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At Spectrum, we provide professional valuation, statistical, financial and economic consulting services to meet a variety of client needs and to solve business problems.

Our expertise includes business valuation services for litigation, tax planning and mergers & acquisitions engagements; a broad spectrum of utility consulting services; and expert economic analyses for commercial, antitrust, tax, securities, regulation and employment matters.

As part of our practice, we are often called upon to give expert testimony in civil litigation and regulatory

cases. Our economists and financial analysts have testified in civil and criminal cases on behalf of both plaintiffs and defendants; and in regulatory proceedings for regulated companies, commissions and other parties.

Our professionals have the academic credentials, maturity and experience needed for credible and effective trial and deposition testimony. We also go beyond testimony to help our clients effectively coordinate economic and legal issues, investigate and confront opposing opinions and avoid litigation in the first place.

BUSINESS VALUATION & LITIGATION

- Businesses, professional practices
- Financial assets & contracts
- Intangible assets
- Startup companies
- Mergers & acquisitions
- Tax planning
- Business interruption losses
- Securities fraud

ANTITRUST MATTERS

- Price fixing and bid rigging
- Discriminatory pricing
- Monopolization
- Restraint of trade
- Mergers and acquisitions

REGULATORY ECONOMICS

- Rate of return analysis
- Revenue requirements
- Rate design/Cost of service
- Demand forecasting
- Resource planning
- Policy Analysis
- Deregulation

EMPLOYMENT & EARNINGS MATTERS

- Compensation studies
- Wrongful termination
- Personal injury
- Wrongful death
- FELA
- Discrimination (statistical analysis)

Business Valuation

At Spectrum, we focus on standard appraisal considerations and advanced methods needed for complex problems. In addition to detailed analyses of industry and market structures, our past work and current capabilities include application of advanced econometric modeling and statistical analyses. These techniques enable us to improve the selection of guideline companies, assess alternative valuation multiples, evaluate risks and more accurately identify trends and growth. Prior business valuation engagements have included the following:

Financial Services

- Savings institutions
- Portfolio management
- Director responsibility, banks
- Securities brokerage
- Insurance
- Real estate development & consulting
- Secondary market for vouchers
- Value of futures contracts
- Value of a poison pill options
- Value of a prepayment premiums

Professional and Business Services

- Yellow Pages directories
- Legal services
- Medical practices
- Medical practice consulting
- Hospitals and Health Insurance
- Healthcare staffing
- Business seminars
- Sports facility consulting
- Tourism services
- Disaster recovery services

Telecommunications

- Long-distance resale
- Wireless services
- Competitive access providers
- Competitive Local Exchange Carriers
- Cable content providers
- Internet services providers

Computer Equipment

- Networking equipment
- Financial services software
- Agriculture equipment software
- Useful life of computer equipment
(tax review board)
- Financial services software

Utilities (see section on utility projects)

Intellectual Property

- Patents
- Trademarks
- Copyrights
- Trade secrets

Distribution

- Pharmaceutical wholesaling
- Food wholesaling
- Veterinary supply
- Food services equipment
- Jewelry
- Blood-bank services

Retail Establishments

- Restaurants
- Packaged liquor
- Convenience store/gasoline
- Grocery stores
- Automobiles & RV's
- High-volume discounting

Light Equipment / Manufacturing

- Surgical implements
- Food services equipment
- Toys
- Specialty tool & die
- Cure In-Place Piping
- Conveyors
- Specialty signs
- Leather & hides
- Windows & doors

Heavy Equipment / Manufacturing

- Chemical production
- Energy generating equipment
- Aggregate and gravel
- Concrete
- Rubber and steel processing
- Gold mining

Farms & Ranches

Recent Litigation-Related Projects

Intellectual Property:

- Fleetwood Industries has a contract for the exclusive use of the Coleman name on recreational vehicles. Spectrum valued the use of Coleman's trademark in this market and presented the results in litigation between Coleman and Fleetwood.
- Computed gains to competitors arising from patent infringement, licensing violations and the breach of a non-competition agreement and use of trade secrets by a former employee, in cases concerning the cure-in-place pipe industry.
- Evaluated the assertion of intellectual property rights for helicopter repair in connection to an antitrust counterclaim.
- Analyzed market power, pricing and lost profits in an antitrust counter claim (Walker Process) to patent infringement of surgical instruments.

