PROFESSOR CAROL ALEXANDER

Email: c.alexander@sussex.ac.uk
Website: www.coalexander.com

Carol Alexander is an expert in crypto asset and derivatives markets, financial risk analysis, high-frequency data analysis, blockchains, pricing and hedging financial instruments, volatility analysis, investment strategies, benchmarking and portfolio management.

She has had a dual career in both industry and as an academic and is currently Professor of Finance at the University of Sussex and Visiting Professor at Peking University Business School. She has also edited the Journal of Banking and Finance since 2013.

Throughout her corporate and academic careers Carol has designed and implemented mathematical models for pricing, trading, hedging and risk assessment for a wide range of asset management, stock exchange and banking clients. These include Credit Agricole, Flemings, Hill Samuel, the Shell Pension Fund, Tindeco Asset Management, Pennoyer Capital Management, Equitable House Investments, Alpha Strategies, the New York Stock Exchange and the Intercontinental Exchange.

Carol is the author of the best-selling textbook "Market Models" and of the four-volume textbook series Market Risk Analysis. Her latest textbook "Corruption and Fraud in Financial Markets", edited with Douglas Cumming. All these books are published by Wiley. She has also edited many other books – for these and her academic and industry paper publications, see her websites.

Carol has held corporate roles as a Director and Head of Market Risk Modelling for Nikko Securities; as a Director of Algorithmics Inc., the Toronto-based firm which provided risk modelling software to financial institutions and banks globally; and as a Bond Analyst for Phillips & Drew, City of London.

She worked as a consulting expert witness for Richards Butler, City of London for over 3 years and is an affiliated consultant with Fideres in London, New York, Frankfurt and Johannesburg.

She holds a BSc in Mathematics with Experimental Psychology (First Class) and a PhD in Algebraic Number Theory from the University of Sussex, and an MSc in Mathematical Economics and Econometrics from the London School of Economics and Political Science.

Carol has non-profit chairman and non-executive experience from the Professional Risk Manager's International Association. Carol has gained capacity to take some non-executive roles and could offer particular expertise and credibility as a Chair of the Risk Committee.

- Financial Risk Management
- Blockchain & Cryptocurrency Markets
- Model Design
- Hedge Funds
- Exchanges
- Regulators

INDUSTRY CAREER SUMMARY

BOARD ROLES

2009 – 2012 PROFESSIONAL RISK MANAGER'S INTERNATIONAL ASSOCIATION (PRMIA) (UK)
Non-executive Chairman (2012)
Executive Chairman (2010 – 2011)
Non-executive Director (2009 – 2012)

INDUSTRY ROLES

2020 CryptoCompare (UK)
Real-time implied volatility index design

2017 – now Fideres (UK)
Affiliated academic consultant

2015 – 2016 DTSL (UK)
Real options advisory

2012 – 2014 ICE CLEAR EUROPE (UK)
Model validation

2012 – 2013 TINDECO ASSET MANAGEMENT (Switzerland)
Risk model design

2009 –2010 CREDIT AGRICOLE ASSET MANAGEMENT (UK)
Value-at-Risk model design

2007 – 2008 SAS INTERNATIONAL LTD (UK)
Risk research advisor

2003 – 2006 RICHARDS BUTLER LLP (London)
Expert witness

2001 – 2007 NYSE AMEX LLC (US)
High frequency pricing and hedging of active exchange traded funds

1998 NIKKO SECURITIES INC (UK)
Director, Head of Market Risk Modelling

1997 – 1998 ROBERT FLEMING (UK)
Orthogonal GARCH model implementation

1996 – 1997 EDF MANN (UK)
Spot-futures arbitrage models

1996 ROYAL DUTCH SHELL PLC (Netherlands)
Internal Value-at-Risk model implementation

1994 – 2003 PENNOYER CAPITAL MANAGEMENT (US)
Hedge fund software design

1992 EQUITABLE HOUSE INVESTMENTS (UK)
Cointegration trading models

1990 – 1991 HILL SAMUEL BANK (UK)
First generation GARCH model design and implementation

1982 – 1983 UBS PHILLIPS AND DREW (UK)
Bond analyst

INDUSTRY CAREER (IN FULL)

BOARD ROLES

2002 – 2012 — PROFESSIONAL RISK MANAGER'S INTERNATIONAL ASSOCIATION (PRMIA) (US)

Global non-profit organization based in Minnesota, US, founded to promote sound risk management standards globally and the integration of practice and theory. Governed by a Board of Directors elected by its global membership and represented globally by 45 chapters in major cities around the world

2010 – 2012 **Non-executive Chairman**

2010 – 2011 **Executive Chairman**

2009 – 2012 **Non-executive Director**

Founding chair of academic advisory council; co-editor of the Professional Risk Manager's Handbook (3 volumes); Board member; Chair of Board

