

---

---

# HORIZON RESEARCH GROUP

---

---

June 2011

---

## The Equity Yield Curve

---



---

Horizon Kinetics LLC  
470 Park Avenue South, 4<sup>th</sup> Floor  
New York, NY 10016

---

**Murray Stahl**

**Steven Bregman**

Thérèse Byars

Derek Devens

Peter Doyle

Michael Gallant

Matthew Houk

David Leibowitz

Eric Sites

Fredrik Tjernstrom

Steven Tuen

---

## ***Table of Contents***

<b><i>Introduction</i></b>	<b>3</b>
<b><i>Case Studies</i></b>	
<i>Johns Manville</i>	<b>4</b>
<i>Cellular Communications</i>	<b>6</b>
<i>Pacific Gas &amp; Electric</i>	<b>8</b>
<i>Utilities Companies in the 2003-2007 Time Frame</i>	<b>11</b>
<i>Allegheny Energy</i>	<b>13</b>
<i>Groupe Bruxelles Lambert SA</i>	<b>15</b>
<b><i>Summary</i></b>	<b>16</b>

## *Introduction*

Horizon Kinetics LLC (“Horizon Kinetics” or “Horizon”) began writing about the theory of the “equity yield curve” in the early 1990s and has since successfully applied it as a cornerstone of our investment philosophy. It validates the virtues—and elucidates one of the underlying enabling principles—of long-term investing. Very occasionally, for reasons elaborated upon below, the equity yield curve can be plotted, much like the more familiar bond yield curve. In our experience, the equity yield curve generally has a positive slope, again like the bond yield curve does most of the time, but is decidedly steeper. This suggests that investors require a higher rate of return from a security that may be unlikely to gain in the short term, even if it may be almost certain to gain significantly over a longer time period.

This is specifically observed in the trading behavior of the institutional investment community, which manifests an overwhelming predilection for securities perceived as having the potential for positive relative returns within a discrete time period—generally one year, particularly prior to the end of a given year. The reason for such a short-term focus is quite logical. The compensation structure of the investment management industry is broken down into artificial time horizons. The typical hedge fund manager’s bonus, or incentive fee, is based on year-end results. Thus, securities not perceived as having the ability to perform within that time period are typically avoided, even if their long-term potential may be extraordinarily attractive. In other words, money managers in general have an asymmetric aversion to underperformance versus outperformance, and economic incentives lead them to focus on short-term results. Hence, a future event that will have a decidedly positive impact on the price of a certain security, undisputable though it may be, has limited utility to the professional manager if that event is expected to take place beyond his or her artificial time horizon. Accordingly, the value of that event is heavily discounted by the market.

It has been observed that the equity yield curve flattens out over the last few months prior to the expected event, at which point the security provides returns commensurate with Treasury bills. Ergo, the market is very efficient when very little time remains before the triggering event, but increasingly inefficient when the event is 12 months or more away, or increasingly indeterminate. Fund managers’ reluctance to purchase such securities is expressed in the discount rate, which in some cases exceeds 35%. To take advantage of this aberration one merely has to extend one’s time horizon. From the professional manager’s perspective, this requires the willingness to take on time risk.

In the overwhelming majority of cases, equity valuation is highly subjective. In other words, the elements of valuation (such as the rate of increase in earnings, the normalization of a disrupted business activity or the appropriate valuation multiple) are not certainties but rather are subject to differing estimations and assessments. It is all arguable. After all, reasonable minds may differ. As a consequence, it is understandable that the notion of an equity yield curve, with implicit future dates and values, does not find its way into common discourse, and certainly not as a working model. Occasionally, though rarely, these factors do converge, at least with as much certainty as can be had in the investment world. The following examples, presented in order from most assured and quantifiable to least, show how certain securities can be employed to actually plot the equity yield curve.

## *Johns Manville (circa 1990)*

Johns Manville, a major manufacturer of packaging and buildings products (including, unfortunately, fiberglass insulation), was the first major asbestos liability-related bankruptcy. It emerged from a 6-year bankruptcy proceeding in 1988 with a reorganization plan that created two trust funds to compensate claimants. The plan ceded ownership to the trusts of 80% of the shares and 20% of annual profits, so that the claimants were in the unusual position of owning the company, with a natural self-interest in its financial success.

More importantly, the court permanently enjoined any further asbestos-related cases against the firm, removing this legal liability from the valuation equation. The company did not historically exhibit unusual business or credit risk: it was profitable before the 1982 bankruptcy and remained so, with a 1989 interest coverage ratio of 3.7x, a 45% debt/capitalization ratio, operating cash flow of \$413 million vs. long-term debt of \$802 million and a current ratio of 1.5x. In 1990, the company reached an agreement with the trusts to pay dividends to common shareholders.

