DIRECT TESTIMONY

OF

Travis Allen

Empire District Electric Company

CASE NO. ER-2004-0570

INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. Travis Allen, 200 Madison Street, P.O. Box 2230, Jefferson City MO., 65102.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by the Office of the Public Counsel of the State of Missouri (OPC or Public Counsel), as a Public Utility Financial Analyst.

Q. PLEASE SUMMARIZE YOUR FORMAL EDUCATIONAL BACKGROUND.

A. I earned a Bachelor of Science degree in Business Economics and Finance with a specialization in Financial Markets and Institutions from Southern Illinois University-Edwardsville in December 2001. I earned a Master of Science degree in Business Economics and Finance with a specialization in Finance from Southern Illinois University-Edwardsville in May 2003. During my preparation for these degrees, I received considerable training in cost of capital analysis. Specifically, I developed a comprehensive knowledge and understanding of the Discounted Cash-Flow Model (DCF), the Capital Asset Pricing Model (CAPM), capital structure, and embedded cost rates.

Q. PLEASE DESCRIBE YOUR CONTINUING EDUCATION.

A. I have received general in-house education regarding utility regulation and have received cost of capital training by John A. Tuck and Stephen G. Hill. In addition to this training, I attended a

weeklong course on public utility regulation, sponsored by New Mexico State University and the National Association of Regulatory Utility Commissioners (NARUC). I also attended the FRI Utility Symposium held at the University of Missouri-Columbia. This symposium covered a variety of return on equity and capital structure issues. Currently, I am preparing to sit for the chartered financial analyst (CFA) level one examination.

Q. PLEASE IDENTIFY ALL THE MATERIAL YOU HAVE REVIEWED IN PREPARING FOR THIS DIRECT TESTIMONY FILING.

A. I have reviewed the ValueLine Investment Survey, C.A. Turner Utility Reports, Yahoo Finance, The Wall Street Journal, Standard and Poor's, Moody's Investors Service, Thomson Financial, Stifel, Nicolaus & Company Equity Research Reports, Lehman Brothers Equity Research Reports, Jefferies Equity Research Reports, and A.G. Edwards Equity Research Recent Development Reports. I have also reviewed Empire District Electric Company's responses to OPC data requests 2001-2056 and all of the Company's direct testimony filings in this case. In addition, I have reviewed the following publications:

Electric Utility Restructuring: A Guide to the Competitive Era, Peter Fox-Penner, 1998.

The Cost of Capital to a Public Utility, Dr. Myron J. Gordon, 1974.

The Cost of Capital – A Practitioner's Guided, David C. Parcell, 1997.

Principles of Corporate Finance, 7th Edition, Stewart C. Myers, Richard A. Brealey, 2003.

Fundamentals of Investments, 3rd Edition, Gordon J. Alexander, William F. Sharpe, and Jeffery V. Bailey, 2001.

Investment Analysis and Portfolio Management, 7th Edition, Frank K. Reilly, Keith C. Brown, 2003.

Essentials of Corporate Finance, 2nd Edition, Stephen A. Ross, Randolph W. Westerfield, and Bradford D. Jordan, 1999.

Takeovers, Restructuring and Corporate Governance, 2nd Edition, J. Fred Weston, Kwang S. Chung, and Juan A. Siu, 1998.

Statistics for Management and Economics, 4th Edition, Gerald Keller, Brian Warrack, 1997.

Microeconomic Theory: Basic Principles and Extensions, 8th Edition, Walter Nicholson, 2001.

Macroeconomics, J. Bradford DeLong, 2002.

2004 Yearbook: Stocks, Bonds, Bills, and Inflation, Ibbotson Associates, Inc., 2004.

Q. IS THIS THE TYPE OF MATERIAL RELIED UPON BY EXPERTS WHO PERFORM COST OF CAPITAL ANALYSIS FOR PUBLIC UTILITIES?

A. Yes, it is.

Q. HAVE YOU PREVIOUSLY FILED TESTIMONY BEFORE THE MISSOURI PUBLIC SERVICE COMMISSION?

A. Yes, I filed Direct, Rebuttal, Surrebuttal, and True-Up testimony before the Missouri Public Service Commission in Case No. GR-2004-0209.

Q. WHAT IS THE PURPOSE OF THIS TESTIMONY?

A. I will present a cost of capital analysis for Empire District Electric Company (Empire or Company). As part of that analysis, I will recommend and testify to the capital structure and embedded cost rates, as well as the fair rate of return on common equity that should be used to establish rates in this proceeding.

Q. HAVE YOU PREPARED SCHEDULES IN SUPPORT OF YOUR TESTIMONY?

A. Yes, attached to this testimony is an analysis consisting of 13 Schedules. These Schedules were prepared by me and are correct to the best of my knowledge and belief.

Q. IS EMPIRE AN INDEPENDENT, PUBLICLY TRADED COMPANY?

A. Yes, Empire is a public utility with common stock, preferred trust securities, and long-term debt issued in its name. The common stock of Empire trades on the New York Stock Exchange under the ticker symbol EDE.

Q. HOW DID YOU CALCULATE A FAIR RETURN ON COMMON EQUITY FOR EMPIRE?

A. I performed a Discounted Cash Flow (DCF) analysis and a Capital Asset Pricing Model (CAPM) analysis on both Empire District Electric Company and a comparable group of publicly traded electric utility companies.

Q. PLEASE IDENTIFY THE PUBLICLY TRADED ELECTRIC UTILITY COMPANIES THAT MAKE UP YOUR COMPARABLE GROUP.

A. The companies are as follows: 1) American Electric Power; 2) Central Vermont Public Services Corp.; 3) Cleco Corp.; 4) Duquesne Light; 5) FirstEnergy; 6) FPL Group, Inc.; 7) Green Mountain Power Corp.; 8) Hawaiian Electric; 9) Idacorp, Inc.; 10) Pinnacle West; 11) Progress Energy; 12) Southern Co.; 13) UIL Holdings. A comparison of financial information and risk measures for the proxy group and Empire is on Schedule TA-4.

SUMMARY OF FINDINGS

Q. PLEASE SUMMARIZE YOUR FINDINGS CONCERNING THE OVERALL COST OF CAPITAL FOR EMPIRE.

A. Empire should be allowed an **overall** return between 8.19% and 8.42% on its net original-cost rate base. This return has been determined using Empire's capital structure as of June 30, 2004 and is based on an embedded cost of long-term debt of 7.23%, an embedded cost of preferred stock of 8.83%, and a **return on equity** between 8.96%-9.41%.

