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TIM DE SILVA

Contact Address:
350 Third Street, Unit 1905
Cambridge, MA 02142

Cell: +1 (310) 872 9973
Email: tdesilva@mit.edu
Website: www.timdesilva.me

EDUCATION

2024*	Ph.D. in Finance (* = expected) MASSACHUSETTS INSTITUTE OF TECHNOLOGY, SLOAN SCHOOL OF MANAGEMENT
2021	M.S. in Management MASSACHUSETTS INSTITUTE OF TECHNOLOGY, SLOAN SCHOOL OF MANAGEMENT
2018	B.A. in Financial Economics and Applied Mathematics, *magna cum laude* CLAREMONT MCKENNA COLLEGE *Thesis Supervisor*: Fan Yu

RESEARCH INTERESTS

Household Finance, Asset Pricing, Behavioral Economics, Public Finance, Macro-Finance

REFERENCES

Taha Choukhmane
Class of 1947 Career Development
Assistant Professor of Finance
MIT Sloan School of Management
(203) 823 8346
tahac@mit.edu

Jonathan A. Parker (co-chair)
Robert C. Merton (1970)
Professor of Financial Economics
MIT Sloan School of Management
(617) 253 7218
japarker@mit.edu

Lawrence D.W. Schmidt
Victor J. Menezes (1972)
Assistant Professor of Finance
MIT Sloan School of Management
(617) 258 8617
ldws@mit.edu

Eric C. So
Professor of Global
Economics and Finance
MIT Sloan School of Management
(617) 253 6470
eso@mit.edu

David Thesmar (co-chair)
Franco Modigliani
Professor of Financial Economics
MIT Sloan School of Management
(617) 225 9767
thesmar@mit.edu

JOB MARKET PAPER

1. Insurance versus Moral Hazard in Income-Contingent Student Loan Repayment

Abstract: Student loans with income-contingent repayment insure borrowers against income risk but can reduce their incentives to earn more. Using a change in Australia's income-contingent repayment schedule, I show that borrowers reduce their labor supply to lower repayments. These responses are larger among borrowers with more hourly flexibility, a lower probability of repayment, and tighter liquidity constraints. I use these responses to estimate a dynamic model of labor supply with frictions that generate imperfect adjustment. My estimates imply that labor supply responses to income-contingent repayment decrease the optimal amount of insurance, but are too small to justify fixed repayment contracts. Moving from a fixed repayment contract to a constrained-optimal income-contingent loan increases welfare by the equivalent of a 1.3% increase in lifetime consumption at no additional fiscal cost.

WORKING PAPERS

2. Noise in Expectations: Evidence from Analyst Forecasts, with David Thesmar
Accepted for Publication at the *Review of Financial Studies*.

Abstract: Analyst forecasts outperform econometric forecasts in the short run but underperform in the long run. We decompose these differences in forecasting accuracy into analyst information advantage, forecast bias, and forecast noise. We find that noise and bias increase strongly with forecast horizon while analyst information advantage decays rapidly. Noise increase with horizon generates a mechanical reversal in the sign of the Coibion and Gorodnichenko (2015) regression coefficient at longer horizons, independently of over-/underreaction. A parsimonious model with bounded rationality and a noisy cognitive default a la Patton and Timmermann (2010) matches the term structures of noise and bias jointly.

3. What Drives Investors' Portfolio Choices? Separating Risk Preferences from Frictions, with Taha Choukhmane
Revise and Resubmit at the *Journal of Finance*.

Abstract: We study the role of risk preferences and frictions in portfolio choice, using variation in the default asset allocation of 401(k) plans. We estimate that, absent participation frictions, 94% of investors would prefer holding stocks in their retirement accounts, with an equity share of retirement wealth that declines over the life cycle. We use this variation to estimate a structural life cycle portfolio choice model with Epstein-Zin preferences, finding evidence consistent with relative risk aversion of 2.1 and a portfolio adjustment cost of $200. Our results suggest that the lack of participation in the stock market is mainly due to participation frictions rather than non-standard preferences (e.g. loss-aversion).

