

## MATTHEW AHARONIAN

Principal

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**Dr. Matthew Aharonian** is a financial economist with expertise in securities pricing, valuation & appraisal, corporate finance & capital structure, risk management, capital markets, portfolio performance, structured finance, and quantitative/statistical methods. Dr. Aharonian's work at the Brattle Group has ranged across a variety of topics over the past 13 years, including:

- Asset valuation/appraisal of established manufacturing and service operations
- Valuation/appraisal of start-up ventures, intellectual property, and brands
- Valuation of privately held equity interests and private companies/funds
- Valuation/modeling of fixed income and equity securities
- Valuation/modeling of options and derivatives (securitized and structured)
- The pricing and valuation of corporate debt
- Liquidity and debt capacity analysis
- Event study analysis and causality (class actions)
- The structure and functioning of capital and commodities markets (incl. cryptocurrency)
- Portfolio performance and suitability
- Evaluation of trading strategies (equity, fixed income, f/x, commodities)
- Financial statement modeling and projections
- Cost of capital estimation and capital budgeting
- Patent Infringement

His valuation, damages, and causality analysis has been in the context of securities litigations (U.S. and international), Delaware Chancery Court shareholder disputes, international arbitrations, and, more recently, American Arbitration Association disputes. Dr. Aharonian has also supported economic substance testimony in tax disputes before the U.S. Tax Court and before IRS Appeals (on behalf of both government and taxpayer). More generally, Dr. Aharonian has also supported cost of capital testimony in both U.S. and Canadian energy proceedings, and has served as an adjunct at Babson College, teaching the *Fixed Income Securities* and the *Derivatives: Theory and Practice* (currently) courses in Babson's MBA program.

### AREAS OF EXPERTISE

- Valuation, Risk Management, and Capital Structure
- Financial Securities and Derivatives (equity and fixed income)
- Event Study and Damages Estimation
- Financial Markets and Market Efficiency
- Cost of Capital and Regulatory Mechanisms
- Securities Litigation
- Tax Disputes
- International Arbitration and Commercial Litigation

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### EDUCATION

Ph.D. in Economics, The University of British Columbia, Vancouver

M.A. in Economics, McGill University

B.A. (DHS) in Economics, The University of Western Ontario

### EXPERT TESTIMONY AND REPORTS

[Bond Markets, Reasonable Rates, Capital Structure, Economic Substance] *Confidential engagement*. Retained as testifying expert to opine on the reasonableness of intercompany borrowing rates and hedging transactions, as well as overall transaction structure in a Canadian tax dispute. (*Report due in 2020*).

[Valuation] *In the Matter of the Arbitration Between Amir Sharif-Emami v. Live Up Top Inc, et al (American Arbitration Association, Case No. AAA 01-19-0001-8128)*. Expert Report of Matthew Aharonian and Christine Y. Polek. Submitted an expert report on behalf of Claimant regarding appropriate valuation methodologies for *Live Up Top*, a prop tech start-up company co-founded by Claimant in Syracuse, NY. Our report also addressed deficiencies in two valuation reports relied upon by *Live Up Top* to appraise Claimant's equity interest in the company. Scheduled to testify at the forthcoming hearing. (**Report:** November 15, 2019; **Hearing Testimony (forthcoming):** February 3-7, 2020)

[Valuation, Damages] *In the Matter of the Arbitration Between Robert Micsak and Scott Andel v. All Vision LLC (American Arbitration Association, Case No. AAA 01-19-0000-1483)*. Expert Report of Matthew Aharonian and Christine Y. Polek. Submitted a valuation report on behalf of *All Vision* – a billboard asset development and management company – that valued *All Vision's* operations, equity, and the value of certain options claimed by former executives in the dispute. Scheduled to testify at forthcoming hearing. (**Report:** September 27, 2019; **Hearing Testimony (forthcoming):** January 30, 2020)