CAPTIAL STRUCTURE

Q. HOW IS EMPIRE CURRENTLY CAPITALIZED?

A. As shown on Schedule TA-1, as of the end of the update period, June 30, 2004, Empire was capitalized with 49.49% common equity, 43.99% long-term debt, and 6.52% preferred stock. This is the capital structure that I recommend be used in this proceeding and is the capital structure that I used to develop my rate of return recommendation.

Q. HOW DOES EMPIRE'S CURRENT CAPITAL STRUCTURE COMPARE WITH OTHER ELECTRIC UTILITIES?

A. According to ValueLine, Empire's common equity ratio of 49.49% is higher than the industry average of 42.43%. The calculation of the industry average common equity ratio is shown on Schedule TA-6.

Q. HOW DOES EMPIRE'S CURRENT CAPITAL STRUCTURE COMPARE WITH THE CAPITAL STRUCTURE OF YOUR GROUP OF PROXY COMPANIES?

A. According to ValueLine, Empire's common equity ratio of 49.49% is higher than the average common equity ratio of my proxy group, 45.24%. The calculation of the proxy group average common equity ratio is shown on Schedule TA-7.

EMBEDDED COST RATES

Q. WHAT IS THE APPROPRIATE EMBEDDED COST RATE FOR EMPIRE'S PREFERRED STOCK?

A. The embedded cost rate is 8.83% for Empire's preferred stock. Calculation of the level and embedded cost of preferred stock is shown on Schedule TA-2.

Q. WHAT IS THE APPROPRIATE EMBEDDED COST RATE FOR EMPIRE'S LONG-TERM DEBT?

A. The embedded cost rate is 7.23% for Empire's long-term debt as of June 30, 2004, as reported by the Company in response to OPC data request 2002. Calculation of the level and embedded cost of long-term debt is shown on Schedule TA-3.

DISCOUNTED CASH FLOW MODEL

Q. PLEASE DESCRIBE THE STANDARD DISCOUNTED CASH FLOW (DCF) MODEL YOU USED TO ARRIVE AT THE APPROPRIATE COST OF EQUITY CAPITAL.

A. The model is represented by the following equation:

$$k = D_1/P_0 + g$$

where "k" is the cost of equity capital (i.e. investors' required return), "D_1/P_0" is the expected dividend yield (expected dividend (D_1) divided by the current stock price (P_0)) and "g" is the expected sustainable growth rate.

If future dividends are expected to grow at a constant rate (i.e., the constant growth assumption) and dividends, earnings and stock price are expected to increase in proportion to each other, the sum of the expected dividend yield (D_1/P_0) and the expected sustainable growth rate (g)

equals the required rate of return, or the cost of equity, to the firm. This form of the DCF model is known as the constant growth, or Gordon, DCF model. The constant growth DCF model is based on the following assumptions:

1) A constant rate of growth,
2) The constant growth will continue for an infinite period,
3) The dividend payout ratio remains constant,
4) The discount rate must exceed the growth rate, and
5) The stock price grows proportionately to the growth rate.

Although all of these assumptions do not always hold in a technical sense, the relaxation of these assumptions does not make the model unreliable.

Q. WHAT BASIC FINANCIAL PRINCIPLES IS THE DCF MODEL BASED UPON?

A. The DCF model is based on two basic financial principals. First, the current market price of any financial asset, including a share of stock, is equivalent to the value of all expected future cash flows associated with that asset discounted back to the present at the appropriate discount rate. The discount rate that equates anticipated future cash flows and the current market price is defined as the required rate of return, or the company's cost of equity capital.

Cash flows associated with owning a share of common stock can take two forms: selling the stock and dividends. Just as the current value of a share of stock is a function of future cash flows (dividends), the future price of the stock at any time is also a function of future dividends. When a share of stock is sold, what is given up is the right to receive all future dividends. Therefore, the DCF model, using expected future dividends as the cash flows, is appropriate

regardless of how long the investor plans to hold the stock. Determination of a holding period and an associated terminal price is unnecessary.

The other basic financial principal on which the DCF is grounded is the "time value of money." Investors view a dollar received today as being worth more than a dollar received in the future because a dollar today can immediately be invested. Therefore, future cash flows are discounted. The rate used by investors to discount future cash flows to the present is the discount rate or opportunity cost of capital.

GROWTH RATE

Q. TO WHAT DOES THE GROWTH COMPONENT OF THE DCF FORMULA REFER?

A. The growth rate variable, g, in the traditional DCF model is the dividend growth rate investors expect to continue into the indefinite future (i.e., the sustainable growth rate).

Q. HOW IS THE SUSTAINABLE GROWTH RATE DETERMINED?

A. The sustainable growth rate is determined by analyzing historical and projected financial information for a Company. It is important to recognize the fundamentals of long-term investor-expected growth when developing a sustainable growth rate. Future dividends will be generated by future earnings and the primary source of growth in future earnings is the reinvestment of present earnings back into the firm. This reinvestment of earnings also contributes to the growth in book value. Furthermore, it is the earned return on reinvested earnings and existing capital (i.e., book value) that ultimately determines the basic level of future cash flows. Therefore, one proxy for the future growth rate called for in the DCF formula is found by multiplying the future expected earned return on book equity "r" by the percentage of earnings expected to be retained in the business (b).

This calculation, known as the "b*r" method, or retention growth rate, results in one measure of the sustainable growth rate called for in the Discounted Cash Flow formula. While the retention growth rate can be calculated using historic data on earnings retention and equity returns, this information is relevant only to the extent that it provides a meaningful basis for determining the future sustainable growth rate. Consequently, projected data on earnings retention and return on book equity are generally more representative of investors' expectations.

Q. CAN YOU PROVIDE AN EXAMPLE THAT ILLUSTRATES THE FUNDAMENTALS OF RETENTION GROWTH AS A PROXY FOR SUSTAINABLE GROWTH?

A. Yes, Frank K. Reilly and Keith C. Brown give a good example of the fundamentals of retention growth on page 399 of their book Investment Analysis and Portfolio Management, 7th edition:

When a firm retains earnings and acquires additional assets, if it earns some positive rate of return on these additional assets, the total earnings of the firm will increase because its asset base is larger. How rapidly a firm's earnings increase depends on (1) the proportion of earnings it retains and reinvests in new assets and (2) the rate of return it earns on these new assets. Specifically, the growth rate (g) of equity earnings (that is, earnings per share) without any external financing is equal to the percentage of net earnings retained (the retention rate, which equals 1 – the payout ratio) times the rate of return on equity capital.

$$g = (\text{Retention Rate}) \times (\text{Return on Equity})$$

$$= RR \times ROE$$

Therefore, a firm can increase its growth rate by increasing its retention rate (reducing its payout ratio) and investing these added funds at its historic ROE. Alternatively, the firm can maintain its retention rate but increase its ROE. For example, if a firm retains 50 percent of net earnings and

consistently has an ROE of 10 percent, its net earnings will grow at the rate of 5 percent a year, as follows:

$$g = RR \times ROE$$
$$= 0.50 \times 0.10$$
$$= 0.05$$

Q. ARE THERE ANY OTHER FACTORS THAT INFLUENCE INVESTOR-EXPECTED SUSTAINABLE GROWTH?

A. Yes. Stock financing will cause investors to expect additional growth if a company is expected to issue new shares at a price above book value. The excess of market price over book value would benefit current shareholders, increasing their per share book equity. Therefore, if stock financing is expected at prices above book value, shareholders will expect their book value to increase, and that adds to the growth expectation stemming from earnings retention, or "b*r" growth. A more thorough explanation of "external" growth is included in Appendix (H). This external growth factor has been included in all historic and projected retention growth rate calculations for the group of comparable utilities.

