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INVESTING IN THE "PLAIN VANILLA" UTILITY

*by Leonard S. Hyman, CFA**

During the high-flying days of the power generating-power trading bubble, when prices skyrocketed and wheelers dealed, utility managers and investors looked down on the dull, regulated wire businesses. Why settle for low returns when riches beckoned? Why run a slowly growing regional bureaucracy when one could become a globetrotting empire builder? Why pay dividends when one could invest the money in assets? Dump those dividend-seeking elderly shareholders and turn the company into something exciting!

The morning after the binge has dawned in both the power market and the financial world. After a two-year bear market, investors have jettisoned the dogma of the "new economy." Financial experts now talk about lower expectations. Dull, safe investments might again attract capital. Can electric company managements fashion distribution-oriented businesses that will produce the returns needed to attract capital? They can now because the market is no longer dismissive of the low returns associated with low risk, considering that the high-risk investments so popular in the recent past produced high losses instead of high returns.

I. OVERALL EXPECTATIONS FOR THE MARKET

To answer the financial aspects of that question, let us first examine investor expectations. If investors continue to expect high levels of profit in the market (akin to the 30% per year they made in 1995-1999), they will avoid utility-type shares, because they know for sure that regulated companies cannot earn the returns necessary to generate those profits to investors. (During that period, electric utility shareholders earned only 9% per year, despite a marked drop in interest rates.) Company managements, for that matter, will not embark on a low-risk and low-return course of action if they believe they can do far better by taking greater risks.[1]

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1. A theorist would dispute this conclusion. After all, shouldn't investors seek a return commensurate with risk, and realize that they come out as well by accepting a low return on a low-risk investment as with a high return on a high-risk investment? Shouldn't they understand, as well, that high risk implies the possibility of big losses as well as big gains? Obviously they should, but the tenor

For at least 80 years, investment professionals and academics have tried to quantify the market performance of stocks and compare it with that of bonds.[2] In 1955, economist Ezra Solomon examined another issue, the real growth in stock prices versus the real growth of the economy.[3] Using 1874-1955 data, he concluded that stock prices (as measured by the S&P Index) grew (in real terms) at two-thirds the rate of the gross national product.

After the development of modern portfolio theory in the 1950s and 1960s, academics attempted to measure an equity premium, that is, the return above the risk-free rate that common stock investors desire to earn. In a pioneering study, Fisher and Lorie showed that, in 1926-1960, common stocks produced a nominal annual return of 11.2% versus an ill-defined government bond return of about 4%.[4] Subsequently, Ibbotson and Sinquefield launched a series of studies that quantified returns on stocks and bonds. (Table A)

Table A[5]
Ibbotson and Sinquefield
Historical Returns
(% Annually)

	1926-1974 (a)	1926-1981 (b)	1926-1987 (c)	1926-2000 (d)
	(1)	(2)	(3)	(4)
Nominal Returns				
Common stock return	8.5	9.1	9.9	10.7
excluding dividends	3.5	4.3	4.9	4.5

of discussions after the collapse of stocks in 2000-2002 makes clear that they do not. Corporate executives should understand that a low-risk investment that produces a low return which is in excess of cost of capital does more for shareholders than a high-risk investment that produces a high return that is below the investment's cost of capital. But they seem not to have designed policies in line with that concept. They, instead, focused on raising earnings per share. They also worried that a conservative policy would produce a low valuation in the market, thereby setting up their corporation for a takeover. Therefore, expect investment to move into electric distribution when investors conclude that the alternative investments no longer promise high profits and when managements conclude that they cannot find more profitable outlets for corporate investment.

2. EDGAR L. SMITH, COMMON STOCKS AS LONG-TERM INVESTMENTS (1924) (analyzing data from 1866 to 1922 of 11 test periods, bonds outperformed stocks in only one).

3. Ezra Solomon, *Economic Growth and Common-Stock Value*, 28 J. BUS. 213 (1955).

4. Lawrence Fisher and James H. Lorie, *Rates of Return on Investments in Common Stocks*, 37 J. BUS. 1 (1964) [hereinafter *Rate of Return*].

5. Roger G. Ibbotson & Rex A. Sinquefield, *Stocks, Bonds, Bills and Inflation: Year-by-Year Historical Returns (1926-1974)*, 49 J. BUS. 11, 11-47 (1976) (correlates to column (a)); ROGER G. IBBOTSON & REX A. SINQUEFIELD, STOCKS BONDS, BILLS, AND INFLATION: THE PAST (1926-1976) AND THE FUTURE (1977-2000) (Financial Analysts Research Foundation 1977) (correlates to column (b)); ROGER G. IBBOTSON & REX A. SINQUEFIELD, STOCKS, BONDS, BILLS, AND INFLATION: HISTORICAL RETURNS (1926-1987) (Research Foundation of the Institute of Chartered Financial Analysts 1989) (correlates to column (c)); Robert D. Arnott & Peter L. Bernstein, *What Risk Premium is "Normal"?* 58 FIN. ANALYSTS J. 64, 82 (2002) (correlates to column (d)); ROGER G. IBBOTSON & PENG CHEN, STOCK MARKET RETURNS IN THE LONG RUN: PARTICIPATING IN THE REAL ECONOMY, (Yale Int'l Coll. Fin., Working Paper No. 00-44, 2002). Author's estimate based on available data.

Long-term corporate bonds	3.6	3.6	4.9	5.3
US Treasury bills	2.2	3.0	3.5	3.8
Real returns (deflated by CPI)				
Common stock return	6.1	5.9	6.6	7.6
Long-term government bonds	1.0	-0.1	1.2	1.6 E
Long-term corporate bonds	1.4	0.5	1.8	2.2
US Treasury bills	0.1	0.0	0.4	0.7

Those studies probably led to the notion that common stockholders expected to earn (in real terms) roughly 6% more from common stock than from risk-free Treasury bills, and roughly 4-5% more than from bonds. Ibbotson and Sinquefield even made projections of return based on their studies. (Table B)

Table B[6]
Ibbotson and Sinquefield[7]
Projections of Market Returns
(% Annually)

Year projection made	1977	1981	2002
Period of projection	1977-1980	1982-2001	Unspecified (b)
Nominal return on stocks	11.8	21.4	9.4
Nominal return on corporate bonds	6.5	15.3	-
Rate of inflation	4.2	12.4	3.2
Real return on stocks	7.6	9.0	6.1
Real return on corporate bonds	2.3	2.9	-

The action of the stock market from the late 1980s to the late 1990s seemed to confirm the notion that equity investors should expect to earn at least five percentage points more than bond investors. If anything, the proponents of the "new era" concept would have argued that shareholders should expect a far greater profit differential by investing in stocks.

Recently, however, academics and investment professionals have begun to pull apart the old analysis. Arnott and Bernstein, for instance, examined stock prices, dividends, and the Gross Domestic Product (GDP).[8] They found in real terms that stock prices tracked per capita GDP over time, dividends accounted for a large percentage of real return earnings, and dividends grew more slowly than one should have expected given the reinvestment rate, bond yields (the benchmark for the measure) stayed low because bond investors persistently

6. *Id.*

7. Equity risk premium of 4.0% projected.

8. Robert D. Arnott & Peter L. Bernstein, *What Risk Premium is "Normal"?* 58 FIN. ANALYSTS J. 64, 83 (2002).

underestimated inflation, and rising stock valuations (higher price-earnings ratios) in the latter part of the last century raised the realized return on equity investment. The low rate bond yields occurred because bond investors persistently underestimated inflation rising stock valuations (higher Price/Earnings (P/E) ratios) in the latter part of the last century which raised the realized return on equity investment.

Arnott and Bernstein concluded that one should not project the future based on the expectations that bondholders will so badly miscalculate inflation, and that stockholders will continue to pay higher and higher prices for a dollar of earnings. They suggested instead focusing on "expected returns and expected risk premiums . . . rather than in returns that an investor might hope to earn."[9] They calculated the equity risk premium over long-term Treasuries at 2.4% in real terms.

Claus and Thomas took a different approach.[10] They noted that security analysts publish excessively optimistic estimates for growth in corporate earnings. Those estimates go into the discount models that many investors use to value stocks. Claus and Thomas used a residual-income valuation model, which utilizes current – rather than assumed – data. They estimated a 3.4% equity risk premium. Fama and French, using 1951 to 2000 data, came up with a range of 2.55 to 4.32% for the equity premium, asserting that the 7.43% number derived from actual stock price performance was "due to a decline in discount rates that produces a large unexpected capital gain."[11]

Simply put, do not build into expectations stock prices that grow faster than the economy; do not bank on an additional revaluation of earnings; put a lower valuation on reinvested earnings because corporations reinvest badly; and do not believe Wall Street's optimistic estimates.

During the bubble period, utilities seemed destined to fare badly in the market.[12] They could not produce top-line growth comparable to the stock favorites. They offered low levels of profitability, as opposed to the no-profitability-now-but-riches-in-the-distant-future scenario offered by market leaders. They had high price-earnings-growth ratios as well. (Consider that a utility growing at a reasonably certain 4% that sold at 12x earnings had a P-E-G of 3x. On the other hand, a high flier with a supposed 30% growth rate that sold at 60x earnings had a 2x P-E-G ratio. Obviously, using the new metrics, the latter was the cheaper stock.) When portfolio managers or prosperous investors sat down to boast about their financial prowess, they did not declare that, "I own a great electric stock that paid me 5% last year and went up 10%, too."