[Damages, Investment Alternatives] *In the Matter of the Arbitration Between Martin Brody, as Trustee of the Martin Brody et al. v. Shepherd Kaplan et al. (American Arbitration Association, Case No. AAA No. 1:18-0002-5318)*. Expert Report of Matthew Aharonian. Submitted a report on behalf of Plaintiffs assessing damages sustained by Plaintiffs in relation to their investments in Platinum Partners' Credit Opportunities Fund. Testified at AAA hearing in Boston, MA. (**Report:** July 21, 2019; **Hearing Testimony:** November 20, 2019)

[Valuation] *Confidential engagement*. Co-authored a report with Lynda Borucki, Viera Liang, and Stew Myers assessing the value of a large multinational company's U.S. operations, and that of a foreign subsidiary, as part of a global restructuring. The valuations also involved assessing the impact of a changing royalty structure in place for various brands and IP assets across the organization. (**Report:** April 1, 2019)

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[Valuation, Distressed Assets] *Confidential engagement*. Co-authored a report with Christine Polek concerning the fair market value of certain securities as part of a damages analysis for settlement negotiations. The case was a state action against various banks and trustees over their role in marketing certain RMBS securities prior to the sub-prime crisis. The report addressed economic issues relating to ‘fire sales’ and liquidity discounts, as well as the ability of auctions to set fair market values in distressed economic environments. (**Report:** February 21, 2019)

[Valuation, Derivatives, Pipeline Assets] *Judy Mesirov, derivatively v. Enbridge Energy Company Inc., et al. (Delaware Chancery Court, C.A. No. 11314-VCS)*. *Expert Report of Matthew O’Loughlin and Matthew Aharonian*. Submitted expert report on behalf of Plaintiffs concerning the value of pipeline assets received in a transaction, along with the value of the consideration that was paid in exchange (equity units with imbedded options/features). (**Report:** October 1, 2018)

[Damages, Class Action, Event Study, Security Markets] *GrowthQuest Capital Inc. v. Volkswagen Aktiengesellschaft (Ontario Superior Court of Justice, Court File No.: CV-16-566618-00CP) & Chandler v. Volkswagen Aktiengesellschaft (Quebec Superior Court, S.C. No.: 500-06-000838-173)*. Submitted expert report and was cross-examined in a matter on behalf of Plaintiffs. Testimony concerned tests of market efficiency and damages methodology in the context of securities class actions. (**Report:** November 23, 2017; **Cross-examination:** May 10, 2018 (Toronto))

[Damages (Irreparable Harm), Event Study] *Telecom Association, Petitioner, v. Federal Communications Commission and the United States of America, Respondents, Case No. 15-1063 (and consolidated cases)*. *United States Court for the District of Columbia Circuit. Declaration of William P. Zarakas and Matthew Aharonian*, evaluating allegations of irreparable harm from the FCC’s decision to regulate broadband services under common carrier designation. (**Report:** May 22, 2015)

[Damages, Investment Alternatives] *Askenazy et al. v. Tremont. Group Holdings et al., No. 10-04801-BLS2 (Massachusetts Superior Court)*. *Expert Report of Matthew Aharonian and Lynda Borucki*. Submitted expert report on damages to investors from losses caused by imprudent management of fund portfolios connected to the Madoff fraud. (**Report:** January 24, 2014)

[Railway Regulation, Cost of Capital Estimation, Capital Structure] *Review of Regulatory Cost of Capital Methodologies*, with Michael J. Vilbert and Bente Villadsen. Prepared for the Canadian Transportation Agency. (**Report:** September 2010)

### OTHER CASE HIGHLIGHTS

*Debt Capacity and Debt Characterization in Tax Dispute with IRS. (Settled 2017)* Led two teams supporting a testifying expert (on behalf of the taxpayer) to evaluate the debt/equity characteristics of syndicated debt restructured during the 2008 financial crisis. Developed various credit models and analyses, together with the testifying expert, to benchmark the terms of the debt using market data, and to examine the financial strength of the company at the time of the restructuring. These analyses also

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involved benchmarking and valuing various complex options and guarantees attached to the debt, as well as valuing the company's operations and evolving debt capacity through the crisis.