Contractual Disputes:

- A competitive local exchange carrier charged that the failure of switching equipment caused it to fail. Spectrum developed a bankruptcy probability model and showed that "but for" the actions of the equipment vendor, the CLEC would have survived. We then valued the CLEC.
- Numerous cases involving damages resulting from violations of: covenants not to compete, license of trademark, theft of trade secrets and breach of fiduciary responsibility. Industries included: staffing, financial, blood services, wholesale distribution, real estate, insurance, medical devices, animal biologicals, recreational vehicles, directory publishing and computer software.
- Several cases involving damages resulting from infringement and interference. Industries included: computer equipment, hide processing, medical practices, advertising and telecommunications services.
- Measured lost profits from the dissolutions of distribution agreements in the automobile, millwork, pet and veterinary supplies, food-service equipment and cable television industries.
- Evaluated the economics of new businesses in the telecommunications industry and their expected profits. It is alleged that supplier actions led to the bankruptcy of the firm.
- Several cases involving lost profits resulting from transportation service disruptions and other supply-related problems that impacted production.

Securities-related Litigation:

- Estimated a market-based prepayment penalty on a commercial mortgage in a bankruptcy dispute. Analysis revealed that contracted prepayment penalty was unrelated to lender's potential harm and represented a windfall with respect to other creditors.
- Analyzed of the financial return and reset values of hedge-to-arrive futures contracts for agricultural products, found termination to be proper and claimed loss from inability to roll-over to be more unlikely than winning the lottery.
- Analyzed financial presentation and value of a financial institution in a 10b-5 suit against the firm's auditors. Found that proper reporting would have resulted in share trading at substantially reduced prices approximately two years before actual prices plummeted.
- Replicated and analyzed a large industrial manufacturer's natural gas hedging strategy and physical gas purchasing decisions, and their flow-through impact to the manufacturer's end-product, in a market manipulation case.

Bankruptcy and Lender Liability:

- Analyzed the going concern values of firms that alleged they were driven out of business by lender actions.
- Assisted in the defense of several banks being sued for termination of credit lines and foreclosures.
- Valued an above-market commercial loan and analyzed its prepayment penalty in a bankruptcy reorganization dispute.

Antitrust Analysis:

- Analyzed market structure and defendant conduct in the helicopter repair and reconditioning industry.
- Analyzed market structure and defendant conduct in the health insurance industry.
- Analyzed the structure of the market for quarter-horses and developed a model of conduct. Related conduct model directly to lost profits resulting from artificial market limits.
- Analyzed market structure, performance and harm to competition for defendant on antitrust counter claim to a patent infringement claim.

- Conducted antitrust analysis relating to the market for directory advertising (Yellow Pages) in four cases, also quantified lost profits.
- Analyzed the relevant market and party conduct and quantified damages incurred by a competitive access provider of telecommunications services.
- Analyzed barriers and gains from anticompetitive behavior and refusal to deal in secondary market for automobile purchase vouchers.
- Performed a comparison of the prices charged to alleged victim of a market splitting agreement to those charged in unaffected markets. This required extensive adjustments for variations in terms-of-trade between the markets.

Labor and Employment Economics:

- Analyzed dispatcher records to estimate daily hours and annual overtime worked by 700 plaintiffs in a class action suit for unpaid overtime brought under the Fair Labor Standards Act.
- Using statistical methods, researched the comparability of compensation within groups by race and gender, statistically adjusting for differences in cost of living, experience, education and other variables.
- Evaluated the compensation of “agreement employees” relative to other comparably-situated workers, within the region, nationally and at competitors, in a union contract adjustment hearing before a bankruptcy court.
- Statistically examined and refuted a claim of age bias brought by a group of transferred and terminated employees of a closed printing plant.
- Analyzed a large computerized personnel database using the logit model to measure the impacts of multiple factors in determining the probability of layoffs during a reduction in force.
- Constructed a database and performed extensive statistical analysis for a disparate impact case involving allegations of racial discrimination.
- Analyzed the claims of a group of contract employees that they did not receive pay and benefits comparable to regular employees. Showed that, in fact, contract employee total compensation was higher and that, considering the tax and other advantages of self-employment, these employees as a class fared far better than traditional employees.
- Statistically analyzed the claims of a class of on-call employees seeking overtime pay in a Fair Labor Standards Act case. We used econometric techniques to identify patterns of intensity of activity within shifts, resulting in the elimination of the majority of the class.