Investment advisors seem likely, now, to talk down unreasonable

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9. *Id.* at 65.

10. James Claus & Jacob Thomas, *Equity Premia as Low as Three percent? Evidence from Analyst's Earnings Forecasts for Domestic and International Stock Markets*, 56 J. FIN. 1629 (2001).

11. Eugene F. Fama & Kenneth R. French, *The Equity Risk Premium*, 57 J. FIN. 637 (2002).

12. Ironically, they did not perform as badly as some might think. For instance, "the S&P Utilities and the NASDAQ Composite are now performing neck and neck. Since the inception of the NASDAQ in February 1971, the Composite and the S&P Utilities have performed identically: both have generated an annual compound return of 10.5%." Richard Bernstein, *Strategy Focus*, MERRILL LYNCH GLOBAL RESEARCH HIGHLIGHTS, August 9, 2002, at 3.

expectations.[13] In this new environment, investors might appreciate low-risk stocks that produce high dividends plus steady growth, as well as the new expectations for the market.

II. ELECTRIC INDUSTRY EXPECTATIONS

In the period from 1946 to 1995,[14] electric utility stocks produced an average annual return of 9.9% for investors (as opposed to the 11.7% return earned by investing in the S&P industrial stock index). In the same years, regulators handed down rate orders allowing about 11.7% on common equity, and the utilities managed to earn about 10.7% on shareholders' book equity. The dividend accounted for over two-thirds of the total return. (Table C(a) & (b))

During 1946-1995, utility shares produced returns of roughly 4% over the yield on Treasury bonds. The presumably riskier industrial stocks gave investors almost 6% per year more than the Treasury bond yield. The stocks of both groups produced returns lower than their respective returns on book equity.

Table C(a)[15]
Electric Utilities[16]
1946-1995

	1946-1950	1951-1955	1956-1960	1961-1965	1966-1970	1971-1976
	(1)	(2)	(3)	(4)	(5)	(6)
Total return (%)						
Electric utility stocks (a)	5.3	15.7	13.8	11.7	-0.7	-1.4
Electric utility bonds (b)	1.8	2.0	1.4	3.8	1.2	6.1
LT Treasury bonds (c)	1.4	1.3	1.2	2.6	-0.0	6.2
Yields (%)						
Electric utility stocks (d)	5.7	5.0	4.2	3.2	4.7	8.1
Electric utility bonds (e)	2.9	3.2	4.4	4.6	7.2	8.7

13. The head of one money management organization said, "While that may seem small compared with the double-digit returns of the 1990s, stocks have historically returned about 10% annually...." Stan Luxenberg, *The Prudent Investor*, MERRILL LYNCH ADVISOR, Summer 2002, at 8.

14. The years chosen encompassed the period after the major Holding Company Act reorganizations and before the sale of assets that began the restructuring of the industry.

15. LEONARD S. HYMAN, ANDREW S. HYMAN, AND ROBERT C. HYMAN, AMERICA'S ELECTRIC UTILITIES: PAST, PRESENT AND FUTURE (Public Utilities Reports 2000) [hereinafter HYMAN].

16. Additional information corresponds to its relative lettered item. (a) Moody's electric utilities; (b) Long-term corporates, *see also* (c); (c) Ibbotson and Sinquefield, Salomon Brothers, S&P sources; (d) Moody's, year-end; (e) Moody's average utility bond, year-end; (f) S&P average long-term treasury yield, year-end; (g) Moody's electric utilities as reported; (h) Consumer price index, for year; (i) Total generation, EEI sources; (j) Total generation/population US government sources; (k) Moody's, as reported; (l) Moody's, as reported; (m) Moody's, excludes reserves; (n) Moody's, year-end prices; (o) Merrill Lynch and RRA data bases, as reported in rate cases finalized in year; (p) *see generally* (o) above, return on equity for 1946 to 1965 estimated by assuming industry-wide capitalizations and costs of capital for rate cases.

LT Treasury bonds (f)	2.2	2.7	3.7	4.2	5.8	6.4
Return on equity (%)						
Electric utility stocks (g)	8.1	8.8	9.9	10.9	11.6	10.6
Inflation (%)						
CPI (h)	6.1	1.4	2.1	1.3	4.5	6.9
Kwh % growth						
Generation (i)	5.5	10.1	6.0	6.3	7.2	4.1
Generation/capital (j)	4.7	8.2	4.2	5.0	6.1	3.0
Growth rates (%)						
EPS (k)	8.8	4.2	5.1	7.5	3.1	2.4
Dividends (l)	6.2	4.2	3.8	8.0	3.3	1.1
Book value (m)	2.1	2.3	3.9	4.7	4.8	3.4
Electric stock price (n)	-0.2	9.9	9.3	8.4	-5.0	-9.0
Allowed returns (%)						
Rate base (o)	6.0	6.2	6.1	6.0	6.9	8.2
Equity (p)	9.7E	10.7E	10.8E	9.4E	11.0	12.3

Table C(b)[17]
Electric Utilities[18]
1946-1995

	1976-1980	1981-1985	1986-1990	1991-1995	1946-1995
	(7)	(8)	(9)	(10)	(11)
Total return (%)					
Electric utility stocks (a)	9.2	23.8	13.2	10.6	9.9
Electric utility bonds (b)	3.0	17.4	9.9	11.3	5.7
LT Treasury bonds (c)	1.7	16.8	10.9	12.1	5.3
Yields (%)					
Electric utility stocks (d)	10.0	10.8	8.2	6.6	6.6

17. HYMAN, *supra* note 15.

18. Additional information corresponds to its relative lettered item. (a) Moody's electric utilities; (b) Long-term corporates, *see also* (c); (c) Ibbotson and Sinquefield, Salomon Brothers, S&P sources; (d) Moody's, year-end; (e) Moody's average utility bond, year-end; (f) S&P average long-term treasury yield, year-end; (g) Moody's electric utilities as reported; (h) Consumer price index, for year; (i) Total generation, EEI sources; (j) Total generation/population' US government sources; (k) Moody's, as reported; (l) Moody's, as reported; (m) Moody's, excludes reserves; (n) Moody's, year-end prices; (o) Merrill Lynch and RRA data bases, as reported in rate cases finalized in year; (p) *see generally* (o) above, return on equity for 1946 to 1965 estimated by assuming industry-wide capitalizations and costs of capital for rate cases.

Electric utility bonds (e)	10.6	13.3	9.8	8.1	7.2
LT Treasury bonds (f)	9.7	11.3	8.5	7.1	6.1
Return on equity (%)					
Electric utility stocks (g)	10.8	13.8	11.8	11.0	10.7
Inflation (%)					
CPI (h)	9.2	5.4	4.0	3.1	5.1
Kwh % growth					
Generation (i)	3.3	1.8	3.8	2.1	5.2
Generation/capital (j)	2.8	0.8	2.9	0.8	3.8
Growth rates (%)					
EPS (k)	2.9	6.9	-6.5	8.2	4.2
Dividends (l)	6.0	5.5	0.1	0.7	3.8
Book value (m)	2.0	0.9	-0.9	2.1	2.6
Electric stock price (n)	-0.5	11.8	4.4	4.0	3.1
Allowed returns (%)					
Rate base (o)	9.6	11.7	10.6	9.7	8.1
Equity (p)	13.5	15.4	13.1	11.8	11.7

Table D[19]
1946-1995 Market Returns
(%/Year)

	Electric	Industrials *
Total returns	9.9	11.7
from dividends	6.8	3.9
Treasury bond yield	6.1	6.1
CPI	5.1	5.1
Real total returns	4.8	6.6
Real Treasury yield	1.0	1.0
Return on book equity	10.7	13.4

* S&P 400 Industrials.

Of course, one could argue that the fifty-year study needs an update. Data for 1987 to 2001 include the impacts of electric restructuring, plummeting interest rates, and stock market boom and bust. During those years, the industry recovered from the nuclear and diversification fiascos of the previous decade. Then the Energy Policy Act of 1992 encouraged the companies to enter foreign and deregulated domestic markets. Those entries temporarily raised the prices of

19. HYMAN, *supra* note 15.

utility stocks, but did little to improve the underlying profitability of the utility companies. That is, investors paid higher P/E ratios for the stocks without seeing the commensurate increase in profitability that would justify the higher valuations. (Table E and Figure 1)

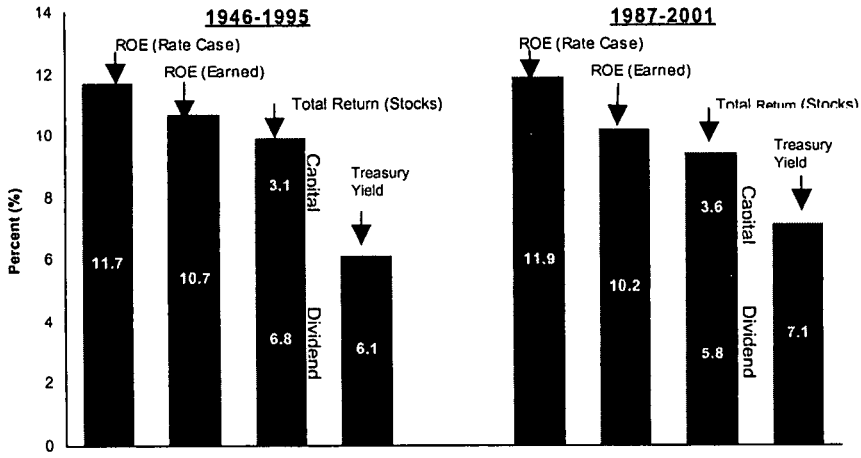
Table E[20]
Market Performance and Returns
1987-2002