*The Western Shoshone Identifiable Group v. U.S.A. et al.* Led Brattle's support of outside expert Dr. Michael Goldstein in developing testimony for the WSIG's suit against the U.S. government over imprudent management of tribal funds. As with the Jicarilla Apache Nation cases, this involved benchmarking performance of a fixed-income portfolio strategy over time and simulating alternative 'but-for' portfolio strategies.

*Debt Capacity and Characterization in Tax Dispute with IRS.* (Settled 2016) Led multiple teams and developed analyses, together with the testifying expert (on behalf of the taxpayer), to evaluate whether intercompany debt issuances and restructurings in a several multibillion dollar transactions were done at arms-length terms. The analyses involved evaluating the financial strength and dynamic debt capacity of the U.S. subsidiaries at the time of the transactions, as well as the use of market data to benchmark the terms of the issued debt instruments. The case was settled favorably for the company at values consistent with our analysis.

*Jicarilla Apache Nation v. U.S.A.* (Part 2, Settled 2016) Led Brattle's support of outside expert testimony in the second part of Jicarilla Apache Nation's suit against the U.S. government over imprudent management of tribal funds. Involved benchmarking performance of a fixed-income portfolio strategy over time and simulating alternative 'but-for' portfolio strategies. Suit settled at numbers in line with Brattle's supporting analysis.

*Evaluation of the loss to two large mining companies from allegedly improper government actions (International Arbitration).* Evaluated the market value impact of the loss to the companies using the event study framework.

*Evaluation of due diligence practices & policies by numerous securities underwriters and mortgage originators in the creation and promotion of RMBS prior to the Subprime Crisis of 2007.*

*Valuation of lost opportunity to pursue a merger (International Arbitration).* Worked with expert to structure an event study providing a market based estimate of damages to a company when it lost the option to pursue a merger. Project also involved detailed analysis of tick-level data and connecting price movements to information flows.

*Jicarilla Apache Nation v. U.S.A.* (Part 1, 2013) Led Brattle's support of expert testimony in the Jicarilla Apache Nation's successful suit against the U.S. government over imprudent management of tribal funds. As with the second case in 2015, this also involved benchmarking performance of a fixed-income portfolio strategy over time and simulating alternative 'but-for' portfolio strategies.

*Valuation of a large multinational food company's U.S. operations.* Used both multiples and discounted cash flow techniques. Led Brattle's support of a valuation that required distilling appropriate segment data

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from consolidated statements, and projecting financials under various growth scenarios in consultation with management.

*Abu Dhabi Commercial Bank, et al v. Morgan Stanley & Co. Inc., et al, No. 08 Civ. 7508(SAS) (S.D.N.Y.)*  
Led Brattle's support of loss-causation testimony using an event study framework on behalf of more than a dozen institutional investors in their recent suit against (and settlement with) Morgan Stanley, Moody's, and S&P over losses tied to RMBS assets and the collapse of Cheyne SIV.

*UK Windfall Tax Dispute.* Led support of expert testimony in identifying the nature of the UK Windfall tax as an income versus value tax. Case was ultimately appealed to the U.S. Supreme Court, which unanimously affirmed the initial court ruling in favor of our client.

*Large Multinational Bankruptcy.* Performed in-depth analyses of cross-border structured finance arrangements by the multinational between the 1990s and its bankruptcy. Dr. Aharonian's role in this engagement was to i) understand and demonstrate the underlying economic relationships between parties involved, along with the business purposes of a series of transactions they undertook, and ii) assess certain representations of value made by parties subject to a class-action suit. The financial relationships and transactions in this engagement utilized complex structures involving special purpose vehicles (SPVs), complex financial instruments, and were designed around tax efficiency and balance sheet considerations. He unbundled the most complicated component of the structures, which involved SPVs, an international equity/debt hybrid investment with imbedded options and guarantees, and a number of accreting loans hedged by a set of interest rate swaps.

