

DERIVATIVES CAPABILITIES

*Among the Derivatives Cases
Discussed Inside...*

Alex Tse v. Ventana Medical

**Ashanti Goldfields
Securities Litigation**

Bennett Group Bankruptcy

**CCEC Asset Management
v. First State Insurance**

MicroStrategy Securities Litigation

**West Basin Municipal Water
District Litigation**

Williams Securities Litigation

For over two decades attorneys have retained Cornerstone Research staff and experts to provide consulting and expert testimony in commercial litigation involving complex derivatives and other contingent claims. Our expertise spans a broad range of derivatives issues, including the valuation of complex derivatives and their application in pricing firms' liabilities, risk management, and hedging.

The analysis of derivatives is rooted in the option-pricing model developed by Fischer Black and Myron Scholes over three decades ago. Since then, option-pricing principles have been used to value sophisticated financial instruments, such as debt securities and insurance contracts, and strategic alternatives available to firms. Simultaneously, quantitative methods for implementing option-pricing models, such as binomial trees and Monte Carlo simulations, have also been developed.

Cornerstone Research's consulting staff combines knowledge of option-pricing theory and application with expertise in implementing cutting-edge option-pricing techniques. As a result, we are able to effectively support our network of experts and work with them in a distinctive "partnership" that combines the strengths of the academic and business worlds. Our faculty experts are drawn from leading business schools and financial institutions and include some of the most prominent names in the area of derivatives research.

On the following pages, we highlight analytical issues in derivatives litigation and specific cases on which we have worked.

COMPLEX DERIVATIVE CONTRACTS

The simplest of derivative contracts is a “plain vanilla” call or put option on a firm’s equity. More complex derivatives, often referred to as “exotic” derivatives, exist to meet specific investor needs. An example of an exotic derivative is a “path-dependent” derivative. As opposed to being linked to the value of the underlying asset at a specific point in time, the price of a path-dependent derivative is linked to the value of the underlying asset over a period of time.

Valuing complex derivatives often requires using computer-intensive simulation methods instead of a traditional formula such as the Black-Scholes model. Cornerstone Research has assisted experts in building valuation and damage models and performing other analyses for a broad range of derivative contracts, including employee stock options, warrants, and many types of exotic options.

Demystifying Financial Derivatives

The different types and applications of derivatives are explained more fully in the Cornerstone Research publication, *Demystifying Financial Derivatives*, by René M. Stulz of The Ohio State University. This publication is available from our website or from any of our offices.

Stock Option Grant Timing

In several current cases involving the timing of stock option grants, Cornerstone Research is assisting clients in responding to SEC investigations and civil suits. We are determining the value these grants conveyed to option holders and analyzing whether the alleged wrongdoing had any impact on shareholders.

West Basin Municipal Water District v. P.G. Corbin and Company, et al.

Retained by Clifford Chance

Defense counsel for Rice Financial Products Company hired Cornerstone Research and Professor René M. Stulz of The Ohio State University in this case arising from a series of complex derivative contracts. The plaintiff, West Basin Municipal Water District, had entered into leveraged municipal interest rate swap contracts with Rice Financial Products. The swap contracts were based on the Bond Market Association Municipal Swap Index and LIBOR rates, and contained leverage and spread features that complicated their structure. West Basin alleged that it did not receive fair market pricing on the swaps.

Working with Professor Stulz, we analyzed the components and risks of the swaps, including liquidity risk in the over-the-counter swap market in the immediate aftermath of the 9/11 terrorist attacks. We performed pricing analyses, investigated issues related to fiduciary duty, and assessed the work of an opposing expert witness. Professor Stulz testified that both parties were well aware of the structure of the swaps, but that the plaintiff had failed to consider factors related to liquidity, termination, and overnight risk. The case settled shortly before trial.