	1987-1991 (1)	1992-1996 (2)	1997-2001 (3)	1987-2001 (4)	9/02 (5)
Stock market performance					
1. Total return-electric utilities (a)	13.4%	6.0%	8.9%	9.4%	-17.8% (b)
2. Dividend yield-year end (a)	7.2	6.1	4.3	5.8	5.1
3. Dividend as % of total return (c)	56.7	101.7	50.6	69.7	>100.0
4. Total return-industrials (d)	16.1	25.5	10.3	17.1	-29.5 (b)
5. Stock price increase-electric utilities (a)	5.8	-0.1	4.4	3.3	-21.1 (b)
Electric market valuations					
6. Price/earnings ratio (e)	12.4x	13.6x	18.4x	14.8x	10.0xE
7. Market/book ratio (e)	128.6%	147.0%	169.0%	148.2%	110.0%E
8. Enterprise value/capital ratio (f)	112.0	120.3	126.9	119.7	105.0E
Bond market yields and performance					
9. Yield-long-term Treasuries (g)	8.5%	6.9%	5.9%	7.1%	4.8%
10. Total return-L.T. Treasuries (g)	8.7	8.6	7.9	8.4	15.6
Electric returns earned					
11. Return on average capital (h)	10.1%	9.5%	8.9%	9.5%	8.0E
12. Return on average equity (i)	10.2	10.8	9.0	10.0	9.0E
13. Return on average equity excl. extraordinary items (i)	12.2	11.7	10.8	11.6	-
14. EBITDA return on capital (j)	16.5	16.9	16.7	16.7	-
15. Adjusted return on capital (k)	8.8	9.4	8.8	9.0	-
16. Adjusted return on average equity (k)	7.2	10.6	10.9	9.5	-
17. Adjusted EBITDA return on capital (k)	15.3	16.8	16.7	16.3	-
Returns allowed in rate cases					
18. Return on rate base (l)	10.6%	9.5%	9.1%	9.7%	8.8%
19. Return on equity (l)	12.8	11.6	11.3	11.9	11.2
Kwh volume growth %					

20. Additional information corresponds to its respective lettered item. (a) S&P electric, total return equals dividends plus capital gains, uses old S&P series through year-end 1998 and new series thereafter; (b) Six month total return, not annualized *see also supra* note l; (c) Based on data in line 5; (d) S&P 400 industrials; (e) S&P electric, year-end prices; (f) Capital is defined as book common equity plus preferred, stock plus long-term debt, plus working capital, all derived from EEI sources for investor-owned electric industry. Enterprise value is defined as market value of common equity (book equity x market/book ratio), plus book value of preferred, plus book value of long-term debt, plus working capital, all year end; (g) S&P Long-Term Government. year-end, total return calculated from S&P data; (h) Calculated by EEI, gross income as percent of average capitalization (long-term debt, notes, preferred and common equity); (i) Calculated by EEI; (j) Earnings before interest, income taxes, depreciation, and amortization as a percent of book capital *see generally* (f) above, all data from EEI sources for investor owned electric industry, year-end book capital; (k) Adjusted by removing allowance for funds used during construction (AFUDC) and phase in revenue deferrals (net) from EEI calculated return (Lines 11 and 12); (l) Regulatory Research Associates (RRA) data, rate case decisions made in year; (m) Total generation including non-utility sources, EEI data; (n) U.S. population series not adjusted for 2000 census, from Statistical Abstract; (o) Annual index.

20. Generation (m)	3.6	2.3	1.8	2.6	-
21. Generation/capita (n)	2.6	1.1	0.9	1.4	-
Inflation					
22. Consumer Price Index (CPI) (o)	4.4	2.9	2.4	3.2	-

Figure 1
Historical Yields and Returns



Over the fifteen-year period from 1987 to 2001, industrial stocks outperformed utilities by a wide margin, possibly reflecting the wide divergence in profitability on the books of the two sectors. Electric utility shares produced total returns roughly 2% in excess of bond yields. For both utilities and industrials, book return on equity exceeded total return on shares. (Table F)

Table F
Market Returns
1987-2001
(%/Year)

	Electric	Industrials (a)
Total returns	9.4	17.1
from dividends	6.6	3.5
Treasury bond yield	7.1	7.1
CPI	3.2	3.2
Real total returns	6.2	13.9
Real Treasury yield	3.9	3.9
Return on book equity	10.2 *	18.7 *

* Partially estimated for S&P averages.

In sum, through the post-war period, electric utility investors could expect a total return of roughly 3% to 4% above bond yields, with more than 60% of that return in the form of dividends. With the exception of a period which coupled

huge nuclear expenditures and high interest rates, electric stocks sold at prices close to or above book value. Given the expanding number of potential retirees in the country, the disastrous experience of investors in exciting stocks, and the low level of interest rates, the worries about the strength of economic recovery should dull dividend paying electric utilities have difficulty. Would dividend-paying electric companies, however, have difficulty attracting investors if they could actually earn 10% to 11% on book equity on a steady basis? In the past, utility managers failed their investors when they bet the company on a technology they did not understand (nuclear power), when they entered businesses far afield from their experience (diversification), and when they plunged into seemingly related businesses without adjusting their finances to the new risk levels (merchant generation, power marketing, and foreign investment). In other words, the managements knew how to run the prosaic operations. But they did not know how to invest. Will a back-to-basics approach favor shareholders?

III. MARKET VALUATION OF UTILITIES

Electric utility stocks tend to track interest rates. Investors compare the dividend yield on utility shares to the yields available from savings accounts and fixed income investments. They buy utility shares (which pushes up utility stock prices and reduces utility dividend yields) when the shares offer high yields (on a risk-adjusted basis) compared to the alternatives. They sell utility shares (depress prices and increase dividend yields) when the utility stocks offer too low a return (on a risk-adjusted basis) compared to the alternative investments.

Financial theorists will argue that dividends do not count, that investors count on the total earning power of the investment not just the portion that comes to them in the form of a dividend check. Unlike industrial corporations though, utilities tend to earn a steady, predictable flow of income and pay dividends that change at a minimal rate. So, whether investors look to the dividend or to the corporate income stream, they still have to value a bond-like flow of income. Either way, they will view electric shares as bond substitutes, and they will price them accordingly.[21]

From 1987 to 2001, despite boom, bust, and bubble bursting, electric stock prices moved in the reverse direction from interest rates in fourteen out of fifteen years. (Table G) The dividend yield on the stocks followed the bond yield even more closely than the stock prices. (Figures 2 and 3)

21. Every so often, the newest crop of security analysts declare that a revitalized electric industry has broken the nexus between interest rates and stock prices. That ignores the fact that this is a mature, slow-growth, regulated business.

Figure 2[22]
Stock Price vs. Bond Yield

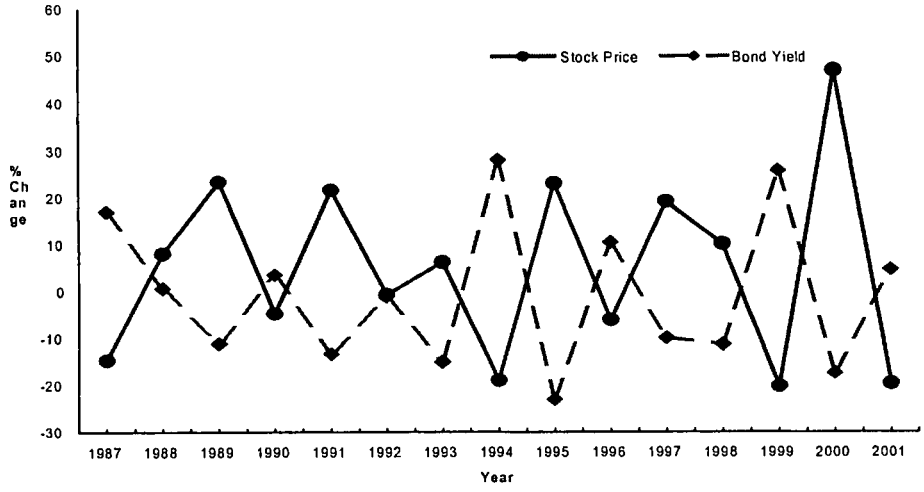
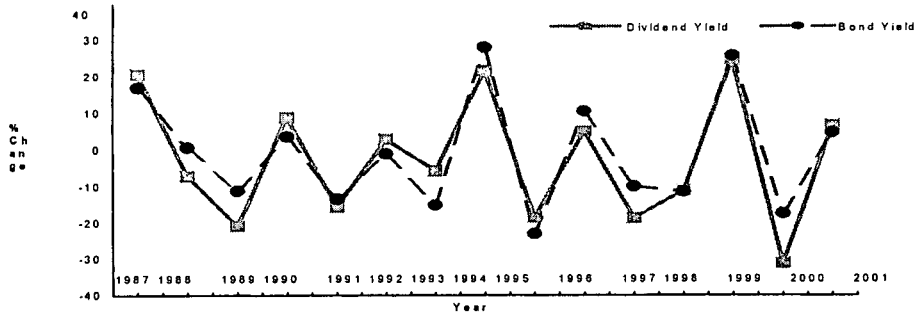