*HYMF, Inc., and Barclays Bank PLC v Highland Capital Mgmt., L.P.,* Reviewed and reconstructed the NAV and investor rolls of various Highland funds to determine the value of various Barclay's derivatives with Highland as of specific valuation dates. This provided support for an external expert's report on damages after Highland refused Barclay's redemption requests during the financial crisis relating to \$705 million worth of derivatives it had written.

### TEACHING

Spring 2020: Options and Derivatives (Graduate), Adjunct Lecturer, Babson College, Wellesley, MA

Fall 2014: Fixed Income Securities (MBA), Adjunct Lecturer, Babson College, Wellesley, MA

### ACADEMIC HONORS AND FELLOWSHIPS

UBC Department of Economics Graduate Fellowship & Teaching Assistantship (1997-2002)

Canadian Federal Government Graduate Scholarship (2001)

McGill Department of Economics Fellowship and Teaching Assistantship (1995-1996)

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### PUBLICATIONS

“The Focus on Event Studies in Class Certification,” with Torben Voetmann and Paul Hinton. In *Law360* (New York, NY). December 22, 2015.

“Dynamic Price Misalignments and Market Efficiency on the NYSE,” Working Paper, 2006.

“SDF Based Measures of Price Misalignment and their Estimation,” Working Paper, 2005.

“Financial Liberalization and Economic Growth in LDCs,” Working Paper, 2001.

### PRESENTATIONS

“Current Challenges for Defense Strategies in Securities Class Actions - Overcoming Skepticism Of Traditional Event Studies,” (with Lawrence Freed and Paul Hinton) *CLE session at Kramer Levin Naftalis & Frankel LLP*. November 2018.

“Securities Litigation: Defense Strategies in 2018 and Beyond,” *Knowledge Group Webinar Series*. January 2018.

“Securities Class Actions: Trends & Developments in 2017 & Beyond,” *Knowledge Group Webinar Series*. November 2017.

“Understanding the Impact and Implications of the New Debt-Equity Regulations,” *Knowledge Group Webinar Series*. September 2017.

“Halliburton II and the Price Impact Rule: Impact on Securities Class Actions Explored,” *Knowledge Group Webinar Series*. September 2016.

“Halliburton II – Then and Now: Economic Issues Raised by the Decision and How Courts are Facing Them,” *Knowledge Group Webinar Series*. April 2016.

“The CDS Market Prior to the Financial Crisis,” *The Brattle Group*, May 2009

“Cost of Capital Methodology,” New Consultant Training, *The Brattle Group*, November 2007

“Dynamic Price Misalignments and Market Efficiency on the NYSE,” Richard Ivey School of Business, University of Western Ontario, February 2007.

“Dynamic Price Misalignments and Market Efficiency on the NYSE,” (Job Market Candidate Presentation) Department of Economics, University of Toronto, January 2006.

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“Dynamic Price Misalignments and Market Efficiency on the NYSE,” Department of Economics (Brown Bag Series), University of British Columbia, November 2005.

“SDF Based Measures of Price Misalignment and their Estimation,” Department of Economics, University of British Columbia, September 2005.

### ADDITIONAL CONSULTING EXPERIENCE

#### Securities Litigation and the Financial Crisis

- Investigated the due diligence procedures by a large investment bank in the origination and underwriting of hundreds of thousands of loans later securitized and sold to investors. Examined on masse the evolution of the underwriting issues using large data analysis techniques.
- Helped establish loss-causation and damages to investors from an alleged breach of fiduciary duties by their investment manager.
- Deconstructed a complex collection of structured finance transactions between a large hedge fund and an investment bank. Following the 2008 financial crisis, the value of different portions of the investment eroded significantly, and there was a dispute over the recovery of capital. An estimate of lost capital and damages was determined based on forensic examination of the related investment funds and based on a valuation of various risk-managing derivative contracts.
- Used an event study framework to estimate price inflation and damages in a class action of shareholders suing a monoline insurer with exposure to RMBS during the financial crises. The event study involved statistically separating the impacts of various confounding events.