Mass Torts:

- Evaluated measures of intellectual capacity, educational outcomes and loss of earnings in a community-wide lead exposure case.
- Analyze losses to surviving families following several aircraft disasters, including the crash of American Eagle flight number 4194 near Roselawn, Indiana.
- Statistically evaluated outcomes in a case claiming carcinogen exposure from fertilizer.

Agricultural Economics Projects:

- Constructed operating models and analyzed lost profits and other damages to plaintiff rice farmers in the bellwether cases arising from the 2006 industry-wide contamination of the United States long-grain rice supply with genetically-modified genes.
- Analyzed lost profits and other damages to an international shipping and grain distribution company due to a breach of fiduciary duty and misappropriation of professional staff and company assets.
- Analyzed losses of profits to cattle and hog rearing operations.
- Computed loss of profits to a horse breeding operation resulting from the negligent infection of quarter horses.
- Evaluated loss of profits and property impairment to an organic vegetable and vineyard operation due to delayed market entry.
- Evaluated a proposed acquisition and refurbishment of a short-line railroad serving agricultural producers.

Other Projects:

- Numerous valuations of businesses and professional practices.
- Performed statistical analyses to evaluate class homogeneity and evaluated the economic theory and public policy implications a suit brought in class-action matters regarding auto insurance and fashion accessories.
- Performed complex statistical analyses to evaluate claimed discrimination and disparate treatment due on race, age and gender in numerous housing and employment matters.

Personal Injury/Wrongful Death/Wrongful Termination

Our services to clients litigating personal injury, wrongful death and/or wrongful termination claims include:

- Review, critique and/or correction of opposing expert loss evaluations;
- Questions and exhibits for expert deposition/cross-examination;
- Loss evaluation reports grounded in a thorough consideration of all-relevant issues, sound economic analyses and the most current research.

Our economic loss evaluations expose opposing experts' flawed methodologies and ad hoc or counterfactual assumptions. For example, we:

- Project earnings based on established past work/earnings patterns, labor agreements and the most current compensation growth forecasts.
- Project self-employment earnings using detailed revenue and expense analysis.
- Value medical benefits based on actual replacement cost and/or research on comparable employers.
- Apply actual retirement benefit formulae to calculate loss related to Social Security or private, state, federal or military pensions.
- Base worklife/retirement on the plaintiff's actual "but for" circumstance, including early retirement incentives.
- Present post-injury-employment scenarios based on reasoned opinions.
- Adjust mortality and employment for pre-existing conditions.
- Correctly offset for decedent's personal consumption of household income.
- Evaluate plaintiff's household services loss based on actual circumstance.
- Compute loss from future medical care costs by adjusting life care plans for:
 - Overstated costs;
 - Normal medical care;
 - Care for pre-existing conditions;
 - Normal expenditures from earnings;
 - Double-counts of household services;
 - Medicare/Medicaid/private insurance offsets (if permitted).
- Discount to present value using current bond yields.

FELA

Spectrum specializes in correctly evaluating economic damages incurred by injured railroad employees (or their survivors) under the Federal Employers Liability Act (FELA). Our expertise includes:

- Past and current railroad labor agreements;
- Unreimbursed expenses unique to railroaders;
- Railroad medical benefits;
- Railroad retirement benefits (valued based on actual formulae for Tier I, Tier II, Supplemental and/or corporate pension);
- Railroader retirement experience given early retirement incentives;
- Alternative railroad positions post-injury;
- Taxation of railroad earnings and benefits based on IRS formulae.

