Peter O'Neill

Australian Citizen, UK Permanent Resident

London,
United Kingdom
+44 74156 78922
peteroneill@gmail.com

Education

2013–2018 **PhD**, *Financial Economics*, University of New South Wales

2006–2010 **Bachelor**, *Commerce (Honors)*, University of Sydney

Working Papers

"Can Markets be Fully Automated? Evidence From an 'Automated Market Maker'" (Job Market Paper)

"Banning Dark Pools: Venue Selection and Investor Trading Costs" (with C. Neumeier, A. Gozluklu, P. Hoffmann, F. Suntheim), *FCA Occasional Paper 60*, 2021

"Forex Trading and the WMR Fix: Assessing the Effects of Rigging and Reform" (with M.D.D. Evans, D. Rime and J. Saakvitne), *Working Paper*, 2021

"Non-Standard Errors" (a Many Author Collaboration with 'Fincap'), *Working Paper*, 2021

"Sharks in the Dark: Quantifying Latency Arbitrage" (with M. Aquilina, S. Foley, T. Ruf), *FCA Occasional Paper 21*, 2016

Publications

"Quantifying the High-Frequency Trading 'Arms Race'" (with M. Aquilina and E. Budish), *Quarterly Journal of Economics (Forthcoming)*, 2021

"Benchmarks in the Spotlight: The Impact on Exchange Traded Markets" (with A. Aspris and S. Foley). *Journal of Futures Markets*, 2020

"Time Pro-Rata Matching: Evidence of a Change in LIFFE STIR Futures" (with A. Aspris, S. Foley and D. Harris). *Journal of Futures Markets*, 2015

Employment

2018– **Technical Specialist (Senior Economist)**, *Financial Conduct Authority (UK)*, Economics Department, *London*

Role approx. 70:30 (Policy:Research)

2010–2012 **Graduate**, *PwC*, Banking & Financial Services Assurance, *Sydney*

Other Experience

2013-18 **Visiting PhD Student Researcher**, *Financial Conduct Authority (UK)*, Surveillance Department & Economics Department, *London*

- Analysis for detection of market abuse in UK financial markets
- Analysis of financial benchmarks (4pm Fix, Gold, Silver, Interest Rate Swaps, Oil)

- Analysis for economic cost benefit analyses of new policies, e.g. pre/post-trade transparency, research bundling, LIBOR, CFD leverage cap

- Analysis for systemic risk working groups at Bank of England, FSB on ETFs, non-bank financials, asset managers with non-liquid allocations

Conferences (Own Presentations)

2021	European Finance Association	*Milan*
2019	Central Bank Microstructure Conference	*Stockholm*
2019	Future of Financial Information (Discussant)	*Stockholm*
2019	North American Finance Association	*Vancouver*
2019	Sydney Microstructure Conference	*Sydney*
2019	Financial Management Association	*Glasgow*
2017	European Finance Association	*Mannheim*
2017	Plato-Imperial-CEPR Microstructure Conference	*London*
2017	Warwick University Microstructure Conference	*London*

Awards

2020 WFA Conference Best Paper Award – "Two Sigma Award for the Best Paper on Investment Management"

Capital Markets Co-operative Research Center (CMCRC) PhD Scholarship

R.J. Chambers Scholarship For Undergraduate Honors

Knowledge Areas

Languages	Python, R, SAS, Stata, LaTeX
Datasets	Bloomberg, Refinitiv Datastream & Tick History, Blockchain data
Platforms	Amazon Web Services (AWS)

References

Professor	Eric Budish — Chicago Booth School of Business — eric.budish@chicagobooth.edu
Professor	Talis Putnins — University of Technology Sydney — talis.putnins@uts.edu.au
Assoc. Prof.	Sean Foley — Macquarie University — sean.foley@mq.edu.au

Selected Paper Abstracts

"Can Markets be Fully Automated? Evidence From an 'Automated Market Maker'" (Job Market Paper)

Would a *fully* automated financial market be desirable, or even possible? While algorithms are increasingly prevalent in modern markets, they are still managed by humans who intervene in the operation of the market. In contrast, a new market type, "Automated Market Makers" (AMMs), removes humans completely, automating their trade matching and liquidity provision functions in transparent and deterministic code. Can such markets succeed? Using a complete record of 39 million AMM transactions from blockchain data, I show that AMMs now provide liquidity to over $50bn worth of trades per month. Despite the crude simplicity of their pricing algorithm, AMMs facilitate price discovery and their prices manage to stay within close bounds of other less automated markets. They overcome adverse selection costs in liquidity provision through fees, making their liquidity sustainable. I show that these markets arrive at equilibrium levels of liquidity by adjusting the size of the liquidity pool, analogous to traditional market makers adjusting bid-ask spreads. Consequently, they provide deeper liquidity pools in less volatile assets. Lastly, I show that AMM liquidity is more stable during extreme volatility than traditional markets, suggesting that full automation might have benefits.

"Quantifying the High-Frequency Trading 'Arms Race'" (with M. Aquilina and E. Budish), *Quarterly Journal of Economics* (Forthcoming), 2021

We use stock exchange message data to quantify the negative aspect of high-frequency trading, known as "latency arbitrage." The key difference between message data and widely familiar limit order book data is that message data contain attempts to trade or cancel that fail. This allows the researcher to observe both winners and losers in a race, whereas in limit order book data you cannot see the losers, so you cannot directly see the races. We find that latency arbitrage races are very frequent (about one per minute per symbol for FTSE 100 stocks), extremely fast (the modal race lasts 5–10 millionths of a second), and account for a remarkably large portion of overall trading volume (about 20%). Race participation is concentrated, with the top six firms accounting for over 80% of all race wins and losses. The average race is worth just a small amount (about half a price tick), but because of the large volumes the stakes add up. Our main estimates suggest that races constitute roughly one-third of price impact and the effective spread (key microstructure measures of the cost of liquidity), that latency arbitrage imposes a roughly 0.5 basis point tax on trading, that market designs that eliminate latency arbitrage would reduce the market's cost of liquidity by 17%, and that the total sums at stake are on the order of $5 billion per year in global equity markets alone.

"Forex Trading and the WMR Fix: Assessing the Effects of Rigging and Reform" (with M.D.D. Evans, D. Rime and J. Saakvitne), *Working Paper*, 2021

We examine the design and effectiveness of the WMR 4pm Fix, the most important benchmark in foreign exchange markets, using unique trader identified data from a major inter-dealer trading venue. We propose and examine new measures of benchmark quality and examine changes to market liquidity and trader behavior around two events: (i) the revelations of benchmark rigging in June 2013, and (ii) the reform of the benchmark calculation methodology in February 2015. We find that benchmark quality, measured as price efficiency and robustness, improves after the 2015 reform, but comes at the cost of a significant increase in tracking error for users of the benchmark. We also find that quoted spreads and price impact increase following the reform, with HFTs trading more aggressively during the Fix.

"Banning Dark Pools: Venue Selection and Investor Trading Costs" (with C. Neumeier, A. Gozluklu, P. Hoffmann, F. Suntheim), *FCA Occasional Paper 60*, 2021

We analyze the relationship between transaction costs and venue choice using proprietary transaction-level data from institutional trade executions in the UK equity market. We show that a higher share of dark trading (midpoint dark pools) is associated with lower execution costs. In the context of a recent ban on dark trading, we provide evidence consistent with the existence of significant participation externalities on substitute trading venues such as periodic auctions. We further provide micro-evidence on Menkveld et al. (2017)'s pecking order theory of venue choice over the life-cycle of large parent orders.