

SAMANTHA KAPPAGODA

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EMPLOYMENT & CONSULTING ACTIVITIES

RISK ECONOMICS®, INC., **Chief Economist/Co-Founder**, NYC (2009 - present)

Primary focus: analysis and modeling of trends and patterns across global asset classes, markets, regions, sectors, industries

- ◆ Expertise and experience: include portfolio strategy for foreign exchange, fixed income, commodities, and capital markets activity; as well as econometric time-series and longitudinal analyses of business cycle dynamics, retail consumer behavior, industrial and housing markets, consumption spending and labor income, income distribution related to health, aging, retirement, population and immigration, and other demographic and socioeconomic indicators
- ◆ Appointed by the Colorado Attorney General, co-led extensive statistical and empirical analysis of data, and preparation of the technical appendix presenting the results related to police interactions, arrests and uses of force by the Aurora Police Department, conducted in conjunction with the first of its kind pattern and practice investigation under the law enforcement accountability Senate Bill 217
- ◆ **Consulting Activities:** Consulting expert managing/co-managing a support team on a diverse range of litigation support engagements for matters involving a successor liability matter, a financial institutions bankruptcy, a mergers and acquisition (M&A) intellectual property (IP) dispute, and an environmental reinsurance treaty dispute, and a state insurance regulatory investment fraud investigation, including the following:
 - ◆ *Laura S. Lehman et al vs. Transbay Joint Powers Authority (TJPA), Millennium Tower Association vs Mission Street Development, LLC et al*, and related cases, In Superior Court of the State of California, County of San Francisco, Case No. CGC 17-557830. TJPA joined by Millennium Tower Association (MTA) in opposing the summary judgment motion filed by the engineering firm related to successor liability from its 2010 acquisition via an asset purchase agreement (APA) of the geotechnical engineering firm for the Millennium Tower
 - ◆ *MF Global Holdings Ltd., as Plan Administrator v. PricewaterhouseCoopers*, In the United States District Court Southern District of New York Case No. 14-cv-2197 (VM)
 - ◆ *MF Global Holdings Ltd. Investment Litigation, Joseph Deangelis (Tavakoli) v. Corzine et al*, In the United States District Court Southern District of New York 12 MD 2338 (VM), 11 Civ. 7886 (VM)
 - ◆ *Microsoft v. Samsung*, Civil Action No. 14-CV-6039; merger dispute

NUMERATI® PARTNERS LLC, **Chief Data Scientist/Co-Managing Member/Co-Founder**, NYC (2012 - present)

Co-founded technology enablement and commercialization firm, coordinating a data analytics and technology development ecosystem, with the mission of advancing next generation scalable data-intensive risk and liability management enterprises

- ◆ Industry-commissioned proprietary research including (i) over 100 technical peer reviews of technology offerings and (ii) 14 in-depth technical evaluations/assessments of functionality, reliability, and security, as well as red team testing and edge-case analysis, across the following use-case application domains/technologies: automotive telematics; computer vision (e.g., range imaging, RGB-D, optical character recognition (OCR), object detection, optical defect detection); virtual/augmented reality; wearable technology; remote-sensing/satellite imaging; geo-fencing; mobile fleet, commercial (e.g., fault detection) and residential internet-of-things (IoT) sensor networks (e.g., electricity, fire, water intrusion monitoring); IoT cybersecurity; anomaly detection and outlier analytics (e.g., fraud detection); data warehousing, search/information retrieval; natural language processing (NLP); distributed ledger/blockchain technology; workflow robotic process automation (RPA)
- ◆ Evaluation of pilot project participants and technology partners for R&D projects; oversight and supervision of research staff and development team
- ◆ Technical presentations to industry stakeholders/consortium

EMPLOYMENT (CONT'D)

CAXTON ASSOCIATES, Senior Economist, New York (1996 - 2009)

Senior Economist at global macro hedge fund founded by Bruce Kovner with approximately \$15 billion of assets under management, investing in global currencies, commodities, fixed income (sovereign and corporate credit) and equities. Global analytics lead, key member of flagship global macro fund. Analysis informed positioning and pricing for real-time trading decisions, and asset allocation across up to 40 trading strategies. Macroeconomic and demographic analytics and development of proprietary econometric models employing high frequency financial market data combined with global economic data and central bank and related policy actions, guided senior decision makers/portfolio managers.

