Prof. Barry Quinn

Professor of Finance and Financial Technology

Contact Information

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Research Profile Summary

Professor Barry Quinn is Professor of Finance & Financial Technology at Ulster University Business School, where he is developing the Centre for Financial and Regulatory Technology. He is an applied econometrician and Chartered Statistician whose work integrates econometrics, machine learning, and computational approaches to address challenges in financial markets, risk, and regulatory compliance.

His research combines causal policy analysis, algorithmic trading risk detection, and trustworthy AI methods, with a particular interest in how financial technology can support resilient markets and evidence-based regulation. Barry's work is collaborative and interdisciplinary, bridging economics, statistics, computer science, and law.

He teaches across quantitative finance, econometrics, and AI applications in finance, encouraging students to engage with rigorous, ethical, and reproducible methods. Pedagogically, he emphasises employability, resilience, and critical thinking.

Before entering academia, Barry worked in financial markets, specialising in currency trading and liquidity management. He holds a PhD in Finance from Queen's University Belfast, is a Chartered Statistician, and is completing an MSc in Artificial Intelligence. He actively collaborates with industry and policy partners to ensure his research delivers academic, societal, and regulatory impact.

Research Interests: AI applications in finance, causal AI, financial data science, market manipulation detection, systemic risk assessment, regulatory technology, cooperative finance, sustainable finance, generative AI in capital markets.

Education and Professional Qualifications

Qualification	Institution	Year	Research Relevance
Ph.D. Finance	Queen's University Belfast	2012	Thesis: Cooperative Financial Institutions
MSc Quantitative Finance	RMIT University Melbourne	2006	Advanced derivatives and risk management
MSc Artificial Intelligence	Queen's University Belfast	2025*	Current: Deep learning, NLP, computer vision

Qualification	Institution	Year	Research Relevance
Chartered Statistician	Royal Statistical Society	2019	Professional statistical expertise
B.Sc.(Hons) Accounting and Finance	Queen's University Belfast	1995	First Class Honours

Research Excellence

Publication Record (h-index: Available upon request)

Peer-Reviewed Publications (14 total)

Recent High-Impact Publications:

- **Liu, Weilong, Zhang, Yong, Liu, Kailong, Quinn, Barry**, Yang, Xingyu, Peng, Qiao (2024). Evolutionary Multi-Objective Optimisation for Large-Scale Portfolio Selection With Both Random and Uncertain Returns. *IEEE Transactions on Evolutionary Computation* (**ABS4**)

- **McKillop, Donal, Liu, Kailong, Quinn, Barry**, Peng, Qiao (Forthcoming). Modelling and Predicting Credit Union Failures. *International Journal of Forecasting* (**ABS3**)

- **Bouri, E., Quinn, B., Sheenan, L. & Tang, Y.** (2024). Investigating extreme linkage topology in the aerospace and defence industry. *International Review of Financial Analysis* (**ABS3**)

- **Quinn, Barry, Gallagher, Ronan, Kuosmanen, Timo** (2023). Lurking in the shadows: The impact of CO_2 emissions target setting on carbon pricing in the Kyoto agreement period. *Energy Economics* (**ABS3**)

Software Publications

- **Time Series Econometrics (tsfe)** (2022) - R Package for advanced time series analysis (DOI: 10.5281/zenodo.6376113)
- **Financial Machine Learning (fml)** (2020) - R Package for financial ML applications (DOI: 10.5281/zenodo.6376114)

Working Papers & Under Review

- **Kearney, Fearghal, Quinn, Barry, Dai, Yongsheng** (2025) *Signal Amplification in Market Manipulation Detection*
- **Dai, Yongsheng, Quinn, Barry, Kearney, Fearghal, Liu, Weilong, Spence, Ivor, Rafferty, Karen, Wang, Hui** (2025). *Detecting Market Manipulation with Self-supervised Learning: A Hybrid Framework Using Frequency-based Synthetic Anomaly and Domain-Specific Features.* Working paper.
- **Quinn, Barry** (2023). *Explaining AI in Finance: Past, Present, Prospects.* arXiv preprint arXiv:2306.02773.
- **Zhang, Ying (Veronica), Quinn, Barry, Sheenan, Lisa** (2025). *Ownership Dynamics, Risk and Regulation in Chinese Banking: New Evidence*
- **Kearney, Fearghal, Quinn, Barry, Pramanick, Abhishek** (Under Review) *Innovation Signals and Strategic Exits: How Technological Readiness Shapes RegTech Venture Outcomes*

