Nancy Hammond, Ph.D.

Economist | Quantitative Researcher | Financial Markets Expert

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Profile

Economist and quantitative researcher with over 15 years of experience in finance, academia, and economic consulting. Deep expertise in monetary policy, fixed income, and macro-financial risk. Proven track record of producing research insights that inform policy and financial strategy. Skilled in econometrics, volatility modeling, and time series analysis, with hands-on experience coding in Python, R, Matlab, and C++.

Currently incorporating financial intermediaries in macro-finance models while continuing to grow machine learning and quantitative skills.

Technical Skills

- **Econometrics & Time Series**: ARIMA, GARCH, PCA, state-space models
- **Quantitative Finance**: Term structure modeling, bond risk premia, volatility estimation
- **Machine Learning**: Forecasting, deep learning (in progress), optimization
- **Risk Modeling**: Historical/Monté Carlo VaR, LDA, operational risk, CCAR
- **Tools & Languages**: Python, R, C++, Matlab, Stata, Git, LaTeX
- **Visualization & Reporting**: ggplot2, seaborn, matplotlib, Shiny, R Markdown

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Recent Research & Projects (2020–Present)

Independent Researcher (qaEconomics) – Chicago, IL

- Developed a macro-finance model of Treasury risk premia using latent and macroeconomic factors
- Authored a volatility model of overnight policy and repo markets, revealing Fed's preference for managing rate volatility within the target range

- Modeled counterparty credit risk and liquidity risk using market-to-market and stress testing methods
- Built QRM-style Historical and Monte Carlo VaR and Multi-Factor Risk models
- Authored macro-financial report on the UAE economy

Academic Appointments

Depaul University, Driehaus School of Business – Lecturer (2020–Present)

- Taught courses in corporate finance, macroeconomics, and international finance
- Mentored students and promoted financial system literacy with emphasis on shadow banking and systemic risk

Northwestern University – Assistant Professor (2000–2004)

- Designed and taught courses in monetary economics, economic growth, and international finance
- Integrated innovative teaching methods and supported student development

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Industry Experience

KPMG – Managing Consultant, Quantitative Risk Modeling (2016–2017)

- Developed credit and operational risk models for G-SIB clients using QRM software
- Designed equity margin loss and mortgage prepayment models

Protiviti – Managing Consultant, Quantitative Modeling (2013–2015)

- Supported CCAR stress testing and liquidity assessments for top-tier banks
- Developed Poisson regression models for operational risk loss frequency

Navigant – Managing Consultant (2011–2012)

- Modeled energy pricing and efficiency strategies
- Conducted econometric evaluations of incentive programs and equipment adoption

RCF Consulting – Economist (2006–2010)

- Built LDA models for operational risk in banking
- Conducted VAR and error correction analysis for litigation and strategy

Argonne National Laboratory – Economist (2001–2006)

- Led statistical modeling of energy use and performance metrics for EPA's Energy Star program
- Conducted frontier efficiency analysis using stochastic cost functions

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Education

- **Ph.D., Economics** – University of Chicago
  Dissertation: Education and Mortality in Pre-Industrial Britain
- Advanced coursework: Booth School (Asset Pricing, Stochastic Calculus); SoFiE Certificate in Machine Learning (2018)
- B.A., Political Science – University of California, Berkeley
  Additional coursework in probability, statistics, and linear algebra

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Ongoing Learning

- Coursera (in progress):
  - Deep Learning Specialization (Andrew Ng, 1/5 completed)
  - Python & Statistics for Financial Analysis
  - Mathematics for Option Pricing (Python)

Affiliations & Languages

- Member: AEA, AFA, Women in Listed Derivatives (WILD)
- Languages: French (Professional), Spanish (Professional), Arabic & Russian (Limited)