Q. ARE THERE OTHER GROWTH RATE PARAMETERS THAT ARE SOMETIMES USED TO MEASURE GROWTH?

A. Yes. Other methods sometimes used as a proxy for determining the investor-expected sustainable growth rate utilized in the DCF model include: 1) *historical* growth rates, and 2) analysts' *projections* of expected growth rates. Three commonly employed historic growth parameters are: 1) earnings per share, 2) dividends per share, and 3) book value per share. Additionally, analysts'

projections of future growth in earnings per share, dividends per share, and book value per share are sometimes used as an estimate of the sustainable growth rate.

As a matter of completeness, **all** of the above-mentioned techniques for measuring growth were utilized in order to determine a sustainable growth rate.

Q. DID YOU PUT ANY WEIGHT ON NEGATIVE GROWTH RATES?

A. No, negative growth rates were given no weight in my analysis.

Q. WHAT GROWTH RATE PARAMETERS HAVE YOU EXAMINED IN ORDER TO ESTABLISH INVESTOR-EXPECTED GROWTH FOR EMPIRE?

A. The following growth parameters have been reviewed for Empire and the group of 13 comparison electric utilities: 1) my calculations of historic compound growth in earnings, dividends, and book value based on data from Value Line; 2) the average of five-year and ten-year historic growth in earnings, dividends, and book value; 3) projected growth rate in earnings, dividends, and book value; 4) historic retention growth rate; and, 5) projected retention growth rate.

Q. PLEASE EXPLAIN IN MORE DETAIL HOW THE HISTORIC GROWTH RATES OF EARNINGS, DIVIDENDS, AND BOOK VALUE WERE DETERMINED.

A. Historic rates of growth in earnings per share (EPS), dividends per share (DPS), and book value per share (BVPS) were analyzed using two methods. First, compound growth rates were calculated for the time period beginning with the averaged value for 1996-1998 and ending with the averaged value for 2001-2003. The second measure of historic growth was taken from Value Line. I averaged Value Line's calculated 5-year and 10-year historical growth rates when both were available. If only

one was available, I used that one. The historic rates of growth furnished by Value Line are included in this analysis because;

1) The Value Line growth rates are readily available for investor use;

2) The Value Line rates of growth reflect both a five-year and ten-year time frame; and

3) The Value Line rates are measured from an average of three base years to an average of three ending years, smoothing the results and limiting the impact of nonrecurring events.

Value Line historic growth measurements for EPS, DPS and BVPS appear on line (21) of Schedule TA-9, pages 2-15.

Q. PLEASE DISCUSS YOUR ANALYSIS OF PROJECTED GROWTH RATE DATA.

A. Projected growth rates in EPS, DPS, and BVPS were taken from Value Line and are found on line 32 of Schedule TA-9, pages 2-15. Projected growth in EPS was also taken from Thomson Financial. If Thomson did not issue a projection for a particular company, that space contains "n/a". Thomson growth rate projections were used in this analysis because they provide a reliable consensus estimate of analyst expectations and because they are readily available to the average investor. The projected growth in EPS found on line 37 of Schedule TA-9, pages 2-15 is the average of earnings growth projections furnished by Value Line and Thomson. Value Line's projected growth in dividends and book value are listed again on line 37 of Schedule TA-9, pages 2-15.

Q. PLEASE DISCUSS YOUR ANALYSIS OF HISTORIC AND PROJECTED RETENTION GROWTH RATES.

A. Historic retention growth was determined using the product of return (r) and retention rate (b) for the years 1996-2003, and the average was calculated (line 17, final column of Schedule TA-9, pages 2-15). The projected retention growth data, found on lines 27-29 of Schedule TA-9, pages 2-15 is based on information from Value Line. Projected retention growth was calculated for 2004, 2005 and the period 2007-09. An average of these growth rates was calculated and compared to the growth rate for the 2007-09 period alone. The larger value, either the average or the 2007-09 rate was utilized as the projected retention growth rate.

Investors' expectations regarding growth from external sources (i.e. sales of additional stock at prices above book value) has been included in the determination of both historic and projected growth.

Q. PLEASE SUMMARIZE YOUR GROWTH RATE CALCULATIONS FOR EMPIRE AND THE GROUP OF COMPARISON COMPANIES.

A. The following table shows the results of the analysis of growth rates for Empire. The high growth rate is 4.50% for projected earnings per share and the low growth rate is –5.39% for historical earnings per share. The overall average of all growth rates is 0.46%.

Growth rate summary (EDE): Overall average = 0.46%.

	EPS	DPS	BVPS
Historic Compound Growth	-5.39%	0.00%	1.90%
Historic Value Line Growth	-5.39%	n/a	1.75%
Projected Growth	4.50%	0.00%	1.50%

	Historic	Projected
Retention Growth	2.57%	1.54%

With respect to the proxy group of comparable companies, the high average growth rate is 4.65% for historic retention growth and the low average growth rate is –0.11% for historic dividend-per-share growth. The overall average of all growth rates for all 13 companies is 2.17%. The average projected growth rate for the group is 3.34%. These results are illustrated in the table below and again on Schedule TA-9, page 1.

Growth rate summary (proxy group): Overall average = 3.53%

	EPS	DPS	BVPS
Historic Compound Growth	1.68%	-0.11%	1.19%
Historic Value Line Growth	1.42%	0.10%	1.69%
Projected Growth	3.72%	1.15%	3.88%

	Historic	Projected
Retention Growth	4.65%	4.58%

Q. PLEASE DESCRIBE HOW YOU DETERMINED THE EXPECTED GROWTH RATE USED IN YOUR ANALYSIS.

A. In this analysis, I decided to use a growth rate range. The floor of this range was the projected retention growth rate for every Company except UIL Holdings. As shown on Schedule TA-9, page 15, UIL Holdings is a unique situation because it's projected retention growth rate was nearly zero. Although, I do not anticipate UIL Holdings sustainable growth rate to be very large, due to its recent history of poor performance and bearish projections, I simply do not believe that its projected retention growth rate, 0.03%, is a realistic estimate. Consequently, I decided to anchor UIL Holdings sustainable growth rate range with the Thomson Financial estimate of 1.00%. For the ceiling of my sustainable growth rate range, I analyzed the individual Company's growth rates on Schedule TA-9, pages 2-15 to determine if there was any reason to expect a higher rate of growth than the projected retention growth rate. If there was, I recognized it and recorded it as the high-

expected sustainable growth rate. If there was not, I simply used the projected retention growth rate as the high-expected sustainable growth rate. The results of my growth rate analysis are illustrated below.