There did exist, however, an unusual Manville security, which is the subject of this example. This was the Johns Manville preferred, which had a cumulative preferred dividend of \$2.70 per share and a \$25 liquidation preference. An odd feature of this preferred was that the first dividend was not payable until March 1994, well over three years into the future. Furthermore, it was not callable until March 1994, although it appeared that the company would most likely wish to do so since the stated dividend yield, at over 10%, was well above market rates.

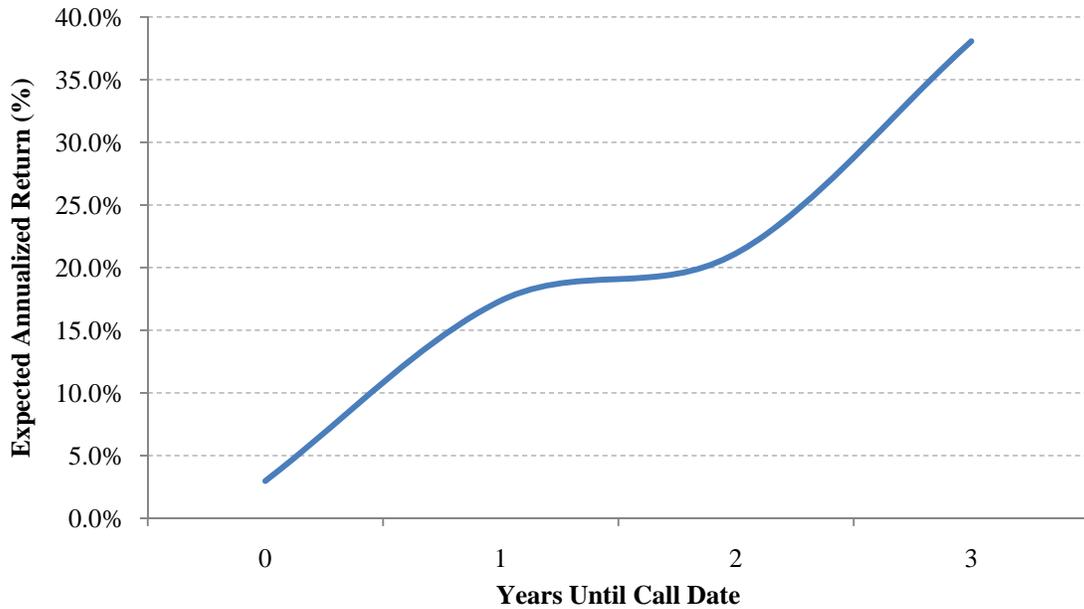
Yet, as of year-end 1990, with over three years to a known date and future value, the preferred traded at \$9, which would provide a 38% compound price return to the March 1994 dividend commencement and call date, and a contingent (if not called) 30% dividend yield. The offered returns would seem excessive indeed, considering, by that time: the substantial resolution of the legal risks, the unique circumstances that the interests of the claimants were fully aligned with those of the management and minority shareholders (maximization of profits, share price and liquidity), the financial health of the company and the capacity to redeem the preferred at \$25 per share and refinance the 10.8% stated yield at lower rates. The following prices for the preferred shares were observed:

<b>Date</b>	<b>Price</b>	<b>Terminal Price</b>	<b>Call date</b>	<b>Years Until Call Date</b>
12/31/1990	\$9.00	\$25.00	3/1/1994	3.17
12/31/1991	\$16.50	\$25.00	3/1/1994	2.17
12/31/1992	\$20.75	\$25.00	3/1/1994	1.16
12/31/1993	\$24.88	\$25.00	3/1/1994	0.16

Source: Bloomberg, Horizon analysis

Therefore, in this example, the equity yield curve can be plotted as follows:

**Hypothetical Equity Yield Curve**  
**Johns Manville Preferred**



The chart above should be read like a bond yield chart, indicating that with three years left before the dividend date, the highest potential annualized return of 38.1% could be realized, whereas with just a few months before the first dividend payment (closer to “0” on the horizontal axis), the annualized return had declined to just 3.1%, almost identical to the yield on a three-month Treasury bill at the time.

## *Cellular Communications Inc. (circa 1991)*

Cellular Communications, Inc. announced in July 1990 that it would combine its cellular interests in Ohio and Michigan in a joint venture with Pacific Telesis, as the first step in a phased buy-out by Pacific Telesis. Cellular Communications owned and operated one of the more concentrated, efficient cellular networks in the nation and was among the first to achieve positive operating cash flow in this sector. Pacific Telesis was one of the seven Regional Bell Operating Companies created from the 1984 split-up of the AT&T holding company. The merger agreement between them was restated in December 1990 and the merger closed on August 1, 1991.