Figure 3[23]
Dividend Yield vs. Bond Yield



22. S&P Electric Utility Average Price (E); S&P Long-Term Treasury (T); E= 4.2 – 1.1T; r2 = .74.
23. S&P Electric Utility Average Price (Y); S&P Long-Term Treasury (T); Y= 1.7 + 1.0 T; r2 = 0.85

Table G[24]
Annual Changes in Electric Stock Prices,
Dividend Yields and Bond Yields
1987-2001
(% Change)

	S&P Electric Stocks		Long-Term
Year	Price	Dividend Yield	Treasury Yield
1987	-14.6	20.8	17.1
1988	8.2	-7.0	0.8
1989	23.5	-20.7	-11.1
1990	-4.6	9.0	3.7
1991	21.7	-15.5	-13.3
1992	-0.6	3.0	-1.0
1993	6.4	-5.6	-15.0
1994	-18.9	21.7	28.1
1995	23.1	-18.4	-23.0
1996	-6.0	5.1	10.5
1997	19.2	-18.6	-9.9
1998	10.2	-11.0	-11.3
1999	-20.2	24.7	25.8
2000	47.0	-31.2	-17.4
2001	-19.6	6.8	4.8

Knowing that the bond market affected the value of electric utilities does not tell us much about how investors view electric utilities versus bonds. For instance, does knowing that bonds yield 6% and that the electric utility earns a 10% return on book equity tell us something about how the market will value the stock?

Table H(a) & (b) presents financial data for the investor-owned electric utility industry. Although analyzing the period from 1987 to 2001, the table includes data for 1984 to 1986. This is to set the stage, and to provide for analysis of lagged data, if needed. Table I(a) & (b) analyzes the data in terms of returns on capitalization and book value, and how the market prices differ from the underlying assets. Table J summarizes pertinent data by tercile (five years in which enterprise value exceeds book capitalization by the greatest percentage, by an intermediate percentage, and by the lowest percentage). Table K provides statistical analyses of the results.

24. Based on year-end prices and yields.

Table H(a)[25]
Electric Utility Financial and Market Data ($ Billions)
1984-2001

Year End	Capitalization	Enterprise Value	Gross Income	EBITDA	Net for Common
	(1)	(2)	(3)	(4)	(5)
1984	$294	$290	$35	$49	$17
1985	309	321	36	53	16
1986	321	355	36	56	17
1987	333	339	35	58	16
1988	340	357	33	55	14
1989	345	399	34	57	15
1990	356	402	33	57	15
1991	358	446	33	59	14
1992	372	458	34	59	16
1993	377	475	32	61	16
1994	383	429	34	64	18
1995	389	479	36	69	19
1996	400	470	36	71	20
1997	433	564	36	75	21
1998	446	594	36	75	15
1999	460	520	40	81	19
2000	509	702	38	79	15
2001	491	588	39	79	15

Table H(b)[26]
Electric Utility Financial and Market Data ($ Billions)
1984-2001

Year End	Common Equity	Market Value Of Common Equity	Adjusted Gross Income	Adjusted EBITDA	Adjusted Net for Common
	(6)	(7)	(8)	(9)	(10)
1984	$120	$116	$23	$41	$9

25. Additional information corresponds to its respective column number. (1) *see generally* Table E, (f); (2) *see generally* Table E, (f); (3) Utility after-tax operating income plus other income; (4) Earnings before income taxes, interest, depreciation and amortization; (5) Net income available for common stock.

26. Additional information corresponds to its respective column number. (6) Book value of common stock equity; (7) Book equity multiplied by year-end market-book ratio of S&P electric utilities; (8) Adjusted by removing allowance for funds used during construction and phase-in deferral revenues from gross income; (9) Adjusted by removing allowance for funds used during construction and phase-in deferrals from EBITDA; (10) Adjusted by removing allowance for funds used during construction and phase-in deferrals from net income available to common stock.

1985	130	142	24	44	7
1986	138	172	26	48	9
1987	142	148	26	51	9
1988	142	159	27	50	9
1989	147	201	29	53	11
1990	148	194	29	54	11
1991	150	238	30	57	12
1992	156	242	32	58	15
1993	161	259	32	61	16
1994	165	211	34	64	18
1995	172	262	36	69	19
1996	178	248	36	71	20
1997	181	312	36	75	21
1998	186	334	36	75	15
1999	177	237	40	81	19
2000	180	373	38	79	15
2001	187	281	39	79	15

Table I(a)[27]
Electric Utility Financial and Market Ratios
1984-2001

	EC-V As % Of C	MVCE As % CE	Long Treasury Bond Yield	Adj. EBITDA % C	Adj. GI % C	Adj. NC % CE
	(1)	(2)	(3)	(4)	(5)	(6)
1984	-1.4	-3.3	11.4	13.9	7.9	7.5
1985	3.8	9.2	9.4	14.3	7.8	5.4
1986	10.6	24.6	7.7	14.9	8.1	6.5
1987	1.8	4.2	9.2	15.3	7.8	6.3
1988	5.0	12.0	9.2	14.7	7.9	6.3
1989	15.7	36.7	8.1	15.4	8.4	7.5
1990	12.9	31.1	8.4	15.1	8.1	7.4
1991	24.6	58.7	7.6	15.9	8.4	8.0
1992	23.1	55.1	7.4	15.6	8.6	9.6

27. All data is from Table H(a) & (b). All formulas converted to percent for table. Additional information corresponds to its respective column number. (1) (Enterprise Value – Capitalization) / (Capitalization); (2) (Market Value of Common Equity – Book Value of Common Equity) / (Book Value of Common Equity); (3) Year end S&P long-term Treasury bond yield, rounded, monthly average of weekly indexes for December; (4) E (Adjusted EBITDA) / (Capitalization); (5) (Adjusted Gross Income) / (Capitalization); (6) (Adjusted Net Income Available for Common) / (Book Value of Common Equity).

1993	26.0	60.9	6.2	16.2	8.5	9.9
1994	12.0	27.9	8.0	16.7	8.9	10.9
1995	23.1	52.3	6.2	17.7	9.3	11.0
1996	17.5	39.3	6.7	17.8	9.0	11.2
1997	30.3	72.4	6.1	17.3	8.3	11.6
1998	33.2	79.6	5.4	16.8	8.1	8.1
1999	13.0	33.9	6.7	17.6	8.7	10.7
2000	37.9	107.2	5.6	15.5	7.5	8.3
2001	19.8	51.9	5.8	16.1	7.9	8.0

Table I(b)[28]
Electric Utility Financial and Market Ratios
1984-2001

	3 Year LAG Adi. EBITDA % C (7)	3 Year LAG Adi. GI % C (8)	3 Year LAG Adi. NC % C (9)	LAG EBITDA - BY (10)	LAB To GI - BY (11)	NC - BY (12)
1984						
1985						
1986						
1987	14.4	7.9	6.5	5.2	-1.3	-2.7
1988	14.8	7.7	6.1	5.6	-1.3	-3.1
1989	15.0	7.9	6.4	6.9	-0.2	-1.7
1990	15.1	8.0	6.7	6.7	-0.4	-1.7
1991	15.1	8.1	7.1	7.5	0.5	-0.5
1992	15.5	8.3	7.6	8.1	0.9	0.2
1993	15.5	8.4	8.1	9.3	2.2	1.9
1994	15.9	8.5	8.3	7.9	0.5	0.3
1995	16.3	8.7	8.4	10.1	2.5	2.2
1996	16.9	8.9	8.5	10.2	2.2	1.8
1997	17.4	9.1	8.7	11.3	3.0	2.6
1998	17.6	8.9	8.9	12.2	3.5	3.5

28. All data is from Table H(a) & (b). All formulas converted to percent for table. Additional information corresponds to its respective column number. (7) Simple average of three previous years' data in column (4); (8) Simple average of three previous years' data in column (5); (9) Simple average of three previous years' data in column (6); (10) (Column 4) – (Column 3); (11) (Column 5) – (Column 3); (12) (Column 6) – (Column 3).

1999	17.3	8.5	9.0	10.6	1.8	2.3
2000	17.2	8.4	8.8	11.6	2.8	3.2
2001	16.6	8.1	8.6	10.8	2.3	2.8

Table J[29]
Analysis of Market Premium Over Capitalization and Over Share Book Value (1987-2001)
(%)

Tercile Years in which Enterprise Value exceeded Capitalization	$\left(\frac{EV-C}{C}\right)$ (a)		$\left(\frac{MV-CE}{CE}\right)$ (b)		$\left(\frac{EBITDA}{C}\right)$ - BY (c)		$\left(\frac{GI}{C}\right)$ -BY (d)		$\left(\frac{NC}{CE}\right)$ - BY (e)	
	X	M	X	M	X	M	X	M	X	M
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1. By the highest percentage	30.4	30.3	75.8	72.4	10.4	11.3	2.4	2.8	2.1	2.6
2. By an intermediate percentage	19.8	19.8	47.1	51.9	9.2	10.1	1.5	2.2	1.1	1.8
3. By the lowest percentage	8.9	12.0	21.8	27.9	7.2	6.7	-0.2	-0.4	-1.0	-1.7

29. X = Mean M = Median. All data is from Table I(a) & (b). Additional information corresponds to its relative lettered item. (a) (Enterprise Value – Capitalization) as percent of Capitalization; (b) (Market Value of Common Equity – Book Value of Common Equity) as percent of Book Value of Common Equity; (c) (Adjusted EBITDA/Capitalization) – Treasury Bond Yield; (d) (Adjusted Gross Income/Capitalization) – Treasury Bond Yield; (e) (Adjusted Net Income Available for Common Stock/Common Equity) – Treasury Bond Yield.

