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TIM DE SILVA

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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 (Dual Major), *magna cum laude* CLAREMONT MCKENNA COLLEGE *Thesis Supervisor*: Fan Yu

RESEARCH INTERESTS

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

REFERENCES

Jonathan A. Parker (co-chair)
Robert C. Merton (1970)
Professor of Financial Economics
MIT Sloan School of Management
(617) 253 7218
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David Thesmar (co-chair)
Franco Modigliani
Professor of Financial Economics
MIT Sloan School of Management
(617) 225 9767
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Taha Choukhmane
Class of 1947 Career Development
Assistant Professor of Finance
MIT Sloan School of Management
(203) 823 8346
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Lawrence D.W. Schmidt
Victor J. Menezes (1972)
Assistant Professor of Finance
MIT Sloan School of Management
(617) 258 8617
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Eric C. So
Professor of Global
Economics and Finance
MIT Sloan School of Management
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eso@mit.edu

JOB MARKET PAPER

1. "Balancing Insurance and Incentives in Student Loan Repayment"

Abstract: This paper studies the trade-off in government-financed student loans between providing insurance against income risk and disincentivizing labor supply. Using policy variation from the Australian student loan system, I show borrowers adjust their labor supply to reduce repayments on income-contingent loans. These responses are larger among borrowers with high debt balances, who have a lower likelihood of eventual repayment, and among those who are more liquidity-constrained, for whom the repayment reduction is valuable. I then estimate a structural model and find this evidence is consistent with a Frisch labor supply elasticity of 0.11, but also substantial frictions that limit labor supply adjustment. In the model, a constrained-optimal income-contingent loan generates a welfare gain relative to a 25-year fixed repayment contract equivalent to 1.3% of lifetime consumption with the same fiscal cost. Of this gain, 1.5% comes from improved insurance, while -0.2% comes from labor supply responses that reduce the amount of insurance this contract can provide at a given cost. These findings suggest that income-contingent repayment creates labor supply responses that affect contract design, but these responses are too small to justify fixed repayment contracts.

WORKING PAPERS

2. "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 401(k) default investment options. Patterns of active choice in response to different default funds imply that, absent participation frictions, 94% of investors prefer holding stocks, with an equity share of retirement wealth declining with age—patterns markedly different from their observed allocations. We use this quasi-experiment to estimate a lifecycle model and find relative risk aversion of 2, EIS of 0.4, and a $200 portfolio adjustment cost. Our results suggest low stock-market participation is due to participation frictions rather than non-standard preferences such as loss-aversion.

3. "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

4. "Noise in Expectations: Evidence from Analyst Forecasts" with David Thesmar
   Review of Financial Studies, Forthcoming.

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 Pierfrancisco Mei

   Abstract: We introduce the concept of selective inattention, which refers to the idea that agents in the economy selectively update their expectations about aggregate variables only during the short windows in which they make individual decisions for which these aggregate variables are relevant. Using a comprehensive set of new and existing household surveys from the US and Europe, we show households form expectations that are both significantly different and more accurate around periods in which they make large decisions, such as taking out a mortgage. This improvement in forecast accuracy is larger for individuals with lower income and education, suggesting the strength of the selective inattention channel varies cross-sectionally. We conclude by highlighting the importance of selective inattention in a stylized consumption-saving problem under interest rate uncertainty and show this economy 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, such as 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 transition function of the states. 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 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

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 Rating: Mean = 5.3/7, Median = 6/7
Spring 2022	TA for 15.453: Finance Lab (MFin) Professors Gita Rao and Bhushan Vartak, MIT Sloan Rating: Mean = 6.7/7, Median = 7/7
Spring 2022	TA for 15.539: PhD Seminar in Empirical Methods (PhD) Professors Eric C. So and Charles C.Y. Wang, MIT Sloan Rating: Mean = 7/7, Median = 7/7
Summer 2020	TA for 15.511: Financial Accounting (Sloan Fellows MBA) Professor Bala Dharan, MIT Sloan Rating: Mean = 6.3/7, Median = 7/7
Summer 2019	TA for 15.511: Financial Accounting (Sloan Fellows MBA) Professor Joe Weber, MIT Sloan Rating: Mean = 5.9/7, Median = 6/7
Spring 2018	TA for ECON101: Intermediate Microeconomics (undergraduate) Professor Saman Olfati, Claremont McKenna College Rating: N/A

CONFERENCE PRESENTATIONS

2023	American Finance Association Annual Meeting*
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 (x3), 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
	(includes scheduled)

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)

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%)
2016	Best Sophomore in Economics, Athletic Director's Honor Roll
2015	Athletic Director's Honor Roll

PROFESSIONAL ACTIVITIES

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

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

Born: June 21st, 1996. Ethnicity: Sri Lankan, White. Citizenship: USA.