Under the terms of the agreement, Cellular Communications shareholders received redeemable preference shares in exchange for their common shares. Beginning January 28, 1992, any of these preference shares which were traded in the open market would automatically convert to Series A stock. Pacific Telesis had pledged to purchase 10 million of the 40 million then-outstanding preference and Series A shares on October 27, 1995, at \$60/share, with priority given to the participating preferred shares. Therefore, a holder of preferred shares on January 28, 1992 could anticipate a proration of 25% (no outstanding A shares, 40 million preference shares) if all preferred shareholders held their positions until October 27, 1995, meaning that, on average, 25% of their shares would be purchased by Pacific Telesis at \$60/share, while they would continue to hold 75% of their shares in preferred stock. At year-end 1993, 23 months following the announcement, 8 million of the original preference shares had traded and therefore converted to Series A stock. As a result, 32 million preference shares remained. Holders of the preference shares could now anticipate a proration of 31% if they were to hold their position until October 27, 1995. During the 25 months remaining until October 1995, if another 27.5% of the original shares traded hands each year, the proration for preference shares would be 100%. As a reference point, annual share turnover among domestic telephone companies at that time fell within a range of roughly 21% to 69%.<sup>1</sup> Turnover of the preference shares in the first 23 months was consistent with this range. Therefore, a 100% proration at the end of the 3.75 year period, which is to say a full \$60/share payoff, was an entirely reasonable expectation for investors who were willing to hold onto their preference shares. The greater the propensity of others to trade their preference shares, the greater the likelihood that those who held their preference shares until October 27, 1995 would achieve 100% proration.

Given the 3.75-year forward purchase contract by an investment grade company (Pacific Telesis), and conservative assumptions applied to a range of proration scenarios, the extended return horizon would appear to have induced a sufficiently high discount rate to offer equity yield curve return possibilities. As a base-case example, a 10% compound return from the January 28, 1992 market price of \$29.20 would have resulted if only 50% of the preference shares had traded over the almost 4-year period (a 50% proration), and the unredeemed stock did not appreciate at all. In reality, the stock appreciated more than 60%.

A somewhat more realistic scenario, with 75% cumulative turnover, which would require only 20% annual turnover, would achieve 100% proration for those who held their preference shares and a 21% compound return. In an alternative scenario, 5% annual share price appreciation and a 50% proration for preference shareholders would result in an expected annualized return of 13%.

---

<sup>1</sup> Based on AT&T, Bell Atlantic, Century Tel, Cincinnati Bell, Sprint and Telephone & Data Systems

### Scenario Analysis for Preference Shareholders

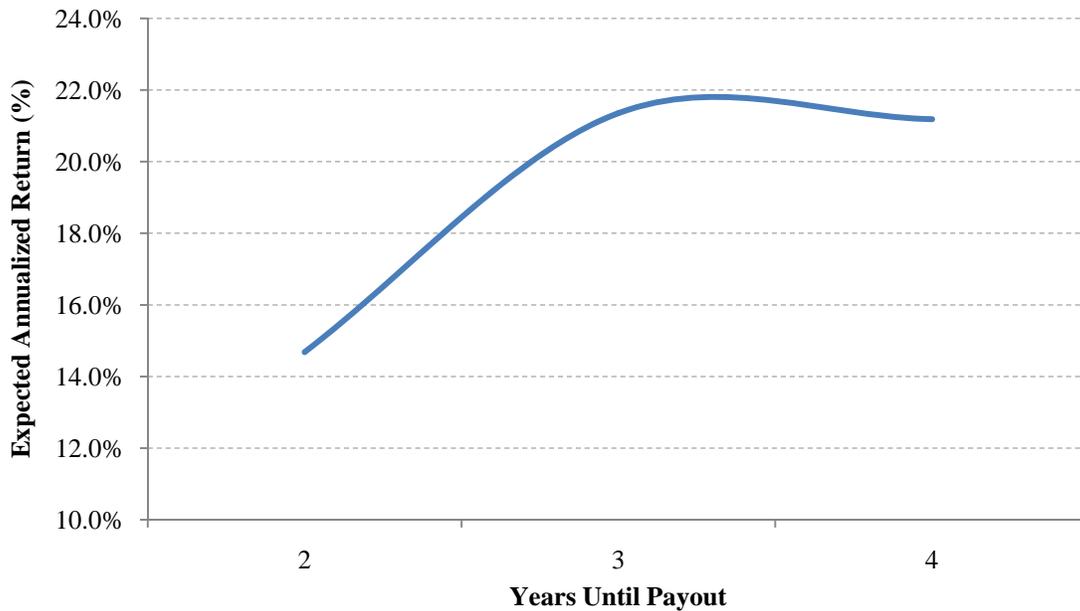
Beginning Market Price	Price Appreciation (%)	Ending Market Price	Cumulative Turnover	Proration % *	Payout Price	Years Until Payout	Compound Annualized Return (%)
\$29.20	-	\$29.20	50%	50%	\$60.00	3.75	10.6%
\$29.20	-	\$29.20	75%	100%	\$60.00	3.75	21.2%
\$29.20	5%	\$35.06	50%	50%	\$60.00	3.75	13.1%

\* Proration rate applies to holders of preference shares.