Collateralized Debt Obligations (CDOs)

As the market for these instruments has grown dramatically over the past decade, their performance has increasingly become the focus of regulatory inquiry and litigation. We have worked with Professor Michael R. Gibbons of the Wharton School and Professor René M. Stulz of The Ohio State University in a number of matters to

assess the availability and pricing of bond and loan assets purchased to create CDO pools, as well as the pricing, hedging, and performance of the CDOs.

Path-Dependent Derivatives

Retained by Shearman & Sterling

In a case involving derivative contracts issued by a firm in an acquisition, attorneys retained Cornerstone Research and Professor William L. Silber of New York University. As part of the consideration in its mergers with two target firms, the acquiring firm issued two types of derivatives to the target shareholders. These derivatives can be broadly categorized as put options—they decline in value as the price of the underlying stock increases. The plaintiffs alleged that the acquiring firm inflated its stock price after the mergers, thereby reducing the value of the derivatives.

In his report, Professor Silber demonstrated that a majority of the derivatives were adequately hedged by positions in other securities issued by the acquirer, and that such hedged holders suffered no harm from alleged inflation in the acquirer’s stock price. Further, those holders who were not hedged could not form a class as they were in direct conflict with each other regarding the amount of alleged inflation in the acquirer’s stock price. Professor Silber showed that such a conflict arose because of the differences in the contractual terms of the two derivatives—over certain ranges of the acquiring firm’s stock price, an increase in inflation would decrease the value of one derivative but increase the value of the other.

FIRM CAPITAL STRUCTURE

Alex Tse, et al. v. Ventana Medical Systems, Inc., et al.

Retained by Wilson Sonsini Goodrich & Rosati

Defense counsel retained Cornerstone Research and Professor Michael R. Gibbons of the Wharton School in this securities fraud lawsuit. The plaintiffs had invested in BioTek Solutions, which agreed to merge with Ventana Medical Systems. The plaintiffs alleged that Ventana had committed securities fraud by, among other things, failing to disclose information about a compensation package for two Ventana directors that included stock options in the soon-to-be-merged company, and misrepresenting that the conversion price offered to the BioTek investors on convertible notes was the fair market value of the soon-to-be-merged company's common stock. The plaintiffs claimed that this fraud caused them to agree to merger terms that were less than favorable.

Professor Gibbons opined on both damages and the value of the securities that the BioTek investors were offered in the merger. The defendants won the case, with their motion for summary judgment being granted in full. The court found the plaintiffs' damage claim speculative and found no evidence that Ventana had misrepresented the conversion price to BioTek investors.

CCEC Asset Management, et al. v. First State Insurance

Retained by Wilson Sonsini Goodrich & Rosati

Cornerstone Research has worked on several cases that have involved convertible preferred stock with a relatively unusual feature—the conversion ratio (that is, the number of common shares to be exchanged for each preferred share at some future date) is not fixed. This type of preferred stock, for which the conversion ratio depends on the common stock price at the future conversion date, has grown in use over time. This feature has the effect of providing a floor on the total value of the common stock to be received since, in general, the number of common shares to be received for each preferred share increases as the price of the common stock declines. Consequently, if combined with short-selling and conversion at a discount to the prevailing stock price, this feature is sometimes referred to as “death spiral” conversion. The effect of this relation between the conversion ratio and the price of common stock is that standard methods of valuing preferred stock are not appropriate.

For these cases, Dr. Allan W. Kleidon of Cornerstone Research developed an alternative valuation procedure, based on option pricing, that replicates the payoffs to the convertible preferred shares at the future conversion date by means of a portfolio of stocks, bonds, and options that can each be valued using standard valuation methods. In the above referenced case, this approach was presented to a judge magistrate who accepted the analysis; the case subsequently settled.

In re: The Bennett Funding Group, Inc. Bankruptcy Cases

Retained by Simpson Thacher & Bartlett

Cornerstone Research worked with Professor William L. Silber of New York University on behalf of the Bankruptcy Estate to assess the value of a warrant of a small publicly traded company that was sold by the Bennett Funding Group shortly before its bankruptcy. We used a modified binomial tree technique and the Monte Carlo simulation technique to accommodate the “forced exercise” features of the instrument.