4. Losing is Optional: Retail Option Trading and Expected Announcement Volatility, with Eric C. So and Kevin C. Smith.

Abstract: We document the growth of retail options trading and provide evidence that retail investors are drawn to options by anticipated spikes in volatility. Retail investors purchase options in a concentrated fashion before earnings announcements, particularly those with greater expected abnormal volatility. Comparing across asset markets, we also find retail investors disproportionately trade options over stocks as anticipated announcement volatility increases. In doing so, retail investors display a trio of wealth-depleting behaviors: they overpay for options relative to realized volatility, incur enormous bid-ask spreads, and sluggishly respond to announcements. These translate to retail losses of 5-to-9% on average, and 10-to-14% for high expected volatility announcements.

PUBLICATIONS

5. Are Volatility Expectations in Different Countries Interdependent? A Data-Driven Solution to Structural VAR Identification for Implied Equity Volatility Indices
Undergraduate Economic Review, Vol. 14(1), 2017.

   - Winner of Claremont McKenna College *Best Senior Thesis in Financial Economics*

6. Is Google Search Behavior Related to Volatility? Incorporating Google Trends Data into a GARCH Model for Equity Volatility
Undergraduate Economic Review, Vol. 13(1), 2016.

WORK IN PROGRESS

7. Selective Inattention, with Pierfrancesco Mei

Abstract: We introduce the concept of selective inattention: agents in the economy selectively update their expectations about aggregate variables only when they make individual decisions for which these variables are relevant. Using a comprehensive set of household surveys, we show that households form expectations of macroeconomic variables that are more accurate, less dispersed, and closer to those of professional

forecasters around periods in which they make important decisions, such as taking out a mortgage. These effects are larger for more consequential decisions and increase with proxies for financial sophistication. In ongoing work, we develop a consumption-savings model with durable and nondurable consumption, where agents can pay an observation cost to observe the return on a risky asset. In the model, agents exhibit selective inattention endogenously: they are more likely to pay the observation cost when adjusting durable consumption. This selective inattention has spillover effects on nondurable consumption and implies that the model can exhibit two features that have been difficult to reconcile jointly: a high level of macro-inattention, which refers to the sluggishness with which average expectations respond to shocks, and large responses of macro aggregates to shocks, in particular volatile durable goods spending.

8. DGP-Agnostic Dynamic Programming via Reinforcement Learning, with Marc de la Barrera

   Abstract: Traditional dynamic programming requires a mathematical model of the state transition function. Using reinforcement learning techniques, we develop a framework that allows more general transition functions. The modeler does not need to know the transition function as long as it can simulate realizations of it or observe realizations from data. We apply it to the income fluctuations problem and show that our solution technique is able to learn the underlying data-generating process, achieving the same value as traditional methods. We then quantify the welfare loss of assuming the income process is an AR1 instead of using real income realizations.

9. Optimal Default Asset Allocations with Choice Frictions, with Taha Choukhmane
10. Personal Debt and Entrepreneurial Risk-Taking, with Maya Bidanda

SOFTWARE PACKAGES

`nndp`	Dynamic Programming with Neural Networks (joint with Marc de la Barrera) Source code: GitHub, PyPi

INDUSTRY EXPERIENCE

2017	Institutional Equity Derivatives Trading and Research, Morgan Stanley
2016	Quantitative Investment Researcher, Analytic Investors
2016-2018	Director, Claremont Consulting Group
2015-2016	Lead Consultant, Claremont Consulting Group

RESEARCH EXPERIENCE

2022-2024	Visiting Researcher, Australian National University *Sponsors*: Nicholas Biddle, Andrew Norton
2022-2024	Honorary Appointment, University of Technology Sydney *Sponsor*: Anna Bedford
2021-2022	Research Assistant for Professor Taha Choukhmane
2020	Research Assistant for Professor Eric C. So
2018-2019	Research Assistant for Professor Eben Lazarus
2016	Research Assistant at the Lowe Institute of Political Economy