Source: Horizon research, Bloomberg

As noted above, actual stock price appreciation was much greater than the conservative assumptions used in the above scenario analysis. For the case where 100% proration is achieved, we can plot the following yield curve using observed market prices for illustrative purposes:

#### Hypothetical Equity Yield Curve Cellular Communications Preferred



Date	Price	Terminal Price	Payout date	Years Until Payout
1/28/1992	\$29.20	\$60.00	10/27/1995	3.75
12/31/1992	\$34.75	\$60.00	10/27/1995	2.82
12/31/1993	\$46.75	\$60.00	10/27/1995	1.82

Source: Bloomberg, Horizon research

## *Pacific Gas & Electric Preferred Shares (circa 2001)*

In 2001, Pacific Gas & Electric (“PG&E”), California’s largest electric utility, stopped paying preferred dividends. This was the result of a voluntary bankruptcy to force a resolution of a flawed plan of deregulation that led to the California energy crisis catalyzed by the Enron debacle, but with damaging consequences that the state government did not wish to acknowledge. While preferreds ordinarily have little value in bankruptcy, this situation was atypical.

At the time of Horizon’s purchase recommendation in May 2002, there were two competing plans of reorganization—one by the company itself and the other by the California Public Utility Commission—which were to be put to creditor vote in June. Both plans, despite major strategic differences, were in agreement on two issues: they were structured to 1) achieve an investment grade rating for PG&E, and 2) result in no impairment to either the company’s debtors or preferred shareholders. This meant that interest and dividends would continue to accrue. These goals were supported by the inherent economics of the PG&E operating business, which was not injured and which produced copious cash flow. Accordingly, the credit risk issue for the preferreds of the PG&E subsidiary was essentially resolved. The company was expected to emerge from bankruptcy in January 2003.

Nine preferred series in total were recommended by Horizon, and the basic return profile included one known variable and two variables subject to reasonable estimation. The known variable was the amount of dividend arrearages. These cumulated to about 17% of the trading prices of the preferreds as of May 2002—the trading prices themselves were about one-third below face value. Were the company to exit bankruptcy in June 2003, the annualized return from the dividend payments would have been approximately 25%.

This high indicated yield was due in part to uncertainty about the second variable, the time frame for exiting bankruptcy. If an additional six months were required, say until January 2004, the annualized return from the dividend arrearages would have been approximately 16%.

However, even in the case of a January 2004 payoff date, the expected return would be higher than that implied merely by the dividend arrearages, since the trading prices would also be expected to recover to some degree. Using as a proxy the yields at which a basket of preferreds of investment-grade utilities then traded (since the PG&E preferreds would regain investment grade status), a \$22-\$25 price range would be expected, representing an annualized total return of approximately 58% from the \$14-\$18 beginning price range assuming a January 2003 bankruptcy emergence, or 21% assuming a January 2004 bankruptcy emergence.

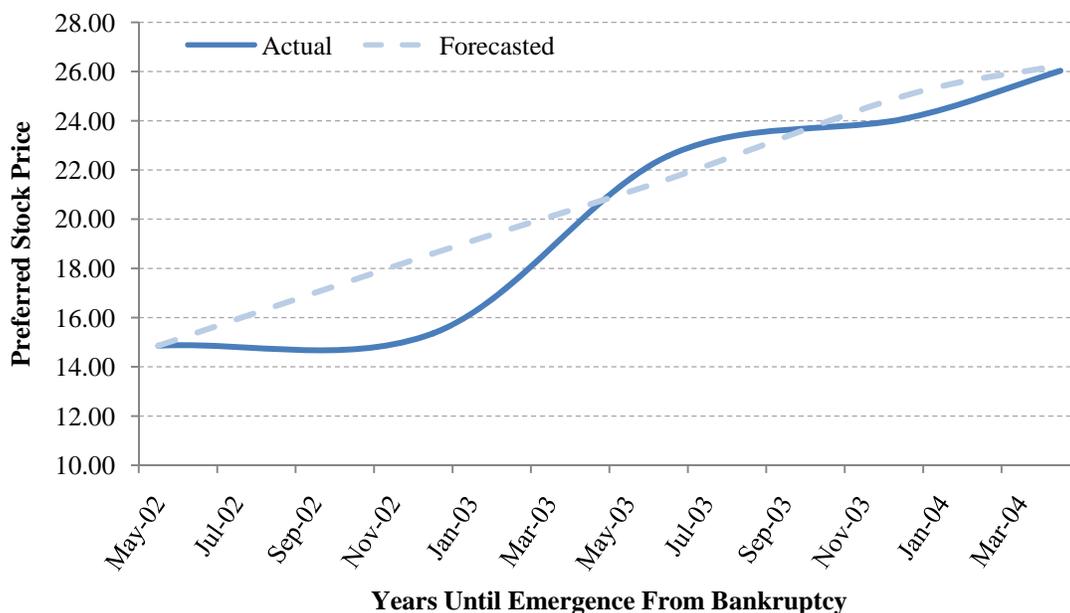
Securities with readily quantifiable fixed-income characteristics such as the PG&E preferreds, coupled with an underlying investment grade credit, should not be priced at, roughly speaking, a 1- to 2-year base yield as high as 14% to 21%. In this instance, while the time horizon was not exceptionally long, it was somewhat indeterminate and was reasonably expected to extend beyond the conventional 12-month investment horizon of most investment managers. Below are the actual observations:

