Ali Choubdaran

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Education

London School of Economics (LSE), PhD in Finance	2021 – Present
London School of Economics (LSE), MRes in Finance	2019 – 2021
Sharif University of Technology, MSc in Economics	2016 – 2019
Sharif University of Technology, BSc in Electrical Engineering	2011 – 2016

Technical Skills

Statistics & Econometrics: Hypothesis Testing, Monte Carlo Simulation, GMM, MLE, Time-Series Analysis, Panel Data, Diff-in-Diff, Instrumental Variables, Bayesian Inference, Stochastic Calculus

Machine Learning & NLP: Deep Learning, Scikit-learn, XGBoost, LightGBM, TensorFlow, PyTorch, SHAP, Topic Modeling, Sentiment Analysis, NER, Embedding Similarity

Programming & Tools: Python (Pandas, NumPy, SciPy, Seaborn, Statsmodels), C++, SQL, Git, Jupyter, VS Code, LaTeX, AWS, GCP, BigQuery

Mathematical Foundations: Optimization, Signal Processing, Numerical Methods, Linear Algebra, Differential Equations

Work Experience

London School of Economics and Political Science (LSE) — London, UK
Graduate Teaching Assistant / Summer School Instructor — 2020 – Present

- Taught undergraduate and graduate courses in Finance and Economics
- Awarded multiple LSE teaching awards for excellence (avg evaluation: 4.84/5)

Academic Papers

Disagreement Horizon and Timing Alpha in Share Repurchase Programs

- **GCP/EDGAR:** Developed a multi-threaded Python pipeline on GCP to process 300k+ 10-Q/10-K filings
- **NLP:** Linked repurchase figures to underlying programs by matching text references to table-reported data
- **Dataset Construction:** Created largest-to-date buyback completion dataset (4000+ firms, 20 years)
- **Panel Econometrics:** Showed completion behavior reveals managers' private information horizon
- **Trading Strategy Design:** Designed a completion-contingent strategy outperforming buy-and-hold by 5%

Flow-Induced Mispricing and Share Repurchases: Evidence from a Natural Experiment

- **Causal Inference:** Causally linked fund flows to buybacks using the 2003 mutual fund scandal
- **Instrumental Variables:** Quantified flow effects on buybacks using firm-level exposure to scandal funds
- **Alpha Analysis:** Demonstrated buyback anomaly exists only in announcements following outflows
- **Trading Strategy Design:** Developed limit-to-arbitrage strategy delivering 2× buyback anomaly performance

Inter-sectoral Labor Mobility Costs and Macroeconomic Adjustment

- **Structural Macro-Labor Model:** Built a discrete-choice model of inter-sector labor allocation
- **Simulated Method of Moments:** Estimated parameters using 20 years of Labor Force & Household data
- **Demographic Results:** Women, older, and less-educated workers face costs 50%, 30%, and 50% higher
- **Policy Simulation:** Simulated oil price & policy shocks; liberalisation cut tradable-sector employment by 5pp
- **Policy Implications:** Retraining/relocation subsidies cut mobility costs 20% and boost employment 2pp

Corporate Trading and Systematic Liquidity Risk: Evidence from Share Repurchases

- **Big Data/TAQ:** Analyzed millisecond-level quote and trade data to construct firm-level liquidity metrics
- **Market Microstructure:** Separated idiosyncratic vs. systematic liquidity exposure during OMR periods
- **Empirical Design:** Found firm trading during OMRs reduces systematic liquidity exposure by 15%
- **Asset Pricing:** Linked reduced systematic liquidity exposure to a 1.2% lower cost of capital
- **Asset Allocation:** Showed how OMRs, by reducing systematic liquidity, boost appeal to under-diversified funds

Applied Quantitative Research

Fine-Tuning LLaMA-8B to Predict Market Reaction to Corporate News
- **Web Scraping:** Collected & processed 20k+ press releases from official websites of U.S. public firms
- **Event Labeling:** Classified news using 2-day/2-hour abnormal returns, creating short-/medium-term labels
- **LLM Querying:** Queried LLaMA-8B to predict market impact and provide reasoning
- **Supervised Reasoning:** Selected and scored reasoning chains leading to correct predictions
- **Fine-Tuning:** Trained the model on validated rationales, increasing accuracy from 63% to 86%

Inferring Subjective Probabilities from Option Prices via Time-Varying Pricing Kernels
- **Risk-Neutral Extraction:** Derived 30-day risk-neutral return distributions from S&P 500 option prices
- **SDF Dynamics:** Modeled SDF as a polynomial in market return with coefficients as functions of implied moments
- **Estimation:** Constrained maximum-likelihood estimation to parameter sets consistent with belief moments
- **Puzzle Resolution:** Demonstrated the monotonicity puzzle arises from ignoring time variation in pricing kernel
- **Market Timing Strategy:** Timed S&P 500 vs Treasuries using inferred beliefs, improving Sharpe ratio by 50%

NLP-Based FOMC Speech Sentiment Analysis for Polymarket Forecasting
- **Speech Parsing:** Collected and processed historical Fed policymaker speeches from 2020–2024
- **Sentiment Modeling:** Built rule-based and ML models to detect hawkish vs. dovish tone shifts
- **Polymarket Training:** Trained models to predict changes in Polymarket probabilities for Fed rate decisions
- **Predictive Gain:** Improved directional accuracy by 12% over an autoregressive baseline

Alternative Consumer Spending Dataset via Vision Crawling (Early Stage)
- **Vision Crawling:** Engineered a system to scrape seat maps from 5,000+ cinemas, stadiums, and theaters
- **LLM-Powered Extraction:** Applied vision models to detect seat occupancy from visual layouts
- **Macro Signal Design:** Aggregated occupancy trends into real-time consumer demand indicators
- **Policy & Market Use:** Designed to anticipate shifts in spending ahead of CPI and retail sales data

Awards

LSE Graduate Fellowship (2019–2024); LSE Teaching Excellence Award (2023); LSE Summer School Teaching Award (2023); LSE Students' Union Teaching Excellence Award (2024); 3rd in National MSc Economics Exam (20,000+ candidates, 2016).