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Why Are Allowed Rates of Returns Too High?

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Rate of Return Topics

- Allowed Returns on Equity
- Long-Term Interest Rates
- Utility Risk
- DCF Equity Cost Rates
- Risk Premiums
- Equity Cost Rate Test
- The Impact of the New Tax Law

Allowed Returns on Equity

Allowed Returns Below 10%

Despite some resistance, Some Public Utility Commissions are setting Allowed Returns Below 10%!

State	Date of Decision	Utility	Type	Docket, Case #	ROE Allowed
NY	8/4/2003	St. Lawrence Gas Co. Inc.	Gas	CASE 02-G-1275; CASE 02-G-1011	9.8
NJ	8/1/2003	Jersey Central Power & Light Co.	Electric	DOCKET NO. ER02080506; DOCKET NO. ER02080507; DOCKET NO. EO02070417; DOCKET NO. ER02030173; DOCKET NO. ER95120633	9.5
NJ	8/1/2003	Public Service Electric & Gas Co.	Electric	DOCKET NO. ER02050303; DOCKET NO. ER02080604; DOCKET NO. EM00040253; DOCKET NO. ET01120830; DOCKET NO. EO02080610; DOCKET NO. EO01120832; DOCKET NO. EO02110854; DOCKET NO. GR01040280	9.75
NJ	7/21/2003	Rockland Electric Co.	Electric	DOCKET NO. ER02080614; DOCKET NO. ER02100724	9.75
AR	7/17/2003	Arkansas Western Gas Co.	Gas	DOCKET NO. 02-227-U	9.9
TN	6/27/2003	Tennessee-American Water Co.	Water	DOCKET NO. 03-00118	9.9
WY	4/30/2003	Lower Valley Energy, Inc.	Gas	DOCKET NO. 30018-GR-02-15	9.21
NY	3/7/2003	Rochester Gas & Electric Corp.	Gas, Electric	CASE 02-E-0198; CASE 02-G-0199	9.96
FL	2/10/2003	Cypress Lakes Utilities	Water	DOCKET NO. 020407-WS	9.93
AZ	4/17/2002	Xcel Energy-Black Mountain Gas Co.	Gas	Docket No. G-01444A-01-0263	9.85

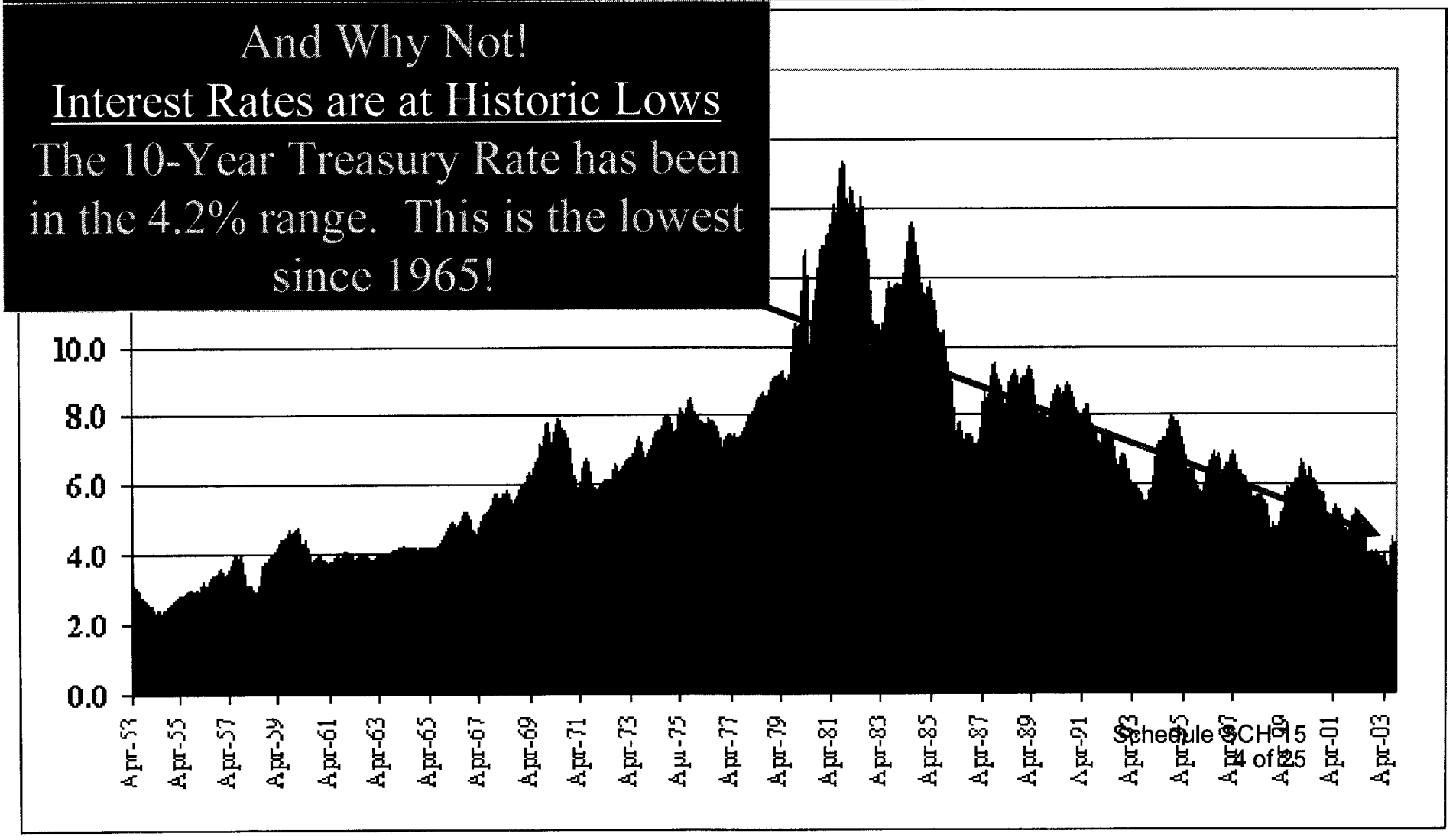
Interest Rates

Ten-Year Treasury Rate

And Why Not!

<u>Interest Rates are at Historic Lows</u>

The 10-Year Treasury Rate has been in the 4.2% range. This is the lowest since 1965!



Utility Risk

And Despite Deregulation, Utilities are not Riskier on a Relative Basis!
Electric, Gas, and Water Utilities are Among the Lowest Risk Businesses As Measured by Beta of the 100 Industries Covered by *Value Line*

Industry Name	# of Firms	Beta
E-Commerce	22	1.29
Internet	14	1.27
Semiconductor Cap Equip	2	1.27
Wireless Networking	27	1.20
Semiconductor	191	1.18
Telecom. Services	20	1.16
Telecom. Equipment	71	1.14
Utility (Foreign)	7	1.11
Computer Software & Svcs	137	1.10
Computer & Peripherals	17	1.05
Advertising	18	1.04
Cable TV	36	1.04
Foreign Telecom.	31	1.03
Bank (Foreign)	13	0.99
Securities Brokerage	15	0.97
Retail (Special Lines)	185	0.97
Investment Co. (Foreign)	81	0.96
Oilfield Services/Equip.	91	0.95
Bank (Canadian)	173	0.92
Electronics	29	0.92
Toiletries/Cosmetics	35	0.91
Steel (Integrated)	12	0.91
Air Transport	81	0.90
Retail Store	31	0.89
Foreign Electron/Entertn	13	0.89
Chemical (Basic)	15	0.87
Financial Svcs. (Div.)	185	0.87
Electrical Equipment	81	0.86
Entertainment	91	0.85
Industrial Services	173	0.82
Auto Parts (OEM)	29	0.82
Metals & Mining (Div.)	35	0.81
Home Appliance	12	0.81
Recreation	81	0.86
Trucking/Transp. Leasing	45	0.8
Medical Services	156	0.85
Building Materials	37	0.85
Bank (Midwest)	32	0.85
Furn./Home Furnishings	33	0.84
Hotel/Gaming	52	0.84
Educational Services	27	0.84
Medical Supplies	182	0.83
Homebuilding	54	0.82
Aerospace/Defense	39	0.82
Maritime	14	0.82
Apparel	41	0.8
Newspaper	18	0.8
Packaging & Container	36	0.8
Diversified Co.	92	0.8
Metal Fabricating	38	0.8
Manuf. Housing/Rec Veh	20	0.81
Chemical (Diversified)	32	0.80
Insurance (Prop/Casualty	56	0.79
Textile	25	0.79
Publishing	43	0.78
[illegible]	170	0.78
[illegible] (General)	30	0.78
[illegible] Household Products	29	0.78
[illegible] Forest Products	48	0.78
[illegible]	124	0.78
[illegible]ery	122	0.78
[illegible]an Energy	15	0.77
[illegible]al (Specialty)	78	0.77
[illegible]d	16	0.77
[illegible]ge (Soft Drink)	13	0.76
[illegible]um (Integrated)	42	0.75
[illegible]nt	90	0.75
[illegible] Aggregates	13	0.75
[illegible]Producing)	92	0.71
[illegible]ified	35	0.70
[illegible]	23	0.70
Gi[illegible]	26	0.70
Envi[illegible]	50	0.69
[illegible]	143	0.69
Food Processing	86	0.68
Auto Parts (Replacement)	26	0.67
Natural Gas (Distrib.)	36	0.62
Electric Utility (West)	20	0.61
Gold/Silver Mining	30	0.60
Tobacco	11	0.59
Investment Co.	25	0.58
Electric Utility (East)	34	0.58
Water Utility	13	0.55
Beverage (Alcoholic)	19	0.54
Electric Util. (Central)	31	0.53