Series	Price on May 21, 2002	Price on April 2, 2004	Arrearages	Annualized Return
6.0% PCGpfA	\$ 18.00	\$ 29.73	\$ 4.875	30.8%
5.5% PCGpfB	\$ 16.00	\$ 28.26	\$ 4.688	35.6%
5.0% PCGpfC	\$ 14.50	\$ 25.51	\$4.0625	35.3%

Source: Bloomberg, Company reports

In the actual event, emergence from bankruptcy occurred in April 2004. Using a basket of these preferred stocks, the return profile from May 21, 2002 – April 2, 2004 can be plotted below. The annualized return for the basket was almost 35%, as the shares appreciated more than modeled (to approximately their face value). The yield curve in this instance is not entirely upward sloping because the payoff date was uncertain—from the perspective of an institutional buyer in May 2002, it could have ranged from well within the standard investment horizon (8 months) to well beyond (two years or more, given the complexities of combined bankruptcy and utility regulation proceedings). Accordingly, a time-risk-sensitive investor would have priced the payoff as if long-dated; as events unfolded, the actual payoff occurred earlier than the investor might have anticipated, resulting in a higher annualized return, albeit the same dollar amount.

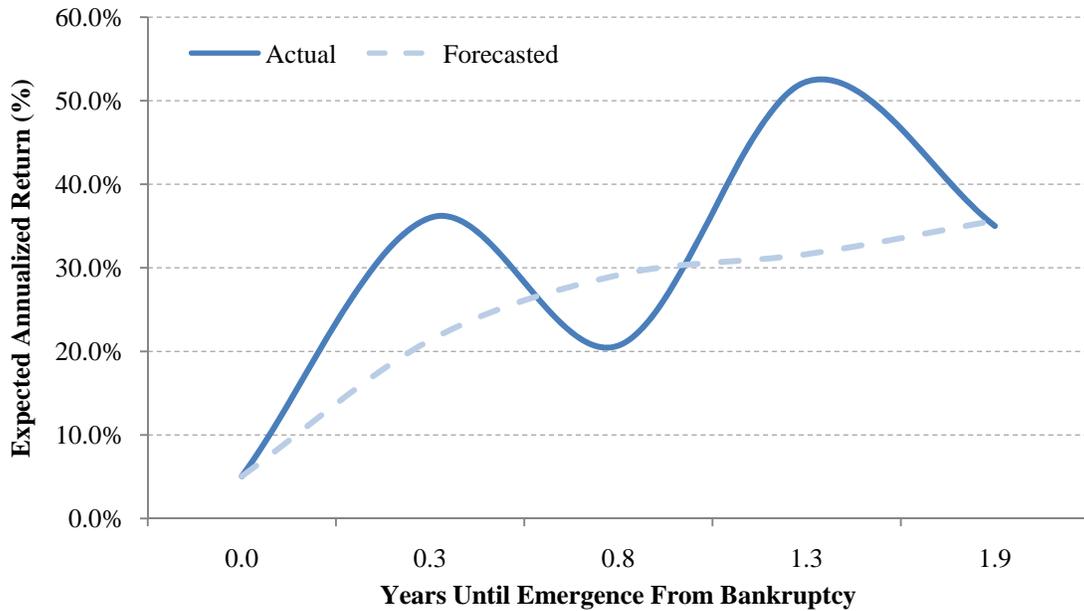
**Average Price  
Basket of Pacific Gas and Electric Preferred Stocks**



Source: Bloomberg, Horizon research

Plotted as an equity yield curve, the results are as follows:

**Equity Yield Curve**  
**Pacific Gas and Electric Preferred Shares**



This case represents somewhat of an anomaly in terms of the equity yield curve as comparatively little of the total return (3.4%) was realized in the first seven months. It should be noted that during this time period, the deterioration of the electric utility industry continued, and PG&E's common shares declined by more than 33% between May 21, 2002 and December 31, 2002. Despite that, the preferred shares appreciated during that same time period, particularly in the ensuing six-month period. Again, the uncertainty regarding the length of the bankruptcy proceedings may have contributed to this.

