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SUMMARY

Dr. Jeffrey Armstrong is an industrial organization economist with over 15 years of experience supporting testifying experts and conducting economic analysis of markets, vertical restraints, horizontal collusion, and the quantitative impact of advertising and marketing programs. He has worked on many high-profile antitrust engagements, including AMD v. Intel, monopolization lawsuits involving U.S. Smokeless Tobacco, and alleged price-fixing matters in various industries.

Dr. Armstrong has advised clients, supported experts and conducted damages analyses in false advertising matters, securities class action fraud cases, and other commercial contract disputes. He previously ran a consumer survey research center and has taught economics and statistics at universities in the U.S. and abroad, and testified in court as an expert witness in economics and statistics. He earned a Ph.D. in economics from the University of California at Los Angeles with specializations in industrial organization and econometrics.

EDUCATION

Ph.D., Economics	University of California, Los Angeles, 1996
M.A., Economics	University of North Carolina, 1986
B.A., Psychology and Political Science	University of North Carolina, 1985

PRESENT EMPLOYMENT

Director, Berkeley Research Group, Washington, DC, 2014–present

PREVIOUS POSITIONS

Finance Scholars Group, Washington, DC
Principal (2011–2014)

CapAnalysis LLC, Washington, DC
Vice president (2006–2011)
Senior economist (2003–2006)

Analysis Group/Economics, New York, NY
Senior associate (2001–2003)

University of California at Los Angeles, Center for International Science, Technology and Policy
Research fellow (1994–2003)

PricewaterhouseCoopers LLP, New York, NY
Manager (2000–2001)

Economic Analysis LLC, Century City, CA
Economist (1998–2000)

University of California at Los Angeles,
Visiting assistant professor of economics (1998–2000)

Thammasat University, Bangkok, Thailand
Visiting professor of economics (1997–1998)

Quantum Consulting, Inc., Berkeley, CA
Director of survey research (1989–1991)

Pacific Telesis, San Ramon, CA
New product demand forecast manager (1986–1989)

PUBLICATIONS

“An Economic Review of Supreme Court Justice Neil Gorsuch’s Antitrust Record,” (with Jeffrey Klenk), *Economics Committee Newsletter*, ABA Antitrust Law Section, Volume 18, Number 2, Fall 2017.

“Understanding the Antitrust Jurisprudence of Justice Gorsuch: *Conwood’s* Continuing Influence,” (with Jeffrey Klenk), *The AntitrustSource*, June 2017.

“Protecting the Pillars of Consumer Demand: False Advertising Cases and Economic Trends in the United States Since the Financial Crisis,” *BRG Review*, Spring 2016, vol. 5 (1), pp. 22 – 31.

“The Voice of the Consumer in the Courtroom: How ‘Big data’ can Improve Injury Evidence in Lanham Act False Advertising Cases,” *The AntitrustSource*, April 2015.

“An Economic Perspective on Dodd-Frank Regulation of Interest Rate Swaps,” August 2012.

“Damages Principles as Applied to the FCPA” (with Mark Glueck), November 2011.

Presenter at Howrey CLE Fundamentals Courses on: impact and damages estimation; antitrust economics of vertical restraints; and deposing economic experts.

“Predatory Bundling or Bundling to Compete?” *LexisNexis Antitrust Litigation News* 1:6, September 2006.

“Commercializing Knowledge: University Science, Knowledge Capture, and Firm Performance in

Biotechnology” (with Lynne G. Zucker and Michael R. Darby), *Management Science*, January 2002.

“Geographically Localized Knowledge: Spillovers or Markets?” (with Lynne G. Zucker and Michael R. Darby), *Economic Inquiry* 36:1, January 1998, 65–86.

“Why Did Countries Join the WTO?” UCLA working paper, 1996.

“Dispute Settlement within the WTO: An Empirical Analysis of Reputation as an Enforcement Mechanism in International Law,” UCLA working paper, 1996.

SELECTED EXPERIENCE

Expert Testimony

Dominion Video Satellite, Inc. v. EchoStar Communications Corporation. Prepared expert report and testified at deposition and arbitration on behalf of Dominion Video Satellite. Dominion signed a long-term contract with EchoStar giving it exclusive broadcasting rights for specific programming content in exchange for satellite transponder rights. Dr. Armstrong testified that EchoStar’s contract breach resulted in injury to Dominion due to the loss of exclusivity and resulting subscriber revenue decline. Dr. Armstrong was asked to opine on the economic principles of exclusive distribution contracts and performed a financial analysis of Dominion’s bankruptcy risk to support an injunction remedy and damages award.