Data Source: http://www.stern.nyu.edu/~adamodar/

The Required Return on Equity

The Traditional Methods to Compute the Cost Required Return on Equity are the Discounted Cash Flow (DCF) and Risk Premium (RP) Approaches. The RP Approach Takes Various Forms, Including the Capital Asset Pricing Model (CAPM)

- **Discounted Cash Flow Method**
  - **Dividend Yield Plus Growth**
- **Risk Premium Approaches**
  - **Risk Premium**
  - **CAPM**
  - **APT**

DCF Equity Cost Rates

DCF Estimates are Clearly Below 10%!

	Electric	Gas	Water
Dividend Yield*	4.6%	3.7%	3.1%
Expected Growth**	5.0%	6.0%	5.5%
DCF Cost Rate	9.6%	9.7%	8.6%

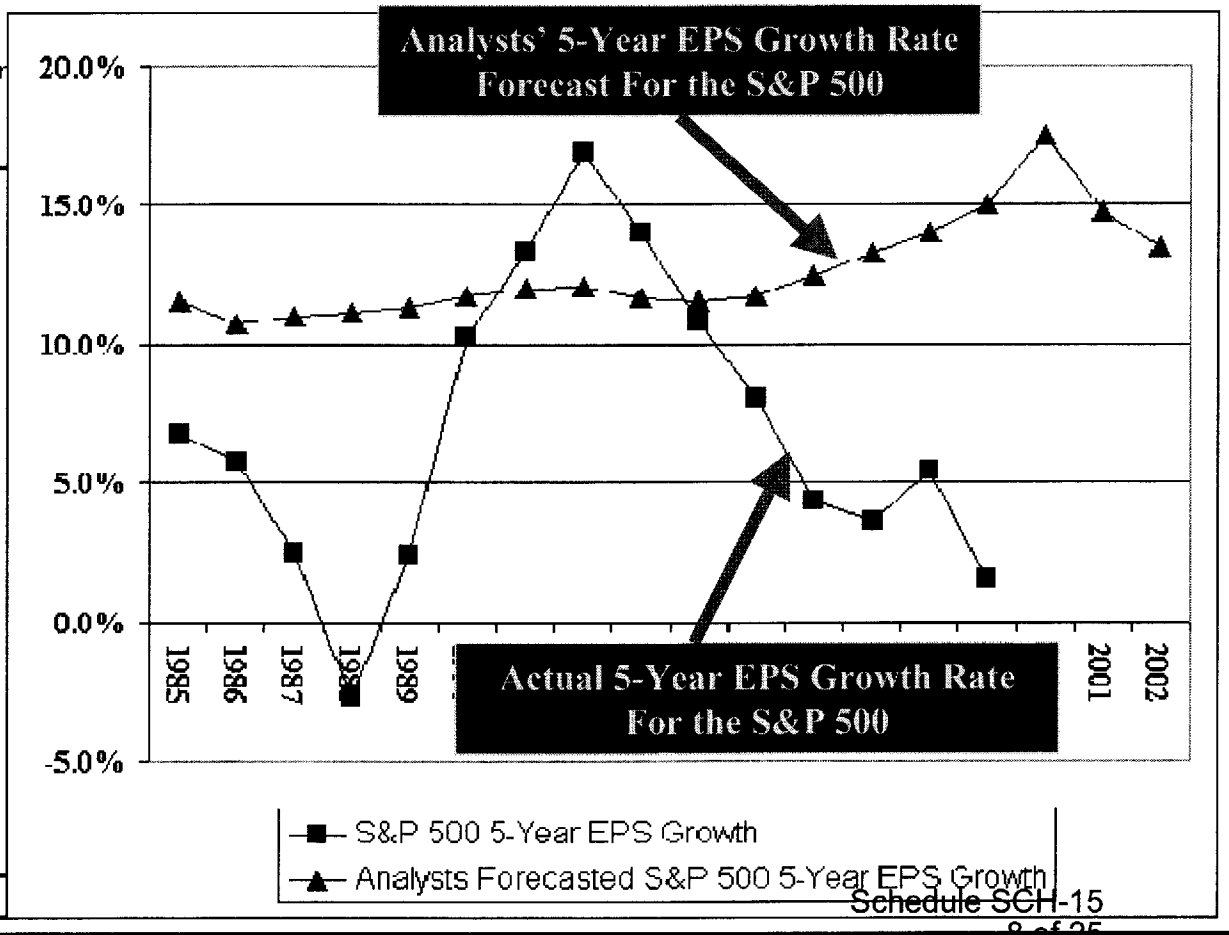
* CA Turner Utility Reports

** Analysts' Average 5-Year Projected EPS Growth Rate, www.yahoo.com

Analysts' EPS Forecasts

And That's Even Using Analysts' 5-Year EPS Forecasts for DCF Growth Which, as Shown Below, are Upwardly Biased Measures of Actual Growth!

	Actual 5-Year S&P 500 EPS Growth	Analysts Projected 5-Year S&P 500 EPS Growth
1985	6.75%	11.50%
1986	5.77%	10.75%
1987	2.48%	11.00%
1988	-2.74%	11.15%
1989	2.40%	11.35%
1990	10.23%	11.75%
1991	13.37%	12.00%
1992	16.89%	12.10%
1993	14.04%	11.65%
1994	10.80%	11.50%
1995	8.02%	11.75%
1996	4.33%	12.50%
1997	3.61%	13.25%
1998	5.43%	14.00%
1999	1.51%	15.00%
2000		17.50%
2001		14.75%
2002		13.50%
Mean	7.38%	11.71%



Schedule SCH-15

Source: J. Randall Woolridge, "Forecasting Through Rose-Colored Glasses: Projected Versus Actual EPS Growth Rates for the S&P 500."

The Market or Equity Risk Premium

Whereas DCF Equity Cost Estimates are Low, the Big Debate in Many Cases Is the Size of the Risk Premium. The Magnitude of The Risk Premium has been Debated in Academic Circles Since Mehra and Prescott's "The Equity Risk Premium Puzzle." The Primary Issue is That Historic Risk Premiums Cannot be Justified Based on Economic Fundamentals

- The Market or Equity Risk Premium is the Difference between the Market Return and the Risk-Free Interest Rate

- Mehra and Prescott (1985)
  - The Equity Risk Premium Puzzle

  - Historic Risk Premiums are Too High Based on Economic Fundamentals

Risk Premium Approaches

There are Three Ways to Measuring the Risk Premium, and There are Problems and Issues with Each. Most Consultants Employ Historical Returns. A Number of Recent Studies are Critical of the Use of Historic Returns to Estimate the Expected Risk Premium.

	Historical Ex Post Excess Returns	Surveys	Ex Ante Models and Market Data
Means of Assessing the Equity-Bond Risk Premium	Historical average is a popular proxy for the ex ante premium – but likely to be misleading	Investor and expert surveys can provide direct estimates of prevailing expected returns/premiums	Current financial market prices (simple valuation ratios or DDM-based measures) can give most objective estimates of feasible ex ante equity-bond risk premium
Problems/Debated Issues	Time variation in required returns and systematic selection and other biases have boosted valuations over time, and have exaggerated realized excess equity returns compared with ex ante expected premiums	Limited survey histories and questions of survey representativeness. Surveys may tell more about hoped-for expected returns than about objective required premiums due to irrational biases such as extrapolation.	Assumptions needed for DDM inputs, notably the trend earnings growth rate, make even these models' outputs subjective. Range of views on this growth rate (plus debates on relevant stock and bond yields) => range of premium estimates.

