Benefits from Green Subsidies? Labor Standards and the Distribution of Gains

with Zahra Sedaghat Telgard

Abstract. How are the gains from green investment subsidies distributed between firms and workers? This project examines whether labor conditions attached to these subsidies increase workers' share of the benefits, using Canada's Clean Technology Investment Tax Credit. The policy offers a larger credit to firms meeting prevailing-wage and apprenticeship requirements, linking investment support to employment practices. The analysis links firms' investment and contractor choices to worker earnings. Firms can qualify for additional support without raising existing workers' pay if they already meet the standards or hire contractors that do. Higher wages at subsidized projects therefore need not reflect gains caused by the policy. Comparing subsidies with and without labor conditions at the same fiscal cost would assess whether these requirements increase worker earnings and training opportunities, and how they affect investment and hiring.

One Carbon Market or Many? Optimal Integration of Sectoral Carbon Markets

Abstract. This paper asks whether carbon credit markets that jointly penalize dirty activity and reward clean activity should be organized separately by sector or integrated into a common market. Integration can establish a common carbon price, equalizing marginal abatement costs across sectors and shifting emissions reductions toward lower-cost opportunities, while also allowing payments from dirty activity in one sector to finance clean investment in another. Separation, however, preserves sector-specific certificate prices, allowing clean incentives to respond independently to differences in innovation and adoption frictions. I study a market design in which clean activities generate tradable certificates and dirty activities create demand for the same asset, with sector-specific crediting and obligation rates determining the effective clean subsidy and carbon penalty. I characterize when a unified market can achieve the efficient combination of a common carbon price and differentiated clean-technology support, when separate sectoral markets perform better, and how this tradeoff depends on abatement costs and clean-technology spillovers across sectors.