TEACHING EXPERIENCE

Fall 2022	TA for 15.425: Corporate Finance (MFin) Professor David Thesmar, MIT Sloan
Spring 2022	TA for 15.453: Finance Lab (MFin) Professors Gita Rao and Bhushan Vartak, MIT Sloan
Spring 2022	TA for 15.539: PhD Seminar in Empirical Methods (PhD) Professors Eric C. So and Charles C.Y. Wang, MIT Sloan
Summer 2020	TA for 15.511: Financial Accounting (Sloan Fellows MBA) Professor Bala Dharan, MIT Sloan
Summer 2019	TA for 15.511: Financial Accounting (Sloan Fellows MBA) Professor Joe Weber, MIT Sloan
Spring 2018	TA for ECON101: Intermediate Microeconomics (undergraduate) Professor Saman Olfati, Claremont McKenna College

FELLOWSHIPS, AWARDS, AND GRANTS

2023	NBER Household Finance Grant, Mark Kritzman and Elizabeth Gorman Finance PhD Research Fund, Stone Finance PhD Fund, Thomas Anthony Pappas Endowed Scholarship Fund
2022	Mark Kritzman and Elizabeth Gorman Research Fund (joint with Taha Choukhmane)
2018-2024	MIT Sloan PhD Fellowship
2018	Phi Beta Kappa, Robert Day School BA Scholar, International Honor Society of Economics (Omicron Delta Epsilon), Best Senior in Economics, Best Senior Thesis in Financial Economics, Dean's List (Top 15%)

CONFERENCE PRESENTATIONS

2023	American Finance Association Annual Meeting*, Olin Finance Conference (PhD Poster Session), Financial Research Association (FRA) Conference
2022	NBER Behavioral Finance Spring Working Group Meeting*, CEPR Seventh European Workshop on Household Finance*, Western Finance Association Meeting, Society for Economic Dynamics Annual Meeting*, European Finance Association Annual Meeting*, Northern Finance Association Annual Meeting*, Texas Finance Festival*, BSE PhD Workshop on Expectations in Macroeconomics, Miami Behavioral Finance Conference*
2021	Transatlantic Doctoral Conference, SoFiE Annual Conference
2020	Stanford GSB Rising Scholars Conference

(includes scheduled, * = presentation by co-author)

SEMINAR PRESENTATIONS

2023	MIT Sloan (x2), MIT Economics (x2), Inter-Finance PhD Seminar
2022	MIT Sloan (x4), MIT Economics, Quantbot Technologies, Inter-Finance PhD Seminar
2021	MIT Sloan (x2) , MIT Economics (x2)
2020	MIT Sloan (x2)
2019	MIT Sloan

INVITED PARTICIPATION

2022	NBER Behavioral Macroeconomics Research Bootcamp (Berkeley Haas), Yale Summer School in Behavioral Finance (Yale SOM), MFR Summer Session for Young Scholars (Chicago), MFR Workshop on the Financial Economics of Insurance (Chicago)
2021	Mitsui Summer School on Structural Estimation in Corporate Finance (Michigan Ross)
2019	Big Data Analytics for Accounting Research (MIT Sloan)

PROFESSIONAL ACTIVITIES

Referee	*Quarterly Journal of Economics, Review of Economics and Statistics, Management Science, Journal of Financial Econometrics, Journal of Accounting and Economics, The Accounting Review*

SKILLS

Software	PYTHON, FORTRAN, OPENMP, MPI, GIT, BASH, SLURM, R, SAS, STATA, BLOOMBERG TERMINAL, GOOGLE ANALYTICS, LaTeX
Languages	English (native), Spanish (beginner)

OTHER ACTIVITIES

Auto Racing	*Team USA Scholarship* Nominee (2015), *Team USA Scholarship* Finalist (2016), 5x Formula 2000 Track Record Holder (2016-2017), Pacific F2000 Pro Series Champion (2016), *Mazda Road to Indy $250,000 Shootout* Competitor (2016), *Motorsports Magazine* Silverstone Classic Driver of the Weekend (2022)
Golf	Ocean League Conference Individual Champion (2012, 2014), NCAA Division III National Team Champion (2016)

PERSONAL INFORMATION

Ethnicity: Sri Lankan, White. Citizenship: USA.