The Risk Premium

- **Among the Issues in Measuring the Risk Premium are:**
  - Geometric vs. Arithmetic Means
  - Short vs. Long Horizon Models
  - Real vs. Nominal Rates
  - Short vs. Long Risk Premium Expectation

- **The Following Table Shows the Estimated Risk Premiums Classified into Four Different Types of Studies:**
  - Historic – A Straight Historical Comparison of Stock and Bond Returns
  - Social Security (SS) – A Series of Studies Commissioned by SS Involving a Breakdown of Fundamental Factors Driving Risk Premiums
  - Puzzle Research – Studies by Academics and Professionals that Try to Estimate the Risk Premium from Fundamental Data (like SS)
  - Surveys – Surveys of Academics and CFOs
  - Miscellaneous – Other Studies

Straight Historical Return Comparison

SS Estimates Based on Fundamentals are Lower

Puzzle Researchers also find Lower Risk Premiums

Risk Prem. ns

Source	Risk-free Rate	ERP Estimate	Data Period	Methodology
Historical				
Ibbotson Associates	3.8% [7]	8.4%	1926-2002	Historical
Social Security				
Office of the Chief Actuary [1]	2.3%, 3.0% [8]	4.7%, 4.0% [32]	1900-1995, Proj out 75 years	Historical
John Campbell [2]	3% to 3.5% [9]	1.5-2.5%, 3-4% [33]	Projecting o years	Historical & Ratios (Div/Price & Earn Gr)
Peter Diamond	2.2% [10]	<4.8% [34]	Last 200 for eq/ 75 for bonds, Proj 75 yrs	Fundamentals: Div Yld, GDP Gr
Peter Diamond [3]	3.0% [11]	3.0% to 3.5% [35]	Proj ng out 75 years	Fundamentals: Div/Price
John Shoven [4]	3.0%, 3.5% [12]	3.0% to 3.5% [36]	Projecting out 75 years	Fundamentals: P/E, GDP Gr
Puzzle Research				
Robert Arnott and Peter Bernstein	3.7% [13]	2.4% [37]	1802 to 2001, normal	Fundamentals: Div Yld & Gr
Robert Arnott and Ronald Ryan	4.1% [14]	-0.9% [38]	Past 74 years, 74 year projection [56]	Fundamentals: Div Yld & Gr
John Campbell and Robert Shiller	N/A	Negative [39]	1871 to 2000, ten-year projection	Ratios: P/E and Div/Price
James Claus and Jacob Thomas	7.64% [15]	3.39% or less [40]	1985-1998, long-term	Abnormal Earnings model
George Constantinides	2.0% [16]	6.9% [41]	1872 to 2000, long-term	Hist. and Fund.: Price/Div & P/E
Bradford Cornell	5.6%, 3.8% [17]	3.5-5.5%, 5-7% [42]	1926-1997, long run forward-looking	Weighting theoretical and empirical evid
Dimson, Marsh, & Staunton	1.0% [18]	5.4% [43]	1900-2000, prospective	Adj hist ret, Var of Gordon gr model
Eugene Fama and Kenneth French	3.24% [19]	3.03% & 4.78% [44]	Estimate for 1951-2000, long-term	Fundamentals: Dividends and Earnings
Robert Harris and Felicia Marston	8.53% [20]	7.14% [45]	1982-1998, expectational	Fin analysts' est, div gr model
Roger Ibbotson and Peng Chen	2.05% [21]	4% and 6% [46]	1926-2000, long-term	Historical and supply side approaches
Jeremy Siegel	4.0% [22]	-0.9% to -0.3% [47]	1871 to 1998, forward-looking	Fundamentals: P/E, Div Yld, Div Gr
Jeremy Siegel	3.5% [23]	2-3% [48]	1802-2001, forward-looking	
Surveys				
John Graham and Campbell Harvey	? by survey [24]	3-4.7% [49]	2Q 2000 thru 3Q 2002, 1 & 10 year pkg	
Ivo Welch	N/A [25]	7% [50]	30-Year forecast, surveys in 97/98 & 99	Survey of financial economists
Ivo Welch [5]	5% [26]	5.0% to 5.5% [51]	30-Year forecast, survey around August 2001	Survey of financial economists
Misc.				
Barclays Global Investors	5% [27]	2.5%, 3.25% [52]	Long-run (10-year) expected return	Fundamentals: Inc, Earn Gr, & Repricing
Richard Brealey and Stewart Myers	N/A [28]	6 to 8.5% [53]	1926-1997	Predominantly Historical
Burton Malkiel	5.25% [29]	2.75% [54]	1926 to 1997, estimate millennium [57]	Fundamentals: Div Yld, Earn Gr
Richard Wendt [6]	5.5% [30]	3.3% [55]	1900-2000, estim for 2001-2015 period	Linear regression model

Current Survey of CFOs Indicates a 3.8% Risk Premium

Non-Historic Risk Premium Measures are Lower

Source: Richard Derrig and Elisha Dorr, "Equity Risk Premium: Expectations Great and Small"

The Risk Premium

- **Straight Historical Risk Premium Estimates are in the 6-8 Percent Range**

- **Virtually all SS and Puzzle Research Studies Indicate that the Risk Premium is Much Lower**

- **The Updated CFO Survey by Graham and Harvey Indicates a Risk Premium of 3.8%.**

Risk Premiums

A Number of Explanations have been Offered To Explain Why Historic Risk Premiums are Excessive

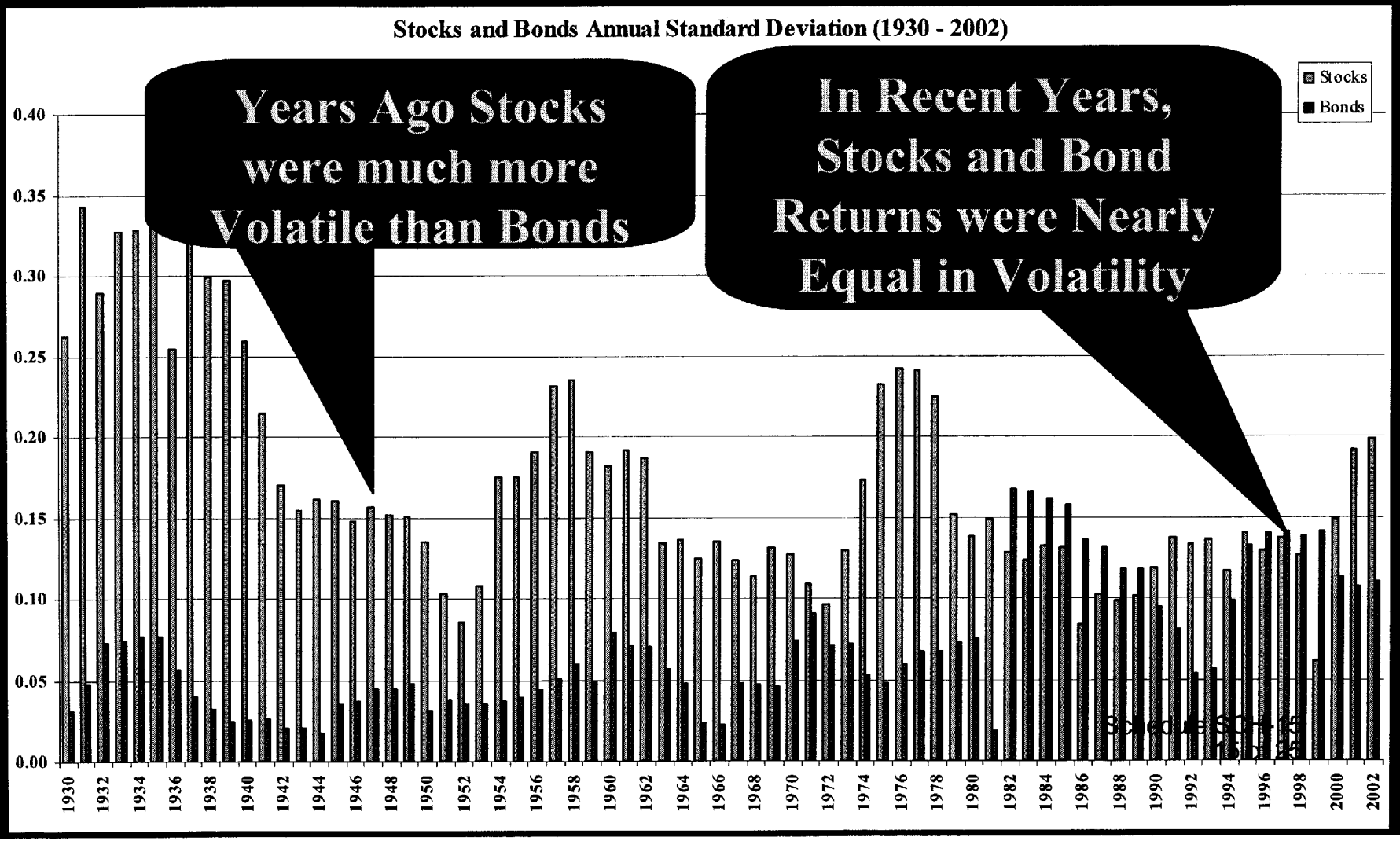
The Problems with Historic Risk Premiums

Change in the Relative Risk of Stocks and Bonds	Stock returns used to be much more volatile than bonds. Today, stock and bond returns are nearly equally volatile.
Survivorship Bias	The only companies that are still in stock market indexes are those that have been successful and are still around. Merged and bankrupt companies did not survive.
Easy Data Bias	Return series tend to start after unusual events (war, market closure, etc.) when assets are cheap.
Peso Problem	The pricing in US markets is based on what could have happened but did not. The US survived two world wars, and a depression, but did not suffer from hyper inflation, invasion, or other calamities of other countries. Since these did not occur, equity returns have been helped.

