# Dr. Barry Quinn

Senior Lecturer in Finance, Technology and Data Science


## Contact Information


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## Personal Statement

As a Senior Lecturer in Finance, Technology, and Data Science at Queen's University Belfast, I bridge the gap between academic research and industry innovation. My work focuses on applying advanced statistical and machine learning techniques to complex problems in finance, with a particular emphasis on regulatory technology, systemic risk, and ethical AI development in financial services. I teach courses in quantitative finance, financial econometrics, and AI applications in finance, and I am passionate about fostering interdisciplinary research collaborations that push the boundaries of what is possible in the field of finance.

## Education and Professional Qualifications

| Degree | Institution | Year |
|---|---|---|
| B.Sc.(Hons) Accounting and Finance | Queen's University Belfast | 1995 |
| MSc Quantitativeref Finance | RMIT University Melbourne | 2006 |
| Ph.D. Finance | Queen's University Belfast | 2012 |
| Chartered Statistician | Royal Statistical Society | 2019 |
| MSc Artificial Intelligence | Queen's University Belfast | Graduating 2025 |

## Employment History

| Years | Position | Institution |
|---|---|---|
| 2020 – – | Senior Lecturer in Finance, Technology and Data Science | Queen's Management School |
| 2010 – 2020 | Lecturer | Department of Finance, Queen's Management School |
| 2009 – 2009 | Teaching Fellow | Business School, Ulster University |

| Years | Position | Institution |
|---|---|---|
| 2005 – 2005 | Teaching Fellow and Quantitative Researcher | Department of Finance, RMIT University Melbourne |
| 1998 – 2004 | Currency Trader and Liquidity Manager | Janus Henderson Investors, London |
| 1995 – 1998 | Financial Adviser | City Financial Partners, London |

## Academic and research leadership

- **Co-director**, Finance, Technology and AI lab, Queen's University Belfast, 2022–.
- **Lead Developer**, Queen's Business School Remote Analytics Lab Platform (Q-RaP), 2021–.
- **QUB Academic Lead**, Steering group for Northern Ireland global centre in secure connected intelligence for regulatory technology in finance.
- **Programme Director**, MSc Quantitative Finance, Queen's University Belfast, 2018–2022.
- **Programme Director**, MSc Computational Finance & Trading, Queen's University Belfast, 2014–2018.
- **Co-Founder**, Queen's Student Managed Fund, 2012–.

## Awards and honours

| Year | Award |
|---|---|
| 2023 | EEECS Scholarship for AI MSc |
| 2012 | Teaching Fellow of Higher Education Authority |
| 2016 | QUB Teaching Award |
| 2018 | European CFA Quant Award (1st) |
| 2021 | Associate Research Fellow, QUB Momentum One Zero (formerly Global Innovation Institute) |

## Skills and Expertise

- Advanced statistical modeling and machine learning
- Ethical econometrics
- AI applications in finance and trading
- Economics of AI and machine learning
- Financial risk management and systemic risk analysis
- Data science and big data analytics in finance
- Interdisciplinary research leadership

## Research

Since 2012, I have authored 27 papers and reports on topics in econometrics and data science, state-of-the-art efficiency and productivity analysis, risk implications of policy actions in banking and climate finance, and association football economics.

On Google Scholar, my h-index is 8 with total citations of 560 (as of 19 September 2024).

## PhD Supervision

I have a strong track record in guiding doctoral research:

- **Completed Supervisions:** Successfully supervised three PhD students to completion as principal supervisor.
- **Current Supervisions:**
  - Principal supervisor for three ongoing PhD projects.
  - Co-supervisor for two additional PhD students.
- **Research Areas:** My PhD students' work covers a wide range of cutting-edge topics in finance and data science, including:
  - Productivity and the economics of AI patents
  - Market manipulation theory and practice
  - Climate risk modeling and financial implications
  - Machine learning applications in asset pricing
  - The economics of AI innovations for financial regulation
  - Computer vision and the Economic costs of cultural displays

This extensive supervision experience demonstrates my commitment to nurturing the next generation of researchers and my ability to guide complex, interdisciplinary projects at the intersection of finance, technology, and data science.

## Industry Collaboration

- FCA Mentor for Tech Sprint on market manipulation (2023-present)
- Lead academic on knowledge transfer projects with Fund Axis Ltd and Research Affiliates Inc (2022-present)
- Collaboration with Citigroup on AI applications for detecting trading anomalies (2021-2024)

## Organized Conferences and Symposia

- Symposium on AI and the Future of Financial Regulation, Queen's University Belfast, November 2023
- Chair, Panel debate on "Digital Regulation: Shaping digital markets and safeguarding consumer rights in Northern Ireland", Northern Ireland Competition Forum, May 2024

## Current Interdisciplinary Research Projects

- AI system for regulatory compliance in global investment management (2024-present)
  - Principal Investigator (with Co-I in computer science)
  - Funded by UKFin+ (UKRI)
  - Developing AI models with enhanced reasoning capabilities for regulatory content generation
- Market manipulation theory and practice (2021-present)
  - Finance expert collaborator in QUB - Citigroup Market Intelligence and Data Science team
  - Co-supervision of PhD student (with Computer Science Colleagues)