Table K[30]
Statistical Analyses of Valuations
(See Table J)

Common stock (all in %)

y = Excess of market over book value of common stock as a percentage of book value $\left(\frac{MV-CE}{CE}\right)$

x_1 = Return on common equity $\left(\frac{NC}{CE}\right)$

x_2 = Bond Long-Term Treasury bond yield (BY)

$y = 7.8\,x_1 - 3.4x_2$
$(r_2 = 0.81)$

Enterprise value (all in %)

y = Excess of enterprise value over book capitalization as a percentage of book capitalization $\left(\frac{EV-C}{C}\right)$

x_1 = Gross income return on capital $\left(\frac{GI}{C}\right)$

x_2 = EBITDA return on capital $\left(\frac{EBITDA}{C}\right)$

x_3 = Long-Term Treasury bond yield (BY)

$y = 6.8\,x_1 - 5.3x_3$
$(r_2 = 0.90)$
$y = 3.1x_2 - 4.3x_3$
$(r_2 = 0.90)$

30. The above regressions show relationships between interest rates, returns and prices, but not precise formulas for use in any given situation.

IV. ATTEMPTING A VALUATION

We should not attempt to apply a formula based on the experience of an entire industry to one investment with the expectation that the generalization fits the particulars. But we may draw some conservative conclusions based on a period in which the average utility under performed the market, did not earn its allowed return, showed steadily declining earnings and dividends per share, and the average investor approached the utility sector with very little enthusiasm. Now, with the bubble burst, perhaps investors would pay more for what a well-run utility offers.

In the fall of 2002, a conservatively run distribution-oriented utility might earn 10% on common equity. It would pay out about 70% of earnings as dividends. Debt and preferred stock would account for 50% to 60% of capitalization. The company might earn a return on capital (gross income) of about 9%. The formulas would indicate a market/book ratio of about 160% for the stock and an enterprise value of over 13% of capitalization. Those prices would give managements comfort that no outsiders could pick off the company on the cheap, and they would also assure non-dilutionary financing.

Investors, however, would not pay those prices unless they could expect a competitive return. At 160% of book value, the stock yields only 4.4%. The company might generate 3% growth from retained earnings, but in the past the average company had not generated the growth indicated by the retention rate. If the company could realize the full potential of its retained earnings, the stock would generate a total return of 7.4% (barely 2.6% above the fall 2002 Treasury yield) and a total return below the range of most recent academic studies of potential profit, and far below expectations generated by Wall Street analysis. Admittedly, the stock's multiple could increase, but why should it given the low level of interest rates and the maturity of the electric business?

Looking at expected returns provides a counterbalance to looking at evaluations made when investors had higher, perhaps unreasonable expectations. If investors now insist on a return of at least 3% above the bond rate and reduce the expected growth rate to 2% in order to take into account dilution from poor investments and unexpected events,[31] the stock would have to fall to a price that provided a 5.8% dividend yield, 121% of book value. Even that price should offer comfort to management and flexibility for financing.

A non-speculative utility investment that can generate a competitive return, much of it from the dividend, has, financially speaking, the makings of an attractive business so long as two factors are met. The first will be satisfied as long as regulators do not yank away the returns, and the second will be met as long as the state of the network does not force the companies into an unremunerated capital spending program.

V. CAPITAL SPENDING

In the 1970s and 1980s, utilities undertook huge capital expenditure

31. In the utility business, profitable unexpected events usually lead to refunds to customers and unprofitable unexpected events come out of shareholder funds.

programs. Regulators did not raise prices fast enough to cover the costs of the newly-raised capital. Sales did not rise fast enough to cover the costs either. Utility stocks sank under the pressure of poor returns and the recurrent need to raise money from external sources.

Since restructuring began in the mid 1990s, many utilities have had to operate distribution networks under long-term price freezes. They cannot recover the cost of new capital investment other than through revenue growth that comes from higher sales. Unfortunately, the electricity business has matured to the point that both customer growth and increased sales per customer have reached low, single-digit levels, even during periods of robust economic conditions and falling real electricity prices. (Table L and Figure 4)

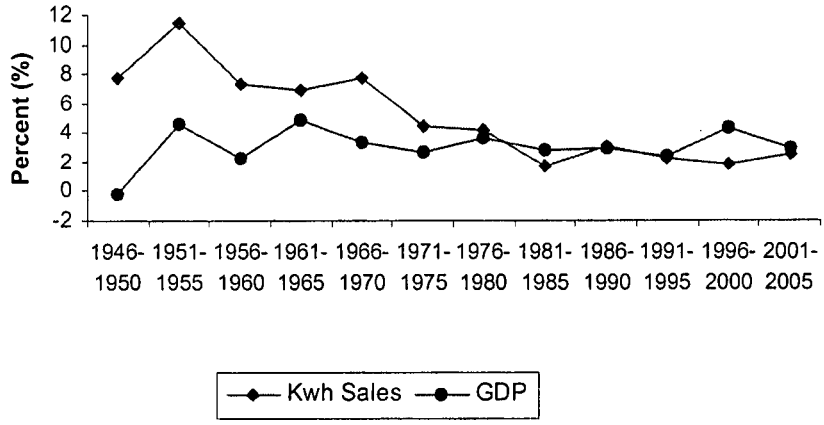
Table L[32]
Rates of Growth[33]
(% Growth)

	Number of Customers	Usage per Customer	Kwh Sales	Real Price of Electricity	Real GDP
1946-1950	5.7	2.0	7.7	-5.0	-0.2
1951-1955	3.2	8.2	11.4	-4.0	4.6
1956-1960	2.3	5.0	7.3	-2.0	2.3
1961-1965	2.2	4.7	6.9	-2.5	4.9
1966-1970	2.0	5.8	7.8	-4.0	3.4
1971-1975	2.4	2.1	4.5	4.2	2.6
1976-1980	2.5	1.7	4.2	3.0	3.6
1981-1985	1.9	-0.2	1.7	2.1	2.8
1986-1990	1.6	1.5	3.1	-3.0	2.9
1991-1995	1.4	0.9	2.3	-1.3	2.4
1996-2000	1.3	0.6	1.9	-2.0	4.3
2001-2005 E	1.5	1.0	2.5	0.0	3.0

32. Columns one through three *see generally 2001 Financial Review*, EDISON ELECTRIC INSTITUTE, *available at* http://www.eei.org/issues/finan/review.htm [hereinafter EEI]. Columns four and five *see generally* HYMAN, *supra* note 15.

33. Columns one through three refer to all ultimate customers, four refers to the GDP deflator, and one through five refer to the compound annual rates of growth.

Figure 4
Rate of Growth



In order to trace the patterns of spending, we must translate the reported numbers into real terms. For this purpose, we use the *Engineering News Record* (ENR) index of construction costs.[34] (Table M)

Table M[35]
Investor Owned Electric Utility
Capital Expenditures
1945-2001
($ Millions)

	Reported Capital Expenditures			Deflated Capital Expenditures	
Year	Distribution	Transmission	ENR Construction Index (a)	Distribution	Transmission
	(1)	*(2)*	*(3)*	*(4)*	*(5)*
1945	160	65	30.1	532	216
1946	345	100	33.8	1,021	296
1947	560	185	40.4	1,386	458
1948	750	260	45.0	1,667	578
1949	835	275	46.6	1,792	590
1950	785	280	49.8	1,576	562
1951	810	300	53.1	1,525	565
1952	879	379	55.7	1,578	680
1953	938	442	58.6	1,601	754
1954	993	464	61.4	1,617	756
1955	1,093	434	64.5	1,695	673

34. The Handy-Whitman index and even the Consumer Price Index would have produced similar results.

35. Columns one and two *see generally* EEI *supra* note 32. Column three *see generally* HYMAN, *supra* note 15. Columns four and five are calculated.