- ◆ **Analysis of Asset Classes:** Direct experience conducting econometric analysis for trading during all market disruptions and economic crises from 1996-2009, across a range of asset classes including the following:
 - ◆ Foreign Exchange: econometric forecasting and but-for analysis of currency crises and devaluations (e.g., 1997 SE Asia crisis, 1998 Dollar/Yen, 1999 Brazil, 2001 Argentina). Econometric analysis of currency market response to geopolitical risk events (e.g., USD, CAD, GBP, EU, JPY, AUD, EMs)
 - ◆ Commodities: modeling spot, futures, and forward markets for physical trading strategies of crude oil, heating oil, gasoline and LNG; industrial and precious metals; agricultural commodities; VIX futures; but-for event analysis (e.g., 1998 LTCM, 2006 Amaranth LNG, and other market and supply-chain disruptions)
 - ◆ Fixed Income: econometric analysis and forecasting of structural (nominal and real) interest rates; analytics including macroeconomic regime shift modeling (e.g., economic and financial conditions, volatility)
 - ◆ Sovereign debt analysis: but-for analysis of market yields dynamics around geopolitical and credit events (e.g., 1997 Asia crisis, 1998 Russia default, Post 9-11 credit crisis, 2007 financial crisis, 2007 Greek debt crisis, 2007 PIIGS, 2008 Icelandic and Scandinavian bank credit disruption); correspondence of Euro repo-to-maturity (RTM) yield changes to credit events and rating transitions
 - ◆ Econometric analysis of fixed income (e.g., sovereign interest rates, yields) market response to geopolitical risk events
 - ◆ Equity and credit indices: but-for market event analysis (e.g., 2008 Algo meltdown; 2008 Bear Stearns Asset Management, 2008 Lehman Brothers defaults)
- ◆ Conducted but-for and intervention analysis of market response to weather-related extreme events and natural catastrophes (e.g., 2004 Ivan, 2005 Katrina) as well as pandemic-related labor market and supply-chain disruptions (e.g., 1997 Avian flu (H5N1), 2009 H1N1)
- ◆ **Analysis of Macroeconomic and Microeconomic Indicators:** Econometric analysis (time series/longitudinal analysis) of economic indicators and spot and futures markets responses to economic indicators releases
 - ◆ Economic indicators analyzed included GDP growth, payroll employment, unemployment rate, claims, retail sales, personal consumption expenditure (PCE), GDP, CPI, PPI, construction spending, housing starts and sales, industrial production, durable goods, ISM
 - ◆ Regional economies covered included: geopolitical, demographic, macroeconomic and comparative market analysis of Americas, UK, EU, Russia, Asia/Pacific (Japan, China, Australia, India, Southeast Asia); computable general equilibrium modeling of EM economies with intervention analysis of structural adjustment lending programs
 - ◆ Economic indicators analyzed included Bureau of Labor Services (BLS), Department of Labor, Bureau of Economic Analysis, Department of Commerce, National Council on Compensation Insurance
 - ◆ Inflation and core-inflation modeling of Consumer Price Index (CPI), Core CPI (Ex-food & energy), Producer Price Index (PPI), Core PPI (e.g., pipeline inflation modeling)
 - ◆ Personal consumption expenditure (PCE) inflation/core-inflation modeling, including sectoral analysis of medical and healthcare goods and services
 - ◆ Labor market dynamics: employment, unemployment, sectoral changes and composition of employment, hourly wages, grey market, dependency ratio analysis; social security and pension obligations
- ◆ Represented global macro trading desk in investor meetings; discussed global outlook and performance
- ◆ Supervised junior economists and developers on development of quantitative/econometric modeling and related research support

EDUCATION

UNIVERSITY OF CHICAGO, MBA, Analytic Finance, Statistics and International Business (1994 - 1996)

- ◆ Teaching Assistant: MBA Business Statistics course

UNIVERSITY OF TORONTO

First Year of Doctoral Studies, Economics (1991 - 1992)

MA, Economics, Industrial Organization and Monetary Economics (1990 - 1991)

- ◆ Ontario Graduate Scholarship (1991-1992)
- ◆ University of Toronto Open Graduate Scholarship (1990-1991)
- ◆ Massey College Junior Fellowship (1990-91, 1991-92)

CARLETON UNIVERSITY, Graduate Studies in Economics (1989 - 1990)

IMPERIAL COLLEGE LONDON, BSc (Honors) Mathematics (1986 - 1989)

- ◆ University of London Tennis Team Member
- ◆ Imperial College Tennis Team Captain