		Projected	
Company		**br+sv**	**High**
American Elec. Pwr.		5.64%	5.64%
Cent. Vermont P.S.		4.48%	5.40%
Cleco Corporation		4.97%	4.97%
Duquesne Light		6.20%	6.20%
FirstEnergy		6.33%	6.33%
FPL Group, Inc.		6.92%	6.92%
Green Mtn. Power		5.77%	5.77%
Hawaiian Electric		3.06%	3.06%
Idacorp, Inc.		3.53%	3.53%
Pinnacle West		4.11%	4.11%
Progress Energy		3.37%	4.00%
Southern Co.		5.15%	5.15%
UIL Holdings		1.00%	1.00%
Average		**4.66%**	**4.85%**
Empire District Electric		*1.54%*	*3.00%*

As illustrated in the chart above, I used a growth rate higher than the projected retention growth rate for only three of the 14 companies, Empire District Electric, Central Vermont Public Services Corporation, and Progress Energy.

With respect to Empire, the projected retention growth rate was 1.54% however, the Thomson Financial estimated earnings-per-share growth rate for Empire was 2.50% and Value Line's estimated earnings-per-share grow for Empire was 6.50%. Consequently, I used my professional judgment to select 3.00% as the high end of my growth rate range for Empire. With respect to Central Vermont Public Service Corporation, the projected retention growth rate was

4.48% however, Value Line's estimated earnings-per-share grow rate for Central Vermont Public Service Corporation was 7.50%. Consequently, I used my professional judgment to select 5.40% as the high end of my growth rate range for Central Vermont Public Service Corporation. Finally, with respect to Progress Energy, the projected retention growth rate was 3.37% however, the Thomson Financial estimated earnings-per-share growth rate was 4.00%. Consequently, I selected 4.00% as the high end of my growth rate range for Progress Energy.

DIVIDEND YIELD

Q. WHAT IS THE APPROPRIATE DIVIDEND YIELD TO USE IN THE DCF?

A. The appropriate dividend yield to use in the DCF is the *expected* dividend yield calculated from the expected dividend over the coming twelve months and the current stock price.

Q. DO EMPIRE DISTRICT ELECTRIC COMPANY AND YOUR PROXY COMPANIES PAY CASH DIVIDENDS?

A. Yes, they do.

Q. WHAT DIVIDEND YIELD DID YOU USE IN YOUR DCF COST OF COMMON EQUITY CALCULATION FOR EMPIRE AND FOR YOUR PROXY GROUP OF ELECTRIC COMPANIES?

A. I used a dividend yield range of 6.36%-6.41% for Empire and a dividend yield of 4.74% for my proxy group of electric companies.

Q. PLEASE DESCRIBE THE CALCULATION OF THE EXPECTED DIVIDEND.

A. I used the following method to determine the expected dividend. First, I annualized the last quarterly dividend for each company (multiplied the last quarterly dividend by four). I then

multiplied that number by one plus one-half its projected retention growth rate, and one plus one-half its high expected growth rate to come up with my expected dividend range [1+1/2 Projected br+sv, and 1+1/2 High E(g)]. This calculation is shown in Schedule TA-11.

Q. PLEASE EXPLAIN YOUR CALCULATION OF THE DIVIDEND YIELD.

A. As stated above, the appropriate dividend yield to use in the DCF equation is equal to the *expected* dividend divided by *current* stock price. Schedule TA-10 shows the average weekly stock price for Empire and each company in my proxy group over a six-week period ending August 31, 2004. I used a six-week period for determining the average weekly stock price because I believe that this period of time is long enough to avoid daily fluctuations and recent enough so that the stock price captured is representative of current expectations. The projected retention growth and high growth dividend yield expectations were then calculated for each company by dividing their specific projected retention growth and high growth-expected dividends by their specific average weekly stock price. As shown on Schedule TA-11, this produced a dividend yield range of 6.36%-6.41% for Empire.

In order to develop the dividend yield range for my 13-company proxy group, I simply averaged the company specific projected retention growth and high growth dividend yield calculations. As shown in Schedule TA-11, both the projected retention and high-expected growth rates produced an average dividend yield of 4.74% for my proxy group of 13 companies.

Q. IS THE METHOD YOU USED TO CALCULATE THE DIVIDEND YIELD CONSISTENT WITH DCF PRINCIPLES?

A. Yes. The DCF equation calls for the dividend yield calculated from expected dividends and current market prices of stock, both of which I utilized in my calculation.

DCF COST OF EQUITY

Q. WHAT IS THE DCF COST OF EQUITY RANGE FOR EMPIRE?

A. The following table, using data from Schedule TA-11, outlines the results of my DCF cost of equity range for Empire:

Empire:

	Dividend Yield	Growth	Cost of Equity
Projected br+sv	6.36%	1.54%	7.90%
High	6.41%	3.00%	9.41%

Q. WHAT IS THE DCF COST OF EQUITY RANGE FOR YOUR PROXY GROUP OF ELECTRIC UTILITIES?

A. The following table, using data from Schedule TA-8, outlines the results of my DCF cost of equity range for my proxy group of electric utilities.

Proxy Group:

	Dividend Yield	Growth	Cost of Equity
Projected br+sv	4.74%	4.66%	9.40%
High	4.74%	4.78%	9.52%

CAPITAL ASSET PRICING MODEL

Q. PLEASE DESCRIBE THE CAPITAL ASSET PRICING MODEL YOU USED TO SUBSTANTIATE YOUR DCF COST OF EQUITY RESULTS.

A. The Capital Asset Pricing Model (CAPM) is described by the following equation:

$$K = Rf + \beta(Rm - Rf)$$

where,

K = the cost of common equity for the security being analyzed,

Rf = the risk free rate,

β = beta = the company or industry-specific beta risk measure,

Rm = market return, and

(Rm - Rf) = market risk premium.

The formula states that the cost of common equity is equal to the risk free rate of interest plus beta multiplied by the difference between the return on the market and the risk free rate (the market risk premium).