	Reported Capital Expenditures			Deflated Capital Expenditures	
Year	Distribution	Transmission	ENR Construction Index (a)	Distribution	Transmission
	(1)	(2)	(3)	(4)	(5)
1956	1,274	455	67.7	1,882	672
1957	1,270	594	70.8	1,794	839
1958	1,125	608	73.1	1,539	832
1959	1,163	554	75.2	1,547	737
1960	1,300	537	77.5	1,677	693
1961	1,265	579	79.7	1,587	726
1962	1,276	571	81.8	1,560	698
1963	1,323	644	84.2	1,571	765
1964	1,502	754	87.5	1,717	862
1965	1,585	940	90.7	1,748	1,036
1966	1,851	1,161	95.2	1,944	1,220
1967	1,977	1,323	100.0*	1,977	1,323
1968	2,299	1,378	107.8	2,133	1,278
1969	2,421	1,554	118.7	2,040	1,309
1970	2,751	1,625	128.9	2,134	1,261
1971	2,869	1,818	146.7	1,956	1,239
1972	3,192	1,749	163.0	1,958	1,073
1973	3,568	1,878	176.5	2,022	1,064
1974	3,583	2,145	188.0	1,906	1,141
1975	3,075	1,771	205.7	1,495	861
1976	2,974	1,832	223.4	1,331	820
1977	3,390	1,687	240.0	1,413	703
1978	3,875	1,738	258.4	1,500	673
1979	4,334	2,090	279.5	1,551	748
1980	4,483	2,353	301.4	1,487	781
1981	4,606	2,270	328.9	1,400	690
1982	4,827	2,203	356.1	1,356	619
1983	5,021	2,371	378.6	1,326	626
1984	5,899	2,250	386.2	1,527	583
1985	6,590	1,863	390.1	1,689	478
1986	7,248	1,761	399.5	1,814	441
1987	7,457	2,066	409.8	1,820	504
1988	8,224	1,942	420.7	1,955	462
1989	8,685	2,512	428.8	2,025	586
1990	9,100	2,441	440.5	2,066	554
1991	8,780	2,294	458.0	1,951	510
1992	8,653	2,610	463.9	1,865	563
1993	9,017	2,647	477.8	1,887	554
1994	9,195	2,572	494.2	1,861	520
1995	8,316	2,476	509.0	1,634	486
1996	8,368	2,113	523.1	1,600	404
1997	8,709	2,645	542.0	1,607	488
1998	10,262	2,546	550.9	1,863	462
1999	10,385	2,312	564.0	1,841	410
2000	9,871	3,156	578.6	1,706	545
2001**	8,496	3,718	593.0	1,432	627

* 1967 equals 100. Rounding errors likely due to splicing of indices with different base years.

** Partially Estimated

Distribution capital expenditures tended to move with customer additions, but the system planners also took into account that, over time, individual customers took more electricity and, therefore, required more plant. Through the early 1970s, the industry appears to have upgraded facilities and anticipated future demand, in addition to simply meeting the basic requirements of the customer. Thereafter, the utilities appear to have done little more than to stay one step ahead of the new customer, plus spend whatever was necessary to keep the plant functioning. (Table N and Figures 5 and 6)

Table N[36]
Distribution Expenditures[37]

	Deflated Distribution Expenditure (Millions)	New Customers (Millions)	Adjusted New Customers (Millions)	Expenditure per New Customer ($)	Expenditure per Adjusted New Customer ($)
	(1)	*(2)*	*(3)*	*(4)*	*(5)*
1946-1950	$7,442	7.4	7.8	$1,006	$954
1951-1955	8,016	5.2	7.6	1,541	1,055
1956-1960	8,439	5.1	9.9	1,655	852
1961-1965	8,183	5.0	12.3	1,637	665
1966-1970	10,228	5.4	19.7	1,894	522
1971-1975	9,337	6.8	27.2	1,373	343
1976-1980	7,282	7.3	31.9	998	228
1981-1985	7,298	6.2	26.4	1,177	276
1986-1990	9,680	7.0	32.6	1,383	297
1991-1995	9,198	4.9	23.2	1,877	396
1996-2000	8,617	3.3	16.3	2,611	529
2001-2005	5,000	5.0	25.0	1,000	200

36. EEI, *supra* note 32.

37. *See also* Table M. Additional information corresponds to its relative column number. (1) Investor-owned utilities; (2) Ultimate customers; (3) New customer count adjusted by increase in kWh/customer from 1946 base year; (4) Col. 1/Col. 2; (5) Col. 1/Col. 3; (6) Col. 4 and Col. 5 make the assumption that the purpose of the year's expenditure is to add on the new customer. In reality, part of the expenditure is for plant that serves existing customers.

Figure 5
Real Distribution Capital Spending
(1967 $)

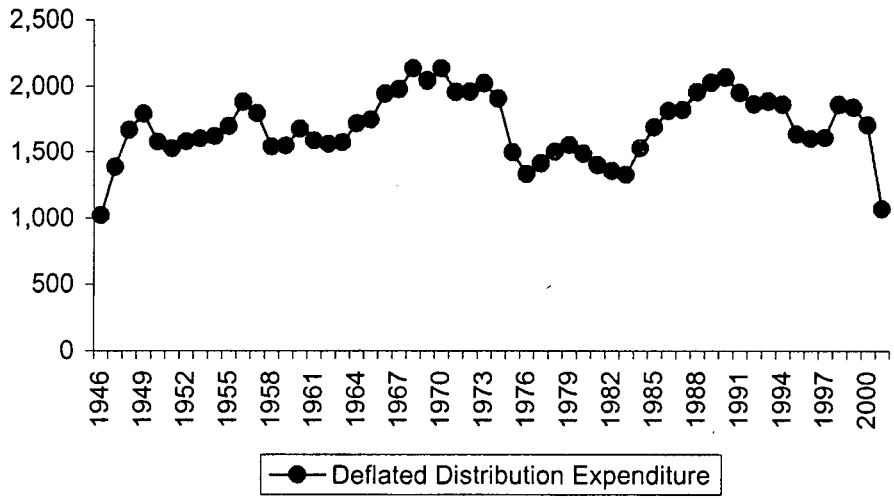
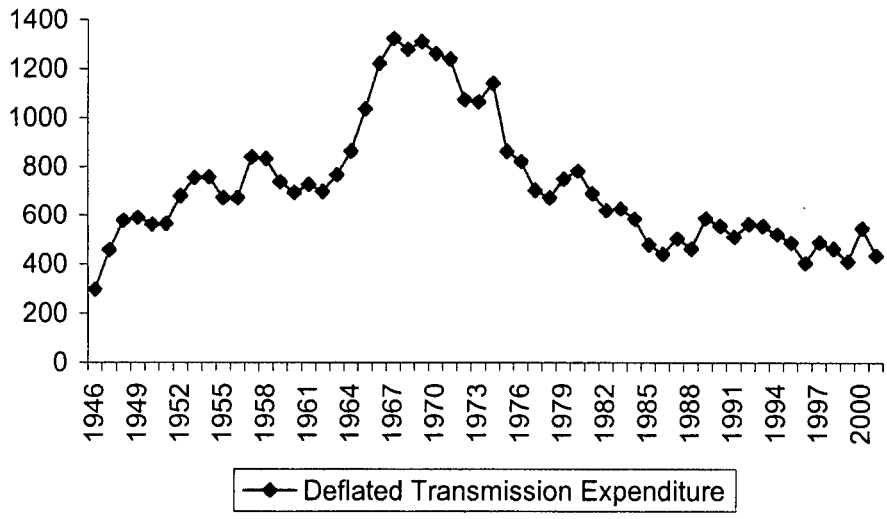


Figure 6
Real Transmission Capital Spending
(1967 $)



Transmission spending shows a more extreme pattern. The industry spent a large amount of money from the late 1960s to the early 1970s in an effort to shore up reliability after the 1965 Northeast Blackout, and perhaps to anticipate the higher future demand that did not occur. Since then, transmission spending has fallen in real terms. Transmission owners, facing uncertainty about ownership and control of assets, and fearful of competition from outsiders, have expanded the network minimally.[38] (See Table O and Figures 7 and 8)

Table O(a)[39]
Transmission Spending[40]

	Deflated Transmission Expenditure ($ Millions)	Increase in Generating Capacity (GW)	Increase in Transmission Circuit Miles >50 kv (1,000 CM)
	(1)	(2)	(3)
1946-1950	$2484	19.9	32
1951-1955	3428	48.1	45
1956-1960	3773	54.9	43
1961-1965	4087	68.7	38
1966-1970	6391	105.8	56
1971-1975	5378	167.3	45
1976-1980	3725	103.4	25
1981-1985	2996	80.7	32
1986-1990	2547	68.5	11
1991-1995	2633	36.8	23
1996-2000	2309	44.2	10
2001-2005E	2790	168.8	10

38. SHIMON AWERBUCH, LEONARD S. HYMAN & ANDREW VESEY, UNLOCKING THE BENEFITS OF RESTRUCTURING: A BLUEPRINT FOR TRANSMISSION (Public Utilities Reports 1999).

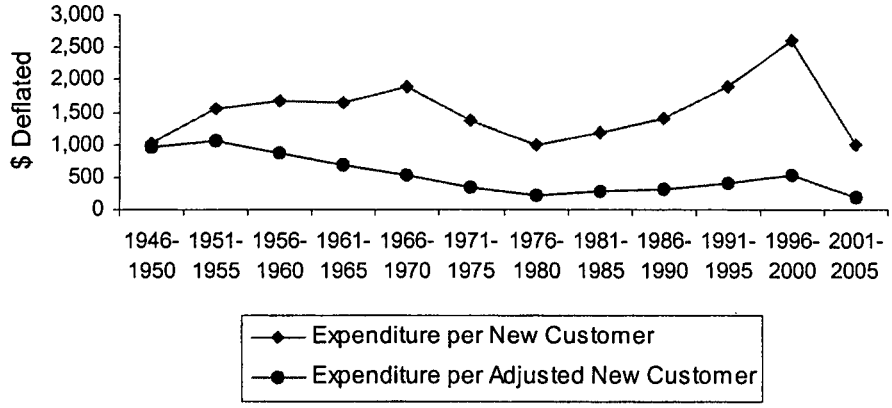
39. EEI, *supra* note 32.