Recent Personal Injury/Wrongful Death/FELA Cases

- Corporate executive claimed that he was passed over for promotion to the senior executive ranks due to a delay in medical diagnosis. Spectrum's research revealed that the senior executive openings were due to multiple corporate scandals involving the plaintiff's immediate superiors and were thus filled by more experienced (and untainted) senior executives from other companies. The jury rejected his claim of a multi-million dollar loss of earnings as a result.
- Husband and wife were both self-employed in business they started. Surviving husband remarries shortly after wife's death. Opposing expert inflates loss to seven figures by 1) applying an understated personal consumption offset based on decedent's wage earnings only rather than household income and 2) including a lifetime loss of household services, "guidance" and "accompaniment", despite remarriage. Spectrum corrects and counters with low six-figure loss. Case settles.
- Opposing expert, with no knowledge of railroad employment, inflates loss of injured railroader to seven-figures by overstating his expected worklife and loss of railroad medical benefits, understating his post-injury worklife and under-discounting to present value based on an ad hoc assumption. Spectrum corrects and counters with low six-figure loss. Case settles.

Energy Economics and Utility Regulation Projects

Pipeline Valuation

A gas pipeline that had been operated by and for the exclusive use of its owners was converted to common carriage. Spectrum was asked by the owners to provide testimony regarding the appropriate value of the pipeline in the rate base. We did a regulatory and economic analysis of the question and provided direct and rebuttal testimony arguing that book value was inappropriate under the circumstances and that regulatory theory and economic efficiency called for the asset to be valued at replacement cost.

Electric Supply Options 2000

Because the transition to competition in the electric industry presented new challenges and opportunities, Memphis Light Gas & Water Division commissioned Spectrum Economics to forecast the structure of the industry in the future and formulate strategies for MLGW to economically provide power. As part of our efforts we used financial, production costing and market clearing price models to forecast the future rates of TVA, the market clearing price of power in the area around Memphis and the relative economics of various construction and market purchasing strategies for meeting the demand for electricity. We also evaluated the technological, fuel supply and regulatory considerations influencing MLGW's decision.

Merger between Western Resources and Kansas City Power and Light

On behalf of the City of Topeka, Kansas, provided testimony to the Kansas Corporation Commission regarding the rate treatment of new generating plants and revenues from power trading activities, why the proposed merger was in the public interest and why the requested acquisition adjustment should not be permitted.

Gas Supply Options Study

For Memphis Light Gas & Water Division, evaluated options for gas supply through 2000. Projected future gas costs, pipeline rates and demand by customer segment. Built an optimization model to estimate the optimal level of firm demand for future years given historical weather patterns. Evaluated economics of expanding a LNG facility. Performed a strategic analysis of various gas supply and transport portfolios.

Pipeline Market Power

For the American Public Gas Association, prepared a white paper entitled Local Gas Distribution Companies and Pipeline Market Power: Workable Competition or Unregulated Monopolization for presentation by the APGA, to Congress, the FERC and other interested parties. Our study included a survey of municipal LDCs, quantification of the extent of cost shifting and development of alternative regulatory policies.

Avoided Cost of Cogeneration

The Townsend Capital Summit Technology Center is a one million square foot industrial complex situated on 300 acres in Lee's Summit, Missouri. Spectrum served as the project coordinator for a team that solicited bids for energy supply including cogeneration and trigeneration. Our team evaluated those bids and assisted the client in negotiating a more favorable rate from the electric utility on the basis of the avoided cost of self-generation. We also solicited bids for gas supply to the plant and assisted the owners in selecting a new gas supplier and in negotiating with the local gas utility for carriage from the city gate.

Rate Design

On behalf of the Agricultural Energy Consumers Association, presented testimony in Pacific Gas and Electric's 1991 ECAC proceeding and 1992 General Rate Case regarding marginal cost, value of service and revenue allocation to the agricultural class.

REPRESENTATIVE LITIGATION CLIENTS

Alverson, Taylor - Las Vegas
Anderson & Bennett - Chicago
Anspach, Meeks - Buffalo, Toledo
Armstrong, Teasdale - St. Louis
Baird, Holm - Omaha, NE
Baker, Sterchi, et al - Kansas City
Belin, McCormick - Des Moines
Bollinger, Ruberry - Chicago
Brasher Law Firm - St. Louis
Burbidge & White - Salt Lake City
Cisneros, Clayson, et al - Las Vegas
Crowell & Moring - Washington, DC
Drinker, Biddle - Philadelphia
Figari & Davenport - Dallas