The formula says that the cost of common equity is equal to the risk free rate plus some proportion of the market risk premium - that proportion being equal to beta. The market overall has a beta of 1.0. Firms with a beta less than 1.0 are assumed to be less risky than the market; firms with beta greater than 1.0 are assumed to be more risky than the market. The appropriate beta to use in the CAPM formula is the beta that represents the risk of the industry (or project) being analyzed. Therefore, I utilized the company specific betas when performing my CAPM cost of equity capital analyzes. Beta for my group of comparable companies ranges from 0.50 to 1.10, with an average of 0.77. Empire's beta is 0.65.

Q. WHAT ARE THE DRAWBACKS OF THE CAPITAL ASSET PRICING MODEL?

A. I believe that there are theoretical and practical drawbacks associated with each of the inputs needed to perform a CAPM analysis when used in a utility rate-setting environment. First, there is no consensus on how the risk-free rate of return should be determined. For correct application, the rate on 3-month U.S. Treasury Bills should be used. U.S. Treasury Bills are free of default risk and

have virtually no interest rate risk. However, rates on U.S. Treasury Bills can fluctuate more than longer-term U.S. Treasury Securities over time, resulting in a somewhat more volatile measure of equity capital cost rates.

Treasury Bonds, while more stable, are not free of risk since they are subject to substantial interest rate risk; an element of risk investors do not face with the purchase of short-term Treasuries. Investors must be compensated for future investment opportunities foregone, as well as for potential changes in inflation and interest rates. Consequently, when investors tie up their money for longer periods of time, as they do when purchasing long-term Treasuries, they are compensated for this increased risk by receiving higher yields on their investment. Therefore, since interest rate risk is fully recognized in the yields on Treasury Bonds, long-term Treasuries do not represent the risk-free return called for in the CAPM.

Secondly, while the CAPM is an ex-ante, or forward-looking model, beta coefficients (the only variable in a CAPM analysis that is company or industry specific) are not. The measurement of beta is derived completely with historical, or ex-post, information. Consequently, historical betas may not reflect either current or expected risk.

Finally, there is substantial debate over what actually constitutes the "market portfolio." This debate revolves around the fact that the "market portfolio" against which return volatility of a particular security is measured determines, to a large extent, the outcome of a CAPM analysis. While the "market portfolio" theoretically includes all assets (stocks, bonds, real estate, gold, etc.), the "market portfolio" used to derive betas is actually only a small part of the true "market

portfolio." Given these limitations, I feel that the CAPM is best used as a check on the reasonableness of my DCF analysis.

Q. HOW DID YOU ARRIVE AT THE VALUES OF THE RISK FREE RATE AND THE MARKET RETURN (OR MARKET PREMIUM) USED IN YOUR ANALYSIS?

A. Due to my belief that the yield on the 3-month U.S. Treasury Bill should be the primary surrogate for the risk-free rate, I have decided to use the average yield on the 3-month T-Bill from 05-03-2004 to 08-27-2004. This produced a risk free rate of 1.274%.

In Stocks, Bonds, and Inflation: 2004 Yearbook, Ibbotson Associates indicates that the historic arithmetic mean market return from 1926-2003 is 12.4%. Thus, the market risk premium that I used in my CAPM analysis was 11.13% (12.4%-1.274%).

Q. WHAT DOES YOUR CAPM ANALYSIS SHOW?

A. As can be seen on Schedule TA-12, the average CAPM cost of common equity for the 13 comparable companies is 9.79% while the CAPM cost of common equity for Empire alone is 8.51%.

Q. WHAT IS YOUR RETURN ON EQUITY RECOMMENDATION FOR EMPIRE?

A. I am recommending that Empire be allowed a return on equity between 8.96% and 9.41%. I believe that selecting a return on equity within this range would provide Empire with a fair rate of return and would produce just and reasonable rates for consumers.

Q. PLEASE EXPLAIN HOW YOU ARRIVED AT THIS RECOMMENDATION.

A. Upon reviewing the results of my DCF and CAPM analyze, I determined that the low end of my DCF results for Empire (i.e. 7.90%), was out of line with the results obtained for the proxy group

and with what the CAPM analysis on Empire was indicating. Consequently, I determined it logical to dismiss the low end of my DCF range for Empire and instead use the result of my CAPM on Empire (8.51%), as the low end of my return on equity range. This resulted in a return on equity range for Empire of 8.51% - 9.41% with a midpoint of 8.96%. Upon further review, I determined that the midpoint to the high end of this range (8.96% - 9.41%), was the most appropriate return on equity range for Empire.

Q. IS YOUR RETURN ON EQUITY RECOMMENDATION CONSISTENT WITH WHAT PROFESSIONAL ANALYSTS ARE EXPECTING FOR EMPIRE?

A. Yes, on page four of the July 23, 2004 A.G. Edwards report entitled Empire District Electric: Equity Research Recent Development Report the following is stated:

> *"We have maintained our 2005 EPS estimate of $1.45… We arrived at our 2005 EPS estimate of $1.45 by assuming reasonable rate relief that allows the company to earn a 9.5% return on common equity."*

WEIGHTED AVERAGE COST OF CAPITAL

Q. WHAT OVERALL, OR WEIGHTED AVERAGE, COST OF CAPITAL IS INDICATED BY YOUR ANALYSIS?

A. The weighted average cost of capital (WACC) range that I calculated for Empire is 8.19% - 8.41%. The lower/higher end of this range is based on a range of 8.96% to 9.41% return on equity, 8.83% embedded cost of preferred stock, and 7.23% embedded cost of long-term debt. The capital structure contains 49.49% common equity, 6.52% preferred stock, and 43.99% long-term debt. The WACC calculation is shown on Schedule TA-13.

Q. WHAT PRE-TAX COVERAGE RATIO IS IMPLIED BY YOUR RECOMMENDATION?

A. Based on a WACC of 8.19% and an assumed overall tax factor of 1.62, the pre-tax coverage ratio is approximately 4.17x. Based on a WACC of 8.42% and assuming the same overall tax factor, the pre-tax coverage ratio is approximately 4.29x. Consequently, selecting any return on equity, and corresponding WACC, within my recommended range will provide Empire with a sufficient interest coverage ratio.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

APPENDIX A

DEVELOPMENT & PURPOSES OF REGULATION

Q. WHY ARE PUBLIC UTILITIES REGULATED?

A. The nature of public utility services generally requires a monopolistic mode of operation. Only a limited number of companies (and quite often only one) are normally allowed to provide a particular utility service in a specific geographic area. Public utilities are often referred to as "natural" monopolies; a state created by such powerful economies of scale or scope that only one firm can or should provide a given service. Even when a utility is not a pure monopoly, it still has substantial market power over at least some of its customers.