RELATED PROFESSIONAL ACTIVITIES

- ◆ Independent Director, Credit Suisse US Mutual Funds (2023 - present), Audit Committee Member and Nominating Committee Chair of two closed end and six open end funds investing in commodity, quantitative, credit and high yield strategies
 - ◆ Closed End Funds: Credit Suisse Asset Management Income Fund (NYSE: CIK) and Credit Suisse High Yield Bond Fund (NYSE: DHY)
 - ◆ Open End Funds: Credit Suisse Commodity Return Strategy Fund, Credit Suisse Floating Rate High Income Fund, Credit Suisse Strategic Income Fund, Credit Suisse Managed Futures Strategy Fund, Credit Suisse Multialternative Strategy Fund, and Credit Suisse Trust - Commodity Return Strategy Portfolio;
- ◆ Affiliated Expert, Analysis Group (2022 - present)
- ◆ American Bar Association SciTech Chapter activities:
 - ◆ Vice-Chair, Internet of Things Committee (2022 - present)
 - ◆ Vice-Chair, Big Data Committee (2022 - present)
 - ◆ Vice-Chair Insurance Technology and Risk Committee, (2019 - 2023)
- ◆ ABA Working Group on Resolution 700, (2022), Use of risk assessment tools and pretrial release evaluations: Co-led the preparation of a technical appendix on data bias diagnostics which supplements an American Bar Association resolution which advocates federal, state, local territorial and tribal governments to align court decisions on pretrial release with the presumption of innocence by refraining from the use pretrial risk assessment analytics unless “data supporting the risk assessment is transparent, publicly disclosed and validated to demonstrate the absence of conscious or unconscious racial, ethnic or other demographic, geographic or socioeconomic bias”
- ◆ ABA Working Group on Resolution 704 (2022), Uniform Personal Data Protection Act
- ◆ ABA Technical Advisor, Uniform Law Commission Study Committee for Public Health Emergency Authorities, (2020-)
- ◆ Technical Advisor, ForwardLane Inc (2018 - present)

PUBLICATIONS & PREPRINTS

- ◆ *Uncertainty and Reliability Implications of Computer Vision Depth Estimation for Vehicular Collision Avoidance and Navigation (Part 2 of 2)*, David K.A. Mordecai, Samantha Kappagoda and John Y. Shin, American Bar Association (ABA) SciTech Lawyer: Winter 2023 (forthcoming)
- ◆ *Uncertainty and Reliability Implications of Computer Vision Depth Estimation for Vehicular Collision Avoidance and Navigation (Part 1 of 2)*, David K.A. Mordecai, Samantha Kappagoda and John Y. Shin, American Bar Association (ABA) SciTech Lawyer: Fall 2022
- ◆ *Comparative Analysis of Agent-Oriented Task Assignment and Path Planning Algorithms Applied to Drone Swarms* (2021): Rohith G. Ganesan, Samantha Kappagoda, Giuseppe Loianno, and David K.A. Mordecai, arXiv:2101.05161

PUBLICATIONS & PREPRINTS (CONT'D)

- ◆ *Classification of Pathological and Normal Gait: A Survey* (2020): Ryan C. Saxe, Samantha Kappagoda, and David K.A. Mordecai, arXiv:2012.14465
- ◆ *Energy Disaggregation with Semi-supervised Sparse Coding* (2020): Mengheng Xue, Samantha Kappagoda, and David K.A. Mordecai, arXiv:2004.10529
- ◆ Emerging Market Credit Derivatives and Default Estimation: Volatility, Business Cycle Correlation and Portfolio Diversification (with D. Mordecai) in Jameson, R. (Ed.), *Credit Derivatives: Applications for Risk Management, Investment and Portfolio Optimisation*, Risk Books, 1998)