American Trucking Association, Inc. et al. v. State of New Jersey. Prepared expert rebuttal report and testified at deposition and trial on behalf of American Trucking Association. Dr. Armstrong rebutted opposing expert’s damages opinion that a hazardous waste disposal tax levied by New Jersey had no impact on out-of-state truckers. Dr. Armstrong testified that the conclusion of no impact was not based in scientific statistical methodology and opined on the proper use of statistical methodologies for performing impact analyses resulting from a taxation event.

Antitrust Matters

Antitrust litigation cases against Intel, including AMD v. Intel. Supported damages and liability experts for defendant Intel on the economics of loyalty discounts, predatory pricing, exclusive contracts and other alleged monopolization conduct. Reviewed all case documents and analyzed Intel’s negotiations with key OEMs including IBM, Dell, Hewlett-Packard and others. Prepared quantitative information on prices, products, customer segments, and costs to test predatory price claims and econometrically analyze the drivers of Intel’s high shares in key market segments contested by AMD. The analyses were also used to supported counsel and expert economic testimony in the investigations by the Japan FTC, the New York State Attorney General, and the US FTC.

Swedish Match v. U.S. Smokeless Tobacco, and state class actions. Following the verdict in the Conwood antitrust case, new plaintiffs filed antitrust lawsuits claiming foreclosure and price overcharges for moist snuff. Dr. Armstrong led the analysis to support the testifying expert in defending numerous claims: anticompetitive exclusive distribution arrangements and retailer incentive programs; the abuse of category management; and allegations of product and shelf space interference by UST field representatives. An econometric analysis of retail level data on

moist snuff sales and UST programs was used to demonstrate UST did not limit rivals shelf space and provided retailer support that grew the overall moist snuff market.

Syngenta AG v. Monsanto. Antitrust counter-claim stemming from an allegation by Monsanto that Syngenta violated Monsanto's genetically modified patents. The antitrust analyses centered on demonstrating the absence of grower lock-in to genetically modified seeds in light of the evidence of other factors important to determining growers' seed and planting system choices. In addition, entry and competition by other biotechnology-based companies undermined Syngenta's claim that Monsanto possessed market power.

Feesers v. Michael Foods and Sodexo. Analyzed competition in the food distribution and food service markets in a Robinson-Patman case. The case centered on whether Feesers as a purchaser and distributor of Michael Foods' liquid egg products was effectively competing against downstream food service provider Sodexo, and whether Michael Foods' supply contracts denied Feesers of economically based price discounts. Feesers failed to demonstrate it was competing in the same line of business as Sodexo and that it was denied competitively determined price discounts.

Columbus Drywall v. Masco. Plaintiff alleged a "hub and spoke" conspiracy between Masco and several of the world's largest manufacturers of home insulation. Extensive analysis of invoice records, all-in price discounts (inclusive of back-end rebates) and parallel analysis of buyer-seller negotiation documents demonstrated that Masco aggressively negotiated for insulation discounts and behaved contrary to a "hub" cartel coordinator over the alleged conspiracy period.

Viazis v. American Association of Orthodontists. Evaluation of Sherman Section I claim against a standards setting association in the orthodontics industry. Plaintiff alleged the AAO suppressed price competition, stifled innovation and restricted advertising by rules preventing a distributor from marketing a new orthodontic brace. A fact-based approach revealed that the pricing and advertising claims were erroneous and that the AAO was justified in enforcing policies to ensure standards of high quality products and care by orthodontists.

Fraser v. Major League Soccer. MLS players alleged the individual teams conspired to suppress player salaries. Dr. Armstrong led the construction of an integrated player-performance-compensation database used to model compensation as a function of objective player performance statistics and outside league opportunities. MLS players' professional opportunities in other U.S. soccer leagues and experience in foreign premier leagues both demonstrated that MLS did not exert wage-setting power in the relevant input market.

Compact-Disk MAP Antitrust Litigation cases. Econometric analysis of panel sales data to determine whether advertising policies instituted by music CD distributors were anticompetitive. Distributors enforced minimum-advertising prices (MAP) on retailers, a practice challenged as an effective resale-price maintenance scheme. Econometric models showed that where and when MAP policies were enforced by defendant music distributors, CD music sales expanded consistent with a pro-competitive motivation for the advertising restraint.

In re Bulk Vitamins Antitrust Litigation. Economic and statistical analysis of bulk vitamin price trends to compute the overcharge in a horizontal price-fixing conspiracy. An event study approach was applied to analyze conspiracy period prices relative to pre- and post-conspiracy prices and an

industry price index. With respect to vitamin C, analysis of China's entry and exportation of bulk vitamin C was shown to have been a competitive factor disciplining alleged cartel members.

Securities Class Actions and Financial Market Disputes

In Re Biovail Securities Litigation. Analysis of stock price history and disclosure events to rebut motion for class certification. Biovail's stock was heavily traded and closely watched by market analysts, thus satisfying several key "Cammie" factors supporting market efficiency. Application of more rigorous statistical, econometric and financial models demonstrated the stock did not satisfy weak form efficiency and that investors could profit from active trading strategies. Analysis of discovery documents indicated that the lead plaintiff, a large pension fund, invested contrary to Biovail's allegedly fraudulent earnings and product news, thus demonstrating the absence of fraud-on-the-market.