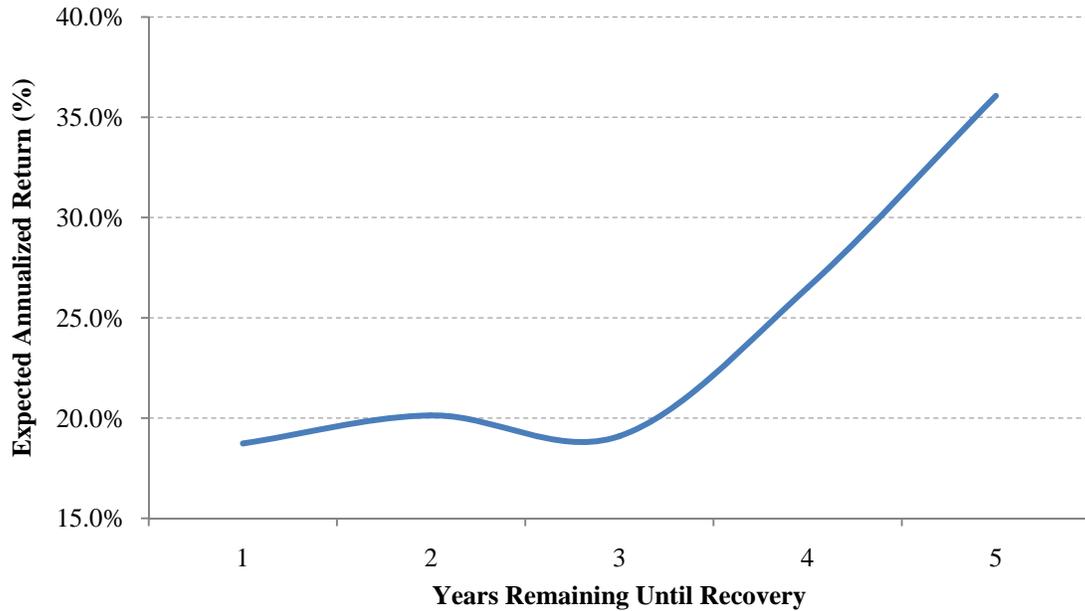
## *Utilities Companies in the 2003-2007 Time Frame*

In late 2002, a meaningful swath of the electric utility industry was on the brink of bankruptcy. These holding companies had involved themselves with Enron in one way or another, created or vastly expanded energy trading subsidiaries and operated them not for the purpose of hedging the legitimate input/output costs and prices of their regulated business, but to pursue standalone trading profits. Many sold long-term power contracts during a rising-price environment and became highly exposed before these prices declined precipitously.

The virtue they shared was significant positive cash flow from their core regulated utility subsidiaries. Additionally, since at the end of the day electric utilities are essentially a public good with a regulatory structure designed to ensure their stability, it appeared that the banks did not want to foreclose on and operate these complex and asset-intensive businesses. Rather, the banks would continue to support them if such support would enable their recovery and assure the integrity of their debt. This thesis was expounded on in many Horizon research reports in late 2002 and early 2003, and various utility securities were acquired for most of our strategies.

Our analysis was that the profitability of the industry was temporarily masked by the debt and the uneconomic supply contracts assumed during the Enron debacle and the ensuing collapse in energy prices. Recovery merely required the temporary cessation of dividend payments to common shareholders, so that the companies' substantial cash flow could be deployed toward debt repayment. During the 1990s, as a group, these companies had achieved net profit margins of 8.6% with low variability, and they had traded, on average, at 1.57x book value, compared to substantial discounts to book value at the time of our recommendation. Within five years, we estimated, the balance sheet debt ratios would return to normal and these companies could recover their investment grade debt ratings. This analysis was not groundbreaking, and was no doubt obvious to the many Wall Street utility analysts. However, it was not of great interest, since the time horizon for realization of this dynamic was at least three years—which on a practical basis for an institutional analyst, or for the analyst's institutional customers, might as well be a decade. In fact, the net profit margin for the group reached 7.5% in 2007 and 8.7% in 2008, slightly surpassing the average for the 1990s. The price/book ratio value for these companies had advanced to 2.3x, surpassing the average of the 1990s, and indicating the return to "normalized" conditions was completed. The following chart represents the return achieved from January 1, 2003 – December 31, 2007 for a basket of electric utility companies:

**Hypothetical Equity Yield Curve**  
**Selected Utilities Companies\* in the 2003-2007 Time Frame**



*\* Selected utilities companies refers to a basket of stocks consisting of Aquila Energy, Centerpoint Energy, CMS Energy, Sierra Pacific Energy, Reliant Energy, TXU, El Paso and Williams Companies. The latter two, while natural gas transmission companies, were also rate-of-return regulated companies, regulated by the Federal Energy Regulation Commission.*

As the chart illustrates, the highest return was realized in the first two years of the recovery of the utilities companies (i.e. when the time horizon to the “event” was 4-5 years); eventually the return stabilized around 20% for the last three years of the period and finally declined to 18.7% in the last year.

## *Allegheny Energy (circa 2002)*

Allegheny Energy was a company-specific case study of the aforementioned energy industry phenomenon. Allegheny Energy, an Atlantic coast electric utility, came to the verge of bankruptcy towards the end of 2002/early 2003. This was mostly attributable to the disastrous results of the company's non-regulated energy trading division in the wake of the Enron scandal. Allegheny's circumstances were immeasurably improved on February 25, 2003, when its bankers agreed to a completely restructured \$2.4 billion credit facility. The credit agreement essentially removed the pending insolvency risk, permitting the sort of predictive quantitative valuation exercises to which regulated utilities typically lend themselves.