#### General Securities Litigation and Investment Management

- Extensive experience in the development of event studies to estimate price inflation from claimed wrongful acts. These engagements often involve multiple and/or compound events and require estimating so-called “inflation ribbons” which identify day-by-day price inflation over a span of time (e.g., a class period). Damages are computed in various ways, including by calibrating various trading models to estimate the number of damaged shares on a daily basis, and then combining these estimates with the estimated inflation ribbon.

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Engagements have included, among others:

- Settlement with a class alleging that a company failed to conform with its continuous disclosure obligations under prevailing securities laws
- Estimating shareholder damages after a party allegedly breached its fiduciary duty and interfered with a merger that would allegedly have created substantial value
- Losses suffered by a mining company after an alleged breach of its mineral rights
- Losses to shareholders after an alleged breach of fiduciary duty and fraudulent misrepresentation under the direction and control of the majority shareholder
- Analyzed a structured finance deal involving share exchanges where the majority shareholder allegedly breached their fiduciary duty in a buyout of the minority shareholders. Helped determine whether or not the share exchanges had been conducted on a fair market value basis.
- Helped examine the role of a custodian bank in allegedly facilitating the continuation of a high profile fraud that caused losses to investors.
- Supported an expert opinion on the prudence of an investment manager's portfolio decisions over a 20 year period. Specifically examined the liquidity requirements of the beneficiaries and the overall performance of the manager's investment strategies.

### Valuation and Structured Finance

- Led the valuation of a Master Limited Partnership ("MLP") in a dispute between shareholders over expropriation of value and control in a closely held corporation. Dr. Aharonian relied on original valuation results for MLPs he previously derived as part of Brattle testimony to the Federal Energy Regulatory Commission ("FERC") on general partner valuation and MLP growth in the pipeline industry.
- Performed a valuation of options to repurchase pharmaceutical patent rights for a large European pharmaceutical company.
- Led Brattle's support of an expert testifying on the valuation of a large multinational dairy company's Brazilian operations. This involved evaluating various valuation methodologies and their appropriateness to the valuation issues at hand.
- Extensively researched control premiums and minority discounts in emerging markets, emerging country risk and credit markets, and certain international banking reforms as part of the class-action suit. This part of the engagement further involved his analyzing banking and

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financial statements prepared under differing accounting standards and business valuation through a variety of methods. Directed the analyses in coordination with the testifying expert, oversaw analyses by a team of research analysts, produced draft material for the expert's report, oversaw the general production of documents, and managed client interactions and requests.

- Performed numerous valuations of energy companies in various submissions by Brattle expert witnesses to state and federal regulatory commissions.