Risk Premiums

The Problem with Historic Risk Premiums:

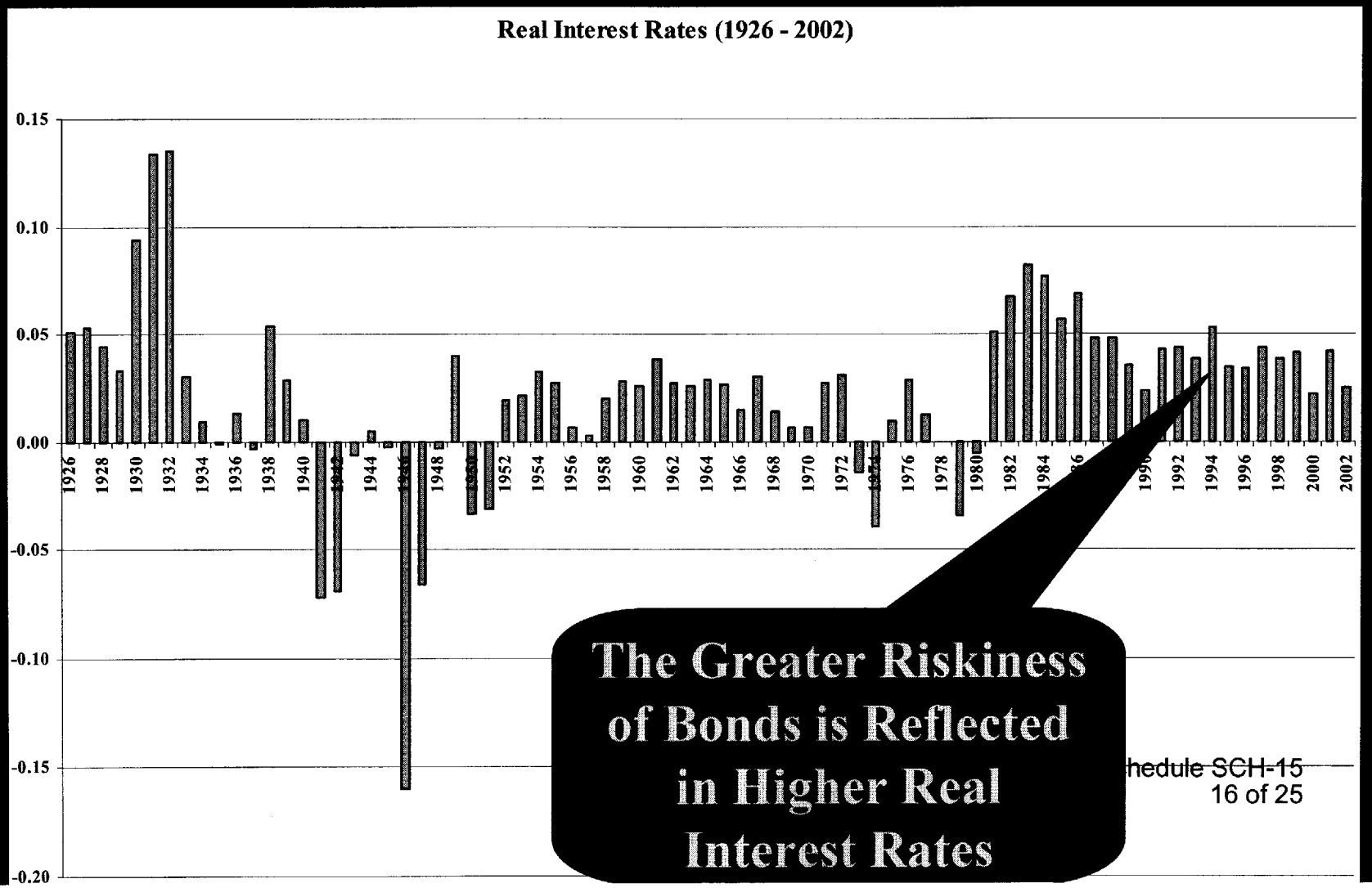
The Change in Risk and Return



Risk Premiums

The Problem: with Historic Risk Premiums:

Real Interest Rates



Risk Premiums

Risk Premiums from *Value Line Investment Survey*

Some Analysts Employ *Value Line's* Projected Four-Year Stock Market Return to Compute an Ex-Ante Risk Premium. However, this Study Shows that *Value Line's* Methodology has Produced Expected Market Returns Well Above Actual Market Returns.

Value Line Forecasted Versus Actual Four-Year Returns
1984-2001

	Projected Four-Year Return	Actual S&P 500 One-Year Return	Actual S&P 500 Four-Year Return	Projected - Actual Four-Year Return
1984	23.30%	6.27%	14.99%	8.31%
1985	20.03%	31.73%	17.69%	2.34%
1986	14.48%	18.67%	17.68%	-3.20%
1987	14.68%	5.25%	11.87%	2.82%
1988	18.67%	16.61%	18.04%	0.63%
1989	16.80%	31.69%	15.69%	1.11%
1990	20.88%	-3.11%	10.62%	10.26%
1991	19.00%	30.47%	11.87%	7.13%
1992	17.70%	7.62%	13.36%	4.34%
1993	14.96%	10.08%	17.20%	-2.24%
1994	15.61%	1.32%	22.96%	-7.35%
1995	15.14%	37.58%	30.51%	-15.37%
1996	15.80%	22.96%	26.39%	-13.20%
1997	13.20%	33.36%	17.20%	-4.00%
1998	9.91%	28.58%	5.66%	4.24%
1999	14.23%	21.04%	-6.78%	21.01%
2000	18.57%	9.11%	14.55% *	33.12%
2001	17.20%	-11.88%	-17.46% **	34.35%
2002		-22.10%	-22.10%	

4.68%

* Three-Year Return
** Two-Year Return

Data Sources: Value Line Investment Survey, Various Issues
www.bearx.com

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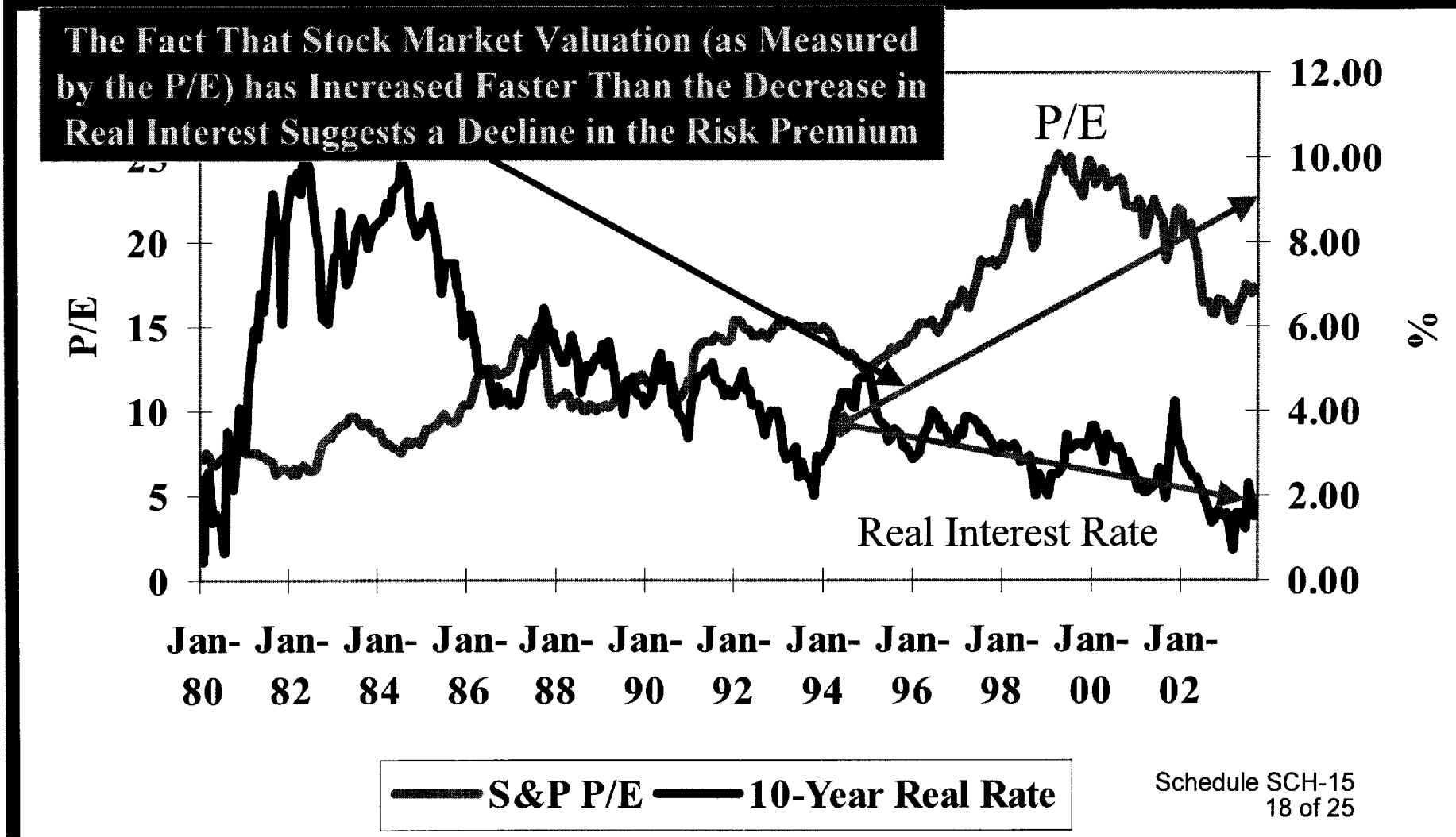
Source: J. Randall Woolridge, "Pitfalls in Using Value Line's Expected Stock Market Returns in Estimating an Equity Risk Premium."