Allegheny was then trading at about \$5.00 per share (versus a high of \$43.86 in April of 2002) against a fully diluted book value of \$12.49 per share and expected forward earnings per share of \$1.21, based on conservative assumptions (as a regulated electric utility, there are certain relatively reliable assumptions, such as the allowed return on regulatory capital, which would have exceeded 10%). In a report dated March 24, 2003, Horizon was of the opinion that the stock was deeply undervalued, given a trading price of less than 5x forward (2003) earnings and approximately 40% of book value. Allegheny had traded at an average 1.83x book value during the 1993-2001 period and generated an average net profit margin of 10.3%, both figures with a fairly low degree of variability. Also, as discussed in the prior segment, the utility industry traded at an average book value multiple of 1.57x during the 1990s, indicating that not only was this an extreme valuation relative to Allegheny's own historical experience, but also compared to competitors in the sector.

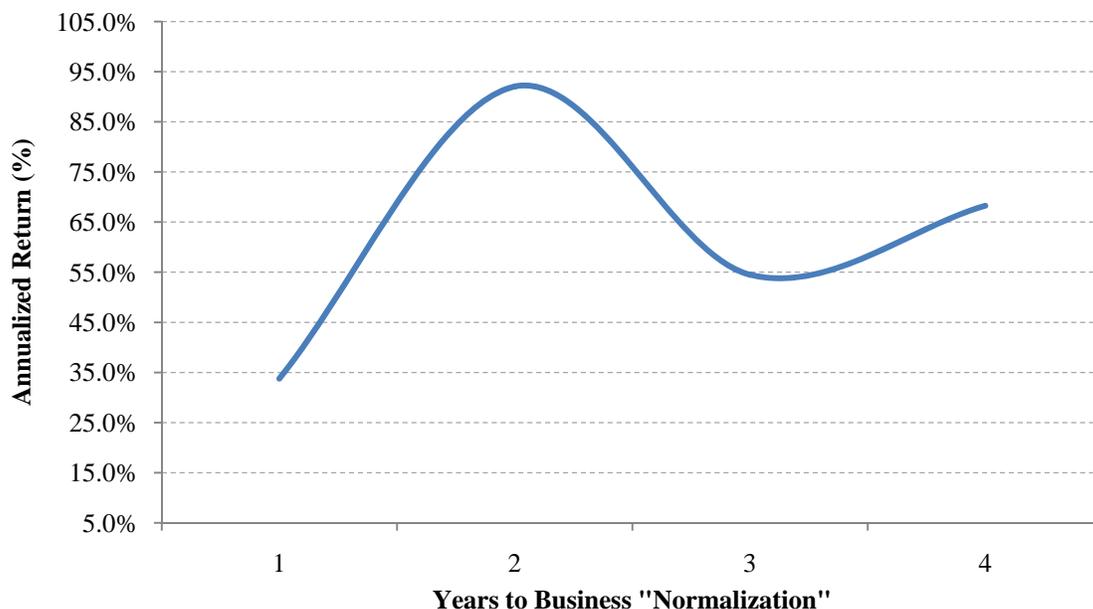
Since bankruptcy was no longer a consideration in early 2003, the company's core business was intact and the problematic energy trading operations had ceased, the question was only *how long* it would take to regain normalized net profit margins and price/book value ratio.

The time frame for achieving normalized net profit margins was modeled by Horizon at approximately three years. The major detraction from net income was interest expense on the debt incurred during the company's financial crisis. Contrary to common misconception, electric utilities are highly profitable enterprises; they are, however, slow-growth companies, for there is little room for expansion. Accordingly, they ordinarily distribute the great majority of their income as dividends rather than reinvesting them. The earnings recovery path for Allegheny was simply one of forgoing the common dividend for a period of time, freeing the substantial cash flow for the purpose of debt reduction. This would decrease the interest expense and in turn, raise earnings. For Allegheny, normalized earnings would be around \$300 million per year (versus a March 2003 market capitalization of \$665 million and net debt of \$4.6 billion), as had been the experience in the late 1990s, and, indeed, its core business had continued to generate strong cash flow throughout the crisis. It would require, prospectively, approximately 3-4 years to reduce the debt-to-equity ratio from 3.0x to around 1.5x, which would be consistent with the typical investment grade utility. For plotting an equity yield curve, a 1.5x book value target price ( $1.5x \$12.49 = \$18.73$ ) and 3-year time frame could be assumed. The derived 3-year equity yield was 52.5%.