Research Funding Track Record

Table 2: Research Grant Portfolio

Funding Body	Role	Period	Project Title	Value	Type
Innovate UK	PI	2022-2023	E.S.G fair value analytics platform	£173,000	Research
Innovate UK	PI	2021-2023	Regulatory technology and portfolio analytics	£173,000	Research
UKRI/InnovateUK	PI	2024-2025	AI regulatory compliance in Investment Management	£100,000	Research
DofE CAST Award NI	Co-I	2023	Welfare Cost of Cultural Displays using AI	£70,000	Research

Total Research Income: £1,075,000+ (direct awards as PI/Co-I)
Success Rate: High success rate in competitive funding schemes
Industry Leverage: Strong track record of industry co-funding and partnerships

Research Impact and Knowledge Transfer

Industry Collaborations

- **Funds Axis Ltd** - RegTech and compliance solutions (ongoing)
- **Citigroup Belfast** - Market manipulation detection (2022-2023)
- **Pearl AI Ltd** - Advanced retail analytics (2017-2019)
- **Financial Conduct Authority** - Tech Sprint Mentor (2023-present)

Research Supervision Excellence

Completed PhD Supervisions (6)

1. **Dr. Jiadong Liu** (2018): *Momentum in Empirical Asset Pricing* - Now research scientist
2. **Dr. Ashleigh Neil** (2019): *Law and Financial Stability* - Now policy analyst
3. **Dr. Colm Kelly** (2021): *Machine Learning in Empirical Asset Pricing* - Now quant researcher
4. **Dr. Qiao Peng** (2021): *US Credit Union Mergers* - Now assistant professor
5. **Dr. Kevin Johnson** (2019): *Industrial Consolidation* - Now senior analyst
6. **Veronica Zhang** (2024): *Capital Policy in Chinese Banking* - Graduating

Current PhD Supervisions (6)

- **Fei Li**: Sustainable Investing and Gender Diversity (QBS scholarship)
- **Abhishek Pramanick**: AI and Future of Financial Regulation (QBS scholarship)

- **Dongwei Li**: Economics of AI Patents in Finance (DofE scholarship)
- **Yuqi Ding**: Economics of Generative AI in Finance (QBS scholarship)
- **Yongsheng Dai**: Market Manipulation Detection (PWC scholarship)
- **Brandon Cochrane**: Economic Cost of Cultural Displays (DofE CAST scholarship)

International Research Network

- **Visiting PhD Supervisors**: Students from China (SYSU), Ireland (UCD), France (UPEC Paris)
- **International Collaborations**: Active research partnerships across Europe, Asia, and North America
- **Conference Presentations**: Regular invited speaker at major international conferences

Research Infrastructure and Capabilities

Technical Expertise

- **Advanced Statistical Methods**: Time series econometrics, machine learning, deep learning
- **Programming Languages**: R (expert), Python (advanced), SQL, MATLAB
- **Specialized Software**: Bloomberg Terminal, Reuters, specialized financial databases
- **High-Performance Computing**: Experience with cluster computing and big data analytics

Research Facilities

- **Queen's Business School Remote Analytics Lab Platform** (Lead Developer, 2021-2024)
- **Finance and AI Research Lab** (Co-founder with Dr Fearghal Kearney, 2022-2024)
- **Ulster University Centre for Financial and Regulatory Technology** (Director, 2024-present)

Training & Capacity Building

- Design and delivery of graduate teaching in Financial Data Science and causal AI, with applications in trading, market microstructure, and policy analysis
- Supervision and mentoring across econometrics, machine learning, and computational finance, including industry-partnered projects
- Emphasis on reproducible research (versioned data pipelines, model governance) and rigorous statistical standards for evidence-based decision-making

Future Research Directions

Emerging Research Themes

1. **Generative AI in Capital Markets**: Applications and regulatory implications
2. **Explainable AI for Financial Regulation**: Transparent algorithmic decision-making
3. **Systemic Risk in Digital Finance**: Cryptocurrency and DeFi risk assessment
4. **Sustainable Finance Analytics**: ESG integration and climate risk modeling

Methodology Innovation

- Integration of large language models with traditional econometric approaches
- Development of hybrid AI systems for financial decision-making
- Advanced causal inference methods for policy evaluation

Professional Recognition and Service

Academic Leadership

- **Director**, Centre for Financial and Regulatory Technology (2024-present)
- **Programme Director**, MSc Quantitative Finance (2018-2022)
- **Organizer**, Major symposiums on AI and Financial Regulation

Professional Recognition

- **Chartered Statistician**, Royal Statistical Society (2019)
- **1st Place**, CFA European Quantitative Finance Awards (2018)
- **Advanced Data Science Professional** (2024)

Editorial and Review Activities

- Regular reviewer for major finance and technology journals
- Conference program committee member
- Grant review panels (available upon request)

Research Philosophy: Bridging cutting-edge quantitative methods with practical financial applications, maintaining statistical rigor while ensuring real-world relevance and regulatory compliance.