Risk Premiums

Risk Premium Equity Cost Rate



Schedule SCH-15
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Source: J. Randall Woolridge, "The Equity Risk Premium: Evidence from Market Valuation and Real Interest Rates."

Risk Premiums

Risk Premium Equity Cost Rate

Using a 5.0% Long-Term Risk-Free Interest Rate, a Risk-Adjustment Factor (or Beta of 0.70), and a Risk Premium of 3.45% (from the Updated Fama French Study), A Risk-Premium Equity Cost Rate of 7.40% is Indicated.

Risk-Free Interest Rate*	5.0%
+	
Risk-Adjustment Factor	.70
*	
Risk Premium**	3.45%
=	
Risk Premium Equity Cost Rate	7.40%

* 30-Year Treasury Rate

** Average Beta for Electric, Gas Distribution, and Water Utilities, Value Line Investment Survey

*** Risk Premium from Updated Fama French Study (2002).

Equity Cost Rate Test

And So How Can One Test Whether an Allowed Return on Equity Meets Investors' Return Requirement?
One Rather Simple Test, Described Below, Involves the Relationship Between Return on Equity and the Market-to-Book Ratio

For a given industry, more profitable firms – those able to generate higher returns per dollar of equity – should have higher market-to-book ratios. Conversely, firms which are unable to generate returns in excess of their cost of equity should sell for less than book value.

Profitability	*Value*
If ROE > K	*then Market/Book > 1*
If ROE = K	*then Market/Book = 1*
If ROE < K	*then Market/Book < 1*

"A Note on Value Drivers," Harvard Business School case study.

Equity Cost Rate Test

Returns on Equity and Market-to-Book Ratios for Electric, Gas, and Water Utilities are Provided Below. The Average Return on Equity and Market-to-Book Ratios are 10.6% and 1.87, Respectively. These Results Clearly Show That the Required Return on Common Equity is Well Below the Current Range.

	Electric	Gas	Water	Average
Return on Equity*	10.7%	11.1%	10.0%	10.6%
Market-to-Book Ratio*	1.58	1.71	2.31	1.87

* CA Turner Utility Reports

The New Tax Law has Further Reduced the Cost of Equity Capital

The Impact of the New Tax La

2. The 10% Pre-Tax Return Produces an After-Tax Return of 8.5% Under The New Tax Law

Panel A
Old Tax Law
10% Pre-Tax Return - 5% Dividend Yield & 5% Capital Gain
Tax Rates - Dividends 30% & Capital Gains 20%

	Pre-Tax Return	Tax Rate	After-Tax Return
Dividends	5.00%	30.00%	3.50%
Capital Gain	5.00%	20.00%	4.00%
Total	10.00%		7.50%

Panel B
New Tax Law
10% Pre-Tax Return - 5% Dividend Yield & 5% Capital Gain
Tax Rates - Dividends 15% & Capital Gains 15%

	Pre-Tax Return	Tax Rate	After-Tax Return
Dividends	5.00%	15.00%	4.25%
Capital Gain	5.00%	15.00%	4.25%
Total	10.00%		8.50%

1. Under the Old Tax Law, A 10% Pre-Tax Return Produced an After-Tax Return of 7.5%

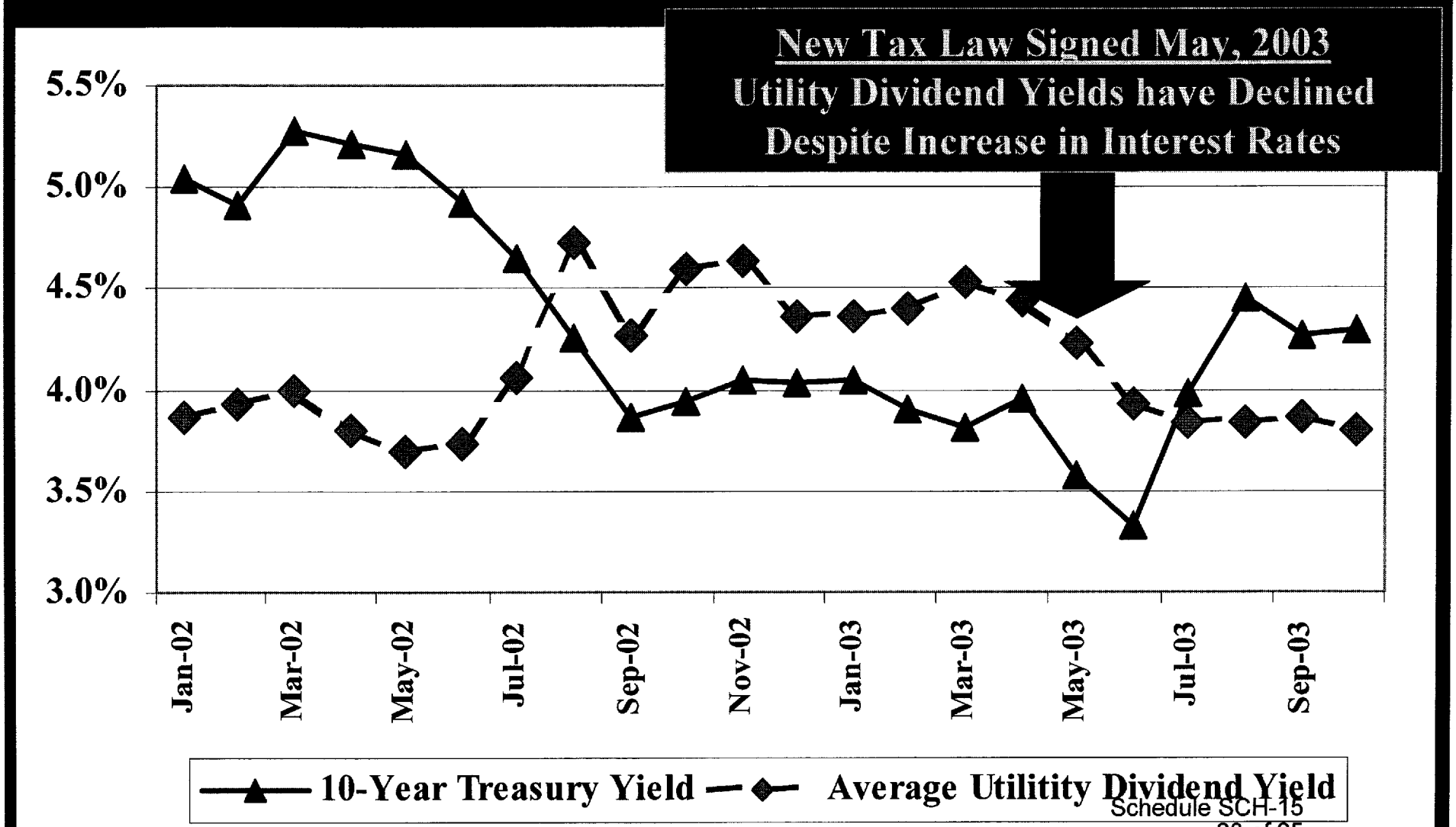
Panel C
The Effect of the New Tax Law on Pre-Tax Returns
After-Tax Return - 3.25% Dividend Yield & 4.25% Capital Gain
Tax Rates - Dividends 15% & Capital Gains 15%

	Pre-Tax Return	Tax Rate	After-Tax Return
Dividends	3.82%	15.00%	3.25%
Capital Gain	5.00%	15.00%	4.25%
Total	8.82%		7.50%

3. Under The New Tax Law, An After-Tax Return of 7.5% is Produced with a Pre-Tax Return of 8.82%. Hence, The New Tax Law Reduces the Pre-Tax Required Return by 1.18%

Assume that a utility has a 10% expected return – 5.0% in dividends and 5.0% in capital gains. The new tax law reduces the double-taxation of dividends by cutting the tax rate on dividends from 30 percent (the marginal tax bracket for the average individual taxpayer) to 15 percent. Panel A shows that under the old tax law a 10.0% pre-tax return provided for a 7.5% after-tax return. Panel B shows that under the new tax law, with tax rates of 15% on both dividends and capital gains, the 10% pre-tax return is worth 8.5% on an after-tax basis. In Panel C, I have held the after-tax return constant (at 7.5%) to illustrate the effect of the new tax law on required pre-tax returns. Assuming that the entire after-tax 1% return difference (7.5% to 8.5%) is attributed to the lower taxation of dividends, the 10.0% pre-tax return under the new law is now only 8.82%. In other words, to generate an after-tax return of 7.5%, the new tax law reduced the required pre-tax return from 10.0% to 8.82%.