SELECTED INVITED PRESENTATIONS

- ◆ *Artificial Intelligence and Emerging Technology*, Invited Speaker, Coresight Research Council, February 2024
- ◆ 2023 Independent Directors Council (IDC) Fund Directors Conference, Invited Panelist, *Artificial Intelligence in Asset Management: Considerations for Fund Boards*
- ◆ Program on Corporate Compliance and Enforcement (PCCE) Directors' Academy 2023, Invited Panelist, *AI: Opportunities and Potential Risks*
- ◆ Colorado Bar Association, Winning at Trial Seminar/CLE 2021, Invited Panelist *Perspectives from an Expert Witness*
- ◆ Council for Economic Education National Economics Challenge 2021, Invited Panelist
- ◆ InsurTech Alliance (ITA) Quarterly Technology Bootcamps and Annual Expo Presentations, August 2018, January 2019, May 2019, October 2019, January 2020, May 2020, September 2020
- ◆ Barclays Second Annual Digital Leader Series 2019, Invited Speaker
- ◆ University of Toronto Next Steps Conference 2019, Invited Panelist *Entrepreneurship and Innovation*
- ◆ American Bar Association ABA-IPL Annual Meeting and 34th Intellectual Property Law Conference 2019, Invited Panelist *Blockchain & IP Promises and Limitations*
- ◆ NYU Tisch Earth Day 2019, Invited Speaker *The Unwired Forest*
- ◆ University of Toronto Alumni Presentation 2018, Invited Speaker
- ◆ New England Conference of Public Utilities Commissioners (NECPUC) Annual Symposium 2018, Invited Speaker *Mitigating and Managing the Risk of a Cyberphysical Cat Event*
- ◆ Council for Economic Education Vantage Point 2015, Invited Moderator *Growing Companies, Growing Women Leaders*
- ◆ Council for Economic Education/100 Women in Hedge Funds Joint Event 2015, Invited Speaker/Moderator *Economics of Financial Decision Making*
- ◆ American Association of State Compensation Insurance Funds (AASCIF) Annual Conference 2015, Invited Presenter *Workers' Compensation Pilot Projects*
- ◆ WCF Utah Board of Directors Annual Meeting 2015, Invited Presenter *Workers' Compensation Pilots*
- ◆ Reinsurance Association of America (RAA) Current Issues Forum on Supply Chain and Contingent Business Interruption Risk 2014, Panelist *Supply-Chain Risks and CBI (Contingent Business Interruption): Forensic RiskTech for Reinsurers as a Strategic Response to Opportunities and Threats from Disruptive Technology*
- ◆ Society of Casualty Actuaries Conference 2011, Invited Panelist *Harnessing Large Datasets to Navigate the Emerging Risk Landscape*
- ◆ HB Litigation (formerly Mealey's) 18th Annual Insurance Insolvency & Reinsurance Roundtable 2011, Invited Panelist *Structural Shocks and Changing Dynamics Related to Emergent Risks, Evolving Health Trends, Demographic Shifts and Labor Markets, Food Insecurity and Food Safety: Implications for Insurers and Reinsurers*
- ◆ Reactions Conference on Insurance Risk and Capital Management 2011, Invited Panelist *How Major Social, Political, and Macroeconomic Uncertainties Can Affect Insurer and Reinsurer Balance Sheets*
- ◆ HB Litigation (formerly Mealey's) 17th Annual Insurance Insolvency & Reinsurance Roundtable 2010, Invited Panelist *Litigation and Regulatory Implications of Environmental, Economic, Life, Health and Casualty Exposures*
- ◆ The 10th Global Alternative Investment Management Forum, 2004, Keynote Panelist and Session Organizer *The Implications of the Preceding, Current, and Future Path of the Global Financial Markets*

EDITORIAL EXPERIENCE

- ◆ Senior Editorial Advisory Board Member, *Journal of Risk Finance* (JRF), Emerald Publications (2005 - present), JRF is a quarterly refereed financial services industry journal that provides a rigorous forum for the publication of theoretical and empirical research both by academics and practitioners, relating to the financing of risk in its various forms
- ◆ Managing Editor and Co-Founder, *Journal of Risk Finance*, Euromoney Institutional Investor Journals (1999 - 2004)
- ◆ Special Editor for Risk Management, *Journal of Alternative Investments*, Euromoney Institutional Investor Journals (2005 - 2008)

ACADEMIC ACTIVITIES

NYU COURANT INSTITUTE OF MATHEMATICAL SCIENCES, New York, NY

Co-Advisor, RiskEcon® Lab for Decision Metrics @ Courant Institute (2011 - Present)

Visiting Scholar, Courant Institute, New York (2011 - Present)

RiskEcon® Lab was established in 2011 at Courant Institute of Mathematical Sciences NYU, with a mission to develop experimental testbeds and analytics that employ high-dimensional datasets from innovative sources by applying a range of computational and analytical methods to commercial and industrial sensor networks and edge computing embedded systems, focusing primarily on research and development (R&D) of remote and compressed sensing, anomaly detection, forensic analytics and statistical process control.