40. Additional information corresponds to its respective column number. (1) Investor-owned utilities; (2) Total capacity in USA; (3) N Total industry. Lines 50 kv and over.

Table O(b)[41]
Transmission Spending[42]

	Transmission Expenditure/New Gen. Cap. ($ Million/GW)	Transmission Expenditure/Circuit Mile New Line ($1,000/CM)	New Circuit Miles per GW of New Generation (CM/GW)
	(4)	(5)	(6)
1946-1950	125	78	1.61
1951-1955	71	76	0.94
1956-1960	69	87	0.78
1961-1965	59	108	0.55
1966-1970	60	114	0.53
1971-1975	32	120	0.27
1976-1980	36	149	0.24
1981-1985	37	94	0.40
1986-1990	37	232	0.16
1991-1995	72	114	0.63
1996-2000	52	231	0.23
2001-2005E	16	279	0.06

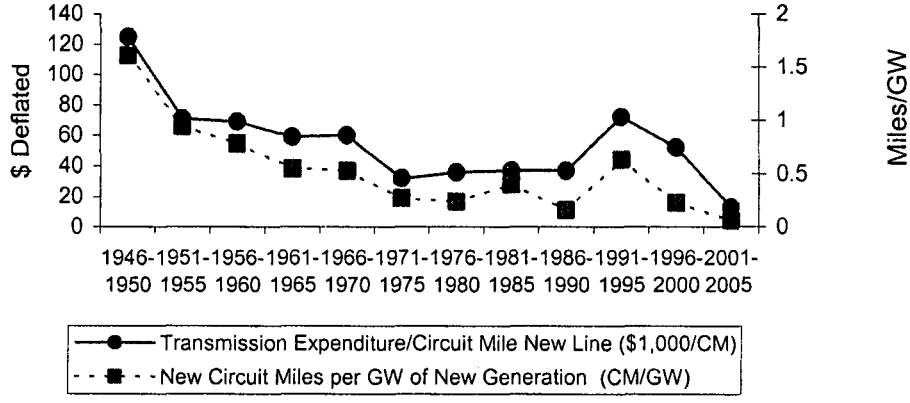
Figure 7
Deflated Distribution Expenditures per New Customer



41. EEI, *supra* note 32.

42. Additional information corresponds to its relative column number. (4) Transmission expenditure/new generating capacity Assumes that investor-owned lines and capacity do not change in proportion to total lines; (5) Transmission expenditure/new circuit miles, *see generally* note 4; (6) New circuit miles/new generation capacity. *See also Rate of Return*, *supra* note 4.

Figure 8
Deflated Transmission Spending



The projections for capital spending derived from the Edison Electric Institute survey compiled late in 2002 would require no outside financing for distribution, but substantial outside financing for transmission.[43] Those projections, however, may result from the difficulty of collecting data on a timely basis in a newly competitive industry. A 2002 report issued by R. J. Rudden Associates, for instance, examined budget trends and concluded that "[l]ocal reliability-related investments are expected to increase . . . peaking in the 2003 to 2005 timeframe .... Local load growth investments are expected to continue above average levels ...."[44] Whatever the case, if the low numbers are correct, they spell trouble ahead. (Table P) In real terms, close to half of the postwar new technology and development plants (T&D) went on the books by the end of 1970. The industry may need to begin the process of replacing that old plant at five or more times its original cost. It may have to spend billions on the metering necessary to bring demand side response to the market; and may have to meet the needs of a re-expanding economy. Replacing a forty-year-old plant over the coming decade could add (in current dollars) as much as five billion dollars to the annual distribution budget and three billion dollars to the transmission budget. Even worse, the replacement of a depreciated old plant with a high priced new plant would force rate filings to cover the capital costs of the new investment.

43. EEI, *supra* note 32.

44. Kevin M. Harper & Michael D. Mount, *Distribution Reliability and Power Quality: The Next Industry Time Bomb?*, R.J. RUDDEN ASSOCIATES, 8 (2002).

Table P[45]
T&D Estimated 2001
($ Billions)

	Distribution	Transmission
Gross plant	$204	$79
Net plant	112	44
Annual depreciation	5.0	2.0
Net income	8.5	2.0
Dividends	6.5	1.5
Retained earnings	2.0	0.5
Capital expenditure (2001)	8.5	3.7
Average cap. exp. (past 5 years)	9.5	2.9
Average proj. cap. exp. (2002-2004)	5.4	3.6
Internal financing %		
2001 cap. exp.	111%	96%
Average proj. cap. exp. (2002-2004)	130	69
Average cap exp. (past 5 years)	74	86

Perhaps the analysis appears overdone. After all, the utilities should have continuously upgraded an old plant. Undoubtedly they did, to some extent, but the spending numbers seem to point to trimming the outlays, rather than beefing up the system. If the industry brought spending up to the lowest levels (determined by the ratios shown in Table N and O), the numbers for 2002 to 2004 could double from the numbers indicated by the EEI survey estimates. Certainly, a skeptical view of the construction numbers would leave one to conclude that financial prospects are not as rosy as indicated by the capital spending survey.

Simply stated, if the T&D industry maintains spending at projected levels, the wires do not fall down and regulation remains as it is, the industry should be able to finance its expansion without undue difficulty. If, on the other hand, expenditures have to rise dramatically in order to provide reliable service while regulation remains the same, the internal financing rate could fall to 70% for distribution and 50% for transmission. The T&D industry would then face financial pressures which it could relieve only by seeking rate relief just when consumers were supposed to see the benefits of restructuring.

VI. REGULATION

Regulation plays a major role in determining whether the wires business will attract investors. Or, to put it directly, regulation could repel investors from a business that should attract them, given existing market conditions.

It appears that the wires sector will have to get back on the rate case treadmill. Capital programs will rise faster than offsets from productivity or additional sales. When the utilities reappear at the regulatory commission, with tin cup in hand, the regulators will have to explain to the public why the much-

45. EEI, *supra* note 32.

vaunted restructuring will produce price increases. If the regulators operate in their time-honored fashion, the initial rate orders will discourage investors. Cost of capital witnesses work with out-of-date data, and that data, for cases coming soon, will include a period of the lowest interest rates in 40 years. In addition, during a period of economic and financial uncertainty, the market may depress yields on low risk government benchmark securities below normal levels. Therefore, analysts who tack on a normal risk premium to the abnormally low benchmark return may end up calculating an unrealistically low return for equity. As the economy picks up, interest rates will rise, the yield on risk-free securities may move up more than other yields to reflect the diminishing level of fear in the marketplace, as will the required rate of return. Utilities may have to pay higher interest costs when they raise money, but the initial batch of rate orders may not reflect that possibility. Sometimes regulatory lag helps the utility; sometimes it hurts it. This time it may hurt.

Returns allowed on equity tend to follow past interest rates as well. (Table Q and Figure 9) Thus, the first rate orders of the new era may come in low enough to discourage investors.

Table Q[46]
Interest Rates and Rate Orders[47]
1965-2001

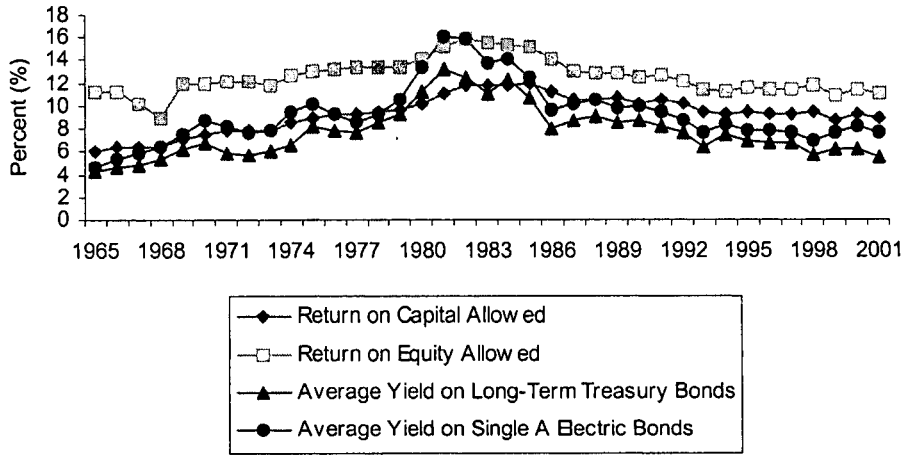
	Average Returns Allowed in Rate Cases (a)		Average Yield on Long-Term Treasury Bonds (b)	Average Yield on Single A Electric Bonds (d)
	Return on Capital	Return on Equity		
	(1)	*(2)*	*(3)*	*(4)*
1965	6.0	11.3	4.2	4.6
1966	6.4	11.3	4.7	5.4
1967	6.4 (c)	10.1 (c)	4.9	5.9
1968	6.4	8.9	5.3	6.5
1969	7.2	12.0	6.2	7.5
1970	7.5	11.9	6.8	8.7
1971	7.8	12.1	5.9	8.2
1972	7.8	12.1	5.7	7.7
1973	7.8	11.8	6.1	7.8
1974	8.6	12.7	6.6	9.5
1975	8.9	13.0	8.2	10.1
1976	9.3	13.2	7.9	9.3
1977	9.3	13.4	7.7	8.6
1978	9.5	13.3	8.5	9.3
1979	9.6	13.3	9.3	10.5

46. Columns one and two *see generally* HYMAN, *supra* note 15 for 1965-1992, Regulatory Research Associates, *Regulatory Focus* (Aug. 26, 2002) for 1993-2001. Column three *see generally* Standard & Poor's.