The Impact of the New Tax Law



Rate of Return Summary

- Allowed Returns on Equity Above 10% are Clearly Excessive

- Interest Rates are at Historic Lows, and Utility Risk is Still Much Lower than Most Industries

- DCF Equity Cost Rates are in the 8-9 Percent Range

- The Big Issue is the Size of the Risk Premium. Most Recent Studies Indicate that Historic Risk Premiums are Excessive. These Studies Suggest a Risk Premium of 3-4 Percent above Long-Term Treasuries.

- Returns on Equity and Market-to-Book Ratios also Support Utility Equity Cost Rates Below 10%

- The New Tax Law has Lowered Equity Cost Rates for Utilities -- by up to 100 Basis Points

J. Randall Woolridge, Ph.D.

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J. Randall Woolridge is a Professor of Finance and the Goldman Sachs & Co. and Frank P. Smeal Endowed University Fellow in the Smeal College of Business at the Pennsylvania State University. He is also the Director of the Smeal College Trading Room. Professor Woolridge's teaching and research interests are in corporate finance and investments, with an emphasis on the valuation consequences of corporate strategic investment and financial decisions. He has published over 35 articles in leading academic and professional journals, including the *Journal of Finance*, *Journal of Financial Economics*, *Strategic Management Journal*, and the *Harvard Business Review*. Dr. Woolridge's research has been highlighted extensively in the financial press. He has been quoted in the *Wall Street Journal*, *Barron's*, *Financial Times*, *New York Times*, *Washington Post*, *Fortune*, *Forbes*, *Business Week*, *The Economist*, *Financial World*, *CFO Magazine*, *Investors' Business Daily*, *Worth Magazine*, *USA Today*, and other publications. In addition, Dr. Woolridge has appeared as a guest on CNN's *Money Line* and CNBC's *Morning Call* and *Business Today*.

Professor Woolridge has consulted on financial issues with businesses, investment banks, and government agencies. He has testified on financial issues in over 50 public utility rate cases in seven states and the District of Columbia. In addition, Dr. Woolridge has participated in executive development programs and seminars for major corporations, financial institutions, and universities in 25 countries in North and South America, Europe, Asia and Africa

The second edition of Professor Woolridge's popular stock valuation book, *The StreetSmart Guide to Valuing a Stock* (McGraw-Hill, 2003), was recently released. He has also co-authored *Spinoffs and Equity Carve-Outs: Achieving Faster Growth and Better Performance* (Financial Executives Research Foundation, 1999) as well as a new textbook entitled *Modern Corporate Finance, Capital Markets, and Valuation* (Kendall Hunt, 2003). Dr. Woolridge is a founder and a managing director of www.valuepro.net - a stock valuation website.

Kansas City Power & Light Co.
Discounted Cash Flow Analysis
Summary Of DCF Model Results

Company	Traditional Constant Growth DCF Model	Constant Growth DCF Model Long-Term GDP Growth	Low Near-Term Growth Two-Stage Growth DCF Model
1 Alliant Energy Co.	8.3%	10.3%	10.3%
2 Ameren	9.1%	11.7%	10.8%
3 American Elec. Pwr.	9.3%	11.3%	11.2%
4 CH Energy Group	8.8%	11.2%	10.5%
5 Cent. Vermont P.S.	12.4%	11.5%	10.7%
6 Con. Edison	9.2%	11.8%	11.1%
7 DTE Energy Co.	10.3%	11.6%	10.9%
8 Duquesne Light	11.4%	12.5%	11.6%
9 Empire District	10.7%	12.5%	11.6%
10 Energy East Corp.	9.7%	11.8%	11.5%
11 FirstEnergy	11.0%	10.2%	10.1%
12 Green Mtn. Power	8.7%	10.6%	10.7%
13 Hawaiian Electric	9.0%	11.1%	10.4%
14 MGE Energy, Inc.	10.5%	11.1%	10.5%
15 NiSource Inc.	8.4%	10.8%	10.4%
16 NSTAR	10.2%	11.0%	11.0%
17 Pinnacle West	10.8%	11.9%	11.6%
18 Progress Energy	9.3%	12.5%	11.8%
19 Puget Energy, Inc.	10.1%	11.3%	10.9%
20 SCANA Corp.	9.8%	11.2%	11.1%
21 Southern Co.	10.3%	11.6%	11.4%
22 Vectren Corp.	9.5%	11.3%	10.9%
23 Westar Energy	9.3%	11.6%	11.3%
24 Xcel Energy Inc.	10.1%	11.5%	11.3%
GROUP AVERAGE	9.8%	11.4%	11.0%
GROUP MEDIAN	9.7%	11.4%	10.9%

Sources: Value Line Investment Survey, Electric Utility (East), Jun 2, 2006; (Central), Jun 30, 2006; (West), Aug 11, 2006.

NOTE: SEE PAGE 5 OF THIS SCHEDULE FOR FURTHER EXPLANATION OF EACH COLUMN.

Kansas City Power & Light Co.
Discounted Cash Flow Analysis
Traditional Constant Growth DCF Model

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
				Projected Growth Rate Analysis										
				Year 2009 "BR" Growth Rate Calculation										
Company	Recent Price(P0)	Next Year's Div(D1)	Dividend Yield	DPS	EPS	Retention Rate (B)	NBV	ROE (R)	B*R Growth	Zacks	Value Line	GDP Growth	Average Growth *(Cols 9-12)*	**ROE** K=Div Yld+G *(Cols 3+13)*
1 Alliant Energy Co.	34.20	1.25	3.65%	1.55	2.45	36.73%	26.35	9.30%	3.42%	4.00%	4.50%	6.60%	4.63%	8.3%
2 Ameren	50.19	2.54	5.06%	2.54	3.30	23.03%	35.30	9.35%	2.15%	6.00%	1.50%	6.60%	4.06%	9.1%
3 American Elec. Pwr.	34.34	1.60	4.66%	1.90	3.25	41.54%	29.50	11.02%	4.58%	3.30%	4.00%	6.60%	4.62%	9.3%
4 CH Energy Group	47.17	2.16	4.58%	2.20	3.25	32.31%	35.25	9.22%	2.98%	NA	3.00%	6.60%	4.19%	8.8%
5 Cent. Vermont P.S.	18.67	0.92	4.93%	0.92	1.75	47.43%	18.95	9.23%	4.38%	NA	11.50%	6.60%	7.49%	12.4%
6 Con. Edison	44.23	2.32	5.24%	2.38	3.20	25.63%	34.30	9.33%	2.39%	3.90%	3.00%	6.60%	3.97%	9.2%
7 DTE Energy Co.	40.92	2.06	5.03%	2.10	3.75	44.00%	35.75	10.49%	4.62%	5.50%	4.50%	6.60%	5.30%	10.3%
8 Duquesne Light	16.83	1.00	5.94%	1.00	1.50	33.33%	10.60	14.15%	4.72%	NA	5.00%	6.60%	5.44%	11.4%
9 Empire District	21.62	1.28	5.92%	1.28	1.50	14.67%	16.75	8.96%	1.31%	NA	6.50%	6.60%	4.80%	10.7%
10 Energy East Corp.	23.73	1.24	5.23%	1.40	2.00	30.00%	21.25	9.41%	2.82%	4.50%	4.00%	6.60%	4.48%	9.7%
11 FirstEnergy	53.38	1.94	3.63%	2.30	4.50	48.89%	38.75	11.61%	5.68%	5.70%	11.50%	6.60%	7.37%	11.0%
12 Green Mtn. Power	31.07	1.24	3.99%	1.54	2.55	39.61%	24.75	10.30%	4.08%	NA	3.50%	6.60%	4.73%	8.7%
13 Hawaiian Electric	27.26	1.24	4.55%	1.24	1.75	29.14%	17.00	10.29%	3.00%	5.20%	3.00%	6.60%	4.45%	9.0%
14 MGE Energy, Inc.	30.65	1.39	4.53%	1.44	2.45	41.22%	19.05	12.86%	5.30%	NA	6.00%	6.60%	5.97%	10.5%
15 NiSource Inc.	21.86	0.92	4.21%	1.00	1.75	42.86%	21.25	8.24%	3.53%	3.30%	3.50%	6.60%	4.23%	8.4%
16 NSTAR	28.34	1.26	4.45%	1.50	2.50	40.00%	18.75	13.33%	5.33%	5.00%	6.00%	6.60%	5.73%	10.2%
17 Pinnacle West	40.35	2.13	5.28%	2.43	3.55	31.55%	40.20	8.83%	2.79%	6.80%	6.00%	6.60%	5.55%	10.8%
18 Progress Energy	42.45	2.50	5.89%	2.62	3.40	22.94%	36.65	9.28%	2.13%	3.60%	1.50%	6.60%	3.46%	9.3%
19 Puget Energy, Inc.	21.26	1.00	4.70%	1.10	1.75	37.14%	21.25	8.24%	3.06%	7.00%	5.00%	6.60%	5.41%	10.1%
20 SCANA Corp.	38.73	1.80	4.65%	2.10	3.50	40.00%	30.00	11.67%	4.67%	4.70%	4.50%	6.60%	5.12%	9.8%
21 Southern Co.	32.33	1.62	5.01%	1.88	2.75	31.64%	18.60	14.78%	4.68%	4.80%	5.00%	6.60%	5.27%	10.3%
22 Vectren Corp.	26.83	1.27	4.73%	1.39	2.05	32.20%	18.35	11.17%	3.60%	5.00%	4.00%	6.60%	4.80%	9.5%
23 Westar Energy	21.75	1.08	4.97%	1.24	1.80	31.11%	19.35	9.30%	2.89%	3.30%	4.50%	6.60%	4.32%	9.3%
24 Xcel Energy Inc.	19.16	0.93	4.85%	1.10	1.75	37.14%	16.00	10.94%	4.06%	4.50%	6.00%	6.60%	5.29%	10.1%
GROUP AVERAGE	31.97	1.53	4.82%	1.67	2.58	34.75%	25.16	10.47%	3.67%	4.78%	4.90%	6.60%	5.03%	9.8%
GROUP MEDIAN			4.79%											9.7%