In order to secure the benefits arising from monopolistic-type operations, utilities are generally awarded an exclusive franchise (or certificate of public convenience) by the appropriate governmental body. Since an exclusive franchise generally protects a firm from the effects of competition, it is critical that governmental control over the rates and services provided by public utilities is exercised. Consequently, a primary objective of utility regulation is to produce market results that closely approximate the conditions that would be obtained if utility rates were determined competitively. Based on this competitive standard, utility regulation must: 1) secure safe and adequate service; 2) establish rates sufficient to provide a utility with the opportunity to cover all reasonable costs, including a fair rate of return on the capital employed; and 3) restrict monopoly-type profits.

APPENDIX B

CALCULATION OF THE WEIGHTED AVERAGE COST OF CAPITAL

Q. PLEASE EXPLAIN HOW THE WEIGHTED AVERAGE COST OF CAPITAL IS USED IN TRADITIONAL RATEMAKING AND HOW IT IS DERIVED.

A. The basic standard of rate regulation is the revenue-requirement standard, often referred to as the rate base-rate of return standard. Simply stated, a regulated firm must be permitted to set rates which will cover operating costs and provide an opportunity to earn a reasonable rate of return on assets devoted to the business. A utility's total revenue requirement can be expressed as the following formula:

$$R = O + (V - D + A)r$$

where R = the total revenue required,

O = cost of operations,

V = the gross value of the property,

D = the accrued depreciation, and

A = other rate base items,

r = the allowed rate of return/weighted average cost of capital.

This formula indicates that the process of determining the total revenue requirement for a public utility involves three major steps. First, allowable operating costs must be ascertained. Second, the net depreciated value of the tangible and intangible property, or net investment in property, of the enterprise must be determined. This net value, or investment (V - D), along with other allowable items is referred to as the rate base. Finally, a "fair rate of return" or weighted average cost of capital (WACC) must be determined. This rate, expressed as a percentage, is multiplied by the rate base. The weighted average cost of capital (WACC) is applied to the rate base (V-D+A) since it is

generally recognized the rate base is financed with the capital structure. The allowed rate of return, or WACC, is typically defined as follows:

$$r = i(D/C) + l(P/C) + k(E/C)$$

where i = embedded cost of debt capital,

D = amount of debt capital,

l = embedded cost of preferred stock,

P = amount of preferred stock,

k = cost of equity capital,

E = amount of equity capital, and

C = amount of total capital.

This formula indicates that the process of determining WACC involves separate determinations for each type of capital utilized by a utility. Under the weighted cost approach, a utility company's total invested capital is expressed as 100 percent and is divided into percentages that represent the capital secured by the issuance of long-term debt, preferred stock, common stock, and sometimes short-term debt. This division of total capital by reference to its major sources permits the analyst to compute separately the cost of both debt and equity capital. The cost rate of each component is weighted by the appropriate percentage that it bears to the overall capitalization. The sum of the weighted cost rates is equal to the overall or weighted average cost of capital and is used as the basis for the fair rate of return that is ultimately applied to rate base.

APPENDIX C

LEGAL REQUIREMENT FOR A FAIR RATE OF RETURN

Q. IS THERE A JUDICIAL REQUIREMENT RELATED TO THE DETERMINATION OF THE APPROPRIATE RATE OF RETURN FOR A REGULATED UTILITY?

A. Yes. The criteria established by the U.S. Supreme Court closely parallels economic thinking on the determination of an appropriate rate of return under the cost of service approach to regulation. The judicial background to the regulatory process is largely contained in two seminal decisions handed down in 1923 and 1944. These decisions are,

> Bluefield Water Works and Improvement Company v. Public Service Commission, 262 U.S. 679 (1923), and
>
> FPC v. Hope Natural Gas Co., 320 U.S. 591 (1944)

In the Bluefield Case, the Court states,

> A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties; but has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. The return should be reasonably sufficient to assure confidence in the financial soundness of the utility, and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties. A rate of return may be reasonable at one time, and become too high or too low by changes affecting opportunities for investment, the money market, and business conditions generally.

Together, Hope and Bluefield have established the following standards,

1). A utility is entitled to a return similar to that available to other enterprises with similar risks;

2). A utility is entitled to a return level reasonably sufficient to assure financial soundness and support existing credit, as well as raise new capital; and

3). A fair return can change along with economic conditions and capital markets.

Furthermore, in Hope, the Court makes clear that regulation does not guarantee utility profits.

APPENDIX D

REGULATION IN MISSOURI

Q. WHAT IS THE ORIGIN AND RATIONALE FOR THE REGULATION OF PUBLIC UTILITIES IN THE STATE OF MISSOURI?

A. All investor owned public utilities operating in the state of Missouri are subject to the Public Service Commission Act, as amended. The Public Service Commission Act was initially passed by the Forty-Seventh General Assembly on April 15, 1913. (Laws of 1913 pp.557-651, inclusive).

In State ex rel Kansas City v. Kansas City Gas Co. 163 S.W. 854 (Mo.1914), the case of first impression pertaining to the Public Service Commission Act, the Missouri Supreme Court described the rationale for the regulation of public utilities in Missouri as follows:

> That act (Public Service Commission Act) is an elaborate law bottomed on the police power. It evidences a public policy hammered out on the anvil of public discussion. It apparently recognizes certain generally accepted economic principles and conditions, to wit: That a public utility (like gas, water, car service, etc.) is in its nature a monopoly; that competition is inadequate to protect the public, and, if it exists, is likely to become an economic waste; that regulation takes the place of and stands for competition; that such regulation to command respect from patron or utility owner, must be in the name of the overlord, the state, and, to be effective, must possess the power of intelligent visitation and the plenary supervision of every business feature to be finally (however invisible) reflected in rates and quality of service. (Kansas City Gas Co. at 857-58).

The General Assembly has determined that the provisions of the Public Service Commission Act "shall be liberally construed with a view to the public welfare, efficient facilities and substantial justice between patrons and public utilities" (See: 386.610 RSMo 2000). Pursuant to the above legislative directive, when developing the cost of equity capital for a public utility operating in Missouri, it is appropriate to do so with a view toward the public welfare; giving the utility an

amount that will allow for efficient use of its facilities and the proper balance of interests between the ratepayers and the utility.

APPENDIX E

MARKET-TO-BOOK RATIO ILLUSTRATION

Q. COULD YOU PROVIDE AN EXAMPLE ILLUSTRATING THE IMPORTANCE OF MARKET-TO-BOOK RATIOS AND THEIR RELATIONSHIP TO THE COST OF EQUITY CAPITAL?

