Luc Faucheux, PhD

Luc Faucheux received his Ph.D. in Physics from Princeton University, mostly focusing on the interplay between stochastic and deterministic forces. His thesis work included the first experimental optical thermal ratchet. Luc received his Master's in Statistical Physics from Ecole Normale Supérieure in Lyon, France.

For the next 25 years or so, Luc held various positions in quantitative research, trading and management on Wall Street, mostly focused on the Fixed-Income derivatives side, both on the sell-side and buy-side. Luc managed the USD rates options book at Citibank, as well as Head of USD Rates trading at UBS.

More recently Luc was Head of Macro Trading for Natixis in the Americas, covering FX, Rates, and Commodities. In 2021, Luc joined SparkCognition, and AI startup applying Deep Learning to the fields of energy production and aviation, finance, and cybersecurity to name a few.

Up until 2021, Luc was teaching Global Capital Markets at the Dolan School of Business in Fairfield, Connecticut before moving down to Miami, where he is also now a lecturer at the Herbert School of Business.

Luc has had extensive experience as an expert witness, in particular in cases related to Citibank and Lehman Brothers bankruptcy.

AREAS OF EXPERTISE

Interest rate derivatives

- Fixed-income, interest rates, yield curves,
- Option modeling, option pricing
- Option exercise / settlement
- Complex securities
- Swaps, futures, ETFs, options, exotics

Portfolio management

- Portfolio management, risks
- Fund allocation, systematic global macro

Trading

- Trading, algorithmic trading,
- Machine learning, automated AI trading

REGISTRATIONS

FINRA

Series 24, Securities Principal
Series 7
Series 63
SIE

EDUCATION

Lycée Louis-Le-Grand

Classes Préparatoires Scientifiques

Ecole Normale Supérieure de Lyon

MS Statistical Physics, 1990
Aggregation Physics, ranked #2, 1991

Princeton University

MA, 1992
PhD, 1995

Rockefeller University

Post-Doctoral Research Fellow 1994-95

INDUSTRY EXPERIENCE

SPARKCOGNITION, Austin, TX **2021 – Present**
Head of Market Research and Trading Strategies
Applies AI and ML tools to Market Making, alpha generation for Hedge Funds and Sell side institutions, most notably ORCA product for automated market-making (in production at Nomura).

HERBERT SCHOOL OF BUSINESS, UNIVERSITY OF MIAMI, Miami, FL **2021 – Present**
Lecturer. Teaches Fundamentals of Fintech, undergraduate and graduate level.

NATIXIS, New York, NY **2018 – 2021**
Managing Director, Head of Macro Trading Americas.
- Products cover FX, FX options, Rates and Rates options for USD and LatAm currencies, commodities (Oil, Natural Gas and NGL) and municipal GIC activity
- Took over and rebuild Interest Rates Swap franchise, implemented best in class processes and risk management tools during the remediation phase
- Exceeded 2019 and 2020 budgets by 40%, 75mm USD in 2019 and 60mm USD in 2020

DOLAN SCHOOL OF BUSINESS, FAIRFIELD UNIVERSITY, Fairfield, CT **2019 -2021**
Adjunct Professor. Teaches Global Financial Markets.

DRW, Chicago **2018**
Taught two week Fixed-Income and Options class to first year employees.

MARTO CAPITAL, New York, NY **2016 – 2017**
Head of Risk Management and Portfolio Construction.
Responsible for designing, implementing and overseeing portfolio construction and risk processes.

UBS, Stamford **2010 – 2016**
Global Co-Head of Trading / Managing Director 2013 – 2016
- Managed all Rates, Credit and Commodities trading for NCL (all UBS books)
- Reduced Risk Weighted Assets (RWA) from 135bn CHF to 4bn CHF, down 97%
- Outperformed loss budget targets by 50mm CHF in 2013, 100mm CHF in 2014 and 50mm CHF in 2015

Head of USD Trading / Managing Director 2010 - 2012
Co-Head USD Trading (Swaps, Government Bonds, Agencies, Options) 2011 - 2012
- Managed a team of 50 people in Stamford, London and Singapore
- 50mm USD in 2010, 80mm USD in 2011, 85mm USD in 2012