Sources: Value Line Investment Survey, Electric Utility (East), Jun 2, 2006; (Central), Jun 30, 2006; (West), Aug 11, 2006.

NOTE: SEE PAGE 5 OF THIS SCHEDULE FOR FURTHER EXPLANATION OF EACH COLUMN.

Kansas City Power & Light Co.
Discounted Cash Flow Analysis
Constant Growth DCF Model
Long-Term GDP Growth

	(15)	(16)	(17)	(18)	(19)
Company	Recent Price(P0)	Next Year's Div(D1)	Dividend Yield	GDP Growth	**ROE** K=Div Yld+G *(Cols 17+18)*
1 Alliant Energy Co.	34.20	1.25	3.65%	6.60%	10.3%
2 Ameren	50.19	2.54	5.06%	6.60%	11.7%
3 American Elec. Pwr.	34.34	1.60	4.66%	6.60%	11.3%
4 CH Energy Group	47.17	2.16	4.58%	6.60%	11.2%
5 Cent. Vermont P.S.	18.67	0.92	4.93%	6.60%	11.5%
6 Con. Edison	44.23	2.32	5.24%	6.60%	11.8%
7 DTE Energy Co.	40.92	2.06	5.03%	6.60%	11.6%
8 Duquesne Light	16.83	1.00	5.94%	6.60%	12.5%
9 Empire District	21.62	1.28	5.92%	6.60%	12.5%
10 Energy East Corp.	23.73	1.24	5.23%	6.60%	11.8%
11 FirstEnergy	53.38	1.94	3.63%	6.60%	10.2%
12 Green Mtn. Power	31.07	1.24	3.99%	6.60%	10.6%
13 Hawaiian Electric	27.26	1.24	4.55%	6.60%	11.1%
14 MGE Energy, Inc.	30.65	1.39	4.53%	6.60%	11.1%
15 NiSource Inc.	21.86	0.92	4.21%	6.60%	10.8%
16 NSTAR	28.34	1.26	4.45%	6.60%	11.0%
17 Pinnacle West	40.35	2.13	5.28%	6.60%	11.9%
18 Progress Energy	42.45	2.50	5.89%	6.60%	12.5%
19 Puget Energy, Inc.	21.26	1.00	4.70%	6.60%	11.3%
20 SCANA Corp.	38.73	1.80	4.65%	6.60%	11.2%
21 Southern Co.	32.33	1.62	5.01%	6.60%	11.6%
22 Vectren Corp.	26.83	1.27	4.73%	6.60%	11.3%
23 Westar Energy	21.75	1.08	4.97%	6.60%	11.6%
24 Xcel Energy Inc.	19.16	0.93	4.85%	6.60%	11.5%
GROUP AVERAGE	31.97	1.53	4.82%	6.60%	11.4%
GROUP MEDIAN			4.79%		11.4%

Sources: Value Line Investment Survey, Electric Utility (East), Jun 2, 2006; (Central), Jun 30, 2006; (West), Aug 11, 2006.

NOTE: SEE PAGE 5 OF THIS SCHEDULE FOR FURTHER EXPLANATION OF EACH COLUMN.

Kansas City Power & Light Co.
Discounted Cash Flow Analysis
Low Near-Term Growth
Two-Stage Growth DCF Model

	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
				CASH FLOWS							
Company	Next Year's Div	2009 Div	Annual Change to 2009	Recent Price	Year 1 Div	Year 2 Div	Year 3 Div	Year 4 Div	Year 5 Div	Year 5-150 Div Growth	ROE=Internal Rate of Return *(Yrs 0-150)*
1 Alliant Energy Co.	1.25	1.55	0.10	34.20	1.25	1.35	1.45	1.55	1.65	6.60%	10.3%
2 Ameren	2.54	2.54	0.00	50.19	2.54	2.54	2.54	2.54	2.71	6.60%	10.8%
3 American Elec. Pwr.	1.60	1.90	0.10	34.34	1.60	1.70	1.80	1.90	2.03	6.60%	11.2%
4 CH Energy Group	2.16	2.20	0.01	47.17	2.16	2.17	2.19	2.20	2.35	6.60%	10.5%
5 Cent. Vermont P.S.	0.92	0.92	0.00	18.67	0.92	0.92	0.92	0.92	0.98	6.60%	10.7%
6 Con. Edison	2.32	2.38	0.02	44.23	2.32	2.34	2.36	2.38	2.54	6.60%	11.1%
7 DTE Energy Co.	2.06	2.10	0.01	40.92	2.06	2.07	2.09	2.10	2.24	6.60%	10.9%
8 Duquesne Light	1.00	1.00	0.00	16.83	1.00	1.00	1.00	1.00	1.07	6.60%	11.6%
9 Empire District	1.28	1.28	0.00	21.62	1.28	1.28	1.28	1.28	1.36	6.60%	11.6%
10 Energy East Corp.	1.24	1.40	0.05	23.73	1.24	1.29	1.35	1.40	1.49	6.60%	11.5%
11 FirstEnergy	1.94	2.30	0.12	53.38	1.94	2.06	2.18	2.30	2.45	6.60%	10.1%
12 Green Mtn. Power	1.24	1.54	0.10	31.07	1.24	1.34	1.44	1.54	1.64	6.60%	10.7%
13 Hawaiian Electric	1.24	1.24	0.00	27.26	1.24	1.24	1.24	1.24	1.32	6.60%	10.4%
14 MGE Energy, Inc.	1.39	1.44	0.02	30.65	1.39	1.41	1.42	1.44	1.54	6.60%	10.5%
15 NiSource Inc.	0.92	1.00	0.03	21.86	0.92	0.95	0.97	1.00	1.07	6.60%	10.4%
16 NSTAR	1.26	1.50	0.08	28.34	1.26	1.34	1.42	1.50	1.60	6.60%	11.0%
17 Pinnacle West	2.13	2.43	0.10	40.35	2.13	2.23	2.33	2.43	2.59	6.60%	11.6%
18 Progress Energy	2.50	2.62	0.04	42.45	2.50	2.54	2.58	2.62	2.79	6.60%	11.8%
19 Puget Energy, Inc.	1.00	1.10	0.03	21.26	1.00	1.03	1.07	1.10	1.17	6.60%	10.9%
20 SCANA Corp.	1.80	2.10	0.10	38.73	1.80	1.90	2.00	2.10	2.24	6.60%	11.1%
21 Southern Co.	1.62	1.88	0.09	32.33	1.62	1.71	1.79	1.88	2.00	6.60%	11.4%
22 Vectren Corp.	1.27	1.39	0.04	26.83	1.27	1.31	1.35	1.39	1.48	6.60%	10.9%
23 Westar Energy	1.08	1.24	0.05	21.75	1.08	1.13	1.19	1.24	1.32	6.60%	11.3%
24 Xcel Energy Inc.	0.93	1.10	0.06	19.16	0.93	0.99	1.04	1.10	1.17	6.60%	11.3%
GROUP AVERAGE	1.53	1.67	0.05	31.97							11.0%
GROUP MEDIAN											10.9%

Sources: Value Line Investment Survey, Electric Utility (East), Jun 2, 2006; (Central), Jun 30, 2006; (West), Aug 11, 2006.