Kayne v. MTC Technologies. Event study analysis of multiple announcement events to determine impact on MTC's stock price history. Plaintiff alleged MTC inflated its share price by circulating and promoting through roadshows a secondary offering prospectus that made false claims about contracts to provide cellular phone services in China. MTC made numerous announcements over time, thus requiring a statistically robust methodology to test for their collective impact on historical share prices. MTC's shares were also thinly traded requiring advanced econometric techniques to adjust for asynchronous share price data.

In Re iMergent Securities Litigation. Event study analysis of iMergent financial disclosures to quantify potential shareholder damages. Prepared exhibits showing historical stock price and trading volumes, stock price reaction to announcement events, and stock price correlation with comparable peer group companies. Prepared potential damages estimates for use in settlement discussions.

Parnes v. Purus. Securities 10b-5 matter filed against Purus following its initial public offering. Shareholders alleged the company failed to disclose deficiencies in new products and claimed damages equal to the entire stock price decline post-IPO. To demonstrate stock price riskiness following an IPO, we assembled a database of stock price histories for 381 newly public companies and analyzed their post-IPO stock price performance. Using these comparable firms as a benchmark, we demonstrated that Purus had not underperformed relative to the market for IPOs.

Korea Life Insurance and Morning Glory Investment v. Morgan Guaranty Trust. Analyzed the potential impact to Morgan Guaranty and the financial system that would follow from a New York district court ruling declaring certain OTC derivatives transactions (mainly interest swaps) entered into by KLI to be retroactively ultra vires. KLI claimed it was owed \$90 million from Morgan, which the latter would pay assuming the derivatives transaction were ruled ultra vires. The potential impact to financial markets was assessed based on a review of similar derivatives transactions declared ultra vires in other jurisdictions, analyses of financial market risk-allocation, and the potential to induce systemic financial risk.

JP Morgan v. Government of Argentina. Review of public information related to a credit derivative triggering event in connection with Argentine sovereign debt issues. At issue was the precise definition of a default event since the transaction was entered into prior to ISDA's issuance of credit derivative default guidelines. An assessment of the country's financial economic conditions as well

as publicly announced government actions supported the broker/dealer's determination that a default (within the meaning of ISDA, i.e., involuntary) had occurred prior to the government's formal declaration of default.

MKP Master Fund v. Salomon Smith Barney. Conducted economic and statistical analyses of a mortgage-backed security hedge fund. The hedge fund failed to meet margin calls during a period of mortgage market instability and alleged its prime broker violated its broker-dealer obligations. The fund's posted collateral was valued in a risk-return-hedge framework to verify the broker's margin calls and increase in margin requirements on overnight repo loans. A detailed analysis of the fund's risk controls revealed higher than stated investment leverage and inadequate hedging. Analysis of fund risk and return was performed by comparing NAV performance over time with comparable peer group hedge funds.

Eagle Cayman Fund v. Salomon Smith Barney. Analyzed the performance of a hedge fund whose portfolio consisted of high-yield and private placement corporate debt. The hedge fund's NAV collapsed as a result of inadequate hedging and severe market turbulence, which prompted the fund's brokers to liquidate the fund's assets. The fund claimed damages stemming from forced liquidation and undervalued security sales.

Intellectual Property Cases

Syngenta v. Monsanto. Analysis of lost profit and forgone royalty payments in connection with Syngenta's infringement of Monsanto's genetically modified corn seed patents. Due to the duration of the litigation, market conditions had changed significantly in the market for genetically modified seeds. We therefore updated the infringement damages calculation to reflect new market conditions, principally greater acceptance of GMO seed and entry by new biotechnology-based seed producers.

Basu et al. v. Bajaj et al. Valuation of online auction website Baazee.com to estimate damages resulting from an alleged trade secret theft. Valuations were performed based on the experience of three rounds of venture financing, as well as a peer-group analysis and study of the Indian dot-com market. The analyses showed that at the time of the trade secret theft, the venture's fair market value was low due to weak and highly uncertain cash-flow projections.

Presstek v. Heidelberg. Calculation of lost profits and reasonable royalties in an arbitration involving patent and trademark infringement and breach of contract claims between an established manufacturer of printing presses and a developer of new printing press technologies.

