

AVANEENDRA TRIVEDI

Quantitative Researcher · Market Microstructure & Non-Equilibrium Market Dynamics

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Independent quantitative researcher with **11 single-authored working papers** (SSRN top 0.8% of 2.8M authors, 5,108 downloads) across market impact, funding stress, and regulatory event studies. Owns research end to end: hypothesis, constrained-optimization estimation, causal identification, out-of-sample validation, and fully reproducible Python pipelines.

SELECTED QUANTITATIVE RESEARCH

Endogenous vs. Information-Driven Price Impact · *Market Microstructure* · *Market Impact* Apr 2026

- Built a multiscale market-impact model separating price moves into flow-driven (endogenous, self-reinforcing) and information-driven components, estimating the flow-to-price response function via constrained convex optimization (CVXPY / CLARABEL) under positivity and stability conditions.
- Reached **76-82% out-of-sample R^2** with every estimation window satisfying all stability constraints, and attributed **75-82% of return covariance to endogenous flow**, a direct read on market fragility and crowding. **Published on SSRN, [6450561](#)** (Reflexivity Kernel Spectroscopy).

Systematic Overnight-Return Effect Around Scheduled Events · *Empirical Finance* · *Signal Research* May 2026

- Ran a pre-registered study of overnight returns across **15 ETFs and 32,130 ETF-days (2016-2024)**, testing a calendar-linked effect against a permutation null of 1,000 randomized draws (**$p < 0.001$**); power analysis confirmed 80% power at a 2.9 bp effect size.
- Pre-committed and rejected four directional hypotheses across five phases; the surviving effect held under both date-clustered ($t = -2.61$) and ETF-clustered ($t = -2.83$) standard errors and passed every pre-specified placebo test. **Published on SSRN, [6818821](#)** (Scheduled Coordination Density).

Funding-Stress Indicator from Cross-Market Arbitrage Spreads · *Fixed Income* · *Intermediary Finance* Apr 2026

- Constructed a latent funding-stress indicator (the shadow price of dealer balance-sheet constraints) from law-of-one-price dislocations across covered interest parity, the Treasury basis, and swap spreads; the series **peaked at the March 2020 liquidity crisis**, with causal identification significant at $p < 0.001$.
- Validated out-of-sample: an indicator fit on CIP and Treasury data alone priced withheld swap spreads to **3.10 bp mean absolute error**, evidence that a single common constraint prices all three markets. **Published on SSRN, [6457180](#)** (Constraint Shadow-Price Tomography).

Causal Study of a 2024 SEC Disclosure Reform (EDGAR) · *Regulatory Finance* · *Causal Inference* Jun 2026

- Estimated the effect of the Feb 2024 Schedule 13D reform with a **difference-in-differences natural experiment** on live SEC EDGAR data (333 filings, 133 clusters): compliance share rose **+0.348 ($p = 0.007$)** and the cross-statute effect ($t = 3.09$) survived false-discovery-rate correction; the pre-specified return test was reported null ($t = 0.40$).
- Measured mandated disclosure across four U.S. statutes over 428 filing dates; convex (second-order-cone) bounds contained 1,535 of 1,536 insider Form 4 values (99.9%), validated by a 94-test suite. Stack: Python, CVXPY / CLARABEL, statsmodels. **SSRN [6868499](#)** (Mandated Revelation Field).

TECHNICAL SKILLS

Quantitative Methods: Convex Optimization (CVXPY / CLARABEL), Causal Inference (Difference-in-Differences, Natural Experiments), Time-Series Analysis, Permutation & Placebo Testing, Out-of-Sample Validation, Partial Identification, Spectral / Eigen-decomposition, Signal Research

Programming & Data: Python (NumPy, pandas, SciPy, statsmodels, Polars), CVXPY, FastAPI, SQL, Parquet, MLflow, DVC, Git

Finance: Market Microstructure, Market Impact & Execution, Fixed-Income Relative Value, Asset Pricing, Regulatory & Disclosure Economics, Risk Management

EDUCATION

Thapar Institute of Engineering and Technology · Patiala, India

Sep 2022 - Jun 2026

B.E., Electronics and Computer Engineering · GPA 8.99 / 10

Relevant coursework: Quantitative Finance, Corporate Finance & Markets, Portfolio Theory, Optimization, Probability & Statistics.

HONORS & CERTIFICATIONS

- **Certifications:** Financial Engineering & Risk Management (Columbia); Investment Management (HEC Paris / AXA IM); Financial Markets (Yale); McKinsey Forward Program.
- **Honors:** Duke of Edinburgh's Award (Gold); International English Olympiad (World Rank 56); Yale Young Global Explorers (Cambridge); National Science / Math / Cyber Olympiad merits.
- **Writing:** Non-Equilibrium, essays translating market-microstructure and non-equilibrium research for a practitioner audience (avaneendra.substack.com).