### Tax Efficiency and Tax Motivated Transactions

- Analyzed a number of international leveraged lease transactions that were challenged by the IRS. The transactions were versions of both the Lease-in/Lease-out (“LILLO”) and Sale-In/Lease-Out (“SILO”) format which transfers depreciation shields (and possibly other risks) from one entity to another in exchange for an upfront infusion of cash and other potential economic benefits.
- Evaluated the economic substance and business purpose of a series of transactions that were used to offset a significant amount of income in a taxpayer's filed income tax return. The taxpayer had used a short-sale of Treasury securities to purportedly hedge changes to the value of an accounts receivable portfolio as interest rates varied. The transaction involved a very short-lived partnership through which losses were transferred back to the taxpayer and used to offset their income. Analysis made use of Macaulay duration, which measures the sensitivity of fixed income asset values to changes in interest rates, to demonstrate that this short-selling strategy could never have performed the hedging function claimed. Excluding the tax-benefits from the strategy, the costs of actually purchasing the strategy resulted in a substantial expected loss that no reasonable investor would have participated in, but for the tax benefits.
- In coordination with the testifying expert and a Principal at Brattle, Dr. Aharonian evaluated the nature of a government tax and whether it should be characterized as an income tax. The engagement involved issues surrounding IPO pricing, the measurement of abnormal returns, and the economic interpretation of legal definitions of income.
- Additionally, Dr. Aharonian developed and supervised the analyses underlying expert testimony for a range of tax motivated transactions on behalf of the Department of the Justice. These engagements have involved deconstructing complex investment relationships and structured finance transactions to address the business purpose and economic substance of the overall strategies involved. Examples include:
  - the Customized Adjustable Rate Debt Structure (“CARDS”)

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- the Family Office Customized investment structure (“FOCUS”)
- Distressed Asset/Debt transactions (“DAD”)

### Bankruptcy Related Damages

- Advised on the correct methodology to compute damages as part of a settlement conference involving bankruptcy by a large energy utility. One party had defaulted on their obligations stemming from a long-term tolling agreement for power generation. The counterparty had been able to re-contract the generation capacity involved with a similar long-term tolling agreement. Parties were trying to settle the extent of the net damages that had been suffered as a result of the default. The contested issues were whether a dual-discount rate approach needed to be utilized in computing the difference between the value of the lost contract and the value of the new contract, and what the appropriate discount rate(s) should be. Dr. Aharonian recast the problem as a type of swap, which clarified which approach was appropriate and what discount rate(s) to use.

### Cost of Capital

- Played an integral role in the cost of capital practice over his first years at Brattle. Either participated in or managed numerous cost of capital engagements, and has played an important role in refining estimation methodology, expanding the capacity and efficiency of producing cost of capital estimates, and in refining and expanding expert testimony. Industries have included Water, Electricity, and Natural Gas, both in the U.S. and Canada.
- Helped develop testimony on the correct way to value pre-tax cash flows from royalty fee arrangements. The work involved developing a framework for clearly establishing the relationship between after-tax discount rates and economically relevant “pre-tax” discount rates – when the latter exists.
- Developed a DCF based methodology for accurately estimating the cost of capital of a Master Limited Partnership. There are a number of complexities that arise in estimating a MLP’s cost of capital, however, due to their unique distribution requirements, growth incentive mechanisms, and tax flow-through status. Dr. Aharonian’s work established the underlying dynamics of how growth and risks are divided between a MLP’s limited partners and general partner over time. Moreover, he developed a Benchmark Model within the DCF framework to properly account for these dynamics in cost of capital estimation.
- Advised with the testifying expert as to whether or not a proposed revenue decoupling mechanism for water utilities would affect their cost of capital, and if so how. A key insight

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was that the mechanism could only affect the cost of capital if it altered the systematic risk of the utilities, which is that risk which cannot be diversified away by investors through diversified portfolios. Dr. Aharonian was part of a small team that developed a framework in which to analyze this issue.

### Classification of Hybrid Financial Instruments

- Together with the testifying expert, advised as to whether certain claims were more properly characterized as debt or equity. As part of the “near” bankruptcy of a generating utility, debt-holders found themselves in the unwelcome position of taking ownership of the entity. This role was undesired and debt-holders took steps to establish an arms-length relationship with the utility. After completing a financial restructuring, a new equity investor was introduced who took full control of the generator. The contested issue here was whether interest expenses which had accrued during the financial restructuring were properly considered as a cost of debt, or whether the essential bankruptcy had temporarily transformed the claims of the debt-holders into equity. Dr. Aharonian proposed and developed a “continuity” theorem to argue that the essential nature of the debt-holders claims during the restructuring was rightly viewed as debt.