As for the actual results, by 2006 the net income level of \$300 million had been regained and the share price finished that year over \$43. By 2007, Allegheny's net profit margin was 12.5%, compared to an average of 10.4% in the 1990s, indicating that the 'normalization' of its business had been completed. Furthermore, its price/book ratio had expanded to 3.47x relative to its 1.52x average during the 1990s. Thus, as the company's income normalized over the course of less than

four years, the shares increased 8.5-fold. The observed annualized returns over the four-year period are plotted below:

**Annualized Return of Allegheny Shares,  
January 2003-December 2006**



*Based On Allegheny's Actual Returns 2003-2006.*

In this case, the compound annual growth rate was 71% over the 3.7-year period. While the steady upward progression of the stock price might make one believe that the annual returns were steady as well, it turns out that most of the returns were once again available in the first year of the turnaround when the stock price appreciation approached 120%..

## ***Groupe Bruxelles Lambert SA (circa 2001)***

Groupe Bruxelles Lambert (“GBL”), as detailed in our February 14, 2001 Contrarian Research Report, held a 22% stake in privately-held German media giant Bertelsmann, in addition to a number of publicly-traded investments. In fact, at the time of the report, the company traded almost exactly at the value of its underlying public holdings. Therefore, in essence, no value was placed on the Bertelsmann holding, even though this position could be conservatively valued above \$10 billion, or more than GBL’s market capitalization at the time. Bertelsmann was perhaps the largest publisher in the world (a partial list of properties included: in books, Random House, Ballantine, Fodor’s, Knopf, Modern Library and Springer, a publisher of science and mathematics texts; in magazines: Der Stern, Family Circle, McCall’s, Parents and YM), the second-largest music distributor (including record labels BMG, Arista and RCA Music) and the largest CD manufacturer in the world.<sup>2</sup> The company also had significant interests in global television programming, broadcasting (it was the largest broadcaster in Europe), multimedia production and printing. Comparable media companies of this scale included Viacom and AOL Time Warner, but unlike those companies, Bertelsmann did not have a levered balance sheet. Even so, the valuation of these other media companies provided a reasonably consistent and conservative set of benchmarks by which to value Bertelsmann. Based on comparables, Horizon estimated Bertelsmann’s valuation at the time was estimated to be between \$57 and \$78 billion, which indicated that GBL’s 22% stake was worth around \$12.5-\$17.2 billion, relative to its then market capitalization of \$6.6 billion (the company also had over \$300 million in net cash, for an enterprise value of \$6.3 billion).

Additionally, GBL held the right to list its Bertelsmann shares on a public exchange no later than year-end 2006, or within 5.8 years of the date of our report, which was the triggering event in this case. The modeled annualized return over the ensuing 5.9 years (in dollar terms) was approximately 19.5% (from the \$6.6 billion market capitalization to \$18.8 billion, inclusive of the comparable company-based public market value of the Bertelsmann stake). This assumed no growth in the underlying businesses, merely the realization of the value of the Bertelsmann stake. In the actual event, the realized annual return was only 17% because Bertelsmann, which did not wish to be forced into a public listing, ultimately made a private arrangement with GBL to repurchase its stake. Accordingly, a public valuation was never achieved. Nevertheless, the equity yield curve was manifest in this investment, and due to the global reach of the company should be compared to the S&P 500’s performance, which was flat over the same time period.<sup>3</sup>

---

<sup>2</sup> Source: Company reports.

<sup>3</sup> Source: Bloomberg.

## *Summary*

While the case studies above were selected to demonstrate the concept of the equity yield curve, many other examples exist in the market. For most equity securities, the timing of potential future valuation changes or payouts is not predictable, as it was in some of the cases presented here, but the underlying theme is the same. Given the lackluster and variable returns of many major stock index components over the last decade, the merits of long-term investing have been called into question. However, as has been shown here, if one selects securities carefully, relying on thorough analysis, positive returns may be realized if one is willing to extend the time horizon and if such extension results in an attractive discount rate, as suggested by the theory of the equity yield curve.

### **DISCLAIMERS**

*This information is for information purposes only. Opinions and estimates offered constitute our judgment and are subject to change without notice, as are statements of financial market trends, which are based on current market conditions. Under no circumstances does the information contained within represent a recommendation to buy, hold or sell any security and it should not be assumed that the securities transactions or holdings discussed were or will prove to be profitable or that future investment decisions will be profitable or will equal or exceed the past investment performance of the securities listed.*

*This information should not be used as a general guide to investing or as a source of any specific investment recommendations, and makes no implied or expressed recommendations concerning the manner in which an account should or would be handled, as appropriate investment strategies depend upon specific investment guidelines and objectives. This is not an offer or solicitation to any person in any jurisdiction in which such action is not authorized or to any person to whom it would be unlawful to make such offer or solicitation.*

*The information contained herein has been obtained from sources believed to be reliable; however, no representation is made regarding its accuracy or completeness.*

*No part of this material may be: a) copied, photocopied, or duplicated in any form, by any means; or b) redistributed without Horizon's prior written consent.*