Foulston & Siefkin - Wichita, KS
Frieden, Haynes - Topeka, KS
Gray, Ritter & Graham - St. Louis
Gullett, Sanford - Nashville, TN
Jones, Day - Chicago
Kelley, Drye & Warren - Chicago
Kirkland & Ellis - Chicago
Klenda, Mitchell - Wichita, KS
Knight, Hoppe, Kurnik - Chicago
Luce Forward - San Diego
McGrath, North - Omaha, NE
Polsinelli Shughart - Kansas City
Richards, Brandt, et al - Salt Lake City
Sandberg, Phoenix, et al - St. Louis

Sanders, Warren & Russell - Kansas City
Shook, Hardy & Bacon - Kansas City
Skadden, Arps - Chicago
Sonnenschein, Nath, et al - Kansas City
Spencer, Fane, et al - Kansas City
Stinson, Morrison, Hecker - Kansas City
Stueve, Siegel, Hanson - Kansas City
Thompson Coburn - St. Louis
Union Pacific Railroad
Vedder, Price - Chicago
Walker & Williams - Belleville, IL
Wallace, Saunders - Kansas City
Whittenburg et al - Amarillo, TX
Williams & Connelly - Washington, DC

References

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PROFESSIONAL QUALIFICATIONS

Christopher C. Pflaum, Ph.D., President, has substantial expertise in the valuation of complex business enterprises such as limited partnerships and contracts containing option clauses and performance-based payments. Dr. Pflaum has testified and consulted in a wide variety of business-related litigation including antitrust, intellectual property valuation, interruption of business, fraud, securities matters and regulatory economics. He has a Ph.D. in Finance from the University of South Carolina.

Eric C. Frye, CFA, ASA, Vice President, specializes in financial and economic analysis. He has fifteen years experience analyzing business plans of small and medium size companies including the development of financial models to forecast future performance. Mr. Frye has a B.A. in Economics from DePauw University and an MBA in Finance and Economics from Indiana University.

George M. McCollister, Ph.D., Principal, has been a consultant for over twenty years specializing in econometric and statistical analysis for resource planning and in civil litigation. Dr. McCollister has conducted many reviews of gas and electric load forecasts and developed numerous forecasting models. In civil litigation, Dr. McCollister has conducted tests of discrimination and measured economic losses with econometric and statistical models. He has a Ph.D. in economics and an M.A. in mathematics from the University of California at San Diego.

Mark W. Erwin, MA, JD, Principal, specializes in the valuation of economic damages in tort litigation. He has applied these skills for eighteen years as Vice President of Litigation Economics, Inc. He earned an M.A. in Economics and a law degree from the University of Kansas.

Douglas M. Radtke, MBA, Principal, has held several executive level positions in the utility industry where he has been responsible for Corporate Planning and Mergers and Acquisitions. Mr. Radtke has a BS from Notre Dame and an MBA from the Ohio State University.

Stephen G. Bronars, Ph.D., Faculty Associate of Spectrum Economics, is a nationally recognized expert in labor economics and Professor of Economics at the University of

Texas at Austin. Dr. Bronar's publications have appeared in numerous economics journals including The American Economic Review, The Journal of Labor Economics and The Review of Economics and Statistics. For Spectrum, he has testified on employment discrimination, railway safety issues and compensation of CEOs.

William M.G. Pearson, MBA, is the Managing Principal of Spectrum's Chicago office. He specializes in the analysis of damages ensuing from business and personal torts, labor issues such as discriminatory practices and wrongful terminations, securities litigation and intellectual property disputes. He has testified in matters involving personal injury and business valuation. He has an M.B.A. from the University of Chicago.

Gary R. Skoog, Ph.D., is a Principal in Spectrum's Chicago office. He conducts economic and econometric analysis for litigation. Dr. Skoog has broad experience in valuation in all types of tort and in commercial litigation and has published extensively in forensic economics, particularly in the area of worklife expectancy. He is the Midwest Vice-President of the National Association of Forensic Economists. Dr. Skoog has served on the faculties of the University of Chicago's Graduate School of Business and Department of Economics. He is currently an adjunct faculty member at De Paul University. Dr. Skoog's Ph.D. is from the University of Minnesota.

Edward C. Bodmer, Senior Associate, has an MBA in finance from the University of Chicago. Mr. Bodmer's expertise in financial modeling and decision analysis is widely recognized. He was employed by First National Bank of Chicago where he was a Vice President in the utilities group and was the developer of the bank's utility financial model.