At trial, Professor Silber presented convincing testimony that the sale price of the warrant had been inadequate and thus provided the key evidence that the transaction should be voided as a preferential transfer. In its ruling, the court cited Professor Silber's work and testimony as authoritative in the area of valuation.

Bond Default Litigation

Cornerstone Research analyzed the relative value of several classes of high-yield bonds issued by an emerging market company that subsequently failed during the 1998 currency crisis. The bonds, which were issued simultaneously to fund a large industrial project, had different times to maturity and different priorities in the event of bankruptcy. The lack of adequate market comparables for each class of bonds required us to employ a contingent claims framework in which bonds of different priority are viewed as options on the company's underlying assets. The model we developed allowed us to quantify the difference in the price of junior bonds relative to senior bonds while simultaneously matching the observed market value of equity.

REAL OPTIONS

Option-Pricing Methods

Cornerstone Research worked with Professor Michael Bradley of Duke University's Fuqua School of Business to determine the current value of a highly leveraged firm with uniquely structured multitiered equity holders.

In this case, traditional discounted cash flow valuation gave a negative value for the firm's equity, which is inconsistent with limited liability. An option-based valuation, however, views equity as a call option with the strike price (the minimum value of the firm for owners to receive any payments upon sale) equal to the face value of the firm's debt. When the debt comes due, either the firm is worth less than the face value of the debt, and the equity holders relinquish the firm's assets to the debt holders, or the firm is worth more than the face value of the debt. In the latter case the company pays off the debt and the equity holders receive the balance. Because these outcomes are identical to the payoffs of a call option, we were able to use a modified version of the Black-Scholes option-pricing model to value the firm's equity. In this situation, valuing the firm's equity as a derivative of potential future outcomes provided a more reliable estimate than traditional valuation techniques.

A real option is an option on the real assets of a firm. An often-cited example of a real option is the option that is available to a firm's management to grow or expand in the future. For example, a biotechnology firm may have the option to make future research and development investments, each of which is contingent on the success of the previous investment. The real options literature cautions that the standard discounted cash-flow approach may undervalue a firm that has a number of valuable options. The Nobel Prize-winning work of Fischer Black, Myron Scholes, and Robert C. Merton on the pricing of financial options is the basis of the real options approach.

In re: MicroStrategy, Inc. Securities Litigation

Retained by Arnold & Porter

In this case, Professor Paul A. Gompers of Harvard Business School, with support from Cornerstone Research, addressed the question of market efficiency for the high-profile software company MicroStrategy. After establishing a significant divergence of market price from discounted cash flow value, Professor Gompers used the real options approach to demonstrate that the divergence could not be explained away by the existence of investment opportunities not captured in the cash flow forecast. He estimated the components of the Black-Scholes formula based on the projections of the size of a new market that MicroStrategy considered entering, on analyst estimates of the window of opportunity and costs to enter this market, and on the implied volatilities of comparable companies.

In re: Williams Securities Litigation

Retained by Gibson, Dunn & Crutcher

Cornerstone Research supported Dr. Craig Pirrong of the University of Houston in reviewing and opining on the reasonableness of The Williams Companies' methodologies for valuing multi-billion-dollar long-term energy contracts. The valuation of these complex contracts depended substantially on the imbedded real option value contained in the structure of the contract. As part of its financial reporting and risk management program, Williams developed a sophisticated, multi-layered process that employed option valuation techniques to value the contract.

The plaintiffs attacked this process, focusing their criticism on several significant inputs to the valuation model. Dr. Pirrong's analysis showed that Williams used reasonable inputs in its proprietary valuation models and that these models produced reasonable valuations for the complex contracts. Dr. Pirrong argued successfully that an alternative model advanced by the plaintiffs, when used with reasonable inputs, validated Williams' models, methodology, and values.