A. Yes. Assume that a utility's equity has a book value of $10 per share and that, for simplicity, this utility pays out all its earnings in dividends. If regulators allow the utility a 12% return, investors will expect the company to earn (and pay out) $1.20 per share. If investors require a 12% return on this investment, they will be willing to provide a market price of $10 per share for this stock ($1.20 dividends/$10 market price = 12%). In that case, the allowed/expected return is equal to the cost of capital and the market price is equal to the book value.

Now, assume the investors' required return is 10%. Investors would be drawn to a utility stock in a risk class for which they require a 10% return but was expected to pay out a 12% return. The increased demand by investors would result in an increase in the market price of the stock until the total share yield equaled the investors' required return. In our example, that point would be $12 per share ($1.20 dividends/$12 market price = 10%). As such, the allowed/expected return (12%) is greater than the required return (10%) and the per share market price ($12/share) exceeds book value ($10/share), producing a market-to-book ratio greater than one ($12/$10 = 1.20). Consequently, when the market-to-book ratio for a given utility is greater than one, the earned or projected return on book equity is greater than the cost of capital.

APPENDIX F

DEVELOPMENT OF A PROXY GROUP

Q. PLEASE EXPLAIN HOW YOU DEVELOPED A GROUP OF ELECTRIC UTILITIES WITH RISK CHARACTERISTICS SIMILAR TO EMPIRE.

A. The following selection criteria have been used to develop a group of comparable electric utilities:

1). Publicly traded company;

2). Greater than 60% of total revenues from regulated electricity sales;

3). Dividend Paying;

4). Covered by Value Line;

5). Standard & Poor's Bond Rating of at least (BBB-) or a Moody's Bond Rating of at least Baa3;

The following companies met the selection criteria: 1) American Electric Power; 2) Central Vermont Public Services Corp.; 3) Cleco Corp.; 4) Duquesne Light; 5) First Energy; 6) FPL Group, Inc.; 7) Green Mountain Power Corp; 8) Hawaiian Electric 9) Idacorp, Inc. 10) Pinnacle West 11) Progress Energy 12) Southern Co. 13) UIL Holdings.

Q. HAVE YOU MADE ANY RISK EVALUATIONS FOR THE INDUSTRY GROUP?

A. Yes. As shown on Schedule TA-4, I have examined several measures that typically act as indicators of relative risk.

The beta coefficient;

Fixed charge coverage;

Value Line Safety rating;

Bond Rating from Standard & Poor's;

Average common equity ratio;

Value Line Financial Strength.

Q. WHAT CONCLUSIONS CAN BE DRAWN FROM THIS ANALYSIS?

A. Generally, the level of overall, or total, risk for the industry companies is representative of the risks faced by Empire as a regulated electric utility.

APPENDIX G

EFFICIENT NATURE OF THE CAPITAL MARKETS

Q. IS THE DISCOUNTED CASH FLOW MODEL INHERENTLY CAPABLE OF ADJUSTING FOR THE LEVEL OF REAL OR PERCEIVED RISKINESS TO A GIVEN SECURITY?

A. Yes. It is impossible for any one analyst to systematically interpret the impact that each and every risk variable facing an individual firm has on the cost of equity capital to that firm. Fortunately, this type of risk-by-risk analysis is not necessary when determining the appropriate variables to be plugged into the DCF formula.

As stated earlier, the DCF model can correctly identify the cost of equity capital to a firm by adding the expected dividend yield (D_1/P_0) to the correct determination of investor-expected growth (g). Thus, the difficult task of determining the cost of equity capital is made easier, in part, by the relative ease of locating dividend and stock price information and the efficient nature of the capital markets.

Q. PLEASE EXPLAIN THAT STATEMENT.

A. The DCF model is based on the assumption that investors (1) calculate intrinsic values for stocks on the basis of their interpretation of available information concerning future cash flows and risk, (2) compare the calculated intrinsic value for each stock with its current market price, and (3) make buy or sell decisions based on whether a stock's intrinsic value is greater or less than its market price.

Only if its market price is equal to or lower than its intrinsic value as calculated by the marginal investor will a stock be demanded by that investor. If a stock sells at a price significantly above or below its calculated intrinsic value, buy or sell orders will quickly push the stock towards

market equilibrium. The DCF model takes on the following form when used by investors to calculate the intrinsic value of a given security,

$$P_0 = D_1/k\text{-}g$$

where P_0= the intrinsic value of the security,

D_1 = the expected dividend,

g = the expected growth rate, and

k = the required return on the security

Since the required rate of return for any given investor is based on both the perceived riskiness of the security and return opportunities available in other segments of the market, it can be easily demonstrated that when perceived riskiness is increased, the investors' required return is also increased and the market value of the investment falls as it is valued less by the marginal investor. Returning to the form of the DCF model used to determine the cost of equity capital to the firm,

$$k = D_1/P_0 + g$$

we see that the required return rises as an increase in the perceived risk associated with a given security drives the price down. Within this context, the DCF formula incorporates all known information, including information regarding risks, into the cost of equity capital calculation. This is known as the "efficient market" hypothesis.

Q. IS THE "EFFICIENT MARKET" HYPOTHESIS SUPPORTED IN THE FINANCIAL LITERATURE?

A. Yes. Modern investment theory maintains that the U.S. capital markets are efficient and, at any point in time, the prices of publicly traded stocks and bonds reflect all available information about those securities. Additionally, as new information is discovered, security prices adjust virtually

instantaneously. This implies that, at any given time, security prices reflect "real" or intrinsic values.

APPENDIX H

DETERMINATION OF RETENTION (BR + SV) GROWTH &

SUSTAINABLE GROWTH VS. EARNINGS AND DIVIDEND GROWTH RATES

Q. PREVIOUSLY YOU STATED THAT IT IS CRITICAL TO UNDERSTAND THE SOURCES OF GROWTH WHEN DEVELOPING A SUSTAINABLE GROWTH RATE RECOMMENDATION. PLEASE PROVIDE AN EXAMPLE THAT ILLUSTRATES HOW SUSTAINABLE GROWTH IS MEASURED.

A. To understand how investors develop a growth rate expectation, it is helpful to look at an illustration that shows how expected growth is measured. To do this, assume that a hypothetical utility has a first period common equity, or book value per share of $20.00; the investor-expected return on that equity is 12 percent; and the stated company policy is to pay out 50 percent of earnings in dividends. The first period earnings per share are expected to be $2.40 ($20 per share book equity x 12% equity) and the expected dividend is $1.20. The amount of earnings not paid out to shareholders ($1.20), referred to as retained earnings, raises the book value of the equity to $21.20 in the second period. The following table continues the hypothetical for a three-year period and illustrates the underlying determinants of growth.