Head of USD Non-Linear trading 2010 - 2011
(Gamma, Vanilla, Callable, Exotics, Hybrids and Structured Notes, both UBS and third-party issuance)
- Managed a team of 15 people in Stamford, London and Singapore
- Achieved #1 market share with Taiwan life insurance companies (callable accretors market)
- Designed and created OPTU on Bloomberg "one of the most comprehensive, and by far the most popular, contributor page on the Bloomberg platform"

INDUSTRY EXPERIENCE (Continued)

LEHMAN BROTHERS AND LEHMAN ESTATE (LBHI), New York, NY **2007 – 2010**

Global Head of Rates, FX and Equity / Managing Director 2008 – 2010

- 50mm USD in 2010, 80mm USD in 2011, 85mm USD in 2012
- Managed a team of 50 in New York, responsible for unwinding and hedging all Rates, Munis, FX and Equities derivatives transactions for LBHI
- Advised Woodlands Commercial Bank (formerly Lehman Brothers Commercial Bank) for asset/liability management and Federal audit
- Managed a portfolio of 5,000 live trades, 2mm terminated trades, 6,000 ISDAs
- Built-up Front-Office team, rebuilt Front-to-back Risk Management and Valuation systems (selected Bloomberg and Numerix, migrated all trades from Legacy Lehman infrastructure)

Head of USD Rates Exotics / Senior Vice President 2007 - 2008

- 80mm USD, client revenues up 300% to 30mm USD, customer coverage up 70%

CITIBANK, New York, NY **2002 – 2007**

Head of USD Exotics and Medium Term Notes Structuring/Director 2005 - 2007

- 100mm USD
- Managed a team of 25 in New York, London and Hong-Kong

USD options Trader/Director 2004 - 2005

- 40mm USD
- Reorganized the Vanilla cap and Bermuda business, structured repo and callable

Fixed Income Quantitative Research/Vice President 2002- 2004

- Implemented correlation model for relative value of caps versus swaptions
- Implemented skew and smile modeling
- Published articles in Risk magazine on Gamma trap and Structured Notes issuances
- Intensive interaction with customers through skew modeling presentations and Investors conference

CDC FINANCIAL PRODUCTS, New York, NY **2001-2002**

Senior Derivative Trader/Vice President 2001- 2002

- Implemented correlation model for relative value of caps versus swaptions
- 10mm USD
- Managed a team of 2 in New York and London
- Managed the Bermuda and Exotic books, built up Callable business with Home Loan Banks

INDUSTRY EXPERIENCE (Continued)

MIZUHO CAPITAL MARKETS, New York, NY **1995-2001**
Senior USD Option Trader/Vice President Fuji Capital Markets) 2000 - 2001

- 2mm USD from merging and auctioning the books to Chase Bank in a portfolio auction
- Worked out assignments and compressions across all counterparties in the portfolio
- Merged and traded the DKBFP and FCMC option books, migrated all trades onto common platform, and sold off entirety of options book in less than 3 months

Head USD Option Trader/Vice President (Dai-Ichi-Kangyo Bank Financial Products) 1997 - 2000
Assistant Vice President 1996 - 1997

- 4mm USD in 1997, 6mm USD in 1998, 12mm USD in 1999
- Developed the Agency callable business, with a group of 4 analysts and marketers
- Significant market share gain with Federal Home Loan Banks

Officer of Research and Development 1994 – 1995

- Managed five-member R&D team; supervised and trained Japanese expatriate staff.
- Designed and implemented two-factors BGM, Monte-Carlo and Black-Karasinsky interest rate options models
- Implemented global release of a front-to-back booking, risk management and downstream processes (confirmation, payments) internally built system (Collage)

PUBLICATIONS

Luc Faucheux, LS Bourdieu, PD Kaplan, AJ Libchaber (1995)
"Optical thermal ratchet"
Physical Review Letters, 1995, 74(9)

Luc Faucheux, AJ Libchaber (1995)
"Selection of Brownian particles"
J. Chem. Soc. Faraday Trans., 1995, 91(18)

Luc Faucheux, AJ Libchaber (1994)
"Confined Brownian motion"
Physical Rev. E, 1994, 49(6)

Luc Faucheux, G Stolovitzky, AJ Libchaber (1995)
"Periodic forcing of a Brownian particle"
Physical Rev. E, 1995, 51(6)