Other Real Options Valuations

Cornerstone Research has supported experts with the valuation of firms using real options methods. In one case, the opposing expert applied the real options approach to value a biotechnology company. In another case, the opposing expert valued the target company in a merger structured such that the price for the target was contingent on future earnings. In both cases, Cornerstone Research assisted experts in rebutting inappropriate assumptions in the opposing experts' real options valuations.

RISK MANAGEMENT AND HEDGING

Because the value of derivatives is linked to the fluctuations in the value of an underlying asset, index, or interest rate, derivatives are an efficient tool for hedging risk. Hedging strategies involving derivatives may use standard call or put options, plain vanilla interest rate swaps, or more exotic derivatives created to meet specific hedging needs.

Ashanti Goldfields Securities Litigation

Retained by Milbank, Tweed, Hadley & McCloy

Cornerstone Research was retained by counsel for the defendants in a securities class action involving securities issued by Ashanti Goldfields (now AngloGold Ashanti) to support testifying experts on the issues of market efficiency, liability, and damages. In light of the then-descending trend of gold spot prices, Ashanti, one of the largest gold miners in Africa, undertook a substantial hedging program using gold derivative transactions between 1995 and 1999.

Following the surprise late-September 1999 announcement by a group of European central banks that they would be restricting future gold sales, the gold spot price increased dramatically over the course of a few days. As a result, the market-to-market value of Ashanti's hedgebook dropped. Plaintiffs alleged that Ashanti had "lost" more than \$800 million when the gold spot price spiked and that its stock price had been artificially inflated because of the defendants' failure to disclose the speculative nature of the derivative transactions.

With Cornerstone Research's support, the defendants' experts designed and implemented various analytical and simulation analyses to value commodity derivatives, and proved in their reports that Ashanti would not necessarily have been better off if it had employed a plain vanilla hedging program. The experts established the rationale for Ashanti's hedging program—it helped stabilize cash flows and avoid possible shutdowns. They also showed that the ex ante margin call probability was remote and hence any alleged stock price inflation would be immaterial. The case settled before trial.

Tax Implications of Derivatives Transactions

Cornerstone Research has analyzed complex company structures and derivative transactions in several tax-related matters to determine whether there was sufficient potential in these entities for "economic benefit." The derivative transactions included swaps and options on interest rates and foreign currencies. Our analysis in these matters has focused on pricing and potential profitability. Specifically, we have developed methods for pricing of customized interest rate swaps and foreign currency options and have also analyzed the payoffs the companies would realize from these transactions under varying future levels of interest rates and foreign currencies.

Over-the-Counter Derivatives

Cornerstone Research has worked on several cases involving hedging strategies that employed derivatives. In one case, we were retained by the counsel for a bank in a dispute with a former corporate client that involved over-the-counter derivatives transactions. In preparation for trial we worked with three financial economics experts: Professors William F. Sharpe of Stanford University; Mark E. Rubinstein of the University of California, Berkeley; and René M. Stulz of The Ohio State University. With Professor Sharpe we developed an overview of derivatives and how corporations use them in managing risk; with Professor Rubinstein we developed models to determine the prices of certain derivatives; and with Professor Stulz we examined risk management activities undertaken by the plaintiff and assessed various pricing models for the derivatives in question. In a series of pre-trial rulings, the court dismissed most of the plaintiff's claims against our client. The case settled shortly thereafter.

Failed Hedge Funds and Insurers

In cases arising from the failures of hedge funds and insurers, Cornerstone Research has worked with Professor René M. Stulz of The Ohio State University to assess investment strategies and to value investment positions in complex derivative instruments. In examining causes of the failures of the firms in question, a primary focus of analysis has been the evaluation of hedging strategies and their performance in light of changes in market conditions.