NOTE: SEE PAGE 5 OF THIS SCHEDULE FOR FURTHER EXPLANATION OF EACH COLUMN.

Kansas City Power & Light Co.
Discounted Cash Flow Analysis
DCF Analysis Column Descriptions

Column 1: Three-month Average Price per Share (May 2006-Jul 2006)

Column 2: Estimated 2007 Dividends per Share from Value Line

Column 3: Column 2 Divided by Column 1

Column 4: Estimated 2010 Dividends per Share from Value Line

Column 5: Estimated 2010 Earnings per Share from Value Line

Column 6: One Minus (Column 4 Divided by Column 5)

Column 7: Estimated 2010 Net Book Value per Share from Value Line

Column 8: Column 5 Divided by Column 7

Column 9: Column 6 Multiplied by Column 8

Column 10: "Next 5 Years" Company Growth Estimate as Reported by Zacks.com

Column 11: "Est'd 03-05 to 09-11" Earnings Growth Reported by Value Line.

Column 12: Average of GDP Growth During the Last 10 year, 20 year, 30 year, 40 year, 50 year, and 58 year growth periods.

Column 13: Average of Columns 9-12

Column 14: Column 3 Plus Column 13

Column 15: See Column 1

Column 16: See Column 2

Column 17: Column 16 Divided by Column 15

Column 18: See Column 12

Column 19: Column 17 Plus Column 18

Column 20: See Column 2

Column 21: See Column 4

Column 22: (Column 21 Minus Column 20) Divided by Three

Column 23: See Column 1

Column 24: See Column 20

Column 25: Column 24 Plus Column 22

Column 26: Column 25 Plus Column 22

Column 27: Column 26 Plus Column 22

Column 28: Column 27 Increased by the Growth Rate Shown in Column 29

Column 29: See Column 12

Column 30: The Internal Rate of Return of the Cash Flows in Columns 23-28 along with the Dividends for the Years 6-150 Implied by the Growth Rates shown in Column 29

Kansas City Power & Light Co.

Risk Premium Analysis

	MOODY'S AVERAGE PUBLIC UTILITY BOND YIELD (1)	AUTHORIZED ELECTRIC RETURNS (2)	INDICATED RISK PREMIUM
1980	13.15%	14.23%	1.08%
1981	15.62%	15.22%	-0.40%
1982	15.33%	15.78%	0.45%
1983	13.31%	15.36%	2.05%
1984	14.03%	15.32%	1.29%
1985	12.29%	15.20%	2.91%
1986	9.46%	13.93%	4.47%
1987	9.98%	12.99%	3.01%
1988	10.45%	12.79%	2.34%
1989	9.66%	12.97%	3.31%
1990	9.76%	12.70%	2.94%
1991	9.21%	12.55%	3.34%
1992	8.57%	12.09%	3.52%
1993	7.56%	11.41%	3.85%
1994	8.30%	11.34%	3.04%
1995	7.91%	11.55%	3.64%
1996	7.74%	11.39%	3.65%
1997	7.63%	11.40%	3.77%
1998	7.00%	11.66%	4.66%
1999	7.55%	10.77%	3.22%
2000	8.14%	11.43%	3.29%
2001	7.72%	11.09%	3.37%
2002	7.53%	11.16%	3.63%
2003	6.61%	10.97%	4.36%
2004	6.20%	10.75%	4.55%
2005	5.67%	10.54%	4.87%
Jun-06	6.11%	10.57%	4.46%
AVERAGE	9.35%	12.49%	3.14%

INDICATED COST OF EQUITY

PROJECTED TRIPLE-B UTILITY BOND YIELD*	6.95%
MOODY'S AVG ANNUAL YIELD DURING STUDY	9.35%
INTEREST RATE DIFFERENCE	-2.40%
INTEREST RATE CHANGE COEFFICIENT	-42.49%
ADUSTMENT TO AVG RISK PREMIUM	1.02%
BASIC RISK PREMIUM	3.14%
INTEREST RATE ADJUSTMENT	1.02%
EQUITY RISK PREMIUM	4.16%
PROJECTED TRIPLE-B UTILITY BOND YIELD*	6.95%
INDICATED EQUITY RETURN	**11.11%**

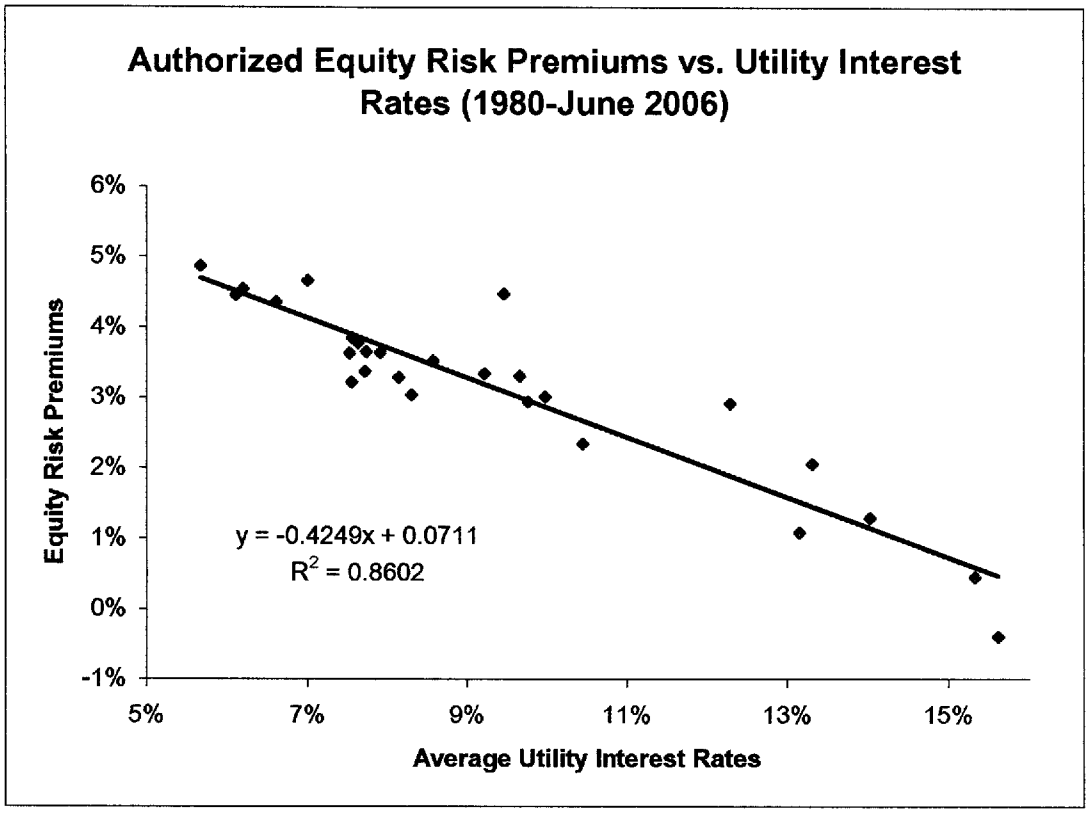
Sources:

(1) Moody's Investors Service

(2) Regulatory Focus, Regulatory Research Associates, Inc.

*Projected triple-B utility bond yield is 125 basis points over projected long-term Treasury rate from Schedule SCH-R-3.

Kansas City Power & Light Co.
Risk Premium Analysis



BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of Kansas City Power & Light Company to Modify Its Tariff to Begin the Implementation of Its Regulatory Plan	)))	Case No. ER-2006-0314

AFFIDAVIT OF SAMUEL C. HADAWAY

STATE OF TEXAS	)	
	)	**ss**
COUNTY OF TRAVIS	)	

Samuel C. Hadaway, being first duly sworn on his oath, states:

1. My name is Samuel C. Hadaway. I am employed by FINANCO, Inc. in Austin, Texas. I have been retained by Great Plains Energy, Inc., the parent company of Kansas City Power & Light Company, as an expert witness to provide cost of capital testimony on behalf of Kansas City Power & Light Company.

2. Attached hereto and made a part hereof for all purposes is my Rebuttal Testimony on behalf of Kansas City Power & Light Company consisting of 27 pages and Schedules SCH-9 through SCH-R-17, all of which having been prepared in written form for introduction into evidence in the above-captioned docket.

3. I have knowledge of the matters set forth therein. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded, including any attachments thereto, are true and accurate to the best of my knowledge, information and belief.

Samuel C. Hadaway
Samuel C. Hadaway

Subscribed and sworn before me this 6th day of September 2006.

JENNIFER LYNNE GARNER
Notary Public
STATE OF TEXAS
My Comm. Exp. 04-11-2010

Notary Public

My commission expires: 4-11-2010