PROFESSOR CAROL ALEXANDER
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Carol Alexander is an internationally recognised authority on crypto asset and derivatives markets, financial risk analysis, model validation and design, and digital asset innovation. She is Professor of Finance at the University of Sussex and Research Counsel at Exponential Science, with over three decades of dual academic and industry leadership.

Carol's expertise includes the design and implementation of mathematical models for pricing, trading, hedging, and risk assessment, both for traditional and digital markets. She has worked with clients such as Credit Agricole Asset Management, New York Stock Exchange, Intercontinental Exchange, FTX US, and multiple law firms, often as model architect or expert witness on high-profile cases. Recent projects have included model design for crypto asset clearing houses, CFTC margin models, and validation of major industry indices.

A pioneer in market risk analysis, Carol is the author of the four-volume **Market Risk Analysis** series (Wiley, 2009), which remains a global standard for quantitative finance practitioners, and of the influential **Market Models** (Wiley, 2001). She also conceived and edited the PRMIA Handbooks, designed and implemented the PRM industry qualifications, and has published extensively in leading academic journals. Her recent research and consultancy have focused on risk, efficiency, and pricing in crypto, DeFi, and NFT markets, as well as margin model architecture and digital asset benchmarking.

Advisory Board and Prize Committee Roles

- Research Counsel, Exponential Science (2024–)
- Advisory Board, Fields Institute for Mathematical Sciences (Committee for Financial Industries)
- Advisory Board, FT Wilshire Digital Assets Group and Taxonomy Working Group
- Bachelier Prize Committee (Mathematical Finance)
- Leverhulme Prize Committee (Economics)
- Exponential Science Best Paper Prize Committee
- Risk.Net Rising Star in Quant Finance Prize Committee
- Quality Assurance Agency Working Group for Finance Subject Benchmark Statement
- Non-executive Chairman / Executive Chairman / Non-executive Director, Professional Risk Manager's International Association (PRMIA) (2009–2012)
  - Founding Chair of Academic Advisory Council; Co-editor of the Professional Risk Manager's Handbook (3 volumes); Chair of Board

Consulting, Industry, and Expert Witness Projects

- Model Architect, ClearToken (UK) (2024)
  Design and build of margining model for crypto asset clearing house
- Expert Witness, Skadden, Arps, Slate, Meagher & Flom LLP (UK) (2023)
  Consulting expert witness at European Court in Luxembourg
- Expert Witness, White & Case (Washington DC, US) (2021—2022)
  Consulting expert witness on class action cases
- Model Architect, FTX US (2020—2021)
  Margin model design and build for CFTC regulation application, counterparty risk management, pseudocode, whitepaper
- Affiliated Academic Consultant, Fideres Partners (UK) (2017–)
  Advice on financial market and securities litigation cases

- Indexing Model Validation, CryptoCompare (UK) (2021—2022)
  Validation of model design for new crypto asset price indices
- BVIN Index Design, CryptoCompare (UK) (2020)
  Design and implementation of real-time bitcoin implied volatility index
- Model Validation, ICE Clear Europe LTD (UK) (2012–2014)
  Validation of new margin system based on portfolio mapping and risk measurement
- Value-at-Risk Model Design, Tindeco Financial Services AG (Switzerland) (2012–2013)
  Risk assessment model design with post-doctoral researcher
- Value-at-Risk Model Design, Credit Agricole Asset Management (UK) (2009–2010)
  Advised Risk Committee on in-house VaR model modification
- Real Options Decisions, DTSL (UK) (2015–2016)
  Decision theoretic framework for Ministry of Defence project management
- Risk Research Advisor, SAS Institute, Inc (UK) (2007–2008)
  Models for operational risk assessment
- Expert Witness, Richards Butler LLP (UK) (2003–2006)
  Consulting expert witness on pension fund vs asset manager
- High Frequency Pricing and Hedging, NYSE AMEX Options LLC (US) (2001–2007)
  Patented models for exchange traded funds
- Director and Head of Market Risk Modelling, Nikko Securities Inc. (US/UK) (1998)
  Led team in building models for index tracking
- Orthogonal GARCH Models, Robert Fleming Ltd. (UK) (1997–1998)
  Proprietary risk-sensitive models for capital requirements
- Academic Director, Algorithmics Inc. (US) (1996–1998)
  Designed 'Histo-Risk' software, client training and academic credibility
- Spot-Futures Arbitrage Models, EDF MAN (UK) (1996–1997)
  Statistical models for arbitrage
- Internal Value-at-Risk Model Implementation, Shell Pension Fund, Royal Dutch Shell PLC (Netherlands) (1996)
  First-generation VaR models for capital requirements
- Hedge Fund Software Design, Pennoyer Capital Management (US) (1994–2003)
  Cointegration-based statistical arbitrage model design
- Volatility Trading Models, Equitable House Investments (UK) (1992)
  Design and testing for realised/implied volatility swaps
- First Generation GARCH Models, Hill Samuel Bank (UK) (1990–1991)
  GARCH models for capital requirements
- Bond Analyst, UBS Phillips and Drew (UK) (1982–1983)
  Index-linked bonds valuation using inflation forecasts

Generative AI, Media and Outreach

Carol is a global thought leader on the impact of generative AI, particularly in finance and education.

- **GenAI Lead for Sussex Business School**: Chair of the AI in Education Working Group, leading adoption of AI in teaching and assessment.
- **YouTube channel, Professor Carol Alexander:** 100+ videos, 4,000+ subscribers.
  - *No-Coder's Guide to Surviving Generative AI* (recent flagship lecture series)
  - *No Code, No Nonsense: Understanding AI in a Minute or Two*
  - *Financial Risk Management* (Complete 3rd-year undergraduate module)
  - *Blockchains and Crypto Assets* (Complete postgraduate module)
- **Media**: Regularly featured on CNBC, BBC, CNN, Times Radio, Financial Times, The Guardian, Reuters, The Sun, Mail, and more.
- **LinkedIn**: 9,000+ followers; GenAI and finance content frequently exceeds 10,000 views.

- **Mainstream impact**: Faculty-wide and public resources for AI adoption, keynote/invited speaker at international conferences, and trusted media commentator on crypto, risk, and AI.

Education & Qualifications

- BSc Mathematics with Experimental Psychology, Sussex
- MSc Mathematical Economics and Econometrics, LSE
- PhD Algebraic Number Theory, Sussex

Carol's unique blend of research, technical, and communication skills have made her a valued advisor, NED, and thought leader at the intersection of risk, digital assets, and AI. She offers deep expertise to boards, regulators, exchanges, and fintech companies, with a proven track record in both traditional and digital finance.