Selected Experts

Michael Bradley
F.M. Kirby Professor of Investment Banking,
Fuqua School of Business;
Professor of Law, Duke Law School
Duke University

Jennifer S. Conrad
Dalton McMichael Distinguished Professor
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University of North Carolina, Chapel Hill

Michael R. Gibbons
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Paul A. Gompers
Eugene Holman Professor of Business
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Christopher M. James
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Scholar of Finance,
Warrington College of Business
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Allan W. Kleidon
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Albert "Pete" Kyle
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Haas School of Business
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William F. Sharpe
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William L. Silber
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Lassaad Adel Turki
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Selected Client Law Firms

Akin Gump Strauss Hauer & Feld
Alston & Bird
Arnold & Porter
Axinn, Veltrop & Harkrider
Baker Botts
Baker & Hostetler
Baker & McKenzie
Bartlit Beck Herman Palenchar & Scott
Bingham McCutchen
Boies, Schiller & Flexner
Cadwalader, Wickersham & Taft
Cahill Gordon & Reindel
Chadbourne & Parke
Choate, Hall & Stewart
Cleary Gottlieb Steen & Hamilton
Clifford Chance
Cooley Godward Kronish
Covington & Burling
Cravath, Swaine & Moore
Davis Polk & Wardwell
Debevoise & Plimpton
Dechert
Dewey Ballantine
Dickstein Shapiro
DLA Piper
Dorsey & Whitney

Drinker Biddle & Reath
Farella Braun + Martel
Fenwick & West
Finnegan, Henderson, Farabow, Garrett & Dunner
Folger Levin & Kahn
Fried, Frank, Harris, Shriver & Jacobson
Fulbright & Jaworski
Gibson, Dunn & Crutcher
Goodwin Procter
Harkins Cunningham
Haynes and Boone
Heller Ehrman
Hogan & Hartson
Holland & Hart
Howrey
Hunton & Williams
Husch & Eppenberger
Irell & Manella
Jenner & Block
Jones Day
Katten Muchin Rosenman
Kaye Scholer
Kelley Drye & Warren
Kilpatrick Stockton
King & Spalding
Kirkland & Ellis

Kirkpatrick & Lockhart Preston Gates Ellis
Latham & Watkins
LeBoeuf, Lamb, Greene & MacRae
Manatt, Phelps & Phillips
Mayer, Brown, Rowe & Maw
McDermott Will & Emery
McKenna Long & Aldridge
Milbank, Tweed, Hadley & McCloy
Mintz Levin Cohn Ferris Glovsky and Popeo
Mitchell Silberberg & Knupp
Montgomery, McCracken, Walker & Rhoads
Morgan, Lewis & Bockius
Morris, Nichols, Arshat & Tunnell
Morrison & Foerster
Munger, Tolles & Olson
O'Melveny & Myers
Orrick, Herrington & Sutcliffe
Patton Boggs
Paul, Hastings, Janofsky & Walker
Paul, Weiss, Rifkind, Wharton & Garrison
Pepper Hamilton
Perkins Coie
Pillsbury Winthrop Shaw Pittman
Powell Goldstein
Proskauer Rose
Quinn Emanuel Urquhart Oliver & Hedges

Reed Smith
Richards, Layton & Finger
Robins, Kaplan, Miller & Ciresi
Schulte Roth & Zabel
Shartsis Friese
Shearman & Sterling
Sheppard, Mullin, Richter & Hampton
Sidley Austin
Simpson Thacher & Bartlett
Skadden, Arps, Slate, Meagher & Flom
Snell & Wilmer
Sonnenschein Nath & Rosenthal
Stroock & Stroock & Lavan
Sullivan & Cromwell
Thompson & Knight
Vinson & Elkins
Vorys, Sater, Seymour and Pease
Wachtell, Lipton, Rosen & Katz
Weil, Gotshal & Manges
Weston Benschop Rochefort Rubalcava MacCuish
Wiley Rein
Williams & Connolly
Willkie Farr & Gallagher
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