False and Deceptive Advertising Cases

Western Sugar Cooperative et al. v. Archer-Daniels-Midland Company et al. U.S. sugar producers filed a Lanham Act false advertising case alleging the Corn Refiners Association and its member companies ran a multi-year, multi-media advertising campaign that induced consumers and food and beverage manufacturers to purchase or manufacturer more products sweetened with high-fructose corn syrup ("HFCS") at the expense of sucrose sugar. The plaintiffs' damages expert testified to over \$1 billion in damages based on aggregate industry sales data. Utilizing highly detailed store sales scanner data of products sweetened by sucrose sugar or HFCS, a statistical evaluation of the challenged advertising showed consumers' actual product purchases of over 40 different food and beverage products were not affected by television, print or website advertising.

The case went to trial in the U. S. District Court of California (CD) and the parties settled during trial.

Jackson Hewitt v. H&R Block. Evaluated the financial impact of alleged false advertising by H&R Block on Jackson Hewitt's retail tax preparation business. Jackson Hewitt ("JH") accused H&R Block of conducting a multi-media false advertising campaign stating JH's tax preparation service was deficient. A statistical analysis supporting the validity of H&R Block's representations was performed. In addition, an econometric analysis was performed to test JH's claim of lost sales stemming from the alleged false advertising by combining Nielsen audience measurement data with JH store sales histories.

Maris Distributing Company v. Anheuser-Busch. Conducted event studies to test sales impacts in defamation lawsuit filed by Maris Distributing against Anheuser-Busch ("AB"). The alleged defamatory statements were shown to have no impact on Maris' beer sales by geography or channel using an econometric model of beer consumption which showed that other factors, such as weather and seasonal effects, explained the variation in Maris' beer sales.

Univision Communications v. Nielsen Media Research. Statistical analysis of Nielsen Media Research ("NMR") audience measurement methodology. The sampling and statistical methods used by NMR to project total viewership of Univision Communications' ("Univision") programming were shown to under-represent key customer segments due to improper use of a metering technology and weighting procedure that NMR planned to adopt. The analysis was used to demonstrate that NMR made false statements claiming its new metering technology produced reliable, unbiased projections of Univision's television audiences.

Other Commercial Litigation

Tom Rice Buick v. GMC. Economic analysis of benefits of contract that facilitated tying structure between dealer car sales and post-sale automobile parts and maintenance services. The dealer accused GMC of underfunding after-market services. Analysis of the lifecycle profits on car sales and after-market sales showed that GMC's policies ensured dealers earned an adequate risk-adjusted return on their business.

Heitmeyer v. MBIA. Arbitration involving a leading financial insurance company in which plaintiff claimed rights to certain municipal tax-liens. Plaintiff's expert produced numerous damages models that valued the tax-liens based on Black-Scholes and binomial option pricing techniques. Each model was critiqued and shown to have inflated damages prompting plaintiff's counsel to withdraw these damages models from testimony.

Gauthier and class v. Journal/Sentinel. Liability and damages analyses in an employee stock options (ESO) suit brought on behalf of a class of over 200 terminated employees. The employees' ESOs were valued using augmented Black-Scholes techniques to account for stock-option vesting requirements and transferability restrictions.

The Common Fund v. KPMG. An analysis of the security trading costs incurred in connection with unauthorized investments funded by university endowments. The Common Fund accused KPMG of failing to discover unauthorized investment strategies that caused substantial losses in fund value. The fund authorized certain types of investment strategies (hedged positions) but did not restrict trading volume. Damages were calculated after netting out round-trip security trading costs

(bid-ask spread and commission fees), which were substantial due to the very high volume of trades placed over the alleged damages period.

In Re C&B Livestock et al. Calculation of damages in a dispute involving the early redemption of an illiquid, seasoned debt note. The note contained a yield-maintenance or “make-whole premium” clause, but the court did not permit this liquidation damages remedy. Therefore, actual damages were determined by calculating loan replacement costs (search and negotiation fees based on historical loan-agent salaries), foregone interest on the prepaid loan, and a default-risk premium to account for loan seasoning.

Appaloosa Investment v. Providian Financial Corporation. Worked on behalf of a group of corporate bond investors attempting to block a capital restructuring plan by a major issuer of consumer credit cards. An analysis of the credit card company’s financial filings with regulatory bodies, other financial disclosures and industry reports supported bond holders’ contention that the proposed restructuring plan would significantly jeopardize the firm’s ability to meet debt obligations.

Non-litigation Consulting Assignments

Assisted a leading securities brokerage firm in conducting an internal assessment of its equity ratings practices and ratings performance.

Developed a shareholder class action settlement database and econometric model to predict settlement amounts in shareholder class action suits.

Valued alternative damages award scenarios in connection with wrongful termination that caused executives to forfeit their stock options compensation.

Prepared background materials on derivatives valuation and hedge effectiveness measurement procedures for use by public companies in meeting their financial reporting requirements.

Prepared a report for the Thailand Development Research Institute in support of Thailand’s and other developing countries’ defense against an alleged violation of the World Trade Organization’s environmental policies.

Assisted the Thailand Development Research Institute in developing its export analysis and export forecasting models.