47. Additional information corresponds to its relative lettered item. (a) Average of cases decided; (b) Average of S&P weekly indices; (c) No reported decisions, average of 1966 and 1968; (d) Average yield, Moody's A-rated electric utility bonds.

1980	10.2	14.1	11.2	13.3
1981	11.1	15.1	13.2	16.0
1982	11.7	15.8	12.5	15.9
1983	11.7	15.5	11.1	13.7
1984	11.8	15.4	12.3	14.0
1985	12.0	15.2	10.7	12.5
1986	11.2	14.1	8.1	9.6
1987	10.5	13.0	8.8	10.1
1988	10.6	12.9	9.1	10.5
1989	10.7	12.8	8.6	9.8
1990	10.1	12.5	8.8	9.9
1991	10.5	12.6	8.2	9.4
1992	10.1	12.1	7.6	8.7
1993	9.5	11.4	6.5	7.6
1994	9.3	11.3	7.4	8.3
1995	9.4	11.6	7.0	7.9
1996	9.2	11.4	6.8	7.8
1997	9.2	11.4	6.7	7.6
1998	9.4	11.7	5.7	7.0
1999	8.8	10.8	6.2	7.6
2000	9.2	11.4	6.2	8.2
2001	9.0	11.1	5.6	7.7

Figure 9
Returns Allowed vs. Interest Rates



The cost of capital procedure itself could produce misleading conclusions. Cost of capital witnesses will pounce on the conditions that make investment attractive and use them to make the investment unattractive. Generally, rate case witnesses derive returns from market prices, and then apply those returns to the book equity of the utility. Investors, however, expect returns on the market value (what they pay) of investment, not on the underlying book value of the shares that they purchase. An investor who hopes to earn an 8% return on a share that costs ten dollars (but has a book value of seven dollars) expects to make eighty cents (not fifty-six cents) per year. The rate case witness, however,

will apply that expectation of 8% to book value in determining how much the utility should earn.[48] The calculation will produce less than the expected level of income, causing the shares to decline. Of course, to many players, that is part of the rate case cycle, and once the returns drive the shares below book value, then the investor derives a benefit from the calculation. The fact that the utility probably will not earn the allowed return exacerbates the problem for investors, who over time, have not managed to earn a return on investment as high as the return the utility earns on book value. A single-digit allowed return, distinctly possible in the current interest rate environment, would threaten the viability of utility dividends. With little growth plus lower dividend expectations, stocks would head down.

The price freezes in place worsen the picture. Rather than receiving an inadequate return on new investment during a price freeze, the utility may earn no return on new investment. That is if the investment does not generate sufficient revenues from consumers. The freeze may discourage capital investment now, which may defer the spending until the end of the freeze when it piles up on top of then-current spending needs. The price freeze may shift burdens to future customers, or it may lead to service degradation, which the customer pays for through inconvenience or increased cost of doing business.[49] Either way, regulators that must deal with rate hikes to cover past deferrals plus future needs may balk at the request. The utilities may have to develop new financing mechanisms that permit them to make and recover needed expenditures without triggering the ire of regulators who thought that "deregulation" would lead to a better world.

Price caps or rate moratoria apply to roughly 30% of the sales of investor-owned utilities. Another 15% or so of sales are made under plans that allow price adjustments for given events. These numbers exclude California. Price caps cover sales in most of the northeastern quadrant of the USA. Utilities operating under price caps may feel pressure to keep down capital expenditures and maintenance in order to maintain a satisfactory profit. The price caps, however, will end, principally in 2003 to 2006, making a spate of rate cases

48. Roger Morin, in his classic analysis of the problem, observed:

> One seemingly potent argument in favor of market value . . . is that if cost of capital is not formulated in terms of current market costs, there is no assurance that the commitment of funds to investment . . . will earn a rate sufficient to cover these costs . . . .
>
> It can be shown however that if the regulatory authority adds the cost of the additional capital . . . into allowed rate of return, and if there is no regulatory lag, the utility will realize an appropriate compensatory return . . . .

ROGER A. MORIN, UTILITIES' COST OF CAPITAL 266-7 (Public Utilities Reports 1984). The problem, however, is that there is regulatory lag, and there is a good chance that the regulators will not include incremental costs.

49. In 1997, The Electric Power Research Institute (EPRI) estimated cost of outages to consumers at $2.20 per kWh. Using that figure for run-of-the-mill outages (0.1% of production) produces a cost to the economy of $7 billion per year. EPRI, however, also asserted that the costs of reliability below what customers required, cost the economy $26 billion per year. *Powering Progress, and Background Report: A Preliminary Vision of Opportunities* 2-5 (Electric Power Research Institute 1997). Subsequently, other sources have claimed that inadequate electric service costs the economy as much at $100 billion per year. Bruce Humphrey, *Mixed Signals Cloud Reliability Picture*, PLATTS ENERGY BUSINESS & TECHNOLOGY, 49 (2002).

likely just as wholesale power prices begin to recover from the lows established during the generating glut.[50] (Tables R and S)

Table R[51]
Phase Out of Price Caps[52]
(% of Sales Capped)

	Price Caps Phased Out in Year	Cumulative Phase Out
2003	18	18
2004	12	30
2005	17	47
2006	25	72
2007	11	83
2008 and later	17	100

Table S[53]
Historic and Forward Energy Prices
(1998-2004)

	On-Peak Power Prices ($/MWH)	Natural Gas Prices ($/MM BTU)
1998	$35.95	$2.14
1999	38.34	2.33
2000	60.97	4.72
2001	58.65	4.39
2002	29.11	3.23
2003	33.73	3.91
2004	34.51	3.87

The current regulatory framework, with its emphasis on return rather than price, provides the utility with little incentive to find better, more efficient ways to serve the customer. If the utility does innovate successfully, the regulator lowers prices. If it plows ahead in an inefficient (but not obviously so) manner, the regulator raises prices to cover costs. Under the price freeze, the utility has an incentive to cut costs now, but not to consider future requirements of

50. For comments on the direction of prices *see generally* Raymond C. Niles, *Weekly Energy Wire*, SALOMON SMITH BARNEY, 2 (Dec. 12, 2002) [hereinafter Niles].

51. Regulatory Research Associates, *Regulatory Focus* (Aug. 26, 2002); EEI, *supra* note 32.

52. Percentage of price-capped sales as of 2002 phased out in given year. Sales to ultimate customers. Investor-owned utilities.

53. Niles, *supra* note 50.

customers. With a need to attract capital, but with a pricing formula that could cause investors to shy away, and a clear challenge to serve customers better in a changing market, the industry might do better for itself and for consumers within a framework that encourages efficiency.

Finally, the present regulatory framework puts emphasis on using volume charges to pay for essentially fixed costs.[54] In the new world, the wires company really provides access to energy services provided by others. It should be indifferent to whether the consumer uses more or less energy, unless that usage affects the plant or operating costs of its delivery mechanism. Furthermore, the distributor should not face disincentives to helping the customer to reduce usage, especially if that reduction would lower system-wide costs. The present pricing structure too, may discourage the placement of distributed resources within the network even though those resources might help the utility lower system-wide access costs. With more spending required, and more emphasis on demand-side resources likely,[55] the distribution utility needs to operate under a regulatory system more attuned to the new environment. Basing the revenue on volume has the makings of a losing proposition for the wires utilities as well as for the customers. It charges for the wrong product and sends the wrong signals.

Perhaps the industry needs to put greater emphasis on access rather than volume, on incentives that reward it for finding the most efficient means of serving the customer, and most important, for giving customers what they want.

VII. CONCLUSION

The glamorous generators and marketers, the darlings of deregulation, have crashed. Cash starved enterprises have put foreign and domestic assets on the block for sale. The Federal Energy Regulatory Commission has enmeshed the transmission sector in more rules than existed before restructuring, possibly shrinking business opportunities. What is left for investors?

The wires business, especially at the local level, retains the characteristics of the old utility. In the post-bubble market it could attract investors. Fortunately, the industry has the ability to earn returns that match or exceed market expectations because it will have to attract funds for capital expenditures. Unfortunately, though, some of the same factors that make the industry attractive to investors could lead to regulatory actions that would quickly eliminate the attractiveness and leave investors wondering how the safe end of the business proved as unsafe as the exciting part.

Clearly, the so-called "deregulation" effort has not produced the expected results, and requires reworking. The regulated effort, however, may not produce the expected results, either, without revision, preferably before the need becomes urgent.

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54. Shimon Awerbuch, *Pricing Reform for the Local Disco: Setting Rates That Will Support Distributed Generation*, PUB. UTILS. FORTNIGHTLY, July 1, 2000, at 42.

55. Notice of Proposed Rulemaking, *Remedying Undue Discrimination Through Open Access Transmission Service and Standard Electricity Market Design*, 67 Fed. Reg. 55,452 (July 31, 2002) (to be codified at 18 C.F.R. pt. 35).