INDUSTRY ROLES

2020 — CryptoCompare (UK)

Global crypto asset data provider

BVIN Index

Design and implementation of real-time bitcoin implied volatility index

2017 – now — Fideres (UK)

Financial markets malpractice and manipulation specialists

Affiliated Academic Consultant

Advice on financial market and securities litigation cases

2015 – 2016 — DTSL (UK)

Systems integration solutions and services for custom applications

Real options decisions

Advice on design of decision theoretic framework for project management by the Ministry of Defence

2012 – 2014 — ICE CLEAR EUROPE LTD (UK)

Derivatives clearing house for the Intercontinental Exchange (ICE)

Model validation

Validation of model design for new margin system, based on portfolio mapping and risk measurement principles. Working for CRO with in-house risk analysts and computer programmers

2012 – 2013 — TINDECO FINANCIAL SERVICES AG (Switzerland)

Integrated investment management platform provider for banks, family offices, asset, fund and wealth managers

Value-at-risk model design

Risk assessment model design, working with post-doctoral researcher funded by Tindeco and employed by University

2009 – 2010 — CREDIT AGRICOLE ASSET MANAGEMENT (UK)

Asset management side of commercial Bank

Value-at-risk model design

Advised Risk Committee on modification of in-house Value-at-Risk model for the group asset management arm

2007 – 2008

SAS INSTITUTE, INC (UK)
Global leader in innovative analytics, business intelligence and data management software and services
Risk Research Advisor
Worked with Head of Risk for SAS UK on development of models for operational risk assessment

2003 – 2006

RICHARDS BUTLER LLP (UK)
Former UK law firm
Expert Witness
Consulting expert witness working directly with Richards Butler and legal counsel pension fund vs major asset manager (settled out of court)

2001 – 2007

NYSE AMEX OPTIONS LLC (US)
Owns and operates an options trading platform
High frequency pricing and hedging of active exchange traded funds
Advised NYSE, working with programmers from Alpha Strategies, on my own design of two complex models (both patented)

1998

NIKKO SECURITIES INC (US)
Based in New York, offers a range of integrated financial services and solutions for individual and corporate clients
Director, Head of Market Risk Modelling, UK Office
Headed a team of mathematicians and programmers in building models of my own design for index tracking

1997 – 1998

ROBERT FLEMING LTD (UK)
Former leading asset manager and merchant bank
Orthogonal GARCH models
Implementing these models, of my own design, which measure risk in a market-sensitive fashion, hence producing capital requirements that were less onerous during periods of stability. Model designs were given to in-house programmer, and results were reported to Head of Risk Management

1996 – 1998

ALGORITHMICS INC (US)
Former Toronto based tech firm providing risk management software to financial institutions. At peak had a presence in 25 countries, with clients including 25 of the world's largest banks and over two thirds of the CRO Forum of leading insurers
Academic Director
Hired by CEO and reported to Head of London Office. Undertook client training and built an international reputation for the firm through a variety of angles of academic credibility. Designed the signature 'Histo-Risk' software for risk-sensitive VaR modelling

1996 – 1997

EDF MAN (UK)
Agricultural commodities merchant
Spot-futures arbitrage models
Advice on statistical models for arbitrage

1996	ROYAL DUTCH SHELL PLC (Netherlands) *Global group of energy and petrochemical companies* Internal value-at-risk model implementation, Shell Pension Fund Working with a senior risk analyst and a computer programmer to build first-generation VaR models. These models provide risk-sensitive measures for capital requirements which allow firms to make more efficient use of capital
1994 – 2003	PENNOYER CAPITAL MANAGEMENT (US) *Former New York based hedge fund* Hedge fund software design Model design for cointegration-based statistical arbitrage. Working with programmer to implement the mathematical models that I designed, reporting to hedge fund owner. This attracted private investors, seeking alpha, to invest their resources in Pennoyer
1992	EQUITABLE HOUSE INVESTMENTS (UK) *Former proprietary trading firm in London* Volatility trading models Advised CEO on design and testing of models for swapping realised and implied volatility (an early form of variance swap)
1990 – 1991	HILL SAMUEL BANK (UK) *Former leading British merchant bank* First generation GARCH models Six-month secondment from University of Sussex. Worked with programmers to implement the GARCH models that I designed which provide risk-sensitive measures for capital requirements which allow firms to make more efficient use of capital. Reported to Head of Risk
1982 – 1983	UBS PHILLIPS AND DREW (UK) *London-based stockbroker* Bond Analyst Client investment advice and research on valuing index-linked bonds using inflation forecasts. Passed actuarial examinations in statistics in this role