	Year 1	Year 2	Year 3	Gr.
Book Value	$20.00	$21.20	$22.47	6.00%
Equity Return	12%	12%	12%	
Earnings/Sh.	$2.40	$2.54	$2.67	6.00%
Payout Ratio	50%	50%	50%	
Dividend/Sh.	$1.20	$1.27	$1.34	6.00%

As can be seen, earnings, dividends, and book value all grow at the same rate when the payout ratio and return on equity remain stable. Moreover, key to this growth is the amount of earnings retained or reinvested in the firm and the return on equity.

Letting "b" equal the retention ratio of the firm (or 1 minus the payout ratio) and letting "r" equal the firm's expected return on equity, the DCF growth rate "g" (also referred to as the sustainable growth rate) is equal to their product, or

$$g = br.$$

As shown in the example, the growth rate for the hypothetical company is 6.00 percent (12% ROE x 50% payout ratio).

Dr. Gordon has determined that this equation embodies the underlying fundamentals of growth and, therefore, is a primary measure of growth to be used in the DCF model (Gordon, The Cost of Capital to a Public Utility, 1974, p.81). It should be noted, however, Dr. Gordon's research also indicates that analysts' growth rate projections are useful in estimating investors' expectations. As a result, analysts' published growth rate projections, along with other historic and projected growth rates, are considered in this analysis for the purpose of reaching an accurate estimation of the expected sustainable growth rate.

Q. CAN THE RETENTION GROWTH RATE MODEL BE FURTHER REFINED IN ORDER TO BEST REPRESENT INVESTORS' EXPECTATIONS?

A. Yes. The above hypothetical example does not allow for the existence of external sources of equity financing (i.e., sales of common stock). Stock financing will cause investors to expect additional growth if the company is expected to issue additional shares at a market price which exceeds book value.

The excess of market value over book value per share would benefit current shareholders by increasing their per share equity value. Therefore, if the company is expected to continue to

issue stock at a price that exceeds book value per share, the shareholders would continue to expect their book value to increase and would add that growth expectation to that stemming from the retention of earnings, or internal growth.

On the other hand, if a company is expected to issue new common equity at a price below book value, that would have a negative effect on shareholders' current growth rate expectations. Finally, with little or no expected equity financing or a market-to-book ratio at or near one, investors would expect the long-term sustainable growth rate for the company to equal the growth from earnings retention.

Dr. Gordon identifies the growth rate which includes both expected internal and external financing as,

$$g = br + sv$$

where, g = DCF expected growth rate,

r = return on equity,

b = retention ratio,

v = fraction of new common stock sold that accrues to the current shareholder,

s = funds raised from the sale of stock as a fraction of existing equity.

Additionally,

$$v = 1 - BV/MP$$

where,

MP = market price,

BV = book value.

The second term (sv), which represents the external portion of the expected growth rate, does not normally represent a major source of growth when compared to the expected growth attributed to the retention of earnings. For example, the FERC Generic Rate of Return Model estimates the (sv) component in the range of 0.1% to 0.2%. However, I have used this equation as the basis for determining sustainable growth for the comparable group.

Q. IS HISTORIC OR PROJECTED GROWTH IN EARNINGS OR DIVIDENDS APPROPRIATE FOR DETERMINING THE DCF GROWTH RATE?

A. No, not always. As I have stated, growth derived from earnings or dividends alone can be unreliable for ratemaking purposes due to external influences on these parameters such as changes in the historic or expected rate of return on common equity or changes in the payout ratio. An extended example will demonstrate this point.

If we take the example above and assume that, in year two, the expected return on equity rises from 12 percent to 15 percent, the resulting growth rate in earnings and dividends per share dramatically exceeds what the company could sustain indefinitely. The error that can result from exclusive reliance on earnings or dividends growth is illustrated in the following table:

	Year 1	Year 2	Year 3	Gr.
Book Value	$20.00	$21.20	$22.79	6.75%
Equity Return	12%	15%	15%	
Earnings/Sh.	$2.40	$3.18	$3.42	19.37%
Payout Ratio	50%	50%	50%	
Dividends/Sh.	$1.20	$1.59	$1.71	19.37%

Due to the change in return on equity in year two, the compound growth rate for dividends and earnings is greater than 19 percent, which is the result only of a short-term increase in the equity return rather than the intrinsic ability of the firm to grow continuously at a 19 percent annual rate.

For year one, the sustainable rate of growth (g=br) is 6.00 percent, just as it was in the previous example. On the other hand, in years two and three, the sustainable growth rate increases to 7.50 percent. (15% ROE x 50% retention rate = 7.50%). Consequently, if the utility is expected to continually earn a 15 percent return on equity and retain 50 percent of earnings for reinvestment, a growth rate of 7.50 percent would be a reasonable estimate of the long-term sustainable growth rate. However, the compound growth rate in earnings and dividends, which is over 19 percent, dramatically exceeds the actual investor-expected growth rate.

As can be seen in the hypothetical, the 19 percent growth rate is simply the result of the change in return on equity from year one to year two, not the firm's ability to grow sustainably at that rate. Consequently, this type of growth rate cannot be relied upon to accurately measure investors' sustainable growth rate expectations. In this instance, to rely on either earnings or dividend growth would be to assume the return on equity could continue to increase indefinitely. This, of course, is a faulty assumption; the recognition of which emphasizes the need to analyze the fundamentals of actual growth.

Q. IS HISTORIC GROWTH IN DIVIDENDS AN ACCURATE INDICATOR OF INVESTORS' GROWTH EXPECTATIONS WHEN THE HISTORICAL PAYOUT RATIO HAS BEEN ERRATIC OR TRENDED DOWNWARD OVER TIME?

A. As stated, no. It can also be demonstrated that a change in our hypothetical utility's payout ratio makes the past rate of growth in dividends an unreliable basis for predicting investor-expected

growth. If we assume the hypothetical utility consistently earns its expected equity return but in the second year changes its payout ratio from 50 percent to 75 percent, the resulting growth rate in dividends far exceeds a reasonable level of sustainable growth.

	Year 1	Year 2	Year 3	Gr.
Book Value	$20.00	$21.20	$21.84	4.50%
Equity Return	12%	12%	12%	
Earnings/Sh.	$2.40	$2.54	$2.62	4.50%
Payout Ratio	50%	75%	75%	
Dividends/Sh.	$1.20	$1.91	$1.97	28.13%

Although the company has registered a high dividend growth rate (28.13%), it is not representative of the growth that could be sustained, as called for in the DCF model. In actuality, the sustainable growth rate (br) has declined due to the increased payout ratio. To utilize a 28 percent growth rate in a DCF analysis for this hypothetical utility would be to assume that the payout ratio could continue to increase indefinitely and lead to the unlikely result that the firm could consistently pay out more in dividends than it earns.