## Major conference presentations

- Invited Talk, *Rethinking Research Impact: Combining Effect Sizes and Economic Significance in Finance*,Royal Statistics Society Annual Conference, Brighton UK, Sep 2024
- Keynote Speaker, *Estimating Systemic Risk*, Irish Finance Association, Maynooth University, Ireland, April 2023
- Invited Talk, *Teaching data science in the age of FinTech*, Royal Statistics Society Annual Conference, Aberdeen UK, Sep 2022
- Invited Talk, *Carbon pricing and machine learning*, Multidisciplinary Workshop on Fintech, Islamic Finance and Sustainability (online), Hamad Bin Khalifa University, Qatar, Nov 2022
- Invited Speaker, *Understanding fintech and financial stability*, International Workshop on Financial System Architecture and Stability, Bayes Business School, London, Sept 2018
- Invited Speaker, *Systemic Risk and Basel Compliance*, British Accounting and Finance Association Annual Conference, London, April 2018
- Invited Speaker, *Differential regulation of Irish credit unions: Does one size fit all?*, 2nd Conference on Contemporary Issues in Banking, Centre for Responsible Banking and Finance, St Andrews, Dec 2017
- Invited Speaker, *Business model diversity, efficiency and productivity of cooperatives*, European workshop in efficiency and productivity analysis, Aalto University, Finland, Jun 2017
- Invited Panelist, *Statistical inference and credibility in finance*, Emerging Scholars in Banking and Finance, Bayes Business School, London, Dec 2016
- Invited Speaker, *Capital regulation compliance and the performance of European banks*, International Workshop on Financial System Architecture and Stability, HEC Montreal, Aug 2016
- Participant, *Bloomberg Annual Educational Symposium*, Bloomberg London HQ, Sep 2015

## Publications

### Journal Articles

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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.
Quinn, Barry, McKillop, Donal (2009). Cost performance of Irish credit unions. Journal of Cooperative Studies.
Glass, J, McKillop, Donal, Quinn, Barry (2015). Modelling the Performance of Irish Credit Unions, 2002-2010. Financial Accountability & Management.
Glass, J Colin, McKillop, Donal G, Quinn, Barry, Wilson, John (2014). Cooperative bank efficiency in Japan: a parametric distance function analysis. The European Journal of Finance.
McKillop, Donal G, Quinn, Barry (2015). Web adoption by Irish credit unions: Performance implications. Annals of Public and Cooperative Economics.
Ayadi, Rym, Naceur, Sami Ben, Casu, Barbara, Quinn, Barry (2016). Does Basel compliance matter for bank performance?. Journal of Financial Stability.
McKillop, Donal G, Quinn, Barry (2017). Irish credit unions: Differential regulation based on business model complexity. The British Accounting Review.
Gallagher, Ronan, Quinn, Barry (2020). Regulatory own goals: The unintended consequences of economic regulation in professional football. European Sport Management Quarterly.
Quinn, Barry, Hanna, Alan, MacDonald, Fred (2018). Picking up the pennies in front of the bulldozer: The profitability of gilt based trading strategies. Finance Research Letters.

McKillop, Donal, French, Declan, Quinn, Barry, Sobiech, Anna L, Wilson, John OS (2020). Cooperative financial institutions: A review of the literature. International Review of Financial Analysis.
Liu, Jiadong, Papailias, Fotis, Quinn, Barry (2021). Direction-of-change forecasting in commodity futures markets. International Review of Financial Analysis.
Quinn, Barry, Gallagher, Ronan, Kuosmanen, Timo (2023). Lurking in the shadows: The impact of CO2 emissions target setting on carbon pricing in the Kyoto agreement period.. Energy Economics.
Liu, Kailong, McKillop, Donal, Quinn, Barry, Peng, Qiao (2022). Modelling and Predicting Credit Union Failures. Centre for Responsible Banking and Finance Working Paper Series, St Andrew's University.

### Conference Proceedings

Ayadi, Rym, Nacuer, Sami Ben, Casu, Barbara, Quinn, Barry (2016). The unintended systemic risk consequences of regulatory compliance. Proceedings of 2nd International Workshop on Financial System Architecture and Stability.
Quinn, Barry (). Teaching open science analytics in the age of financial technology. Annual Conference of Royal Statistical Society.
Quinn, Barry (). Statistical Principles and Econometrics: Combining Effect Sizes and Economic Significance in Finance. Annual Conference of Royal Statistical Society.

### Technical Reports

Bryon Graham, Barry Quinn (2019). Price comparison and web analytics. .
Bryon Graham, Barry Quinn (2017). Machine learning and retail analytics. .
Fearghal Kearney, Barry Quinn (2020). The theoretical foundations of value at risk modelling. .
French,Declan, McKillop, Donal, Quinn, Barry (2018). Landscape review of Northern Ireland credit unions. .

### Software

Quinn, Barry (2022). Time Series Econometrics R Package. . https://github.com/quinfer/tsfe
Quinn, Barry (2020). Financial Machine Learning R package. . https://github.com/quinfer/fml

### Unpublished Work

Dai, Yongsheng, Wang, Hui, Rafferty, Karen, Spence, Ivor, Quinn, Barry (). TDSRL: Time Series Dual Self-Supervised Representation Learning for Anomaly Detection from Different Perspectives. . https://ideas.repec.org/p/zbw/qmsrps/202403.html
McKillop, Donal G, Quinn, Barry (2013). Cooperative traits of technology adoption: website adoption in Irish Credit Unions. Available at SSRN 2253403.
McKillop, Donal G, Quinn, Barry (2015). A Sustainable Business Model Strategy for Irish Credit Unions: Does One Size Fit All?. Available at SSRN 2667505.

Gallagher, Ronan, Kuosmanen, Timo, Quinn, Barry (2017). Lurking in the Shadows: Testing For Shadow Price Differences with Applications in Economic Regulation. Available at SSRN 3072863.