- ◆ Capstone Advisor, Center for Urban Science and Progress (CUSP) (2022): co-advised team of graduate students in research project entitled *Behavior Modeling Using Multi-Modal Mobility Data*. Project implemented empirical methods for analyzing NYC taxi and ride hailing data
- ◆ Associated Researcher, NYU Social Media and Political Participation Lab (SMaPP) (2013 - 2018): Developed social media analytics pilot projects for select not-for-profit organizations to observe quantifiable/scalable metrics leveraging public engagement of diverse messaging employed within campaigns targeting the intersection of grassroots collective action and political influence on critical issues of interest; pilot enabling organizations to explore effectiveness of various appeals/information campaigns for generating actions of highest interest
- ◆ Judging Panelist, NYU Interactive Telecommunications Masters Program (ITP): Judge for Course Final *Towers of Power* Course (2018, 2017)
- ◆ Judging Panelist, NYU Tandon School of Engineering Cyber Security Awareness Week (CSAW): Judge for CSAW Competitions: Hack ML (2019); Policy (2018); Law and Policy (2017); Social Media (2011)
- ◆ Guest Lecturer, *Patent Litigation Simulation*, NYU Law School (2016)
- ◆ NYU AIG Partnership on Innovation for Global Resilience: Instrumental in establishing this first-of-a-kind interdisciplinary multi-year \$5.5 million research collaboration

NOT-FOR-PROFIT ORGANIZATION BOARD OF DIRECTORS EXPERIENCE

Over thirty cumulative years of non-profit board experience. Board committees include Governance (Chair), DEIA, Strategic Planning, President/CEO search and Board Chair search.

- ◆ **Girl Scouts of Greater New York, Board of Directors** (2014 - present), Committees: Governance, Board Leadership, Diversity Equity Inclusion Accessibility (DEIA), Strategic Planning
- ◆ **Black Rock Forest Consortium, Leadership Council Member** (2014 - present)
- ◆ **University of Toronto**, Lester B. Pearson International Scholarship Committee (2019 - present)
- ◆ **Council for Economic Education, Board of Directors** (2014 - 2020), Committees: Governance and Nominating, Program and Marketing Committee. Judging Panel: Alfred P. Sloan Awards (2015 - 2017)
- ◆ **Glynwood Center for Regional Food and Farming, Board of Directors** (2010 - 2019), Committees: Governance and Nominating (Chair), Strategic Planning, CEO Search Committee
- ◆ **Hudson Valley Shakespeare Festival, Board of Directors** (2010 - 2015), Committees: Governance and Nominating, Strategic Planning

HONORS & AWARDS

- ◆ Girl Scouts of Greater New York *Woman of Distinction* 2013, for activities in Science, Technology, Engineering and Mathematics (STEM)
- ◆ Sir Harold Acton Society Award, New York University (philanthropy in STEM and the establishment of RiskEcon® Lab at Courant Institute NYU) 2011
- ◆ *Who's Who in America*, Marquis, various editions since 2000
- ◆ *Who's Who in Finance and Business* (prev. *Who's Who in Finance and Industry*), Marquis, various editions since 2002
- ◆ *Who's Who of American Women*, Marquis, various editions since 2002
- ◆ *Who's Who of Emerging Leaders*, Marquis, 2006
- ◆ *Canadian Who's Who*, University of Toronto Press/Grey Publishing, various editions since 2005

PRIOR EMPLOYMENT & CONSULTING ASSIGNMENTS

- ◆ **Economist, Operations Evaluation Department, World Bank**, Washington DC (1992 - 1994): Evaluation of structural adjustment lending programs; primary focus on outcome, impact and sustainability of programs in emerging market economies. Determined optimal mix of policy options by analyzing effects on economic performance and income distribution. Techniques included dynamic stochastic general equilibrium (DSGE) modeling, econometric analysis and forecasting. Conducted in-depth analysis of macroeconomic instruments and targets for over 50 emerging market countries. Constructed performance indices to compare and contrast cross-sample performance. Evaluated structural adjustment lending portfolio. Assessed inflationary effects on the economy, differential impact across sectors, and changes in capital and trade flows.
- ◆ **Banc One First Chicago** (1995): Econometric analyses of fixed income markets
- ◆ **Central Bank of Canada** (1991): Review of non-bank financial institutions
- ◆ **Citibank/Lloyd's Insurance Exchange** (1988): Review of underwriting and claims settlement process for Lloyd's reinsurance syndicate